Pliny the Younger was governor of Pontus/Bithynia from 111-113 AD. We have a whole set of exchanges of his letters with the emperor Trajan on a variety of administrative political matters. These two letters are the most famous, in which P. encounters Christianity for the first time.

Pliny, *Letters* 10.96-97

Pliny to the Emperor Trajan

It is my practice, my lord, to refer to you all matters concerning which I am in doubt. For who can better give guidance to my hesitation or inform my ignorance? I have never participated in trials of Christians. I therefore do not know what offenses it is the practice to punish or investigate, and to what extent. And I have been not a little hesitant as to whether there should be any distinction on account of age or no difference between the very young and the more mature; whether pardon is to be granted for repentance, or, if a man has once been a Christian, it does him no good to have ceased to be one; whether the name itself, even without offenses, or only the offenses associated with the name are to be punished.

Meanwhile, in the case of those who were denounced to me as Christians, I have observed the following procedure: I interrogated these as to whether they were Christians; those who confessed I interrogated a second and a third time, threatening them with punishment; those who persisted I ordered executed. For I had no doubt that, whatever the nature of their creed, stubbornness and inflexible obstinacy surely deserve to be punished. There were others possessed of the same folly; but because they were Roman citizens, I signed an order for them to be transferred to Rome.

Soon accusations spread, as usually happens, because of the proceedings going on, and several incidents occurred. An anonymous document was published containing the names of many persons. Those who denied that they were or had been Christians, when they invoked the gods in words dictated by me, offered prayer with incense and wine to your image, which I had ordered to be brought for this purpose together with statues of the gods, and moreover cursed Christ--none of which those who are really Christians, it is said, can be forced to do--these I thought should be discharged. Others named by the informer declared that they were Christians, but then denied it, asserting that they had been but had ceased to be, some three years before, others many years, some as much as twenty-five years. They all worshipped your image and the statues of the gods, and cursed Christ.

They asserted, however, that the sum and substance of their fault or error had been that they were accustomed to meet on a fixed day before dawn and sing responsively a hymn to Christ as to a god, and to bind themselves by oath, not to some crime, but not to commit fraud, theft, or adultery, not falsify their trust, nor to refuse to return a trust when called upon to do so. When this was over, it was their custom to depart and to assemble again to partake of food--but ordinary and innocent food. Even this, they affirmed, they had ceased to do after my edict by which, in accordance with your instructions, I had forbidden political associations. Accordingly, I judged it all the more necessary to find out what the truth was by torturing two female slaves who were called deaconesses. But I discovered nothing else but depraved, excessive superstition.

I therefore postponed the investigation and hastened to consult you. For the matter seemed to me to warrant consulting you, especially because of the number involved. For many persons of every age, every rank, and also of both sexes are and will be endangered. For the contagion of this superstition has spread not only to the cities but also to the villages and farms. But it seems possible to check and cure it. It is certainly quite clear that the temples, which had been almost deserted, have begun to be frequented, that the established religious rites, long neglected, are being resumed, and that from everywhere sacrificial animals are coming, for which until now very few purchasers could be found. Hence it is easy to imagine what a multitude of people can be reformed if an opportunity for repentance is afforded.

Trajan to Pliny

You observed proper procedure, my dear Pliny, in sifting the cases of those who had been denounced to you as Christians. For it is not possible to lay down any general rule to serve as a kind of fixed standard. They are not to be sought out; if they are denounced and proved guilty, they are to be punished, with this reservation, that whoever denies that he is a Christian and really proves it--that is, by worshiping our gods--even though he was under suspicion in the past, shall obtain pardon through repentance. But anonymously posted accusations ought to have no place in any prosecution. For this is both a dangerous kind of precedent and out of keeping with the spirit of our age.

Founders Online

From George Washington to The States, 8 June 1783

(Circular)

Head Quarters Newburgh June 8-21st 1783

Sir

The great object, for which I had the honor to hold an Appointment in the service of my Country being accomplished, I am now preparing to resign it into the hands of Congress, and to return to that domestic retirement; which it is well known I left with the greatest reluctance, a retirement for which I have never ceased to sigh through a long and painfull absence, and in which (remote from the noise and trouble of the World) I meditate to pass the remainder of life, in a state of undisturbed repose: But before I carry this resolution into effect, I think is a duty incumbent on me, to make this my last official communication, to congratulate you on the glorious events which Heaven has been pleased to produce in our favor, to offer my sentiments respecting some important subjects which appear to me to be intimately connected with the tranquility of the United States, to take my leave of your Excellency as a public Character, and to give my final blessing to that Country, in whose service I have spent the prime of my life, for whose sake I have consumed so many anxious days and watchful nights, and whose happiness, being extremely dear to me, will always constitute no inconsiderable part of my own.

Impressed with the liveliest sensibility on this pleasing occasion, I will claim the indulgence of dilating the more copiously on the subjects of our mutual felicitation—When we consider the magnitude of the prize we contended for, the doubtfull nature of the Contest, and the favorable manner in which it has terminated, we shall find the greatest possible reason for gratitude and rejoycing—This is a theme that will afford infinite delight to every benevolent & liberal Mind, whether the event in contemplation be considerd as the source of present enjoyment or the parent of future happiness; and we shall have equal occasion to felicitate ourselves, on the lot which Providence has assigned us, whether we view it in a natural, a political, or a moral point of light.

The Citizens of America, placed in the most enviable condition, as the sole Lords and Proprietors of a vast tract of Continent, comprehending all the various Soils and Climates of the World and abounding with all the necessaries and conveniences of life, are now, by the late satisfactory pacification, acknowledged to be possessed of absolute freedom and Independancy—They are from this period to be considered as the Actors, on a most conspicuous Theatre, which seems to be peculiarly designated by Providence for the display of human greatness and felicity, here they are not only surrounded with every thing which can contribute to the completion of private and domestic enjoyment, but Heaven has crowned all its other blessings by giving a fairer opportunity for political happiness, than any other Nation has ever been favored with—Nothing can illustrate these observations more forcibly than a recollection of the happy conjuncture of times and circumstances under which our Republic assumed its Rank among the Nations—the foundation of our Empire was not laid in the gloomy Age of ignorance and superstition, but at an Epocha when the rights of Mankind were better understood and more clearly defined, than at any former period—The researches of the human Mind after social happiness have been carried to a great extent, the treasures of knowledge acquired by the labours of Philosophers, Sages and Legislators, through a long succession of years, are laid open for our use and their collected wisdom may be happily applied in the establishment of our forms of Government. The free cultivation of letters, the unbounded extension of Commerce, the progressive Refinement of manners, the growing liberality of sentiment, and, above all, the pure and benign light of Revelation, have had a meliorating influence on Mankind and encreased the blessings of Society. At this Auspicious period the United States came into existence as a Nation, and if their Citizens should not be completely free & happy, the fault will be entirely their own.

Such is our situation, and such are our prospects: but nowithstanding the Cup of blessing is thus reached out to us, notwithstanding happiness is ours if we have a disposition to seize the occasion and make it our own, yet it appears to me there is an option still left to the United States of America; that it is in their choïce and depends upon their conduct, whether they will be respectable and prosperous or contemptible and Miserable as a Nation. This is the time of their political probation: this is the moment when the eyes of the whole World are turned upon them—This is the moment to establish or ruin their National Character for ever—This is the favorable moment to give such a tone to our fœderal Government, as will enable it to answer the ends of its institution—or this may be the ill fated moment for relaxing the powers of the Union, annihilating the cement of the Confederation and exposing us to become the sport of European Politicks, which may play one State against another, to prevent their growing importance and to serve their own interested purposes; for according to the System of Policy the States shall adopt at this moment, they will stand or fall, and by their confirmation or lapse, it is yet to be decided whether the Revolution must ultimately be considered as a blessing or a curse: a blessing or a curse, not to the present Age alone, for with our fate will the destiny of unborn Millions be involved.

With this conviction of the importance of the present Crisis, silence in me would be a crime; I will therefore speak to your Excellency the language of freedom and sincerity without disguise. I am aware, however, that those who differ from me in political sentiment may perhaps remark I am stepping out of the proper line of my duty, and they may possibly ascribe to arrogance or ostentation what I know is alone the result of the purest intention; but the rectitude of my own heart, which disdains such unworthy motives; the part I have hitherto acted in life; the determination I have formed of not taking any share in public business hereafter; the ardent desire I feel and shall continue to manifest of quietly enjoying in private life, after all the toils of War, the benefits of a wise and liberal Government, will, I flatter myself, sooner or later convince my Country men that I could have no sinister views in delivering, with so little Reserve, the opinions contained in this address.

There are four things, which I humbly conceive are essential to the well being, I may even venture to say to the existence, of the United States as an independent Power.

1st An indissoluble Union of the States under one federal Head.

2ndly A sacred regard to public Justice.

3dly The adoption of a proper Peace Establishment—and

4thly The prevalence of that pacific and friendly disposition among the people of the United States, which will induce them to forget their local prejudices and policies, to make those mutual concessions which are requisite to the general prosperity, and, in some instances, to sacrifice their individual advantages to the interest of the community.

These are the pillars on which the glorious fabrick of our Independancy and National Character must be supported — Liberty is the basis—and whoever would dare to sap the foundation or overturn the Structure under whatever specious pretexts he may attempt it, will merit the bitterest execration and the severest punishments which can be inflicted by his injured Country.

On the three first Articles I will make a few observations, leaving the last to the good sense and serious consideration of those immediately concerned.

Under the first head, altho it may not be necessary or proper for me in this place to enter into a particular disquisition of the principles of the Union and to take up the great question which has been frequently agitated, whether it be expedient and requisite for the States to delegate a larger proportion of Power to Congress or not, yet it will be a part of my duty, and that of every true Patriot; to assert without reserve and to insist upon the following positions—That unless the States will suffer Congress to exercise those prerogatives they are undoubtedly invested with by the Constitution, every thing must very rapidly tend to Anarchy and confusion—that it is indispensible to the happiness of the individual States that there should be lodged somewhere, a supreme power to regulate and govern the general concerns of the confederated Republic, without which the Union cannot be of long duration—That there must be a faithfull and pointed compliance on the part of every State with the late proposals and demands of Congress, or the most fatal consequences will ensue; that whatever measures have a tendency to dissolve the Union, or contribute to violate or lessen the Sovereign Authority, ought to be considered as hostile to the Liberty and Independancy of America and the Authors of them treated accordingly; and lastly, that unless we can be enabled, by the concurrence of the States, to participate of the fruits of the Revolution, and enjoy the essential benefits of civil Society, under a form of Government so free and uncorrupted, so happily guarded against the danger of oppression as has been devised and adopted by the Articles of Confederation, it will be a subject of regret that so much blood and treasure have been lavished for no purpose; that so many sufferings have been encounter'd, without a compensation and that so many sacrifices have been made in vain.

Many other considerations might here be adduced to prove, that without an entire conformity to the spirit of the Union we cannot exist—as an independant Power. It will be sufficient for my purpose, to mention but one or two which seem to me of the greatest ïmportance. It is only in our United Character, as an Empire, that our Independance is acknowledged, that our power can be regarded or our Credit supported among foreign Nations—the Treaties of the European Powers with the United States of America will have no validity on a dissolution of the Union. We shall be left nearly in a State of Nature, or we may find by our own unhappy experience, that there is a natural and necessary progression from the extreme of Anarchy to the extreme of Tyranny, and that arbitrary power is most easily established on the ruins of Liberty abused to Licentiousness.

As to the second Article, which respects the performance of public justice, Congress have in their late address to the United States almost exhausted the Subject, they have explained their ideas so fully and have enforced the obligations the States are under to render compleat justice to all the public Creditors, with so much dignity and energy, that in my opinion no real friend to the honour and Independancy of America, can hesitate a single moment respecting the propriety of complying with the just and honorable measures proposed—If their Arguments do not produce conviction, I know of nothing that will have greater influence, especially when we recollect that the System referred to, being the result of the collected wisdom of the Continent, must be esteemed, if not perfect, certainly the least objectionable of any that could be devised, and that if it shall not be carried into immediate execution, a National bankruptcy, with all its deplorable consequences, will take place before any different plan can possibly be proposed and adopted, so pressing are the present circumstances! and such is the alternative now offerd to the States!

The ability of the Country to discharge the debts which have been incurred in its defence, is not to be doubted, an inclination I flatter myself will not be wanting: the path of our duty is plain before us—honesty will be found on every experiment to be the best and only true policy—let us then as a Nation be just—let us fulfill the public Contracts which Congress had undoubtedly a right to make for the purpose of carrying on the War, with the same good faith we suppose ourselves bound to perform our private engagements; in the mean time let an attention to the chearfull performance of their proper business as individuals and as members of Society be earnestly inculcated on the Citizens of America—then will they strengthen the hands of Government & be happy under its protection, every one will reap the fruit of his Labours, every one will enjoy his own acquisitions without molestation and without danger.

In this state of absolute freedom and perfect security, who will grudge to yield a very little of his property to support the common interests of Society and ensure the protection of Government? who does not remember the frequent declarations at the commencement of the War that we should be completely satisfied, if at the expence of one half, we could defend the remainder of our possessions! where is the Man to be found who wishes to remain indebted for the defence of his own person and property to the exertions, the bravery and the blood of others, without making one generous effort to repay the debt of honor and of gratitude? In what part of the Continent shall we find any Man or body of Men who would not blush to stand up and propose measures purposely calculated to rob the Soldier of his Stipend and the public Creditor of his due and were it possible that such a flagrant instance of injustice could ever happen, would it not excite the general indignation and tend to bring down upon the authors of such measures the aggravated vengeance of Heaven?

If after all, a spirit of disunion or a temper of obstinacy and perverseness should manifest itself in any of the States; if such an ungracious disposition should attempt to frustrate all the happy effects that might be expected to flow from the Union; if there should be a refusal to comply with the Requisitions for funds to discharge the annual Interest of the public Debts and if that refusal should revive again all those jealousies and produce all those evils which are now happily removed, Congress, who have, in all their transactions, shewn a great degree of magnanimity and justice, will stand justified in the sight of God and Man and the State alone which puts itself in opposition to the aggregate wisdom of the Continent and follows such mistaken and pernicious councils, will be responsible for all the Consequences.

For my own part, conscious of having acted, while a servant of the public, in the manner I conceived best suited to promote the real interests of my Country, having in consequence of my fixed belief, in some measure, pledged myself to the Army that their Country would finally do them compleat and ample Justice and not wishing to conceal any instance of my official conduct from the eyes of the World, I have thought proper to transmit to your Excellency the inclosed collection of papers relative to the half-pay & commutation granted by Congress to the Officers of the Army. From these communications my decided sentiment will be clearly comprehended, together with the conclusive reasons which induced me, at an early period, to recommend the adoption of this measure in the most earnest and serious manner. As the proceedings of Congress, the Army and myself are open to all and contain in my opinion sufficient information to remove the prejudices and errors which may have been entertained by any, I think it unnecessary to say anything more, than just to observe, that the resolutions of Congress now alluded to, are undoubtedly as absolutely binding upon the United States, as the most solemn

Acts of Confederation or Legislation. As to the idea which, I am informed, has in some instances prevailed, that the half pay and Commutation are to be regarded merely in the odious Light of a pension, it ought to be exploded forever—that provision should be viewed as it really was, a reasonable compensation offerd by Congress at a Time when they had nothing else to give to the Officers of the Army for services then to be performed. It was the only means to prevent a total dereliction of the Service—it was a part of their hire, I may be allowed to say, it was the price of their blood and of your Independancy—it is therefore more than a common debt, it is a debt of honor—it can never be considered as a pension or gratuity nor be cancelled untill it is fairly discharged.

With regard to a distinction between Officers and Soldiers, it is sufficient that the uniform experience of every Nation of the World combined with our own, proves the utility and propriety of the discrimination—Rewards in proportion to the Aids the Public derives from them, are unquestionably due to all its Servants—In some Lines, the Soldiers have perhaps generally had as ample a compensation for their Services, by the large bounties which have been paid them, as their Officers will receive in the proposed commutation; in others, if besides the donation of Lands, the payment of Arrearages of Cloathing and Wages (in which Articles all the component parts of the Army must be on the same footing) we take into the estimate the bounties many of the Soldiers have received and the gratuity of one years full pay which is promised to all, possibly their situation (every circumstance being duly considered) will not be deemed less eligible than that of the Officers, should a farther Reward however be judged equitable, I will venture to asert no one will enjoy greater satisfaction than myself, on seeing an exemption from Taxes for a limitted time (which has been petitioned for in some instances) or any other adequate compensation or immunity, granted to the brave defenders of their Countrys cause; but neither the adoption or rejection of this proposition, will in any manner affect, much less militate against, the Act of Congress by which they have offer'd five Years full pay in lieu of half pay for life, which had been before promised to the Officers of the Army.

Before I conclude the Subject of public justice, I cannot omit to mention the obligations this Country is under to that meritorious class of veteran non Commission'd Officers and Privates who have been discharged for inability, in consequence of the resolution of Congress of the 23d April 1782, on an annual pension for life; their peculiar sufferings, their singular merits and claims to that provision, need only be known, to interest all the feelings of humanity in their behalf; nothing but a punctual payment of their annual allowance, can rescue them from the most complicated misery, and nothing could be a more melancholy and distressing sight, than to behold those who have shed their blood or lost their limbs in the service of their Country, without a shelter, without a friend and without the means of obtaining any of the necessaries of life or comforts of life compelled to beg their daily bread from door to door! Suffer me to recommend those of this description belonging to your State to the warmest patronage of your Excellency and your Legislature.

It is necessary to say but a few words on the third topic which was proposed and which regards particularly the defence of the Republic—As there can be little doubt but Congress will Recommend a proper Peace Establishment for the United States in which a due attention will be paid to the importance of placing the Militia of the Union upon a regular and respectable footing—If this should be the case, I would beg leave to urge the great advantage of it in the strongest terms—the Militia of this Country must be considerd as the Palladium of our security and the first effectual resort, in case of hostility; It is essential therefore, that the same system should pervade the whole—that the formation & discipline of the Militia of the Continent should be absolutely uniform and the same species of Arms, Accoutrements & Military Apparatus should be introduced in every part of the United States. No one, who has not learned it from experience, can conceive the difficulty, expence & confusion which result from a contrary System, or the vague Arrangements which have hitherto prevailed.

If in treating of political points, a greater latitude than usual has been taken in the course of this address—the importance of the Crisis and the magnitude of the objects in discussion, must be my apology—It is, however, neither my wish or expectation, that the preceding observations should claim any regard, except so far as they shall appear to be dictated by a good intention, consonant to the immutable rules of Justice—calculated to produce a liberal system of Policy and founded on what ever experience may have been acquired by a long and close Attention to public business—Here I might speak with the more confidence, from my actual observations and if it would not swell this Letter (already too prolix) beyond the bounds I had prescribed myself, I could demonstrate to every mind open to conviction, that in less time & with much less expence than has been incurred, the War might have been brought to the same happy, conclusion if the resources of the Continent could have been properly drawn forth—that the distresses and disappointments, which have very often occurred, have in too many instances resulted more from a want of energy in the Continental Government, than a deficiency of means in the particular

States—That the inefficacy of measures, arising from the want of an adequate authority in the supreme Power, from a partial compliance with the requisitions of Congress in some of the States and from a failure of punctuality in others, while it tended to damp the Zeal of those which where more willing to exert themselves, served also to accumulate the expences of the War and to frustrate the best concerted plans; and that the discouragement, occasioned by the complicated difficulties & embarrasments in which our affairs were by this means involved, would have long ago produced the dissolution of any Army, less patient, less virtuous and less persevering than that which I have had the honor to Command. But while I mention these things, which are notorious facts, as the defects of our Federal Constitution, particularly in the prosecution of a War, I beg it may be understood, that as I have ever taken a pleasure in gratefully acknowledging the assistance and support I have derived from every class of Citizens, so shall I always be happy to do justice to the unparralled exertions of the individual States on many interesting occasions.

I have thus freely disclosed, what I wished to make known, before I surrendered up my Public trust to those who committed it to me—the task is now accomplished—I now bid adieu to your Excellency, as the Chief Magistrate of your State at the same time I bid a last farewell to the cares of Office and all the employments of public life.

It remains then to be my final and only request, that your Excellency will communicate these sentiments to your legislature at their next meeting and that they may be considered as the Legacy of one who has ardently wished on all occasions to be usefull to his Country and who even in the shade of Retirement will not fail to implore the divine benediction upon it.

I now make it my earnest prayer, that God would have you and the State over which you preside, in his holy protection that he would incline the hearts of the Citizens to cultivate a spirit of subordination & obedience to Government, to entertain a brotherly affection and love for one another, for their fellow Citizens of the United States at large and particularly for their brethren who have served in the field—and finally that he would most graciously be pleas'd to dispose us all to do Justice, to love mercy and to demean ourselves, with that Charity, humility & pacific temper of mind, which were the Characteristicks of the Divine Author of our blessed Religion & without an humble immitation of whose example in these things, we can never hope to be a happy Nation. With the greatest regard and esteem, I have the honor to be Sir Your Excellency's Most Obedient and most humble Servant

Go: Washington

NNPM.

Back to top

SOURCE PROJECT	Washington Papers
TITLE	From George Washington to The States, 8 June 1783
AUTHOR	Washington, George
RECIPIENT	The States
DATE	8 June 1783
CITE AS	"From George Washington to The States, 8 June 1783," *Founders Online,* National Archives, https://founders.archives.gov/documents/Washington/99-01-02-11404. [This is an **Early Access document** from The Papers of George Washington. It is not an authoritative final version.]

THIS DOCUMENT IS THE PROPERTY OF HIS BRITANNIC MAJESTY'S GOVERNMENT).

S E C R E T.

W.P.(G)(40) 211. COPY NO. 51

9TH AUGUST, 1940.

WAR CABINET.

BREVITY.

Memorandum by the Prime Minister.

To do our work, we all have to read a mass of papers. Nearly all of them are far too long. This wastes time, while energy has to be spent in looking for the essential points.

I ask my colleagues and their staffs to see to it that their Reports are shorter.

(i) The aim should be Reports which set out the main points in a series of short, crisp paragraphs.

(ii) If a Report relies on detailed analysis of some complicated factors, or on statistics, these should be set out in an Appendix.

(iii) Often the occasion is best met by submitting not a full-dress Report, but an Aide-memoire consisting of headings only, which can be expanded orally if needed.

(iv) Let us have an end of such phrases as these: "It is also of importance to bear in mind the following considerations.....", or "Consideration should be given to the possibility of carrying into effect.....". Most of these woolly phrases are mere padding, which can be left out altogether, or replaced by a single word. Let us not shrink from using the short expressive phrase, even if it is conversational.

Reports drawn up on the lines I propose may at first seem rough as compared with the flat surface of officialese jargon. But the saving in time will be great, while the discipline of setting out the real points concisely will prove an aid to clearer thinking.

W.S.C.

10, Downing Street.

9TH AUGUST, 1940.

8-23-1971

The Memo

Lewis F. Powell Jr.

51/167 4cc 8/23/71

CONFIDENTIAL MEMORANDUM

ATTACK ON AMERICAN FREE ENTERPRISE SYSTEM

TO: Mr. Eugene B. Sydnor, Jr. DATE: August 23, 1971
Chairman
Education Committee
U.S. Chamber of Commerce

FROM: Lewis F. Powell, Jr.

This memorandum is submitted at your request as a basis for the discussion on August 24 with Mr. Booth and others at the U.S. Chamber of Commerce. The purpose is to identify the problem, and suggest possible avenues of action for further consideration.

Dimensions of the Attack

No thoughtful person can question that the American economic system is under broad attack.* This varies in scope, intensity, in the techniques employed, and in the level of visibility.

There always have been some who opposed the American system, and preferred socialism or some form of statism

*Variously called: the "free enterprise system", "capitalism", and the "profit system". The American political system of democracy under the rule of law is also under attack, often by the same individuals and organizations who seek to undermine the enterprise system.

(communism or fascism). Also, there always have been critics of the system, whose criticism has been wholesome and constructive so long as the objective was to improve rather than to subvert or destroy.

But what now concerns us is quite new in the history of America. We are not dealing with episodic or isolated attacks from a relatively few extremists or even from the minority socialist cadre. Rather, the assault on the enterprise system is broadly based and consistently pursued. It is gaining momentum and converts.

Sources of the Attack

The sources are varied and diffused. They include, not unexpectedly, the Communists, New Leftists and other revolutionaries who would destroy the entire system, both political and economic. These extremists of the left are far more numerous, better financed, and increasingly are more welcomed and encouraged by other elements of society, than ever before in our history. But they remain a small minority, and are not yet the principal cause for concern.

The most disquieting voices joining the chorus of criticism, come from perfectly respectable elements of society: from the college campus, the pulpit, the media, the intellectual and literary journals, the arts and sciences, and from politicians. In most of these groups the movement against the system is participated in only by minorities. Yet, these often are the most articulate, the most vocal, the most prolific in their writing and speaking.

Moreover, much of the media - for varying motives and in varying degrees - either voluntarily accords unique publicity to these "attackers", or at least allows them to exploit the media for their purposes. This is especially true of television, which now plays such a predominant role in shaping the thinking, attitudes and emotions of our people.

One of the bewildering paradoxes of our time is the extent to which the enterprise system tolerates, if not participates in, its own destruction.

The campuses from which much of the criticism emanates are supported by (i) tax funds generated largely from American business, and (ii) contributions from capital funds controlled or generated by American business. The Boards of Trustees of our universities overwhelmingly are composed of men and women who are leaders in the system.

Most of the media, including the national TV systems, are owned and theoretically controlled by corporations which depend upon profits, and the enterprise system to survive.

Tone of the Attack

This memorandum is not the place to document in detail the tone, character, or intensity of the attack. The following quotations will suffice to give one a general idea:

William Kunstler, warmly welcomed on campuses and listed in a recent student poll as the "American lawyer most admired", incites audiences as follows:

> "You must learn to fight in the streets, to revolt, to shoot guns. We will learn to do all of the things that property owners fear".*

The New Leftists who heed Kunstler's advice increasingly are beginning to act - not just against military recruiting offices and manufacturers of munitions, but against a variety of businesses:

> "Since February 1970, branches (of Bank of America) have been attacked 39 times, 22 times with explosive devices and 17 times with fire bombs or by arsonists".**

Although New Leftist spokesmen are succeeding in radicalizing thousands of the young, the greater cause for concern is the hostility of respectable liberals and social reformers.

---

*Richmond News-Leader, June 8, 1970. Column of William F. Buckley, Jr.

**N. Y. Times Service article, reprinted Richmond Times-Dispatch, May 17, 1971.

It is the sum total of their views and influence which could indeed fatally weaken or destroy the system.

A chilling description of what is being taught on many of our campuses was written by Stewart Alsop:

> "Yale, like every other major college, is graduating scores of bright young men who are practitioners of 'the politics of despair'. These young men despise the American political and economic system . . . (their) minds seem to be wholly closed. They live, not by rational discussion, but by mindless slogans".*

A recent poll of students on 12 representative campuses reported that:

> "Almost half the students favored socialization of basic U.S. industries".**

A visiting professor from England at Rockford College gave a series of lectures entitled "The Ideological War Against Western Society", in which he documents the extent to which members of the intellectual community are waging ideological warfare against the enterprise system and the values of western society. In a foreword to these lectures, famed Dr. Milton Friedman of Chicago warned:

> "It (is) crystal clear that the foundations of our free society are under wide-ranging and powerful attack - not by Communist or any

---

*Stewart Alsop, Yale and the Deadly Danger, Newsweek, May 18, 1970.

**Editorial, Richmond Times Dispatch, July 7, 1971.

> other conspiracy but by misguided individuals parroting one another and unwittingly serving ends they would never intentionally promote".*

Perhaps the single most effective antagonist of American business is Ralph Nader who - thanks largely to the media - has become a legend in his own time and an idol of millions of Americans. A recent article in Fortune speaks of Nader as follows:

> "The passion that rules in him - and he is a passionate man - is aimed at smashing utterly the target of his hatred, which is corporate power. He thinks, and says quite bluntly, that a great many corporate executives belong in prison - for defrauding the consumer with shoddy merchandise, poisoning the food supply with chemical additives, and willfully manufacturing unsafe products that will maim or kill the buyer. . . . He emphasizes that he is not talking just about 'fly-by-night hucksters' but the top management of blue-chip business".**

A frontal assault was made on our government, our system of justice, and the free enterprise system by Yale professor Charles Reich in his widely publicized book: "The Greening of America", published last winter.

---

*Dr. Milton Friedman, Prof. of Economics, U. of Chicago, writing a Foreword to Dr. Arthur A. Shenfield's Rockford College lectures entitled "The Ideological War Against Western Society", copyrighted 1970 by Rockford College.

**<u>Fortune</u>, May 1971, p. 145. This <u>Fortune</u> analysis of the Nader influence includes a reference to Nader's visit to a college where he was paid a lecture fee of $2,500 for "denouncing America's big corporations in venomous language . . . bringing (rousing and spontaneous) bursts of applause" when he was asked when he planned to run for President.

The foregoing references illustrate the broad, shotgun attack on the system itself. There are countless examples of rifle shots which undermine confidence and confuse the public. Favorite current targets are proposals for tax incentives through changes in depreciation rates and investment credits. These are usually described in the media as "tax breaks", "loop holes", or "tax benefits" <u>for the benefit of business</u>. As viewed by a columnist in the Post, such tax measures would benefit "only the rich, the owners of big companies".*

It is dismaying that many politicians make the same argument that tax measures of this kind benefit only "business", without benefit to "the poor". The fact that this is either political demagoguery or economic illiteracy, is of slight comfort. This setting of the "rich" against the "poor", of business against the people, is the cheapest and most dangerous kind of politics.

The Apathy and Default of Business

What has been the response of business to this massive assault upon its fundamental economics, upon its philosophy, upon its right to continue to manage its own affairs, and indeed upon its integrity?

---

*The Washington Post, Column of William Raspberry, June 28, 1971.

The painfully sad truth is that business, including the boards of directors and the top executives of corporations great and small and business organizations at all levels, often have responded - if at all - by appeasement, ineptitude and ignoring the problem. There are, of course, many exceptions to this sweeping generalization. But the net effect of such response as has been made is scarcely visible.

In all fairness, it must be recognized that businessmen have not been trained or equipped to conduct guerrilla warfare with those who propagandize against the system, seeking insidiously and constantly to sabotage it. The traditional role of business executives has been to manage, to produce, to sell, to create jobs, to make profits, to improve the standard of living, to be community leaders, to serve on charitable and educational boards, and generally to be good citizens. They have performed these tasks very well indeed.

But they have shown little stomach for hard-nose contest with their critics, and little skill in effective intellectual and philosophical debate.

A column recently carried by the Wall Street Journal was entitled: "Memo to GM: Why Not Fight Back?"* Although addressed to GM by name, the article was a warning to all American business. Columnist St. John said:

---

*Jeffrey St. John, The Wall Street Journal, May 21, 1971

> "General Motors, like American business in general, is 'plainly in trouble' because intellectual bromides have been substituted for a sound intellectual exposition of its point of view".

Mr. St. John then commented on the tendency of business leaders to compromise with and appease critics. He cited the concessions which Nader wins from management, and spoke of "the fallacious view many businessmen take toward their critics." He drew a parallel to the mistaken tactics of many college administrators:

> "College administrators learned too late that such appeasement serves to destroy free speech, academic freedom and genuine scholarship. One campus radical demand was conceded by university heads only to be followed by a fresh crop which soon escalated to what amounted to a demand for outright surrender".

One need not agree entirely with Mr. St. John's analysis. But most observers of the American scene will agree that the essence of his message is sound. American business "plainly is in trouble"; the response to the wide range of critics has been ineffective, and has included appeasement; the time has come - indeed, it is long overdue - for the wisdom, ingenuity and resources of American business to be marshaled against those who would destroy it.

Responsibility of Business Executives

What specifically should be done? The first essential - a prerequisite to any effective action - is for businessmen to confront this problem as a primary responsibility of corporate management.

The overriding first need is for businessmen to recognize that the ultimate issue may be survival - survival of what we call the free enterprise system, and all that this means for the strength and prosperity of America and the freedom of our people.

The day is long past when the chief executive officer of a major corporation discharges his responsibility by maintaining a satisfactory growth of profits, with due regard to the corporation's public and social responsibilities. If our system is to survive, top management must be equally concerned with protecting and preserving the system itself. This involves far more than an increased emphasis on "public relations" or "governmental affairs" - two areas in which corporations long have invested substantial sums.

A significant first step by individual corporations could well be the designation of an executive vice president (ranking with other executive VP's) whose responsibility is to counter - on the broadest front - the attack on the enterprise system. The public relations department could be one of the fundations assigned to this executive, but his responsibilities should encompass some of the types of activities referred to subsequently in this memorandum. His budget and staff should be adequate to the task.

Possible Role of the Chamber of Commerce

But independent and uncoordinated activity by individual corporations, as important as this is, will not be sufficient. Strength lies in organization, in careful long-range planning and implementation, in consistency of action over an indefinite period of years, in the scale of financing available only through joint effort, and in the political power available only through united action and national organizations.

Moreover, there is the quite understandable reluctance on the part of any one corporation to get too far out in front and to make itself too visible a target.

The role of the National Chamber of Commerce is therefore vital. Other national organizations (especially those of various industrial and commercial groups) should join in the effort, but no other organizations appears to be as well situated as the Chamber. It enjoys a strategic position, with a fine reputation and a broad base of support. Also - and this is of immeasurable merit - there are hundreds of local Chambers of Commerce which can play a vital supportive role.

It hardly need be said that before embarking upon any program the Chamber should study and analyze possible courses of action and activities, weighing risks against probable effectiveness and feasibility of each. Considerations of cost, the assurance of financial and other support from members, adequacy of staffing and similar problems will all require the most thoughtful consideration.

The Campus

The assault on the enterprise system was not mounted in a few months. It has gradually evolved over the past two decades, barely perceptible in its origins and benefitting from a gradualism that provoked little awareness much less any real reaction.

Although origins, sources and causes are complex and interrelated, and obviously difficult to identify without careful qualification, there is reason to believe that the campus is the single most dynamic source. The social science faculties usually include members who are unsympathetic to the enterprise system. They may range from a Herbert Marcuse, Marxist faculty member at the University of California at San Diego, and convinced socialists, to the ambivalent liberal critic who finds more to condemn than to commend. Such faculty members need not be in a majority. They are often personally attractive and magnetic; they are stimulating teachers, and their controversy attracts student following; they are prolific writers and lecturers; they author many of the textbooks; and they exert enormous influence - far out of proportion to their numbers - on their colleagues and in the academic world.

Social science faculties (the political scientist, economist, sociologist and many of the historians) tend to be liberally oriented, even when leftists are not present. This is not a criticism per se, as the need for liberal thought is essential to a balanced viewpoint. The difficulty is that "balance" is conspicuous by its absence on many campuses, with relatively few members being of conservative or moderate persuasion and even the relatively few often being less articulate and aggressive than their crusading colleagues.

This situation extending back many years and with the imbalance gradually worsening, has had an enormous impact on millions of young American students. In an article in Barron's weekly, seeking an answer to why so many young people are disaffected even to the point of being revolutionaries, it was said:

"Because they were taught that way".*

Or, as noted by columnist Stewart Alsop, writing about his alma mater:

> Yale, like every other major college, is graduating scores of bright young men . . . who despise the American political and economic system".

As these "bright young men", from campuses across the country, seek opportunities to change a system which they have been taught to distrust - if not, indeed "despise" - they seek employment in the centers of the real power and influence in our country, namely: (i) with the news media, especially television; (ii) in government, as "staffers" and consultants at various levels; (iii) in elective politics; (v) as lecturers and writers; and (v) on the faculties at various levels of education.

Many do enter the enterprise system - in business and the professions - and for the most part they quickly discover the fallacies of what they have been taught. But those who eschew the mainstream of the system, often remain in key positions of influence where they mold public opinion and often shape governmental action. In many instances, these "intellectuals"

*Barron's National Business and Financial Weekly, "The Total Break with America, The Fifth Annual Conference of Socialist Scholars", Sept. 15, 1969.

end up in regulatory agencies or governmental departments with large authority over the business system they do not believe in.

If the foregoing analysis is approximately sound, a priority task of business - and organizations such as the Chamber - is to address the campus origin of this hostility.

Few things are more sanctified in American life than academic freedom. It would be fatal to attack this as a principle. But if academic freedom is to retain the qualities of "openness", "fairness" and "balance" - which are essential to its intellectual significance - there is a great opportunity for constructive action. The thrust of such action must be to restore the qualities just mentioned to the academic communities.

What Can Be Done About the Campus

The ultimate responsibility for intellectual integrity on the campus must remain on the administrations and faculties of our colleges and universities. But organizations such as the Chamber can assist and activate constructive change in many ways, including the following:

Staff of Scholars

The Chamber should consider establishing a staff of highly qualified scholars in the social sciences who do believe in the system. It should include several of national reputation, whose authorship would be widely respected - even when disagreed with.

Staff of Speakers

There also should be a staff of speakers of the highest competency. These might include the scholars, and certainly those who speak for the Chamber would have to articulate the product of the scholars.

Speaker's Bureau

In addition to full time staff personnel, the Chamber should have a Speaker's Bureau which should include the ablest and most effective advocates from the top echelons of American business.

Evaluation of Textbooks

The staff of scholars (or preferably a panel of independent scholars) should evaluate social science textbooks, especially in economics, political science and sociology. This should be a continuing program.

The objective of such evaluation should be oriented toward restoring the balance essential to genuine academic freedom. This would include assurance of fair and factual treatment of our system of government and our enterprise system, its accomplishments, its basic relationship to individual rights and freedoms, and comparisons with the systems of socialism, fascism and communism. Most of the existing textbooks have some sort of comparisons, but many are superficial, biased and unfair.

We have seen the civil rights movement insist on rewriting many of the textbooks in our universities and schools. The labor unions likewise insist that textbooks be fair to the viewpoints of organized labor. Other interested citizens groups have not hesitated to review, analyze and criticize textbooks and teaching materials. In a democratic society, this can be a constructive process and should be regarded as an aid to genuine academic freedom and not as an intrusion upon it.

If the authors, publishers and users of textbooks know that they will be subjected - honestly, fairly and thoroughly - to review and critique by eminent scholars who believe in the American system, a return to a more rational balance can be expected.

Equal Time on the Campus

The Chamber should insist upon equal time on the college speaking circuit. The FBI publishes each year a list of speeches made on college campuses by avowed Communists. The number in 1970 exceeded 100. There were, of course, many hundreds of appearances by leftists and ultra liberals who urge the types of viewpoints indicated earlier in this memorandum. There was no corresponding representation of American business, or indeed by individuals or organizations who appeared in support of the American system of government and business.

Every campus has its formal and informal groups which invite speakers. Each law school does the same thing. Many universities and college officially sponsor lecture and speaking programs. We all know the inadequacy of the representation of business in these programs.

It will be said that few invitations would be extended to Chamber speakers.* This undoubtedly would be true unless the Chamber aggressively insisted upon the right to be heard - in effect, insisted upon "equal time". University administrators and the great majority of student groups and committees would not welcome being put in the position publicly of refusing a forum to diverse views. Indeed, this is the classic excuse for allowing Communists to speak.

The two essential ingredients are (i) to have attractive, articulate and well-informed speakers; and (ii) to exert whatever

*On many campuses freedom of speech has been denied to all who express moderate or conservative viewpoints.

degree of pressure - publicly and privately - may be necessary to assure opportunities to speak. The objective always must be to inform and enlighten, and not merely to propagandize.

Balancing of Faculties

Perhaps the most fundamental problem is the imbalance of many faculties. Correcting this is indeed a long-range and difficult project. Yet, it should be undertaken as a part of an overall program. This would mean the urging of the need for faculty balance upon university administrators and boards of trustees.

The methods to be employed require careful thought, and the obvious pitfalls must be avoided. Improper pressure would be counterproductive. But the basic concepts of balance, fairness and truth are difficult to resist, if properly presented to boards of trustees, by writing and speaking, and by appeals to alumni associations and groups.

This is a long road and not one for the fainthearted. But if pursued with integrity and conviction it could lead to a strengthening of both academic freedom on the campus and of the values which have made America the most productive of all societies.

Graduate Schools of Business

The Chamber should enjoy a particular rapport with the increasingly influential graduate schools of business. Much that has been suggested above applies to such schools.

Should not the Chamber also request specific courses in such schools dealing with the entire scope of the problem addressed by this memorandum? This is now essential training for the executives of the future.

Secondary Education

While the first priority should be at the college level, the trends mentioned above are increasingly evidenced in the high schools. Action programs, tailored to the high schools and similar to those mentioned, should be considered. The implementation thereof could become a major program for local chambers of commerce, although the control and direction - especially the quality control - should be retained by the National Chamber.

What Can Be Done About the Public?

Reaching the campus and the secondary schools is vital for the long-term. Reaching the public generally may be more important for the shorter term. The first essential is to establish the staffs of eminent scholars, writers and speakers, who will do the thinking, the analysis, the writing and the speaking. It will also be essential to have staff personnel who are thoroughly familiar with the media, and how most effectively to communicate with the public. Among the more obvious means are the following:

Television

The national television networks should be monitored in the same way that textbooks should be kept under constant surveillance. This applies not merely to so-called educational programs (such as "Selling of the Pentagon"), but to the daily "news analysis" which so often includes the most insidious type of criticism of the enterprise system.* Whether this criticism results from hostility or economic ignorance, the result is the gradual erosion of confidence in "business" and free enterprise.

This monitoring, to be effective would require constant examination of the texts of adequate samples of programs. Complaints - to the media and to the Federal Communications Commission - should be made promptly and strongly when programs are unfair or inaccurate.

*It has been estimated that the evening half-hour news programs of the networks reach daily some 50,000,000 Americans.

Equal time should be demanded when appropriate. Efforts should be made to see that the forum-type programs (the Today show, Meet the Press, etc.) afford at least as much opportunity for supporters of the American system to participate as these programs do for those who attack it.

Other Media

Radio and the press are also important, and every available means should be employed to challenge and refute unfair attacks, as well as to present the affirmative case through these media.

The Scholarly Journals.

It is especially important for the Chamber's "faculty of scholars" to publish. One of the keys to the success of the liberal and leftist faculty members has been their passion for "publication" and "lecturing". A similar passion must exist among the Chamber's scholars.

Incentives might be devised to induce more "publishing" by independent scholars who do believe in the system.

There should be a fairly steady flow of scholarly articles presented to a broad spectrum of magazines and periodicals - ranging from the popular magazines (Life, Look, Reader's Digest, etc.) to the more intellectual ones (Atlantic, Harper's, Saturday Review, New York, etc.)*, and to the various professional journals.

Books, Paperbacks and Pamphlets

The news stands - at airports, drugstores and elsewhere - are filled with paperback and pamphlets advocating everything from revolution to erotic free love. One finds almost no attractive, well-written paperbacks or pamphlets on "our side". It will be difficult to compete with an Eldridge Cleaver or even a Charles Reich for reader attention, but unless the effort is made - on a large enough scale and with appropriate imagination to assure some success - this opportunity for educating the public will be irretrievably lost.

Paid Advertisements

Business pays hundreds of millions of dollars to the media for advertisements. Most of this supports specific products;

*One illustration of the type of article which should not go unanswered appeared in the popular "New York" of July 19, 1971. This was entitled "A Populist Manifesto" by ultra liberal Jack Newfield - who argued that "the root need in our country is 'to redistribute wealth'".

much of its supports institutional image making; and some fraction of it does support the system. But the latter has been more or less tangential, and rarely part of a sustained, major effort to inform and enlighten the American people.

If American business devoted only 10% of its total annual advertising budget to this overall purpose, it would be a statesman-like expenditure.

The Neglected Political Arena

In final analysis, the payoff - short of revolution - is what government does. Business has been the favorite whipping-boy of many politicians for many years. But the measure of how far this has gone is perhaps best found in the anti-business views now being expressed by several leading candidates for President of the United States.

It is still Marxist doctrine that the "capitalist" countries are controlled by big business. This doctrine, consistently a part of leftist propaganda all over the world, has a wide public following among Americans.

Yet, as every business executive knows, few elements of American society today have as little influence in government as the American businessman, the corporation, or even the millions of corporate stockholders. If one doubts this, let him undertake the role of "lobbyist" for the business point of view before Congressional Committees. The same situation obtains in the legislative halls of most states and major cities. One does not exaggerate to say that, in terms of political influence with respect to the course of legislation and government action, the American business executive is truly the "forgotten man".

Current examples of the impotency of business, and of the near-contempt with which businessmen's views are held, are the stampedes by politicians to support almost any legislation related to "consumerism" or to the "environment".

Politicians reflect what they believe to be majority views of their constituents. It is thus evident that most politicians are making the judgment that the public has little sympathy for the businessman or his viewpoint.

The educational programs suggested above would be designed to enlighten public thinking - not so much about the businessman and his individual role as about the system which he administers, and which provides the goods, services and jobs on which our country depends.

But one should not postpone more direct political action, while awaiting the gradual change in public opinion to be effected through education and information. Business must learn the lesson, long ago learned by Labor and other self-interest groups. This is the lesson that political power is necessary; that such power must be assidously cultivated; and that when necessary, it must be used aggressively and with determination - without embarrassment and without the reluctance which has been so characteristic of American business.

As unwelcome as it may be to the Chamber, it should consider assuming a broader and more vigorous role in the political arena.

Neglected Opportunity in the Courts

American business and the enterprise system have been affected as much by the courts as by the executive and legislative branches of government. Under our constitutional system, especially with an activist-minded Supreme Court, the judiciary may be the most important instrument for social, economic and political change.

Other organizations and groups, recognizing this, have been far more astute in exploiting judicial action than American business. Perhaps the most active exploiters of the judicial system have been groups ranging in political orientation from "liberal" to the far left.

The American Civil Liberties Union is one example. It initiates or intervenes in scores of cases each year, and it files briefs _amicus curiae_ in the Supreme Court in a number of cases during each term of that court. Labor unions, civil rights groups and now the public interest law firms are extremely active in the judicial arena. Their success, often at business' expense, has not been inconsequential.

This is a vast area of opportunity for the Chamber, if it is willing to undertake the role of spokesman for American business and if, in turn, business is willing to provide the funds.

As with respect to scholars and speakers, the Chamber would need a highly competent staff of lawyers. In special situations it should be authorized to engage, to appear as counsel _amicus_ in the Supreme Court, lawyers of national standing and reputation. The greatest care should be exercised in selecting the cases in which to participate, or the suits to institute. But the opportunity merits the necessary effort.

Neglected Stockholder Power

The average member of the public thinks of "business" as an impersonal corporate entity, owned by the very rich and managed by over-paid executives. There is an almost total failure to appreciate that "business" actually embraces - in one way or another - most Americans. Those for whom business provides jobs, constitute a fairly obvious class. But the 20 million stockholders - most of whom are of modest means - are the real owners, the real entrepreneurs, the real capitalists under our system. They provide the capital which fuels the economic system which has produced the highest standard of living in all history. Yet, stockholders have been as ineffectual as business executives in promoting a genuine understanding of our system or in exercising political influence.

The question which merits the most thorough examination is how can the weight and influence of stockholders - 20 million voters - be mobilized to support (i) an educational program and (ii) a political action program.

Individual corporations are now required to make numerous reports to shareholders. Many corporations also have expensive "news" magazines which go to employees and stockholders. These opportunities to communicate can be used far more effectively as educational media.

The corporation itself must exercise restraint in undertaking political action and must, of course, comply with applicable laws. But is it not feasible - through an affiliate of the Chamber or otherwise - to establish a national organization of American stockholders and give it enough muscle to be influential?

A More Aggressive Attitude

Business interests - especially big business and their national trade organizations - have tried to maintain low profiles, especially with respect to political action.

As suggested in the Wall Street Journal article, it has been fairly characteristic of the average business executive to be tolerant - at least in public - of those who attack his corporation and the system. Very few businessmen or business organizations respond in kind. There has been a disposition to appease; to regard the opposition as willing to compromise, or as likely to fade away in due time.

Business has shunted confrontation politics. Business, quite understandably, has been repelled by the multiplicity of non-negotiable "demands" made constantly by self-interest groups of all kinds.

While neither responsible business interests, nor the United States Chamber of Commerce, would engage in the irresponsible tactics of some pressure groups, it is essential that spokesmen for the enterprise system - at all levels and at every opportunity - be far more aggressive than in the past.

There should be no hesitation to attack the Naders, the Marcuses and others who openly seek destruction of the system.

There should be not the slightest hesitation to press vigorously in all political arenas for support of the enterprise system. Nor should there be reluctance to penalize politically those who oppose it.

Lessons can be learned from organized labor in this respect. The head of the AFL-CIO may not appeal to businessmen as the most endearing or public-minded of citizens. Yet, over many years the heads of national labor organizations have done what they were paid to do very effectively. They may not have been beloved, but they have been respected - where it counts the most - by politicians, on the campus, and among the media.

It is time for American business - which has demonstrated the greatest capacity in all history to produce and to influence consumer decisions - to apply its great talents vigorously to the preservation of the system itself.

The Cost

The type of program described above (which includes a broadly based combination of education and political action), if undertaken long term and adequately staffed, would require far more generous financial support from American corporations than the Chamber has ever received in the past. High level management participation in Chamber affairs also would be required.

The staff of the Chamber would have to be significantly increased, with the highest quality established and maintained. Salaries would have to be at levels fully comparable to those paid key business executives and the most prestigious faculty members. Professionals of the great skill in advertising and in working with the media, speakers, lawyers and other specialists would have to be recruited.

It is possible that the organization of the Chamber itself would benefit from restructuring. For example, as suggested by union experience, the office of President of the Chamber might well be a full-time career position. To assure maximum effectiveness and continuity, the chief executive officer of the Chamber should not be changed each year. The functions now largely performed by the President could be transferred to a Chairman of the Board, annually elected by the membership. The Board, of course, would continue to exercise policy control.

Quality Control is Essential

Essential ingredients of the entire program must be responsibility and "quality control". The publications, the articles, the speeches, the media programs, the advertising, the briefs filed in courts, and the appearances before legislative committees - all must meet the most exacting standards of accuracy and professional excellence. They must merit respect for their level of public responsibility and scholarship, whether one agrees with the viewpoints expressed or not.

Relationship to Freedom

The threat to the enterprise system is not merely a matter of economics. It also is a threat to individual freedom.

It is this great truth - now so submerged by the rhetoric of the New Left and of many liberals - that must be reaffirmed if this program is to be meaningful.

There seems to be little awareness that the only alternatives to free enterprise are varying degrees of bureaucratic regulation of individual freedom - ranging from that under moderate socialism to the iron heel of the leftist or rightist dictatorship.

We in America already have moved very far indeed toward some aspects of state socialism, as the needs and complexities of a vast urban society require types of regulation and control that were quite unnecessary in earlier times. In some areas, such regulation and control already have seriously impaired the freedom of both business and labor, and indeed of the public generally. But most of the essential freedoms remain: private ownership, private profit, labor unions, collective bargaining, consumer choice, and a market economy in which competition largely determines price, quality and variety of the goods and services provided the consumer.

In addition to the ideological attack on the system itself (discussed in this memorandum), its essentials also are threatened by inequitable taxation, and - more recently - by an inflation which has seemed uncontrollable.* But whatever the causes of diminishing economic freedom may be, the truth is that freedom as a concept is indivisible. As the experience of the socialist and totalitarian states demonstrates, the contraction and denial of economic freedom is followed inevitably by governmental restrictions on other cherished rights. It is this message, above all others, that must be carried home to the American people.

Conclusion

It hardly need be said that the views expressed above are tentative and suggestive. The first step should be a thorough study. But this would be an exercise in futility unless

*The recent "freeze" of prices and wages may well be justified by the current inflationary crisis. But if imposed as a permanent measure the enterprise system will have sustained a near fatal blow.

the Board of Directors of the Chamber accepts the fundamental premise of this paper, namely, that business and the enterprise system are in deep trouble, and the hour is late.

L.F.P., Jr.

51/167

Memorandum of conversation between M. S. Gorbachev and U.S. Secretary of State G. Shultz. Excerpt.
October 23, 1987

Gorbachev: First of all, I would like to extend a warm welcome to you, Mr. Secretary of State. Taking into account the fact that you came here soon after your meeting with E. A. Shevardnadze in Washington, maybe we can say that our relations are becoming more dynamic. We welcome this. The main thing now is the substance. And here, as it appears to us, something is emerging.

Shultz: We always want to concentrate our attention on the substance. At the same time, it is true that more and more active contacts at the upper levels help move the work on the substance of important issues further. Therefore, a certain interconnectedness exists between the process of our interaction and progress on the concrete issues. I think we can make note of considerable progress on the substantive issues. In my toast at breakfast yesterday, I said that in ten years history will register the fact that in Reykjavik we achieved more than at any other summit in the past.

Gorbachev: I agree with you. I would say that an intellectual breakthrough took place in Reykjavik, and that it was very powerful, that it had a shocking effect, resembling a reaction at a stock exchange. Later, when many things calmed down, and when people figured things out, it became generally accepted that Reykjavik opened a new, very important stage in the political dialogue between our countries, especially on the most important issues of security.

I would like to welcome Mr, Carlucci, who arrived with you. We are hoping that he will make a positive contribution to our search for resolutions on the issues under discussion.

Shevardnadze: Mr. Carlucci made a constructive contribution to our work in Washington.

Gorbachev: Why don't we do the same here?

Shultz: I have worked with Mr. Carlucci since the 1970s, when he was with the government's Office of Economic Opportunity—the organization, which works on helping to solve such problems as poverty, assistance to the poor, and so on. Then he worked with me at the Office of Management and Budget. That is the organization whose members constantly reject requests for resources from other government bureaus. Overall, Mr. Carlucci has more extensive experience in various government bureaus than perhaps anybody else. He has worked in the departments of Defense and State, in intelligence, and on issues of domestic policy. He has rich experiences and we always work well together.

Gorbachev: Then he should know well that there cannot be any agreement if the interests of the partner in a negotiation are not taken into account. I say this because S. F. Akhromeev and P. Nitze, who are present here, act differently: they want to bargain for better conditions for their side, to achieve superiority for the Soviet Union and for the USA, respectively.

Shultz: I am sure this does not characterize Akhromeev. It does characterize Nitze.

Akhromeev: We were able to agree with him on many issues.

Gorbachev: I think that the fact that the military takes part in our meetings is also very important. It shows that our relations have reached a new stage. If we don't intend to fight each other and, more than that, if we are going to disarm, —then our militaries should also know each other and work together.

Shultz: I completely agree with that. If one looks at the history of Soviet-American relations, then one sees that in one sphere [our] cooperation was able to survive all the highs and lows of our relations, and to preserve its constructive character. I have in mind the interaction of our navies within the framework of the agreement on preventing accidents on the high seas. Therefore, we would consider it important that meetings be held between our defense ministers and other military representatives, meetings between Marshal Akhromeev and the chairman of the U.S. Joint Chiefs of Staff, Admiral Crowe.

Gorbachev: Good. Let us now discuss how we are going to conduct our meeting. We are in a process of democratization in our country now. And that means that this issue should also be resolved in a democratic fashion taking into account both your and our considerations. Maybe you could tell us what you discussed with E. A. Shevardnadze. And then it will be clear what we should discuss with you today.

Shultz: Good. I would like to summarize briefly the discussions that took place. We have developed a certain process, which allows us to consider all the issues that are of interest to both sides. Within the framework of this process, the work is conducted on the basis of combining meetings in a comparatively narrow circle with the work of the working groups, which discuss more concrete issues. We believe that this is a good process.

Gorbachev: Yes, this organization of [our] work has proven itself.

Shultz: We have assembled a good group to conduct the main negotiations: from the Soviet side it is E. A. Shevardnadze together with A. F. Dobrynin and A. A. Bessmertnykh; and from our side, myself, F. Carlucci, and R. Ridgeway. We created working groups, which did some good work on such issues as bilateral relations, human rights and humanitarian issues, arms control. We also created, I would say spontaneously, a group on conventional weapons. Nonetheless, the most productive part of the discussion on regional issues took place within the small group.

We discussed a number of arms control issues. The working group on conventional weapons tried as much as possible to help the discussions, which are now conducted in Vienna, about the mandate for future negotiations on conventional weapons. Another group held a useful discussion, in our view, on chemical weapons. As far as negotiations on nuclear and space weapons are concerned, we had a separate working group on INF and SRINF, as well as a working group, which discussed strategic weapons and space—the ABM. In addition, these latter issues were discussed in a detailed way at the ministerial level.

We came here with a task and instructions from the President to complete the bulk of our work on the treaty on intermediate and medium-range missiles, i.e. if not to literally dot the last "i", then to reach a stage where it would be sufficiently clear that this task is solvable. The President also starts from the assumption that the key issue is strategic weapons. We have also noted your statement to the effect that this is the cardinal problem, as well as another statement in which you said that the work on the strategic offensive weapons could be completed before the spring of next year. We agree with this task and we would like to have a sufficient degree of progress to allow us to talk not about the INF but mainly about strategic weapons during your visit to the USA, which we hope will take place, and to establish a foundation for completing our work in this area. This is our goal.

We clarified a number of issues on INF and SRINF. It relates in particular to the so-called problem of Pershing 1A [missiles] in the FRG, as well as to some other issues. We have to say that we resolved most of those issues at the ministerial level. There remain a number of issues, which the working group was working on last evening and night. I must say that I was disappointed with the report of that working group. I think that we should make them do some serious work. We hear too many statements that such-and-such issue should be left for consideration in Geneva, to which I say: no, this issue should be resolved here because the people working in Geneva receive their instructions from Moscow and Washington. Today, the people who can make the appropriate decisions are gathered here, and it is necessary to resolve those issues.

In short, I was hoping to inform you that the main issues on INF and SRINF weapons have been resolved. Unfortunately, I cannot do that. However, I can say that all of these issues seem to be quite resolvable.

As far as the ABM and space are concerned, those discussions between us and within the working group were, I believe, not useless. I think that we were at least able to identify those key issues, on which we will need major political decisions. It also became clear which issues will require a more comprehensive, detailed working through. I believe that now, when we, while maximizing our efforts, are taking the final steps toward the treaty on INF and SRINF, it has become especially clear how complex the issues of verification are in all their detail and specifics. And when we start talking about the treaty on strategic weapons, where even after the cuts there will remain a large quantity of armaments subject to verification, the complexity and difficulty of control will be even greater.

That is why we agreed that it is necessary right now to step up our efforts seriously in this sphere. This is especially relevant to one big problem, which we admit. I have in mind our differences on ground-based mobile missiles. As I explained, the problem is not that we have objections in principle to mobile missiles. To the contrary, these weapons in principle have some advantages. The problem is that everything on which we agree should be subject to reliable verification. That is why we agreed that this issue will be given priority attention, so that by the time of your visit, which we hope will take place, substantial work will have been conducted that will help you and the President to discuss that issue.

Shevardnadze: In principle, I agree with the assessments presented by the Secretary of State.

Gorbachev: I see, you have agreed on everything? What is left for me and the President?

Shevardnadze: I said—in principle.

Shultz: If not for the work accomplished by you, Mr. General Secretary, and the President, in particular in Reykjavik, we would now be so mired in a bog that we would not be able to move a step.

Shevardnadze: Of course, the agreement achieved in Washington on the liquidation of two classes of missiles was made possible only on the basis of Reykjavik. One has to say that even after Washington, the positive tendency has continued, thanks to which we have been able to achieve agreement on a number of issues that seemed very difficult. Yesterday we were able to agree on a formula regarding warheads for the Pershing-1A. That is a complex and sensitive matter. On that issue, we were able to find a solution that will be acceptable to the USA, the FRG, taking their alliance obligation into account, and to us as well.

The issue of the overall timetable for eliminating intermediate and shorter-range missiles turned out to be rather difficult. Yesterday we agreed in principle that for medium-range missiles it would be a three-year period, and for shorter-range missiles a year and a half, with consideration for technological capabilities in this sphere.

Discussion of a number of issues will be continued. We had a good discussion on the issue of non-circumvention, not allowing transfers of relevant technolgies to third countries. I think a mutually acceptable compromise is emerging in this sphere.

There are still quite a few difficult problems in the area of verification and inspections. These problems can be solved on the basis of an objective approach with the understanding that there are a number of sensitive problems and difficult aspects touching upon the interests of the United States and the Soviet Union.

Gorbachev: I think Mr. Shultz put it right when he said that the most important issue now is no longer intermediate and shorter-range missiles, but the prospects for resolving the problem of strategic offensive weapons, and the shifting of negotiations to the plane of practical decisions. As far as the remaining issues of the INF treaty are concerned, they should be resolved in such a way that both of us have complete confidence and there will be no anxiety regarding treaty implementation.

Shevardnadze: Yes, this is precisely the basis on which we should continue the discussions. At the same time we emphasize that the United States has its own system of missile production and deployment, which differs from our system. We have our own system. And today we stated that in order to work out a realistic agreement, it is necessary to take these differences into account.

Shultz: I agree with that. We do not argue with that.

Shevardnadze: I think that on some fundamental issues it is necessary to make a decision now, today. We have to be clear. In the opposite case, if we leave these issues open, if we transfer them to Geneva, they could persist for a long time.

Gorbachev: Yes, the main issues should be decided here, and leave only technical issues for Geneva. We have the appropriate experience.

Shevardnadze: The second group of issues is disarmament. This, as was correctly noted here, consists of the cardinal problem of radical reductions in strategic offensive weapons and the ABM treaty. In this sphere, results have been more modest. I would say that it is hard to speak of any results whatsoever. Yesterday I openly told the Secretary of State that after Reykjavik the Soviet side made substantial changes, which took into account the interests of the United States, and made significant steps toward the U.S. position. However, precisely after Reykjavik, the U.S. administration added a number of complicating factors to its position, which are causing problems in the negotiations and retarding progress on the main issue.

Gorbachev: If we recall our Reykjavik marathon, then it was precisely the issue of the ABM in space, which became the main obstacle that we were not able to overcome in the end. Obviously, you drew the attention of the Secretary of State to the fact that space remains the biggest obstacle. One also has to note that while we introduced positive elements, elements of flexibility, into our position, the American side continued to stand on its position of reinforced concrete. And it is precisely that position which impedes progress toward an agreement on this issue, which is not only central to Soviet-American relations, but is the most important issue for the entire world. How are we going to move ahead?

Shevardnadze: Yes, it was precisely after Reykjavik that the new elements that are making negotiations more difficult, such as the demand to eliminate all Soviet heavy missiles, appeared in the American position.

Gorbachev: And by the way, we were ready to eliminate them, but in tandem with you, in tandem with the elimination of all nuclear weapons.

Shevardnadze: Absolutely true. And the American side is presenting demands to resolve this issue on a purely unilateral basis. They are also raising the issue of banning mobile ICBMs, and proposing to count middle-range bombers as strategic weapons when that question was already decided in 1979 when the SALT II treaty was negotiated. Also, the American side does not agree to resolve the issue of limiting the number of sea-based cruise missiles. As you know, in Reykjavik we agreed to resolve this issue separately, outside the framework of the main strategic triad. However, it is clear that if sea-based cruise missiles are not limited, it could open a new channel in the arms race, and create an opportunity to circumvent the treaty.

The American side raised the issue of stepping up discussions of verification. We believe that if the main fundamental issues of the future agreement are resolved, we would be able to find a solution to the issues of verification.

As far as the ABM treaty is concerned, yesterday I presented our position in detail. The essence of it is that if there is any retreat from the mutual understanding achieved in Reykjavik about the need for a 10-year period of non-withdrawal from the ABM Treaty, along with strict compliance with its provisions, it would make it impossible to achieve agreement on strategic offensive weapons. The American side is aware of the fact that we developed and clarified our position on such issues as laboratory research, research conducted at plants, testing grounds, etc. The USA is also aware of our new proposals regarding development of a list of devices that would be banned from space, and our proposals regarding the specific parameters and characteristics of such devices.

It so happened that we did not have time for a sufficiently comprehensive discussion of this group of questions. But yesterday we reminded the American side that in order for the summit to be fruitful and full-scale, it would be very important to coordinate our key positions on these issues.

As far as chemical and conventional weapons are concerned, they were discussed within the working groups. Today we will listen to their reports on those issues. We also discussed such regional issues as the situation in the Persian Gulf in particular. Yesterday, while discussing those themes, we stayed up almost until midnight. The discussion was serious, and at times sharp.

Gorbachev: On this last issue I would like to say the following. It might seem to you that sometimes we present demands against the position of the American side that are too great. But here are two instances of principal importance. First of all, we are not sure that you have calculated everything well, that you really understand where this policy might lead for you, for us, and for the entire world.

Secondly—although in terms of importance it might be the main instance—we believe that our interaction in the Persian Gulf is the freshest example that proves the possibility of constructive cooperation between the USSR and USA in resolving a most acute international problem. It was precisely this cooperation that led to the adoption of well-known documents by the [U.N.] Security Council. We believe, and we have told you that and stated it publicly, that we still have substantial potential there. And we need to use our coordinated positions on Resolution 598[1] to the fullest extent, [in order] not to allow that situation to escalate to a new level.

However, the United States is apparently offended by the fact that we did not support its demand for sanctions, for a second resolution, and [you] decided to act alone, like "the good old days." We believe that the cooperation that has developed there is a positive new factor, and is important for our overall relations. However, the United States has preferred to throw away this interaction and to act alone. I will not talk about the reasons for why it happened, but I want to say that your withdrawal from cooperation with us creates disappointment. This political line is wrong. In addition, I repeat, we believe that it could have very serious consequences, which, you, apparently, did not analyze. We are watching America's actions. For our part, we are searching for ways to improve relations with the U.S., ways to lead them to a new stage.

Shevardnadze: Mikhail Sergeevich, I presented our position during yesterday's discussions in that exact same spirit. We believe that it is very important to preserve the unity of the permanent members of the Security Council. The Soviet Union proceeds from the assumption that resolution of the conflict in the Persian Gulf is possible. But for this it is imperative to use the capabilities of the UN Security Council, in particular an organ such as the Military Staff Committee, to the fullest extent.

I would like to summarize. The agreement on INF and SRINF does not look like a distant possibility any longer. Given mutual desires, I believe it is possible to complete all work on this treaty in, let's say, three weeks' time. As far as the key principles of strategic offensive weapons and the ABM are concerned, here some serious work is required. But now, regrettably, we do not have a serious basis for resolving the issue of a 50% reduction in strategic offensive weapons under conditions of preserving the ABM Treaty. I think that our task is to prepare a serious, solid basis for resolving this problem for the summit.

Shultz: Speaking broadly, we have approximately the same impression. Nothing to argue about here. As far as INF are concerned, I think that we should try to resolve the majority of issues on the list prepared by the [working] group today. All that should be left for Geneva would be editing work, dotting the last "i's". We would prefer not to leave the resolution of serious issues for Geneva, where participants in the negotiations would have to wait for instructions from Washington and Moscow.

Gorbachev: We would welcome such approach.

Shultz: As far as strategic weapons are concerned, this is a very important sphere where we want to achieve some progress. E. A. Shevardnadze told me that you personally have devoted a lot of time and attention to these issues, and that you probably would have some thoughts, which you will present today personally. We would like to hear them.

---

[1] A key Security Council resolution calling for an end to the Iran-Iraq War.

Several words about the Persian Gulf. As you noted, one very good opportunity has emerged—the cooperation between us within the framework of U.N. diplomatic efforts. We want this cooperation to produce results. We believe that it could help resolve this military conflict, which is poisoning the entire international situation. We think that there could be nothing better to strengthen the prestige of the U.N. than to achieve success in resolving a difficult problem. A success of that kind would be miraculous medicine for the United Nations. Success would show people that if we undertake something, we are capable of achieving our goals.

I would like to assure you that we do not strive to act alone. We want the process to function, to work within the U.N. framework. As far as our ships in the Gulf are concerned, there are now more ships from European states and from the Gulf states there. American ships constitute only a third, or maybe a fourth, of the overall number of ships there. Why do we and others find ourselves there? Because Iran and the war in this regions represent a threat—a threat to our friends in the Gulf and to the flow of oil, the main source of energy for the countries of the West. We have to provide support for our friends in the Gulf. We have to ensure the safety of supplies of such an important source of energy. Because now and in the future this region will remain one of the main suppliers of oil for the entire world.

I told your Minister that our forces deployed in the Gulf would be reduced if the acuteness of the problem is reduced. They are deployed there precisely in connection with this problem, not to create a permanent presence there. […]

[…] We cannot discount that. At the same time we are not looking for confrontation. However, we cannot allow the Iranians to have a blank check.

Yesterday we discussed this issue in detail. We discussed it from the perspective of the situation in the Security Council. In the immediate future the U.N. General Secretary will present a new version of a package solution on implementing the Security Council Resolution for consideration by all sides. Iraq will accept this proposal. We discussed the issue of what we would do if by the end of the month it becomes clear that Iran is continuing to play games. How should we act in the Security Council in that case? We believe that we should take this to the end. We cannot allow Iran to make a laughing stock out of the U.N. Security Council. The Council has defined its position and it is necessary that it take this to the end.

Gorbachev: I don’t want to get into detailed discussion of this issue right now. But it is a serious, important issue. This problem could bury many things, including, unfortunately, things in our relationship. I only want to say: we hope that you will weigh all this, that you will not be overpowered by certain forces and emotions. This is very serious business. It might lead to very serious consequences. Let us continue the line that we have worked out together. Its potential has not yet been exhausted.

Shultz: I can agree with that. Indeed, we need to work within the U.N. framework because something really important has happened at the U.N.

Gorbachev: I would like to return to what we were discussing earlier. Indeed, we can see that it is not just that the tempo of our progress that is accelerating. There is also a certain amount of progress on the concrete issues under consideration. I would say that if one takes a look at the progress from Geneva through Reykjavik to today, we have succeeded in clarifying many issues.

[.…]

In their search for solutions the sides undertook concrete steps to meet each other halfway. I must say sincerely: in our view, we undertook more of those steps. And in you we still detect a tendency to squeeze as much as possible out of us. What can one do, somebody has to do more, take this additional step, and we decided to do it. But this movement that started gave birth to great expectations among our peoples, and in the entire world. Therefore the anticipation that the next stage of our relations should produce concrete results is completely natural. They have been waiting for them for a long time now. If that does not happen, it would be a big loss both for the American administration and for us. You cannot discount that.

It is from this perspective that I react to reports about the work conducted by you and E. A. Shevardnadze. I have the impression that in the immediate future we could finalize our work on the agreements on INF and SRINF. I agree that the principal issues should be resolved here, in Moscow, while leaving our delegations in Geneva only technical, editing issues.

I would even say: if we complete our work like this, that would be very important in and of itself. It would be a very important event in the eyes of the peoples of the world. But then people will rightfully ask: if we understand the importance of that agreement and if we conclude that agreement in the immediate future, why would we then continue any kind of activity in the sphere of production, testing and deployment of mid-range missiles? Therefore, the right thing to do would be to announce a joint moratorium on such activities. It could be introduced beginning November 1. I repeat, if we have an agreement in principle that we will sign the treaty, then a joint moratorium on deployment and any activities in the sphere of INF would be an important step that would strengthen this political decision. It would show that the agreement would start working *de facto* even before we actually sign it. I think that this important step would determine the degree of our accord on this issue.

Now I move to the central issue—the issue of strategic offensive weapons and space. You recalled my words in this connection. I confirm those words. We believe that resolution of the issues of strategic offensive weapons and space would indeed be extremely important for the security of the USA and the USSR because it is precisely these matters that define the strategic situation. Therefore, finding mutually acceptable solutions to nuclear and space questions becomes especially important and pressing.

In Reykjavik we had a serious exchange of opinions on those issues. After Reykjavik we tried to do something to reaffirm our readiness to reach resolutions on the complex of those problems. What is the essence of the mutual understanding reached in Reykjavik? The essence is the 50% reductions in offensive strategic weapons and the 10-year non-withdrawal from the ABM Treaty. And what is happening in Geneva? Essentially, bargaining is taking place there. Therefore we have been thinking a lot about what else we could do to move ahead with a resolution to this problem in Geneva. Many issues are being discussed there, a lot is being said. However, if you put it all aside, there are two genuinely big issues. The first is ensuring strict compliance with the ABM Treaty, and the second is the optimal correlation between the elements [that constitute] strategic forces, the strategic triad.

As far as the first issue is concerned, we proposed to the United States not to use the right of withdrawal from the ABM Treaty for ten years. We also proposed a second version, which is also connected with the idea of non-withdrawal from the ABM Treaty. Trying to meet the U.S. halfway, we proposed to discuss which devices could be deployed in space, and which could not. We are waiting for your reaction.

As far as the second issue is concerned—the issue of optimal correlation between the different elements [comprising] strategic forces, we considered this matter carefully once more. We are proposing a new formula, on the basis of which we could determine the limits on concentrations of warheads for each element of the triad. Besides, each side would have an opportunity to compensate for the lower number of delivery vehicles on one kind by increasing the number of delivery vehicles of a different kind within the overall limit.

Therefore, we propose [the following]: the United States agrees to legally undertake an obligation not to use its right of withdrawal from the ABM Treaty for ten years under strict compliance with all of its provisions. The Soviet Union agrees to establish limits on concentrations of warheads on different kinds of U.S. and Soviet strategic armaments. Within the [overall] limit of 6,000 warheads, we propose to have not more than 3,000-3,300 warheads on ICBMs, no more than 1,800-2,000 warheads on SLBMs, and not more than 800-900 warheads on air-launched cruise missiles.

We believe that this kind of movement toward each other's positions would lead us in the nearest term to work out key positions on these issues. This would prepare the ground for the next step—the move toward concluding the agreement. In that case, as I understand it, when I arrive in the U.S., we would create the agenda, which we discussed during your visit in April of this year. First of all, we would sign the treaty on the elimination of INF and SRINF. Secondly, we would agree on the key provisions regarding strategic offensive weapons based on the new compromise proposals. And finally, we would incorporate the agreement about initiating negotiations on the problem of nuclear testing that was reached between you and E. A. Shevardnadze. I think that would be a solid agenda.

We see that not everybody in the United States is in favor of such agreements. There are those who wish to undermine this process. They use all kinds of arguments for this purpose, in particular the issue of the Krasnoyarsk radar station. I have to say that we also have complaints about American radar stations. We could remove these complaints on a reciprocal basis. Now I would like to inform you about our unilateral step. The Soviet Union announces a 12-month moratorium on all work on the Krasnoyarsk radar station. We are expecting a similar step from the U.S. in regard to the American radar station in Scotland.

I think that we can take on the issues of strategic offensive weapons and space as they are connected in a substantive, fundamental way.

Shultz: Thank you. I would like to respond to the proposals you have outlined. Of course, every time you introduce proposals on important issues, we study and analyze them carefully. Now I can provide you some considerations based on our analysis.

First of all, I welcome what you said on the INF, and your words about your readiness to give additional stimulus to this work. We are also instructing our representatives so that the main issues will already be resolved in Moscow.

As far as the ABM and related issues are concerned, among other things we have been trying to clarify what your proposals consisted of. We believe that there is a certain amount of progress here. I would like to have total clarity as to whether I understand the proposals that you presented. This does not presuppose that the President agrees with them. As you know, for him this is a very delicate, sensitive issue. I would like to have an opportunity to present the factual substance of your position to him as precisely as possible. Thus, as I understand it, you are proposing that we define a ten-year period of non-withdrawal from the ABM Treaty with strong compliance with the Treaty in the form in which it was developed.

Gorbachev: As it was before 1983. Then we did not have any differences. And besides, that was not just our point of view. That is the point of view of the U.S. Congress. And the Congress is, I am convinced, a very serious, very important body, which receives reports, including reports from departments in which Mr. Carlucci has worked, from the National Security Council, in which Mr. Matlock worked then, and other detailed information. At that time we shared the same position.

Shultz: I would like to clarify—do you have in mind compliance with the Treaty in the form in which it was presented, for example, in the report of our Defense Department from March 1985? I mention this report because it was mentioned by your representatives at the negotiations.

Gorbachev: In the form as this Treaty was understood and adhered to by both sides before 1983.

Shultz: I would not want to enter into any secondary arguments right now, because different opinions exist about what was adhered to and how, and what they had in mind. In our country, some people believe, for example, that the Soviet Union insists on an even more narrow interpretation of the Treaty than the narrow interpretation itself. I named one document for a reference, which your representatives cited, in order to understand your point of view better.

Gorbachev: I repeat: we are talking not only about that, but also about the fact that before 1983 the Treaty was interpreted and effectively enforced by both sides in the same way. If now this creates some difficulties for you, I told the President in Reykjavik that I am ready to help him out of the situation that was created as a result of the launching of the SDI program. Our proposal—to agree on what can and cannot be deployed in space under conditions of non-withdrawal from the ABM Treaty—allows [you] to conduct research within the SDI framework. In particular, the second version proposed by us presupposes defining concrete parameters for devices that are allowed to be deployed in space. With that, naturally, it is understood that there should be no weapons in space. But as far as the orders you have already placed with companies and research organizations, they can be carried out within the limits of these agreed-upon parameters. This proposal represents a compromise.

Besides that, we are moving in the direction of your requests regarding limits. For example, when I say that there would be a limit of 3,000-3,300 ICBM warheads within the total limit of 6,000 warheads, this represents 50%. This is what I promised the President. As you can see, we are true to our word.

Shultz: I would like to clarify certain aspects. You should not interpret the fact that I am clarifying certain issues related to space and ABM as indicating that I was accepting your positions. I am not able to do that. I can only report on them to the President. Do I understand correctly that within the ten-year period of non-withdrawal from the ABM Treaty, activities which correspond to the Treaty in its traditional interpretation would be allowed, along with activities in space within the limits of the ceilings proposed by you? At the same time, such activities could not include deployments prohibited by the ABM Treaty.

Gorbachev: As well as weapons tests in space. As far as permitted activities are concerned, we could discuss and define that together.

Shultz: I think that enough has been said on this issue within the bounds of what can be said at the present stage. I repeat, I was only asking clarifying questions, which do not signify agreement with your proposals on behalf of the President. I believe that we should conduct our conversation directly and openly.

Now another side of the question—how to implement the 50% reductions of strategic armaments in practice? We believe that significant progress has been achieved on this issue. I would like to present an alternative proposal for your consideration. Realizing that the idea of sub-limits, at least of certain kinds of sub-limits has repeatedly caused problems, in particular during our discussions in April during my visit, we undertook an analysis of the situation. Now we have a joint draft text of the treaty, at this point with many brackets. We agreed on a total limit on warheads—6,000. We agreed that the number of delivery vehicles and bombers will be 1,600. We agreed on the limit of warheads on heavy missiles—1,540. We agreed on the rule of counting the bombers. We have an agreement that the throwweight would be reduced by 50%, and now we would like to achieve a legal affirmation of that in the text of the treaty, as well as a confirmation that after such a reduction in throwweight there would be no future increases. In principle, I think we have an agreement on this; however, we would like to confirm that in the formulations of the Treaty. One of the limitations, which we have proposed, and which was reflected today in your response, is the limitation on the number of warheads on ICBMs—3,300. In Washington you proposed a sub-limit of 3,600 units, but that was proposed as a maximum level for any of the elements of the triad.

We believe that the most serious difference between the elements of the triad is the difference between ballistic missiles and warheads that are delivered by air and jet-propelled systems. Of course, land-based missiles are more precise than SLBMs. However, the main distinction is between ballistic missiles and non-ballistic means. Therefore, we would like an agreement to have as a minimum a certain number of warheads on the air-based part of the triad. For this purpose, we proposed a limit of 4,800 for ICBM warheads. In the interests of moving forward, we would be ready to remove our proposal about establishing separate sub-limits for ICBM and SLBM warheads in return for your accepting the proposal on a summary sub-limit of 4,800 units for ICBM and SLBM warheads. Within this ceiling, each side would be free to determine the constituent parts.

As I said before, when we start talking about mobile missiles, it becomes very important to be confident that the limits stipulated by the treaty could be verified. We are ready to engage in work on this issue in Geneva. Frankly speaking, we do not see a satisfactory answer to the problem of verification of mobile missiles. But maybe you can show us how that can be done. Maybe we will be able to work on this issue before your visit to the U.S. At the same time, I have to admit, I do not see how to solve this problem. However, we are ready to work on it.

So here is the structure that we propose. Yes, and there remains the sub-limit of 1,650 units that we proposed. However, as you can see, in general we are making the problem of sub-limits easier, on the condition that there would be a general limit on warheads on ballistic missiles.

Gorbachev: I think that if we find an approach that would allow us to begin movement on all the complex of issues of strategic offensive weapons and space in their interconnectedness, then we should be able to resolve the issue of mobile missiles. By the way, you too are planning to build mobile missiles. You are already building railway-based MX missiles. Therefore it is a problem both for you and for us.

Shultz: Yes, indeed, we are working on this. However, I would like to assure you that we would prefer to introduce a ban on mobile missiles; we are ready to abandon this program.

Gorbachev: But mobile strategic missiles already exist. Besides, as I said in Reykjavik, they have a very short flight time. And what do you do with such a mobile system as a submarine? They come very close to our territory. Besides, while it is known where ICBMs start their flight, it is unknown with SLBMs.

Shultz: Both missiles have a short flight time. Beside that, once ballistic missiles are launched, it is impossible to recall them. In short, ballistic missiles represent the greatest threat, and that is why we consider it necessary to establish a limit on ballistic missile warheads in view of their differences with air-based means.

Gorbachev: You have your own concerns, and we have ours regarding your strategic armaments. I think that these issues should be discussed at the negotiations.

Shultz: I agree.

Gorbachev: I want to reiterate again what I have said many times before. We do not want the United States, after the reductions, to find itself in a situation that would be unfavorable for you, that would weaken your security, weaken your confidence in your security. That would be bad for us as well. Because if one of the sides finds itself in such a situation, it would try to find a way out of it, to seek the possibility of compensation. Experience shows that both of us have found [such] answers. But it is clear that this would not correspond to our interests.

Shultz: You expressed that idea in Geneva. I believe that it is a strong, important idea. I agree with it. You also emphasized the differences in the structure of our strategic forces then, the fact that neither of the sides could force the other to imitate an alien structure. Precisely for this reason, having analyzed the situation, we decided to propose a joint limit on the number of warheads on ballistic missiles, within which the sides would have freedom—at least at the present stage—to determine the combination of warheads. We cannot achieve everything at once. But it seems that it is possible to move considerably ahead on this basis.

Gorbachev: I think now we have a basis on which to work on the key elements of strategic offensive weapons. This could become the central element of the Washington summit because as far as the agreement on INF and SRINF is concerned, all that remains is to sign it. Signing key positions [on strategic weapons] could become the most important outcome of the summit. We could give our delegations concrete instructions on the basis of these key positions to work out a draft text of the treaty, which the President and myself could sign during the President's visit to Moscow.

Recently some of your representatives, Mr. Kampelman, for example, said that we need to start seriously developing a treaty on strategic offensive weapons. They said if we could do that, then it would be easier to resolve the space issues. I want to say at the outset, this is an unrealistic position, an unrealistic approach. Let's not waste time on such approaches. Issues of strategic offensive weapons and space need to be resolved together because they are interconnected. On this basis, we are ready to move forward, taking into account as much as possible each other's security interests.

Shultz: I think that in terms of numbers and parameters, we have said all that we can for now. I think that we sense a certain flexibility, a readiness for collective work. I have the impression that it is unlikely that our representatives in Geneva will be able to produce much in this sense. These are questions for you and for the President. However, our delegations could create a good foundation for a fruitful meeting between you and the President. I have several thoughts about this.

First of all, we could say to our delegations in Geneva that they should tackle the problems of verification energetically and as their priority, especially the verification of mobile missiles. Now we see how difficult the problems of verification are. We should not leave them for February or March. We should focus on them seriously now.

As far as concrete positions are concerned, I think that our delegations in Geneva should not so much bargain about numbers as place an emphasis on clarifying each side's principal approaches. We should talk about why you consider certain provisions important, and why we consider other provisions important. I think that that would help you and the President find resolution to those problems during your meeting.

Finally, I would propose that in addition to continuing our work on removing the brackets in the joint text, which is useful, we should focus on the goal of having your meeting with the President result in joint instructions for our delegations in Geneva regarding parameters for the future treaty. I think that would be a good result of the meeting, which would complement the work that will already have been done on coordination of the treaty.

Gorbachev: From the very start I see weak spots in your proposals. First of all, you did not even mention the problem of space. But if we leave this issue outside the boat, then moving ahead on strategic offensive weapons will not make any sense. We have to consider them as interrelated. Why does the American delegation in Geneva avoid discussing the space issues, especially discussing the latest Soviet proposals?

Overall, I have an impression that with your three considerations, it is as if you are throwing away the idea of developing key positions on strategic offensive weapons and space. Instead, you propose to limit ourselves to some foggy formulas, talk about the need to clarify positions, etc. Of course, resolution of the verification problem, clarification of positions, removal of brackets—all this is necessary. However, our goal should be the preparation of key positions, which we could consider and sign, so that by the time of the President's visit to Moscow, we would have an agreement on the entire set of these issues.

Your approach strikes me as undefined and foggy. In essence, it rejects everything that we said for the purpose of clarifying [our positions] and signaling flexibility on concrete problems.

I would like to repeat: we propose that our delegations in Geneva concentrate on developing key positions for their adoption during the visit. Then it would make sense. Otherwise, everything is moving beyond the term of the present administration. And that would be too bad. Because we wanted to resolve [these issues] precisely with the present administration. And this is possible. A lot has been already done. And we, as we see it, are capable of concluding a good treaty with the current administration. Precisely a good treaty: neither one of us needs a bad one.

Shultz: I would not object to defining coordinated positions. I do not want to offer you anything foggy, not at all. I want to look ahead. Some things are already agreed upon, mainly as a result of the agreements achieved by you and the President in Reykjavik. The question is—what should be done in order to prepare these key positions, these instructions for our negotiators. With all respect for our representatives in Geneva, the main, key positions should be adopted by you and the President. Our representatives in Geneva do not have political mandate for that. But they can prepare the grounds, and we can work to prepare the grounds for your decisions. That is why I emphasize the need for more precision, for working on the issues of verification, especially regarding the mobile missiles.

Gorbachev: Let's still prepare a draft of key positions before we, as you propose, start discussing the issues, so to say, in a scattered way.

Shultz: Of course, the more we could move ahead before the summit, the better. The main decision will have to be taken by you and the President. We, as well as you, want the achieved breakthrough to be be written in the treaty, to receive a practical implementation. It would be very good for you and for us, and would be a present to the entire world.

Gorbachev: Yes, Reykjavik already has a place in history. But a second Reykjavik will not happen. We should not meet with the President and engage in improvisation. I think it is very good that we stood for Reykjavik. There were many people who wanted to bury it. But if everything is limited to a second Reykjavik, it might lead to big political losses both for you and for us. And to the contrary, if we find right political decisions, it would bring both of us great political benefits. You need to decide what you want.

I have an impression that you still cannot decide what it is you want. Maybe it is Ambassador Matlock who informs you in such a manner that you still cannot figure it out? Do you want the Soviet Union to develop successfully, or you don't want that? [Do you want] the Soviet Union to develop in the direction of greater democracy or in the opposite [direction]? [Do you want] us to have stagnation or to move forward?

Shultz: It is your business. It is all up to you to decide, but I can give you my opinion: what is happening in your country is very interesting, and I follow all these changes very closely.

[Source: Archive of the Gorbachev Foundation, Moscow,
Published in *Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya*, nos. 10, pp. 69-81 and 11, pp. 73-84, 1993
Translated by Svetlana Savranskaya for the National Security Archive]

Three and half years ago, I enthusiastically joined Yahoo ! The magnitude of the opportunity was only matched by the magnitude of the assets. And an amazing team has been responsible for rebuilding Yahoo!
It has been a profound experience. I am fortunate to have been a part of dramatic change for the Company. And our successes speak for themselves. More users than ever, more engaging than ever and more profitable than ever!
I proudly bleed purple and yellow everyday! And like so many people here, I love this company

But all is not well. Last Thursday's NY Times article was a blessing in the disguise of a painful public flogging. While it lacked accurate details, its conclusions rang true, and thus was a much needed wake up call. But also a call to action. A clear statement with which I, and far too many Yahoo's, agreed. And thankfully a reminder. A reminder that the measure of any person is not in how many times he or she falls down - but rather the spirit and resolve used to get back up. The same is now true of our Company.
It's time for us to get back up.

I believe we must embrace our problems and challenges and that we must take decisive action. We have the opportunity - in fact the invitation - to send a strong, clear and powerful message to our shareholders and Wall Street, to our advertisers and our partners, to our employees (both current and future), and to our users. They are all begging for a signal that we recognize and understand our problems, and that we are charting a course for fundamental change. Our current course and speed simply will not get us there. Short-term band-aids will not get us there.

It's time for us to get back up and seize this invitation.

I imagine there's much discussion amongst the Company's senior most leadership around the challenges we face. At the risk of being redundant, I wanted to share my take on our current situation and offer a recommended path forward, an attempt to be part of the solution rather than part of the problem.

Recognizing Our Problems

We lack a focused, cohesive vision for our company. We want to do everything and be everything -- to everyone. We've known this for years, talk about it incessantly, but do nothing to fundamentally address it. We are scared to be left out. We are reactive instead of charting an unwavering course. We are separated into silos that far too frequently don't talk to each other. And when we do talk, it

isn't to collaborate on a clearly focused strategy, but rather to argue and fight about ownership, strategies and tactics.
Our inclination and proclivity to repeatedly hire leaders from outside the company results in disparate visions of what winning looks like -- rather than a leadership team rallying around a single cohesive strategy.
I've heard our strategy described as spreading peanut butter across the myriad opportunities that continue to evolve in the online world. The result: a thin layer of investment spread across everything we do and thus we focus on nothing in particular.
I hate peanut butter. We all should.

We lack clarity of ownership and accountability. The most painful manifestation of this is the massive redundancy that exists throughout the organization. We now operate in an organizational structure -- admittedly created with the best of intentions -- that has become overly bureaucratic. For far too many employees, there is another person with dramatically similar and overlapping responsibilities. This slows us down and burdens the company with unnecessary costs.
Equally problematic, at what point in the organization does someone really OWN the success of their product or service or feature? Product, marketing, engineering, corporate strategy, financial operations... there are so many people in charge (or believe that they are in charge) that it's not clear if anyone is in charge. This forces decisions to be pushed up - rather than down. It forces decisions by committee or consensus and discourages the innovators from breaking the mold... thinking outside the box.
There's a reason why a centerfielder and a left fielder have clear areas of ownership. Pursuing the same ball repeatedly results in either collisions or dropped balls. Knowing that someone else is pursuing the ball and hoping to avoid that collision - we have become timid in our pursuit. Again, the ball drops.

We lack decisiveness. Combine a lack of focus with unclear ownership, and the result is that decisions are either not made or are made when it is already too late. Without a clear and focused vision, and without complete clarity of ownership, we lack a macro perspective to guide our decisions and visibility into who should make those decisions. We are repeatedly stymied by challenging and hairy decisions. We are held hostage by our analysis paralysis.
We end up with competing (or redundant) initiatives and synergistic opportunities living in the different silos of our company.

- YME vs. Musicmatch
- Flickr vs. Photos
- YMG video vs. Search video
- Deli.cio.us vs. myweb
- Messenger and plug-ins vs. Sidebar and widgets
- Social media vs. 360 and Groups

- Front page vs. YMG
- Global strategy from BU'vs. Global strategy from Int'l

We have lost our passion to win. Far too many employees are "phoning" it in, lacking the passion and commitment to be a part of the solution. We sit idly by while -- at all levels -- employees are enabled to "hang around". Where is the accountability? Moreover, our compensation systems don't align to our overall success. Weak performers that have been around for years are rewarded. And many of our top performers aren't adequately recognized for their efforts.

As a result, the employees that we really need to stay (leaders, risk-takers, innovators, passionate) become discouraged and leave. Unfortunately many who opt to stay are not the ones who will lead us through the dramatic change that is needed.

Solving our Problems

We have awesome assets. Nearly every media and communications company is painfully jealous of our position. We have the largest audience, they are highly engaged and our brand is synonymous with the Internet.

If we get back up, embrace dramatic change, we will win.

I don't pretend there is only one path forward available to us. However, at a minimum, I want to be part of the solution and thus have outlined a plan here that I believe can work. It is my strong belief that we need to act very quickly or risk going further down a slippery slope, The plan here is not perfect; it is, however, FAR better than no action at all.

There are three pillars to my plan:

1. Focus the vision.
2. Restore accountability and clarity of ownership.
3. Execute a radical reorganization.

1. Focus the vision

a) We need to boldly and definitively declare what we are and what we are not.

b) We need to exit (sell?) non core businesses and eliminate duplicative projects and businesses.

My belief is that the smoothly spread peanut butter needs to turn into a deliberately sculpted strategy -- that is narrowly focused.

We can't simply ask each BU to figure out what they should stop doing. The result will continue to be a non-cohesive strategy. The direction needs to come decisively from the top. We need to place our bets and not second guess. If we believe Media will maximize our ROI -- then let's not be bashful about reducing our investment in other areas. We need to make the tough decisions, articulate them and stick with them -- acknowledging that some people (users / partners / employees) will not like it. Change is hard.

2. Restore accountability and clarity of ownership
a) Existing business owners must be held accountable for where we find ourselves today -- heads must roll,
b) We must thoughtfully create senior roles that have holistic accountability for a particular line of business (a variant of a GM structure that will work with Yahoo!'s new focus)
c) We must redesign our performance and incentive systems.
I believe there are too many BU leaders who have gotten away with unacceptable results and worse -- unacceptable leadership. Too often they (we!) are the worst offenders of the problems outlined here. We must signal to both the employees and to our shareholders that we will hold these leaders (ourselves) accountable and implement change.
By building around a strong and unequivocal GM structure, we will not only empower those leaders, we will eliminate significant overhead throughout our multi-headed matrix. It must be very clear to everyone in the organization who is empowered to make a decision and ownership must be transparent. With that empowerment comes increased accountability -- leaders make decisions, the rest of the company supports those decisions, and the leaders ultimately live/die by the results of those decisions.
My view is that far too often our compensation and rewards are just spreading more peanut butter. We need to be much more aggressive about performance based compensation. This will only help accelerate our ability to weed out our lowest performers and better reward our hungry, motivated and productive employees.

3. Execute a radical reorganization
a) The current business unit structure must go away.
b) We must dramatically decentralize and eliminate as much of the matrix as possible.
c) We must reduce our headcount by 15-20%.
I emphatically believe we simply must eliminate the redundancies we have created and the first step in doing this is by restructuring our organization. We can be more efficient with fewer people and we can get more done, more quickly. We need to return more decision making to a new set of business units and their leadership. But we can't achieve this with baby step changes, We need to fundamentally rethink how we organize to win.
Independent of specific proposals of what this reorganization should look like, two key principles must be represented:

Blow up the matrix. Empower a new generation and model of General Managers to be true general managers. Product, marketing, user experience & design, engineering, business development & operations all report into a small number of focused General Managers. Leave no doubt as to where accountability lies.

Kill the redundancies. Align a set of new BU's so that they are not competing against each other. Search focuses on search. Social media aligns with community and communications. No competing owners for Video, Photos, etc. And Front Page becomes Switzerland. This will be a delicate exercise -- decentralization can create inefficiencies, but I believe we can find the right balance.

I love Yahoo! I'm proud to admit that I bleed purple and yellow. I'm proud to admit that I shaved a Y in the back of my head.

My motivation for this memo is the adamant belief that, as before, we have a tremendous opportunity ahead. I don't pretend that I have the only available answers, but we need to get the discussion going; change is needed and it is needed soon. We can be a stronger and faster company - a company with a clearer vision and clearer ownership and clearer accountability.
We may have fallen down, but the race is a marathon and not a sprint. I don't pretend that this will be easy. It will take courage, conviction, insight and tremendous commitment. I very much look forward to the challenge.

So let's get back up.
Catch the balls.
And stop eating peanut butter.

SAM HINKIE
3601 SOUTH BROAD STREET
PHILADELPHIA, PENNSYLVANIA 19148
[redacted]

April 6, 2016

To the equity partners of Philadelphia 76ers, L.P.:

I hope this letter finds you well. I have been serving the Sixers at your pleasure for the past 34 months. Atul Gawande, a Surgeon at Brigham and Women's Hospital in Boston, remains (from afar) one of my favorite reads. He laughs that reading scientific studies has long been a guilty pleasure. Reading investor letters has long been one of mine.

What I hope to accomplish here is to give you insight into what has transpired behind the scenes in ways you might not have otherwise heard about. Many of you attended our most recent board meeting in New York, where many of these topics were addressed. But for all twelve of you, I hope that this provides a deeper look into what you have at your organization. Accordingly, you should anticipate some mild cheerleading (of others) sprinkled with a healthy dose of self-flagellation about things I've done wrong.

There has been much criticism of our approach. There will be more. A competitive league like the NBA necessitates a zig while our competitors comfortably zag. We often chose not to defend ourselves against much of the criticism, largely in an effort to stay true to the ideal of having the longest view in the room. To attempt to convince others that our actions are just will serve to paint us in a different light among *some* of our competitors as progressives worth emulating, versus adversaries worthy of their disdain. Call me old-fashioned, but sometimes the optimal place for your light is hiding *directly* under a bushel.

Lastly, this letter will only speak to the part of the business that I'm today's steward of: the basketball team and its attendant operations. With Scott O'Neil running our business operations, you are in good hands. I can assure you that when your team is eventually able to compete deep into May, Scott will ably and efficiently separate the good people of the Delaware Valley from their wallets on your behalf. Worry not.

A league with 30 intense competitors requires a culture of finding new, better ways to solve repeating problems. In the short term, investing in that sort of innovation often doesn't look like much progress, if any. Abraham Lincoln said "give me six hours to chop down a tree and I will spend the first four sharpening the axe."

In May of 1969, a 38-year-old Warren Buffett sat down at a typewriter to inform his investors that he was closing his fund (then Buffett Partnership). His reason: market conditions were such that he no longer had the requisite confidence that he could make good decisions on behalf of the investors and deliver on his commitments to them. So he would stop investing on their behalf.

For me, that's today. Given all the changes to our organization, I no longer have the confidence that I can make good decisions on behalf of investors in the Sixers—you. So I should step down. And I have.

In one sense, it pains me that it has come to this and that I would go at the end of a particularly down year in the standings, one that has been painful for all of us. But the fact is—and a young Buffett said it much better than I ever could—"I am not attuned to this environment, and I don't want to spoil a decent record by trying to play a game I don't understand just so I can go out a hero."

Yup.

Thinking about thinking

I admire Seth Klarman a great deal. I am consistently impressed by his conviction and humility, a rare combination. About their approach at Baupost, he says, "it isn't the only way of thinking, but it's how we approach it." Below is some insight into a few things we value and how we've approached decision making at the Sixers.

First, this list is anything but exhaustive, and hardly mine alone. Whenever possible, I think cross-pollinating ideas from other contexts is far, far better than attempting to solve our problems in basketball as if no one has ever faced anything similar. Accordingly, this approach comes from a frequent search into behavioral economics, cognitive science, and a lot of observation and trial and error over my 11 years in the NBA. And mistakes. Lots and lots of mistakes.

To begin, let's stand on the shoulders of Charlie Munger, a giant to me. He is a man that's been thinking about thinking longer than I've been alive. Let's start with him and his approach. His two-part technique is:

1. First, what are the factors that really govern the interests involved, rationally considered?

2. Second, what are the subconscious influences where the brain at a subconscious level is automatically doing these things—which by and large are useful, but which often malfunctions?

To do this requires you to divorce process from outcome. You can be right for the wrong reasons. In our business, you're often lionized for it. You can be wrong for the right reasons. This may well prove to be Joel Embiid. There is signal everywhere that Joel is unique, from the practice gyms in Lawrence, Kansas to Bala Cynwyd, Pennsylvania to Doha, Qatar where he does something awe inspiring far too regularly. We remain hopeful (and optimistic) about his long-term playing career, but we don't yet know exactly how it will turn out. The decision to draft Joel third, though, still looks to me to be the correct one in hindsight given the underlying reasoning. But to call something that could be wrong ("failed draft pick") right ("good decision") makes all of our heads hurt, mine included.

So we have to look deeper at process. Here's a go at it:

(I would be dismayed if you don't see pockets of this kind of thinking throughout the organization. In fact, I will feel like I've let you down.)

The importance of intellectual humility

Lifelong learning is where it's at. To walk down that path requires a deep-seated humility about a) what's knowable, and b) what each of us know. We hire for this aggressively. We celebrate this internally. And we've been known to punish when we find it woefully lacking.

We talk a great deal about being curious, not critical. About asking the question until you understand something truly. About not being afraid to ask the obvious question that everyone else seems to know the answer to. And about the willingness to say three simple words, “I don’t know.”

Tesla’s Elon Musk describes his everyday stance as, “You should take the approach that you’re wrong. Your goal is to be less wrong.” The physicist James Clerk Maxwell described it as a “thoroughly conscious ignorance—the prelude to every real advance in science.” Bill James of the Boston Red Sox (and, I might add, a Kansas basketball expert) added a little flair when asked whether the learnings available via examining evidence were exhausted: “we’ve only taken a bucket of knowledge from a sea of ignorance.”

A way to prop up this kind of humility is to keep score. Use a decision journal. Write in your own words what you think will happen and why before a decision. Refer back to it later. See if you were right, and for the right reasons (think Bill Belichick’s famous 4th down decision against Indianapolis in 2009 which summarizes to: good decision, didn’t work). Reading your own past reasoning in your own words in your own handwriting time after time causes the tides of humility to gather at your feet. I’m often in waist-deep water here.

The other reason to keep track yourself is you’re often the only one to see the most insidious type of errors, the ones the narrative generating parts of our lizard brains storytell their way around—errors of omission. You don’t have a wobbly understanding of just the things you got wrong, but the things you got right but not right *enough*. Listen to Charlie Munger talk about how he and Berkshire Hathaway should be measured not by their success, but by how much more successful they would have been if they bought more of something: “We should have bought more Coke.”

* * * * * * * * * * * *

The necessity of innovation

Investing in disruptive innovation doesn’t ferment misunderstanding, it *necessitates* it. Jeff Bezos says it this way: “There are a few prerequisites to inventing…You have to be willing to fail. You have to be willing to think long-term. You have to be willing to be misunderstood for long periods of time.”

A yearning for innovation requires real exploration. It requires a persistent search to try (and fail) to move your understanding forward with a new tool, a new technique, a new insight. Sadly, the first innovation often isn’t even all that helpful, but may well provide a path to ones that are. This is an idea that Steven Johnson of *Where Good Ideas Come From* popularized called the “adjacent possible.” Where finding your way through a labyrinth of ignorance requires you to first open a door into a room of understanding, one that by its very existence has new doors to new rooms with deeper insights lurking behind them.

In most endeavors, it’s fine to be content to woodshed until you get something near perfect. You want that to be you. Grit matters. But it won’t be long until some innovation makes all that effort newly obsolete. You want that to be you, too.

* * * * * * * * * * * *

The longest view in the room

It is critical to be cycle aware in a talent-driven league. In a situation like yours at the Sixers, where a variety of circumstances left you near a trough in the cycle (and falling), amplifying this cycle became crucial. Today’s outcomes for every team are heavily impacted by decisions past (who to draft, sign, trade, hire, etc.).

Jeff Bezos says that if Amazon has a good quarter it's because of work they did 3, 4, 5 years ago—not because they did a good job that quarter. Today's league-leading Golden State Warriors acquired Draymond Green, Andrew Bogut, and Klay Thompson almost 4 years ago, nearly 4 years ago exactly, and almost 5 years ago. In this league, the long view picks at the lock of mediocrity.

While some organizations (like ours) have this as part of their ethos, for others it *is* the ethos. Check out the 10,000 Year Clock. It is no mere thought experiment, but an actual clock being designed to be placed inside a mountain in West Texas, wound, and left to tick and chime for ten thousand years. Why? Because to design something that lasts that long makes us all consider what the world will look like between now and then. In return, we might be inspired to do something about it.

More practically, to take the long view has an unintuitive advantage built in—fewer competitors. Here's Warren Buffett in the late 80s on this topic: "In any sort of a contest—financial, mental, or physical—it's an enormous advantage to have opponents who have been taught that it's useless to even try." Ask who wants to trade for an in-his-prime Kevin Garnett and 30 hands will go up. Ask who planned for it three or four years in advance and Danny Ainge is nearly alone. Same for Daryl Morey in Houston trading for James Harden. San Antonio's Peter Holt said after signing LaMarcus Aldridge this summer, "R.C. [Buford] came to us with this plan three years ago, four years ago—seriously. And we've worked at it ever since."

* * * * * * * * * * * *

A contrarian mindset

This one is tricky, and getting more so in a league as healthy and popular as the NBA that is covered by beat writers, columnists, bloggers, commentators, and fans minute-to-minute. If you want to have real success you have to *very often* be willing to do something different from the herd.

A few examples might help. Step away from basketball and imagine for a moment this is investment management, and your job is to take your client's money and make it grow. It's January 1, 2015 and the S&P 500 is $171.60, exactly the same price it has been since January 1, 1985. No fluctuation up or down. Flat every single day. And your job for every day of the past 30 years is to make money for your clients by investing. What would you do?

In the NBA, that's wins. The same 82 games are up for grabs every year for every team. Just like in 1985 (or before). To get more wins, you're going to have to take them from someone else. Wins are a zero-growth industry (how many of you regularly choose to invest in those?), and the only way up is to steal share from your competitors. You will have to do something different. You will have to be contrarian.

Howard Marks describes this as a necessary condition of great performance: you have to be non-consensus and right. Both. That means you have to find some way to have a differentiated viewpoint from the masses. And it needs to be right. Anything less won't work.

But this is difficult, emotionally and intellectually. Seth Klarman talks about the comfort of consensus. It's much more comfortable to have people generally agreeing with you. By definition, those opportunities in a constrained environment winnow away with each person that agrees with you, though. It reminds me of when we first moved to Palo Alto. Within about a week of living there a voice kept telling me, "This is great. Great weather, 30 minutes to the ocean, 3 hours to ski, a vibrant city 30 miles away, and one of the world's best research universities within walking distance. People should really move here." Then

I looked at real estate prices. I was right, yes, but this view was decidedly *not* a non-consensus view. My viewpoint as a Silicon Valley real estate dilettante, which took a whole week to form, had been priced in. Shocker.

To develop truly contrarian views will require a never-ending thirst for better, more diverse inputs. What player do you think is most undervalued? Get him for your team. What basketball axiom is most likely to be untrue? Take it on and do the opposite. What is the biggest, least valuable time sink for the organization? Stop doing it. Otherwise, it's a big game of pitty pat, and you're stuck just hoping for good things to happen, rather than developing a strategy for how to make them happen.

There has to be a willingness to tolerate counterarguments, hopefully in such a way that you can truly understand and summarize the other side's arguments at least as well as they can. And then, after all that, still have the conviction to separate yourself from the herd.

* * * * * * * * * * * *

A tolerance of uncertainty

This one can be really difficult, especially when the stakes are high. But it's critical to making rational decisions over the long term. We are all so tempted to simplify when something is hard to think about, simply to get it out of our mind by treating it as impossible.

This goes from academic sounding to <u>life altering</u> in basketball team building, though. Looking at a player with an estimated 10% or 20% chance of being a star over the next three or four years can't be written to zero—*that's about as high as those odds ever get*. That's surely a very, very high number for any player that is ever available to you to be added to your team. Once you accept that, it becomes clear that shrinking the confidence interval around that estimate (and the estimates of the downside risk at the other end of the spectrum) becomes pretty darn important.

But our well worn thinking patterns often let us down here. Phil Tetlock, from just down the street at Penn, addresses this well in his most recent remarkable book *Superforecasting* where he quotes the great Amos Tversky saying, "In dealing with probabilities…most people only have three settings: "gonna happen," "not gonna happen," and "maybe"." Jeff Van Gundy sums it up succinctly on our telecasts, "it's a make or miss league." He's right.

In some decisions, the uncertainties are savage. You have to find a way to get comfortable with that range of outcomes. If you can't, you're forced to live with many fewer options to choose amongst which leads over the long term to lesser and lesser outcomes.

The illusion of control is an opiate, though. Nonetheless, it is annoyingly necessary to get comfortable with many grades of maybe. Sixers fans come up to me to say hello and many of them say the same thing (almost instinctively) as we part, "Good luck." My standard reply: "Thanks. We'll need it."

* * * * * * * * * * * *

Be long science

Science is about predictions. Understanding the world until you can make a prediction about what will happen next. If you're not sure, test it. Measure it. Do it again. See if it repeats.

"So if we want to think like a scientist more often in life, those are the three key objectives—to be humbler about what we know, more confident about what's possible, and less afraid of things that don't matter." That's from Tim Urban, who will soon be recognized as one of tomorrow's polymaths (like many of you, he lives in New York—I'd recommend meeting him for coffee sometime).

For the Sixers, this has meant efforts like tracking every shot in every gym where we shoot, making predictions in writing about what we think will happen with a player or a team, and generally asking more questions about the game than some are comfortable to have said aloud.

* * * * * * * * * * * *

A healthy respect for tradition

While contrarian views are absolutely necessary to truly deliver, conventional wisdom is still wise. It is generally accepted as the conventional view because it is considered the best we have. Get back on defense. Share the ball. Box out. Run the lanes. Contest a shot. These things are real and have been measured, precisely or not, by thousands of men over decades of trial and error. Hank Iba. Dean Smith. Red Auerbach. Gregg Popovich. The single best place to start is often wherever they left off.

There are plenty of caricatures of our approach on your behalf, the most common of which is that folks here don't even watch the games. That instead there is some mystical way by which we make decisions that doesn't have anything to do with building a basketball team. That's simply untrue.

Maybe someday the information teams have at their disposal won't require scouring the globe watching talented players and teams. That day has not arrived, and my Marriott Rewards points prove it from all the Courtyards I sleep in from November to March. There is so much about projecting players that we still capture best by seeing it in person and sharing (and debating) those observations with our colleagues. What kind of teammate is he? How does he play under pressure? How broken is his shot? Can he fight over a screen? Does he respond to coaching? How hard will he work to improve? And maybe the key one: will he sacrifice—his minutes, his touches, his shots, his energy, his body—for the ultimate team game that rewards sacrifice? That information, as imperfect and subjective as it may be, comes to light most readily in gyms and by watching an absolute torrent of video.

Some tradition awaits us everyday at the office. I inherited Marlene Barnes as my executive assistant, a widowed lifelong Philadelphian that joined the Sixers in the fall of 1977. I was born in the winter of 1977. Marlene has worked for 11 different GMs and 5 head coaches at the Sixers. The names evoke many memories for you lifelong Sixers fans and students of history like me: Pat Williams, John Nash, Gene Shue, Jim Lynam, John Lucas, Brad Greenberg, Larry Brown, Billy King, Ed Stefanski, Rod Thorn. With us, she was immediately thrown into a new, more entrepreneurial work environment with a boss full of quirks different than any she had ever encountered. She adapted wonderfully, and now is a regular Slack wizard along with much of our staff, has seamlessly plugged into one productivity hack after another, and has ordered more books from Amazon than she ever thought possible. Her presence served as an everyday reminder to me of the impermanence of my leadership. I told her within a few weeks of working together that when I see her in the mornings I'm reminded that I am a steward—*today's* steward—of her Sixers.

* * * * * * * * * * * *

A reverence for disruption

So often a new management regime looks at an organization and decides that the primary goal is to professionalize the operation. For you, I hope that doesn't happen next. As I described to you in our first ever board meeting, we were fundamentally aiming for something different—disruption. We should concentrate our efforts in a few key areas in ways others had proven unwilling. We should attempt to gain a competitive advantage that had a chance to be lasting, hopefully one unforeseen enough by our competition to leapfrog them from a seemingly disadvantaged position. A goal that lofty is anything but certain. And it sure doesn't come from those that are content to color within the lines.

This is true everywhere, as the balance in any market or any ecosystem ebbs and flows until something mostly unexpected lurches ahead. We see it in spades—past, present, and future.

- New Zealand's flightless bird the moa (measuring in at 10 ft, 400 lbs.) had *the life* tramping around the South Island for a great long run; then the first Māori explorers washed ashore in canoes, and that was that.
- I still miss Blackberry's keyboard, but the 2007 iPhone debut rendered it nearly obsolete to all but a few of us curmudgeons.
- Watch what's happening with the collaboration between IBM's Watson and M.D. Anderson or Google DeepMind's AlphaGo. It won't be just an ancient board game that's disrupted. It's also anything but a game to Lee Sedol.

Nobel Prize winning physicist Max Planck got right to it: "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die." That sounds harsh, more harsh than anything I would ever say. But think about it in your context as an equity partner in the Sixers. Every April you will watch 16 of the 30 teams—the last time that exact configuration of players and coaches will ever be together—"die" as their season ends. Within a few weeks, another seven go fishing. By early June, 29 of the 30 opponents are forced to see the light of the competition's greatness as only one raises the Larry O'Brien trophy.

* * * * * * * * * * * *

I can imagine that some of these sound contradictory: contrarian thinking, but respect for tradition, while looking to disrupt. That yin and yang is part of it—keep looking. Questioning.

Investment objectives

Starting position

In May of 2013 when I spoke with several of you—and even when we first met in the summer of 2012—the situation was clear. Your crops had been eaten. A team that clawed its way to a disappointing 34 wins in 2012-13 had a few handfuls of those wins walking out the door (Dorell Wright, Nick Young, Damien Wilkins, Royal Ivey) and a player that drove a bit more who had just undergone a surgery and was expected to be out for the season (Jason Richardson). That left the club with expected wins in the low 20s before replacing anyone. The young players on rookie-scale deals numbered two: Evan Turner & Arnett Moultrie. Two future first round picks were gone as was the recent youth pipeline of Nik Vučević & Moe Harkless. Gulp.

Outsiders agreed. ESPN regularly ranks the forward-looking three years for each team in their Future Power Rankings. They take into account the team's current roster and future potential of those players as about half the rating, then include future draft picks, cap position, coaching, management, etc. The Sixers near-term future ranked 24^{th} in a 30-team league.

In the press conference announcing my arrival at the Sixers, I said:

- Our challenge was not for the faint of heart. *It wasn't*.
- Our challenge was big enough to humble me to think about the enormity of it. *It did.*

We would have to get so very much right.

Goals

The strategy we settled on was straightforward, even if arduous. Replenish the talent pipeline, improve the quality and quantity of players on the roster, shift the style of play towards tomorrow's champions, and become a culture focused on innovation.

You heard me speak of these goals at each of our quarterly board meetings; always the same since June of 2013. Variety is overrated.

This continuity of focus has served to frustrate many. I've found those most frustrated are those that either underestimate the enormity of the challenge or fundamentally want something else.

Specifically, we set out to maximize the odds of acquiring star players using all three available methods of acquiring players (draft, free agency, and trade).

1. Draft: invest in the deepest pool of star players—young players via the NBA Draft.

2. Free Agency: maintain financial flexibility to assume contract liabilities of other teams to acquire picks and prospects and move quickly toward special opportunities in signings/trade.

3. Trade: gather attractive, improving players to (best case) develop to win games for the Sixers, or (worst case) trade for better players or players likely to improve at a faster rate.

We determined to play a faster style that recognizes the importance of speed in tomorrow's NBA and one that quickly integrates young players. We set out to improve our shot selection toward high efficiency basketball. We also wanted to build a defensive identity that—in time—could thwart tomorrow's high-efficiency offenses. Lastly, we needed to build a world-class training center, develop an ever-evolving player development program, and change the organization's culture to one of innovation and a constant search for competitive edge.

These goals were not to fit some preferred style of play, but instead were aiming for where future champions would be crowned. That original document I gave to Josh and David in 2012 said:

> *History's lessons are clear, but tomorrow's championship caliber teams may break from historical trends:*
>
> - *Example: A 3PA-happy champion like Orlando under Stan Van Gundy*
> - *Example: A fast-paced champion like Phoenix under Mike D'Antoni*

Fast forward three years and Golden State made the 3rd most 3s in NBA history to win the Finals against the Cleveland Cavaliers, who made the 8th most 3s in NBA history. Coach Van Gundy's most 3PA-happy team from Orlando proudly sits smack dab between them in 5th place all time (for now). The Warriors did this in part by playing at the fastest pace of any NBA team last season, considerably faster than Coach D'Antoni's fastest Suns team.

Results

The dozen of you know much about our team, our players, and how we're positioned. I won't waste your time by going through each person in detail, as you have had many opportunities to meet our coaches and players, hear about our talented staff, and see their performance dissected and analyzed in our meetings. Instead, I will try to make the best use of your time by sharing some insight into the inner workings behind the scenes and a few details that aren't appropriate for wider consumption.

Players

It is worth noting that over the long term, basketball teambuilding is about one primary thing—the players. Those players the team has on the roster at the time and those they hold the rights to. Plus those that are to follow. All of the operations, from management to coaches to support staff to systems only exist for one reason—the players.

We have had the good fortune of drafting relatively early, giving us access to some especially talented players, including Jahlil Okafor (#3), Joel Embiid (#3), and Nerlens Noel (#6). Many in our office tried to set a line of when Jahlil would see his first double team in this league. Those with the under looked smart by the end of opening night, where he went for 26 points and 7 rebounds.

We also put ourselves into position to draft in the second round, where we found two 22-year-old gems to date, including Jerami Grant (#39) and Richaun Holmes (#37). Outside of the top 60 selections delivered two more players with real NBA futures in 24-year-old T.J. McConnell and 25-year-old Robert Covington.

Robert is a mistake I rubbed my own nose in for over a year. The 2013 Draft was a flurry of activity for us—a handful of trades and selections in both the first and second rounds. We had more action following the draft as we tried to finalize our summer league team and get the myriad trade calls set up with the NBA. I could see this coming a few days before and we informed the media that this kind of approach might lead to an unusually late start for the post-draft press conference. Several of you were still there late that night. At about 1:00 a.m. I went downstairs to address an equally exhausted media on deadline from their editors. When I returned upstairs, the undrafted Robert Covington was gone, having agreed to play for another club's summer league team, eventually making their regular season roster. He torched the D-League that year, haunting me all the while. When he became available 17 months later, we pounced. But I shudder, even now, at that (nearly) missed opportunity.

Even our efforts to support our players serve as a reminder of the enormity of our challenge. Something important to us is to find ways to be supportive to our players' larger extended families and loved ones that take this journey with them. One group, too casually referred to as "the wives club" at many NBA teams, helps support players' families in getting acclimated to the city by handling tickets for loved ones, volunteering in community events, hosting baby showers, and the like. In 2013 my wife and I arrived at the arena one night to host a few from this group. While I was prepared to highlight for the group the team's family room, child care at the arena, etc., it turned out that our attendance at this event totaled two. Two mothers. It was a pointed reminder of just how young our team was.

This story underscores what our players, particularly our best players, are in greatest need of—time. The gap between driving wins today and driving wins tomorrow will be heavily influenced by a bunch of factors, but the biggest one is time. For players like Jahlil, Nerlens, and Jerami, getting much nearer the middle of their new NBA cohort will go a long way toward letting their talents shine through, just as it has their whole basketball lives when they were nearer the middle of those cohorts. Get down the experience curve, the faster the better. They are 20, 21, and 22 years old.

* * * * * * * * * * * *

A larger quiver

We need to identify high potential prospects and find ways to add them to our program. Then we need to work with them on their game in a targeted way to maximize their performance, their impact on the floor, and their value. One way is to draft them and put them on our 15-man roster. We do that.

Another is to draft them and hold their exclusive NBA rights while they play professionally in a league that doesn't start with N and end with A. Now we do that.

These players can develop under our guidance while not counting against our roster, giving us not just 15 opportunities at one time, but several more. When appropriate for our team—but subject to buyout clauses in their professional contracts abroad—we can sign them to our club as one of our 15. This can happen within a season, at season's end, or whenever their contract is available for buyout.

These sets of players are viable players for the Sixers and viable options to trade in the interim. The goal is simple—a larger quiver. This quiver will give us more options immediately and more options over time. Several players have been affiliated with us during the past several years while playing for teams in Australia, Asia, several clubs in Europe, and our minor-league affiliate the Delaware 87ers. As of now, we hold three players on this list, highlighted by the 21-year-old Dario Šarić. Dario is a 6-10 forward with a guard's skills and a big's toughness. Twice voted as FIBA European Young Player of the Year, we were in position to draft him in part because he required something you've had in ample supply: one part courage, two parts patience. He will look great in Sixers blue.

This approach, like many that create value, isn't popular, particularly locally. But it's also nothing new, just the same typeface bolded. It requires deep player evaluations around the globe, is helped by a network of international relationships, and most of all, patience. The venerable San Antonio Spurs don't have three rights-held players playing internationally like we now do, they have thirteen. Most of their names are hard for many fans to pronounce. Ginobili used to be, too.

The NBA began this season with 100 international players from 37 countries on opening night rosters, comprising over 20% of the league. This is no set of wallflowers either, with four of the last thirteen Finals MVPs in this group. I pine for the days of the Long Beach Summer League at the Pyramid—I now spend as much time in China as Los Angeles.

* * * * * * * * * * * *

Draft picks

While the young players on our team and rights-held players internationally continue to show promise, our ability to add to that group by layering in additional high quality talent via the draft, free agency, and trade is at an all-time high.

In the first 26 months on the job we added more than one draft pick (or pick swap) per month to our coffers. That's more than 26 new picks or options to swap picks over and above the two per year the NBA allots each club. That's not any official record, because no one keeps track of such records. But it *is* the most ever. And it's not close. And we kick ourselves for not adding another handful.

Many of us remember exactly where we were when tragedy strikes and we think of what could have been. For me—and this is sad for my own mental well being—that list includes the January day in 2014 when Miami traded Joel Anthony and two second round picks to our formidable competitors the Celtics. I can still picture the child's play table I paced around at Lankenau Medical Center on my cell phone while negotiating with Miami's front office. This was in between feedings for our newborn twins, when my wife and I were still sleeping in the hospital. Danny Ainge finalized that deal (and several other better ones) and received one first-place vote for Executive of the Year that season: mine.

We have used several of those picks to move around in the draft, to facilitate other deals, in trade for players to add to our team, and to select players for our team. Players like Jerami Grant (part of the haul from the Spencer Hawes trade), Nerlens Noel & Dario Saric (via the Jrue Holiday trade and its derivative), Ish Smith (used one of the two picks we acquired in the Eric Maynor trade, plus another), Richaun Holmes (part of the proceeds via the K.J. McDaniels trade), and others. Yet we still retain the rights to more future 2nd round picks at our disposal going forward than 27 other NBA teams.

In the upcoming May draft lottery, we have what will likely be the best ever odds to get the #1 overall pick (nearly 30%), a roughly 50/50 chance at a top-2 pick (the highest ever), and a roughly 50/50 chance at two top-5 picks, which would be the best lottery night haul ever. That same bounce of a ping pong ball (almost a flip of a coin) will determine if we have three first round picks this year (unusual) or four (unprecedented). That's this year. Or this quarter, if you will.

If you were to estimate the value of those firsts and the ones to follow, from this point forward we have essentially two NBA teams' worth of first round pick value plus the third most second round picks in the league.

* * * * * * * * * * * *

Salary cap position

Our salary cap position going forward is easily the NBA's best. The most room, the most flexibility, providing the widest available set of options in free agency or trade of any club. This stockpile can be used all at once or strategically over the ensuing years to acquire players that fit your team, improve in your development program, and help you move up the standings. During this phase of acquiring players and picks to really invest in our future and climb higher than we have in over 30 years, we spent a bit over $135M on payroll across the three seasons, while the NBA median spend was over $200M. That won't last, as over time a climb up the standings will see spend rise precipitously as well.

These advantages over our competitors are material, but well short of deterministic. From here a whole host of solid decisions are necessary to play our hand out of this stacked deck.

* * * * * * * * * * * *

Other

Building a talent pipeline into our program, while important, is of course not the only goal we had. Even with young players and expected roster turnover, we needed to move the club toward a style that was conducive to winning in tomorrow's NBA. We improved our pace from below average to 1st immediately, then settled into about 6th for the next two seasons. We moved our shot selection from consistently bottom two in the league to consistently 2nd in the league. And our defensive principles are increasingly top-notch, showing that we can play above average defense (13th) when we had solid veteran defenders like Luc Mbah a Moute on the roster, but also struggle with some of the NBA's youngest talent defending every night (bottom 5).

Outlook

Your club is on solid footing now, with much hard work yet to be done. As we continued to invest in young players, acquire more draft selections, and maintain cap flexibility the forward-looking markets took notice. Our Future Franchise Rankings (ESPN's) that began at 24th in a 30-team league in May of 2013 climbed to 19th in 2014, 17th in 2015, and most recently via RealGM's rankings in December of 2015, 12th. I think that is imminently reasonable, as is a couple of spots higher.

Lottery night will be nerve-wracking for most and exciting for all. I said to Josh & David last year during the NBA's Draft Lottery that it is rare for the importance of luck in our lives to be laid bare for the whole world to see. Walking out with a top-5 pick in each hand would be exciting, but it's not necessary. The rights to those picks don't extinguish, but instead move forward to a future year, one filled with new possibilities and challenges both.

Regardless of the haul that comes out of a May night in New York, the team is likely to see additional lottery pick talent hit the court next season regardless. Two additional first round picks this year are available to you as well. Plus additional draft picks are set to flow in regularly for many years to come. Plus the league's best cap position. A bevy of young players. A deep and passionate coaching staff. An innovative management team. A beautiful new practice facility set to open before training camp. In a city with wonderful basketball heritage. You could do worse.

The NBA can be a league of desperation, those that are in it and those that can avoid it. So many find themselves caught in the zugzwang, the point in the game where all possible moves make you worse off. Your positioning is now the opposite of that.

A sincere thank you

Thank you for the opportunity you all gave me to lead this storied franchise. My gratification is beyond my power to express. What is unequivocal is that the principal beneficiary of your largesse has been me. Thank you.

Philadelphia has been wonderful to our family. Two of our children were born here. Lincoln said that to meet with the public "renewed in me my perceptions of responsibility and duty." Those words rang hollow until we moved here and I talked with our fans. Everywhere I went, lifelong Sixers fans told me stories about how they wanted the team to be good again—really good.

It's clear now that I won't see the harvest of the seeds we planted. That's OK. Life's like that. Many of my NBA friends cautioned me against the kind of seed sowing that felt appropriate given the circumstances for exactly this reason. But this particular situation made it all the more necessary, though. Part of the reason to reject fear and plow on was *exactly because* fear had been the dominant motivator of the actions of too many for too long.

I will be repotted professionally. That is often uncomfortable; most growth is. But it's also often healthier over the longer sweep of history, too.

In the interim, I'll probably be with my wife and kids for a few weeks. If you need to reach me—now or later—I am available at [redacted] and I suspect someday soon on Twitter via @samhinkie.

I wish you the best of luck. Like other Sixers fans, I will cross my fingers for you on lottery night in New York.

We Don't Sell Saddles Here

Stewart Butterfield Follow 12 min read · Feb 17, 2014

26K 85

> *The memo below was sent to the team at Tiny Speck, the makers of* ***Slack****, on* July 31st, 2013. *It had been a little under seven months since development began and was two weeks before the launch of Slack's 'Preview Release'. It is presented verbatim, as written (including original pull-quotes), with two exceptions: the removal of an introductory section discussing launch logistics and replacement of a link which pointed to an internal company resource with the equivalent public link.*

Build Something People Want

We know that we have built something which is genuinely useful: almost any team which adopts Slack as their central application for communication would be significantly better off than they were before. That means we have something people want.

However, almost all of them have no idea that they want Slack. How could they? They've never heard of it. And only a vanishingly small number will have imagined it on their own. They think they want something different (if they think they want anything at all). They definitely are not looking for Slack. (But then no-one was looking for Post-it notes or GUIs either.)

Just as much as our job is to build something genuinely useful, something which really does make people's working lives simpler, more pleasant and more productive, our job is also to understand what people think they want and then translate the value of Slack into their terms.

A good part of that is "just marketing," but even the best slogans, ads, landing pages, PR campaigns, etc., will fall down if they are not supported by the experience people have when they hit our site, when they sign up for an account, when they first begin using the product and when they start using it day in, day out.

Therefore, "understanding what people think they want and then translating the value of Slack into their terms" *is something we all work on.* It is the sum of the exercise of all our crafts. We do it with copy accompanying signup forms, with fast-loading pages, with good welcome emails, with comprehensive and accurate search, with purposeful loading screens, and with thoughtfully implemented and well-functioning features of all kinds.

"Marketing from Both Ends"

Much has been written about "product-market fit" in the last few years, probably as a result of the popularity of the lean startup movement (though the idea has been around much longer). The term refers to the degree to which a product *could* be successful, given sufficient promotion, appropriate pricing, adequate customer support and so on (before you find that fit, all the pushing in the world won't get you up the hill).

In this classic post on Marc Andreessen's old blog, he calls getting to product-market fit the "only thing that matters" for startups and offers a way of thinking about the life of the startup that divides it into two distinct phases: before product-market fit and after. Once the product fits the market, a company is able to step on the gas, spending to promote a product that will actually sell. The things you need to do before are very different from the things you need to do after (generally test & iterate vs scale & optimize).

We are right in the middle of that first phase. It seems we are doing well and there are many encouraging signs, but we're definitely still in the first phase and it is very, very hard to tell how far we have to go to cross over into the promised land (the last 10% is 90% of the work, etc.) So, we should be working carefully from *both* the product end and the market end:

- Doing a better and better job of providing what people want (whether they know it or not)
- Communicating the above more and more effectively (so that they know they want it)

In the best case, there is a dialectic at play here: the product itself and the way people use it should suggest new ways of articulating the value — and refinements to how we communicate the value should lead to principles which clarify decision-making around product features and design.

Our position is different than the one many new companies find themselves in: we are not battling it out in a large, well-defined market with clear incumbents (which is why we can't get away with "Other group chat products are poisonous. Slack is toasted."). Despite the fact that there are a handful of direct competitors and a muddled history of superficially similar tools, we are setting out to define a new market. And that means we can't limit ourselves to tweaking the product; we need to tweak the market too.

Sell the innovation, not the product

The best — maybe the only? — real, direct measure of "innovation" is change in human behaviour. In fact, it is useful to take this way of thinking as definitional: innovation *is* the sum of change across the whole system, not a thing which *causes* a change in how people behave. No small innovation ever caused a large shift in how people spend their time and no large one has ever failed to do so.

By that measure, Slack is a real and large innovation. It is not as eye-catching as self-driving cars or implantable chips — it is not basic research-y kind of stuff. But, for organizations that adopt it, there will be a dramatic shift in how time is spent, how communication happens, and how the team's archives are utilized. There will be changes in how team members relate to one another and, hopefully, significant changes in productivity.

We are unlikely to be able to sell "a group chat system" very well: there are just not enough people shopping for group chat system (and, as pointed out elsewhere, our current fax machine works fine).

> That's why what we're selling is organizational transformation.

What we are selling is *not* the software product — the set of all the features, in their specific implementation — because there are just not many buyers for this software product. (People buy "software" to address a need they already know they have or perform some specific task they need to perform, whether that is tracking sales contacts or editing video.)

However, if we are selling "a reduction in the cost of communication" or "zero effort knowledge management" or "making better decisions, faster" or "all your team communication, instantly searchable, available wherever you go" or "75% less email" or some other valuable *result* of adopting Slack, we will find many more buyers.

That's why what we're selling is organizational transformation. The software just happens to be the part we're able to build & ship (and the means for us to get our cut).

We're selling a reduction in information overload, relief from stress, and a new ability to extract the enormous value of hitherto useless corporate archives. We're selling better organizations, better teams. That's a good thing for people to buy and it is a much better thing for us to sell in the long run. We will be successful to the extent that we create better teams.

To see why, consider the hypothetical Acme Saddle Company. They could just sell saddles, and if so, they'd probably be selling on the basis of things like the quality of the leather they use or the fancy adornments their saddles include; they could be selling on the range of styles and sizes available, or on durability, or on price.

Or, they could sell *horseback riding*. Being successful at selling horseback riding means they grow the market for their product while giving the perfect context for talking about their saddles. It lets them position themselves as the leader and affords them different kinds of marketing and promotion opportunities (e.g., sponsoring school programs to promote riding to kids, working on land conservation or trail maps). It lets them think big and potentially be big.

> Because the best possible way to find product-market fit
> is to define your own market.

This isn't a new idea. There are many brands whose marketing activities or positioning has them selling something other than (and usually larger than) their product: Harley Davidson sells motorcycle riding, but it especially sells freedom and independence. Most luxury brands sell something that comes down to "being better than you are" (richer, better looking, more attractive to those you find desirable, etc.)

My favorite recent example is Lululemon: when they started, there was not a large market for yoga-specific athletic wear and accessories. They sold yoga like crazy: helping people find yoga studios near their homes, hosting free classes, sponsorships and scholarships, local ambassadors and training, etc. And as a result, they sold just under $1.4 billion worth of yoga-specific athletic wear and accessories in their most recent fiscal year.

But going back to the Acme Saddle Company, the better analogy to what we are doing now is to imagine them selling horseback riding … about 4,000 years ago. It is almost inevitable that centralized internal communication systems will gradually replace email for most organizations over the next 10-20 years and we should do what we can to accelerate the trend and "own it". We are at the beginning of a transition. We have an opportunity to both define the category and push hard for the whole market's growth. We'd be crazy not to take it, because the best possible way to find product-market fit is to define your own market.

Who Do We Want Our Customers to Become?

A few months ago, I read a fairly mediocre ebook called "Who Do You Want Your Customers to Become?" (available here). It was mediocre because it was nearly 70 pages when it could have been 20, not because the ideas were bad: in fact, the core ideas of the piece are fascinating and, I think, very useful to us as we think about the next year or so of Slack.

A central thesis is that *all products are asking things of their customers*: to do things in a certain way, to think of themselves in a certain way — and usually that means changing what one does or how one does it; it often means changing how one thinks of oneself.

We are asking a lot from our customers. We are asking them to spend hours a day in a new and unfamiliar application, to give up on years or even decades of experience using email for work communication (and abandon all kinds of ad hoc workflows that have developed around their use of email). We are asking them to switch a model of communication which defaults to public; it is an almost impossibly large ask. Almost.

To get people to say yes to a request that large, we need to (1) offer them a reward big enough to justify their effort and (2) do an exceptional, near-perfect job of execution.

The best way to imagine the reward is thinking about who we want our customers to become:

- We want them to become relaxed, productive workers who have the confidence that comes from knowing that any bit of information which might be valuable to them is only a search away.
- We want them to become masters of their own information and not slaves*, overwhelmed by the neverending flow.
- We want them to feel less frustrated by a lack of visibility into what is going on with their team.
- We want them to become people who communicate purposively, knowing that each question they ask is actually building value for the whole team.

This is what we have to be able to offer them, and it is the aim and purpose of all the work we are doing. We need to make them understand what's at the end of the rainbow if they go with Slack, and then we have to work our asses off in order to ensure they get there.

How Do We Do It?

We do it really, really fucking good.

The reason for saying we need to do 'an exceptional, near-perfect job of execution' is this: When you want something really bad, you will put up with a lot of flaws. But if you do not yet know you want something, your tolerance will be much lower. That's why it is especially important for us to build a beautiful, elegant and considerate piece of software. Every bit of grace, refinement, and thoughtfulness on our part will pull people along. Every petty irritation will stop them and give the impression that it is not worth it.

That means we have to find all those petty irritations, and quash them. We need to look at our own work from the perspective of a new potential customer and *actually see what's there.* Does it make sense? Can you predict what's going to happen when you click that button or open that menu? Is there sufficient feedback to know if the click or tap worked? Is it fast enough? If I read the email on my phone and click the link, is it broken?

> None of the work we are doing to develop the product is an end in itself.

It is always harder to do this with one's own product: we skip over the bad parts knowing that we plan to fix it later. We already know the model we're using and the terms we use to describe it. It is very difficult to approach Slack with beginner's mind. But we have to, all of us, and we have to do it every day, over and over and polish every rough edge off until this product is as smooth as lacquered mahogany.

Each of you knows "really good". Each of you is able to see when things are not done well. Certainly we all complain enough about other people's software, and we all know how important first impressions are in our own judgements. That is exactly how others will evaluate us.

Putting yourself in the mind of someone who is coming to Slack for the first time — especially a real someone, who is being made to try this thing by their boss, who is already a bit hangry because they didn't have time for breakfast, and who is anxious about finishing off a project before they take off for the long weekend — putting yourself in their mind means looking at Slack the way you look at some random piece of software in which you have no investment and no special interest. Look at it hard, and find the things that do not work. Be harsh, in the interest of being excellent.

Why?

There's no point doing this to be small. We should go big, if only because there are a lot of people in the world who deserve Slack. Going big also means that it will have to be really, really good. But that's convenient, since there's also no point doing it if it is not really, really good. Life is too short to do mediocre work and it is definitely too short to build shitty things.

To do this well, we need to take a holistic approach and not just think about a long list of individual tasks we are supposed to get through in a given week. We get 0 points for just getting a feature out the door if it is not actually contributing to making the experience better for users, or helping them to understand Slack, or helping us understand them. None of the work we are doing to develop the product is an end in itself; it all must be squarely aimed at the larger purpose.

Consider the teams you see in action at great restaurants, and the totality of their effort: the room, the vibe, the timing, the presentation, the attention, the anticipation of your needs (and, of course, the food itself); nothing can be off. There is a great nobility in being of service to others, and well-run restaurants (or hotels, or software companies) serve with a quality that is measured by its attention to detail. This is a perfect model for us to emulate.

Ensuring that the pieces all come together is not someone else's job. It is your job, no matter what your title is and no matter what role you play. The pursuit of that purpose should permeate everything we do.

But Slack is a bit more complicated than a restaurant (at least in some ways). Since it is new and less familiar, we are less able to fall back on well-established best practices. That means we need to listen, watch & analyze carefully. We'll need to build tools to capture users' behaviour and reactions. And then we'll need to take all that information and our best instincts and be continuously improving.

We are an exceptional software development team. But, we now also need be an excellent customer development team. That's why, in the first section of this doc, I said "build a customer base" rather than "gain market share": the nature of the task is different, and we will work together to understand, anticipate and better serve the people who trust us with their teams' communications, one customer at a time.

The answer to "Why?" is "because why the fuck else would you even want to be alive but to do things as well as you can?". Now: let's do this.

> *Slack's preview release began two weeks after this document was sent, on August 14th, 2013. A little under six months later, on February 12th, 2014, it was*

From: Howard Schultz
Sent: Wednesday, February 14, 2007 10:39 AM Pacific Standard Time
To: Jim Donald
Cc: Anne Saunders; Dave Pace; Dorothy Kim; Gerry Lopez; Jim Alling; Ken Lombard; Martin Coles; Michael Casey; Michelle Gass; Paula Boggs; Sandra Taylor
Subject: The Commoditization of the Starbucks Experience

As you prepare for the FY 08 strategic planning process, I want to share some of my thoughts with you.

Over the past ten years, in order to achieve the growth, development, and scale necessary to go from less than 1,000 stores to 13,000 stores and beyond, we have had to make a series of decisions that, in retrospect, have lead to the watering down of the Starbucks experience, and, what some might call the commoditization of our brand.

Many of these decisions were probably right at the time, and on their own merit would not have created the dilution of the experience; but in this case, the sum is much greater and, unfortunately, much more damaging than the individual pieces. For example, when we went to automatic espresso machines, we solved a major problem in terms of speed of service and efficiency. At the same time, we overlooked the fact that we would remove much of the romance and theatre that was in play with the use of the La Marzocca machines. This specific decision became even more damaging when the height of the machines, which are now in thousands of stores, blocked the visual sight line the customer previously had to watch the drink being made, and for the intimate experience with the barista. This, coupled with the need for fresh roasted coffee in every North America city and every international market, moved us toward the decision and the need for flavor locked packaging. Again, the right decision at the right time, and once again I believe we overlooked the cause and the affect of flavor lock in our stores. We achieved fresh roasted bagged coffee, but at what cost? The loss of aroma—perhaps the most powerful non-verbal signal we had in our stores; the loss of our people scooping fresh coffee from the bins and grinding it fresh in front of the customer, and once again stripping the store of tradition and our heritage? Then we moved to store design. Clearly we have had to streamline store design to gain efficiencies of scale and to make sure we had the ROI on sales to investment ratios that would satisfy the financial side of our business. However, one of the results has been stores that no longer have the soul of the past and reflect a chain of stores vs. the warm feeling of a neighborhood store. Some people even call our stores sterile, cookie cutter, no longer reflecting the passion our partners feel about our coffee. In fact, I am not sure people today even know we are roasting coffee. You certainly can't get the message from being in our stores. The merchandise, more art than science, is far removed from being the merchant that I believe we can be and certainly at a minimum should support the foundation of our coffee heritage. Some stores don’t have coffee grinders, French presses from Bodum, or even coffee filters.

Now that I have provided you with a list of some of the underlying issues that I believe we need to solve, let me say at the outset that we have all been part of these decisions. I take full responsibility myself, but we desperately need to look into the mirror and realize it’s time to get back to the core and make the changes necessary to evoke the heritage, the tradition, and the passion that we all have for the true Starbucks experience. While the current state of affairs for the most part is self induced, that has lead to competitors of all kinds, small and large coffee companies, fast food operators, and mom and pops, to position themselves in a way that creates awareness, trial and loyalty of people who previously have been Starbucks customers. This must be eradicated.

I have said for 20 years that our success is not an entitlement and now it’s proving to be a reality. Let’s be smarter about how we are spending our time, money and resources. Let’s get back to the core. Push for innovation and do the things necessary to once again differentiate Starbucks from all others. We source and buy the highest quality coffee. We have built the most trusted brand in coffee in the world, and we have an enormous responsibility to both the people who have come before us and the 150,000 partners and their families who are relying on our stewardship.

Finally, I would like to acknowledge all that you do for Starbucks. Without your passion and commitment, we would not be where we are today.

To: Investors **From: RFB** **September 2, 2005**
Re: YouTube

Introduction

YouTube represents an interesting seed-stage investment opportunity. The company's goal is to become the primary outlet of *user-generated video content* on the Internet, and to allow anyone to upload, share, and browse this content.

The three entrepreneurs are scrappy and smart. They have built a very easy-to-use, fast growing service that taps several strong veins: user-generated content, online advertising, wide proliferation of inexpensive digital video capture devices, and continued broadband adoption.

The company has also developed code snippets that allow users to embed YouTube videos directly into other sites. In this way, the company is building a wide content distribution network, in addition to its direct-to-site traffic.

Deal

Our proposal is to invest $1m in the seed stage, followed by a $4m Series A once specific milestones are met. Sequoia would own ~30% post Series A, with a pool of ~17%.

Competition

There are several direct and potential competitors to YouTube. These include:

- direct competitors (dailymotion, vimeo)
- community photo sites (flickr, webshots)
- online photo sharing sites (ofoto, shutterly, snapfish)
- large internet players (Google & Yahoo video search)
- entertainment sites (big-boys, ebaumsworld)
- file sharing services (ourmedia.org, putfile)
- IPTV companies (Open Media Network, Brightcove)

YouTube appears to have a clear lead over its two direct start-up competitors. The other categories of potential competitors are not necessarily focused on video content, or are not focused on user-generated content within the context of a community-based site. Nevertheless, the company will need to stay very focused over the next 3-6 months to ensure that it builds a rich set of features and content depth to increase its defensibility.

Hiring plan

We need to help the company quickly hire a CEO and VP BD/Sales. The founding team is enthusiastic about bringing on an experience CEO to help lead the company. However, I'm not sure whether we can land a CEO before the Series A. I would appreciate any ideas on potential candidates for either role. My preference would be to launch a search immediately and to have a CEO in place within 90 days.

Two additional former PayPal engineers are set to join in the next week. Both are exceptional.

The plan is to house the company in our incubation area for the near term. That will help us frequently interact with the team until we can surround the company with an experienced management team.

Key risks

- Competition/defensibility

  As outlined above, YouTube faces significant potential competition. The company needs to remain laser focused on improving the user experience to ensure that it continues its early growth trajectory.

- Revenue model

  I believe that YouTube has a clear advertising revenue opportunity. However, we don't yet know what form of advertising would work best. Specifically, can the company develop attractive ad products that are not intrusive to the consumer experience? We can model revenue as follows: # unique videos streamed per day x % of videos monetized x CPM x 365 = estimated annual revenue. Several of the parameters are unknown:

  i. We don't know what CPM rates YouTube could command. Video ad CPMs could range from a low of $5 to over $30.
  ii. We don't know what percentage of inventory (videos served) could be monetized
  iii. We are not sure how much YouTube could grow from its current level of 100,000 videos served per day.

  Below are different scenarios and their associated revenue potential:

	Videos served/day	CPM	% of videos monetized	Implied annual revenue
Scenario 1	10 million	$10	15%	$6m
Scenario 2	20 million	$15	20%	$22m
Scenario 3	30 million	$20	25%	$55m

  We will need to test these assumptions carefully over the next few months to get an accurate handle on the company's revenue potential. We also need to test the success of the company's content distribution network, and whether we can generate advertising revenue from this network. (Google earns ~55% of its revenue from Google-owned sites, and 45% from Network websites.)

  Serving 10-30 million videos may appear daunting, as it represents >100x increase over the company's current activity levels. But the company has achieved its current scale in only two months, and only has 15,000 videos today. (For point of comparison, Flickr and Webshots, two comparable photo community sites, serve 200-500x as many pageviews per day as YouTube.)

- Scalability

  As the table above indicates, YouTube will need to scale significantly from its current level for the company to achieve meaningful revenue. We need ensure that YouTube can inexpensively scale orders of magnitude from current levels.

- Balancing growth

  YouTube has already drawn the attention of larger media companies (e.g., Turner, Transcosmos) that see the potential of distributing YouTube content. As with any marketplace, we need to ensure that we balance demand and supply. It would be inadvisable to grow the viewer base significantly without a substantial increase in the number of videos available on the site. The company cannot afford to disappoint large numbers of customers due to inadequate depth of content.

- Exit

  We cannot point to many high comparable exit valuations.

  A few comparable companies include Webshots, flickr, Ofoto, Shutterfly, and Snapfish. While these companies deal only with still images, there are some similarities with YouTube. None of these companies have had exceptional exits. CNET bought Webshots for ~$70m, Yahoo! bought flickr for <$50m. Apparently Shutterfly is preparing to file its IPO. Ofoto and Snapfish were acquired by Kodak and HP, respectively, although financial terms were not disclosed.

  Another comparable is Blogger, acquired by Google in 2002 for an undisclosed amount.

  There are some other examples of businesses that built successful models leveraging user-generated content, including Tripadvisor, acquired by IAC in 2004 years ago for over $100m (to the best of my knowledge).

Recommendation

I first met with the company three weeks ago, and we are in pole position for the financing. Several VCs have been cold calling the company, and a few media companies have also approached YouTube. I'd like to give the company our decision on Monday.

I recommend that we proceed with the financing as proposed.

YouTube has a great founding team that has hit on several promising themes. The company follows a trend of user-generated content that started with text (blogs), images (flickr, webshots, ofoto), and audio (podcasting). Video is a natural next step, and YouTube is well positioned to capture the lead. The company has not yet enabled advertising revenue streams. But our checks with Yahoo! and Adbrite indicated very strong advertiser demand for online video advertising. We will rapidly need to surround the company with management talent, specifically a CEO.

Contents

Investment summary

Founded by three early PayPal employees. Two engineers, one designer. Seed-stage investment opportunity. Top 10,000 internet site within two months of launch.

- **Business**
  - YouTube's goal is to become the primary outlet for *user-generated video content* on the internet. The company provides a very easy-to-use interface for users to upload, share, and browse their content.
  - Every digital camera now ships with digital video recording capability. But consumers have no easy way to share their personal video content – files are too large, hosting and bandwidth is expensive, and there are no standardized video file formats.
  - Users upload videos to YouTube. The encoding backend converts uploaded videos to Flash Video, which works on ~98% of web browsers. The streaming format means that no file downloading is required.
- **Market**
  - YouTube provides a platform and community for video self-publishing. We've seen similar self-publishing emerge for text (blogs), photos (flickr, webshots, hotornot), and audio (podcasting). This presents interesting advertising revenue opportunities.
  - There are also interesting vertical market opportunities: eBay auction videos (e.g., autos), real estate videos, etc.
- **Financials – TBD**
  - The company currently serves 100,000 videos per day, at an all-in hosting cost of $4,000 per month.
  - The team has developed a software abstraction layer that enables it to use very inexpensive hardware and bandwidth to deliver videos.
- **Competition**
  - Big players: Google Video Search, Ourmedia.org, Open Media Network
  - Small players: DailyMotion, Vimeo, Putfile
- **Team**
  - Steve Chen. UIUC, CS. Recruited as one of PayPal's earliest engineers
  - Chad Hurley. PayPal's first designer, responsible for site design and logo
  - Jawed Karim. UIUC, CS. Graduate CS student at Stanford. Also one of PayPal's earliest engineers
- **Proposed terms**
  - Two-stage, milestone-based financing: $1m seed stage, $4m Series A.
  - SC to own ~30% after Series A.
  - Proposed Series A milestones:
    - Develop comprehensive business plan, including financial plan
    - Develop self-serve advertising product
    - Sign up at least five (5) advertisers who place $5,000 or greater advertising orders
    - Ensure platform scalability to handle at least one million video views per day
    - Recruit a VP of Business Development

\

Competition

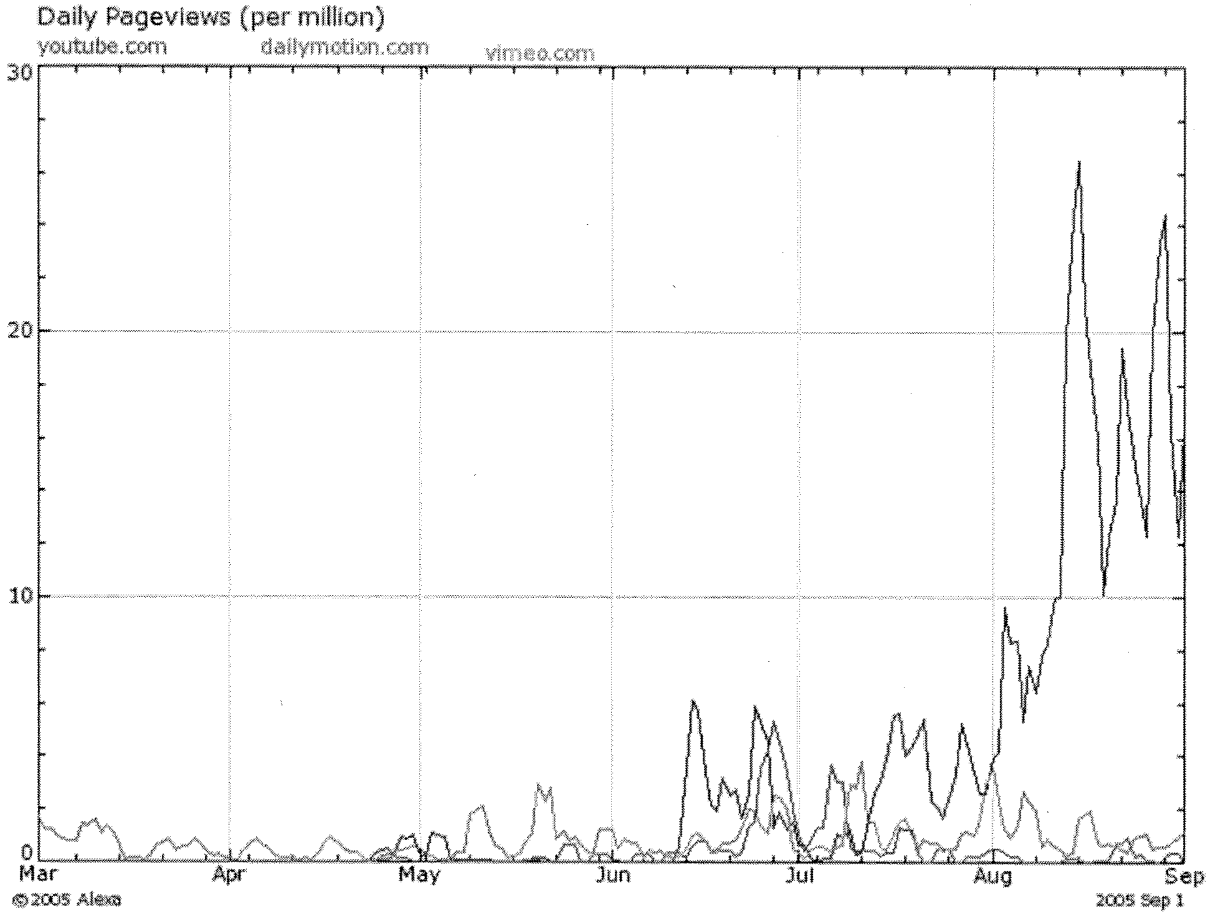
There are several potential and direct competitors to YouTube.

1. Direct competition

The two direct start-up competitors are Dailymotion and Vimeo.

- Dailymotion is based in France. It positions itself as a site to 'watch, publish, share.' The site has pretty good UI, but its navigation and layout is not as intuitive as for YouTube. All videos are encoded and rendered in Quicktime. Quicktime has lower penetration than Flash, so users may be faced with needing to download the player to experience the site.
- "Vimeo is for sharing your video clips." Vimeo was started by Connected Ventures in New York. Their mission is to "develop and manage good websites." They also run a popular site called CollegeHumor. The also claim to draw inspiration from flickr, and launched in February 2005. Vimeo also uses Quicktime. Their site layout is not very intuitive, and makes it hard to find content (e.g., there is no search capability).

The graph below shows the comparative daily pageviews for YouTube, Dailymotion and Vimeo. YouTube's traffic has rapidly overtaken that of these two competitors.



2. Community photo sites

Community photo sites share many features with YouTube: tagging, social networking, discussion groups, ease-of-use. However, they seem focused on still images rather than video.

YouTube admits that it drew inspiration from the popular site Flickr. Flickr has ~200-300x the number of daily pageviews of YouTube. Yahoo! acquired Flickr earlier this year for an undisclosed sum, believed to be ~$30m. Reid Hoffman was in investor in Flickr, and assures the YouTube team that they have no plans to launch a video product in the next 1-2 years.

Webshots is another potential competitor. CNET acquired the company in 2004 for ~$70m at a time that they forecast $15-17m annual revenue. The founding team all just left the company, and it unclear how much new product innovation there is. Webshots seems very focused on photos for now.

3. Online photo sharing sites

The main online photo sharing services, Ofoto, Shutterfly, and Snapfish, are also potential competitors. They do not have community-like features. They also earn revenue primarily from printing. As a result, I think they will remain focused on photos.

4. Entertainment sites

There are several popular online entertainment sites that have significant traffic: Big-boys, ebaumsworld, ifilm.

According to YouTube: "Big-boys and ebaumsworld get a lot of traffic but that's to be expected for the type of content they host. You are guaranteed to have something interesting, something shocking to watch when you visit these sites. However, the disadvantage is that they can never transition their sites into an actual product. Due to the content on the site, they're forever stuck in that segment of the market. If I were to categorize the content on YouTube today, I would break it down into two large categories: personal videos and viral videos. The viral videos, due to copyrights and obscene content, I admit, big-boys and ebaumsworld may beat us there. Although, we have seen our share of viral videos on YouTube. The bigger draw for YouTube is all the personal videos, the ones of your pet, your kid, your family, your vacation, so on. Big-boys and ebaumsworld, due to their origins, can never transition their product into something that hosts these other types of files."

Big-boys and ebaumsworld also position themselves as much broader entertainment sites, offering "Jokes, Pictures, Office Humor, Flash Animation, Soundboards, Prank Calls, Audio, Video, Games, Illusions, Magic."

"IFILM is one of the leading video-entertainment destinations on the Web, offering channels of movies, short films, TV clips, video-game trailers, music videos, action sports and its celebrated Viral Videos collection. IFILM.com delivers more than 30 million streams per month, making it one of the top ten streaming media sites in the world." IFILM is a clear potential competitor, although they don't have the same focus on user-generated content, nor YouTube's community features.

5. Larger competitors

Google and Yahoo are building video search products. Google requires the user to download a new "Google Video Viewer" while Yahoo plays videos in the native file format. In neither case are they providing the simple consumer upload and share experience, nor the community features.

6. File storage services

Putfile and Ourmedia.org are examples of file storage providers that essentially provide a free, web interface to FTP. None of them seem to have a compelling product, and do not focus solely on user-generated video content.

7. IPTV

Finally, there are companies such as the Open Media Network and Brigthcove that are focused on the delivery of mainstream video over the Internet. I do not believe that this competes directly with YouTube's proposition.

The table below attempts to summarize the competitive matrix:

	YouTube	**Direct competition**	**Community photo sites**	**Photo sharing services**	**Entertainment sites**	**Large Internet players**	**File storage**	**IPTV**
Ease of submitting video/degree of automation	Easy	Easy	N/A	N/A	Not easy or auto-mated	N/A	Easy	N/A
Focus	Video	Video	Photos	Photos	Varied	Varied	Varied	Video
Community features	Yes	Yes	Yes	No	No	Yahoo working on it	No	No
Rendering format	Flash	Quick-time	N/A	N/A	Quick-time	Varied	Varied	Varied

The Technology Infrastructure (company supplied)
====================================

As mentioned previously, in order to keep costs down, our video distribution technology is built on clusters with multiple machines in each cluster for redundancy and higher throughput. When a video is uploaded to the site, it is sent to a single machine within a single cluster. This is chosen based on space and, in the future, cpu/bandwidth utilization on the machine and cluster. Newly uploaded videos are picked up by two services running on each of the machines, 1) convert and 2) replicate.

The converter will analyze the video and look at things like framerates, aspect ratios (16:9 vs 4:3), audio encoding (sampling rates, audio codec), and the video codec used on the original video. It uses these heuristics to best convert the video to play on YouTube with adjustments to things inserting the black bands on top/bottom of a 16:9 video, altering the sampling rate to best conform to the incoming sound, guess at frames per second of the incoming video, etc. As part of this process, video stills of each video are also generated.

At the end of this process, the video server communicates back to the central database changing the status from "Uploaded" to "Awaiting Replication".

While all this is going on, the replication service is standing by looking for videos that need to be replicated. When a video enters this queue, it's picked up by the replication service and the video is replicated to every machine within the video cluster. After the replication is finished, it talks to the database and marks the video as "Processed".

A newly uploaded video will go from a "Uploaded" -> "Awaiting Replication" -> "Processed" state in about 1-2 minutes.

The best part about this technology is that it really is infinitely scalable. We can add more capacity directly at the video conversion/transport layer at will.

The math for this comes out to:
By bandwidth --
$239 / 1 machine / 1 month
1 machine has 2000 GB transfer / month
2000 GB * 1000 MB / GB = 2,000,000 MB transfer / machine / month
7 MB average size of video
2,000,000 / 7 = 285,714 videos served from each machine / month
$239.0 / 285,714 = $0.00083 cost per video served.

By storage --
$239 / 1 machine / 1 month
1 machine has 2x160 GB HD for 320 GB
320 GB * 1000 MB / GB = 320,000 MB / machine
7 MB average size of video
320,000 / 7 = 45,714 videos / video cluster
$239/45,714 = $0.005228 cost per video stored.
$0.005228 * 2 machines / cluster = $0.010456 / video replicated.

The video serving technology provides a substantial barrier to entry. The video clustering solution sounds obvious and straight-forward post implementation but it certainly wasn't when we were faced with the question of -- "how do we keep costs down while having access to massive storage/bandwidth?" There's also the encoding technology. We're constantly improving this side of the product by incorporating the latest codecs.

Team bios

Chad Hurley is a co-founder of YouTube. Chad has an experienced background in web development and graphic design. He was the first member of the PayPal design team, where he lead efforts to develop the interface for the original Palm-based program that enabled secure wireless money transfers between handhelds. As the product evolved, he effectively designed auction features which solidified PayPal's long term success and is a credited member of two critical auction patents. Chad looks forward to building an empowering video service for the world.

Jawed Karim is a co-founder of YouTube. He was previously a computer science student at the University of Illinois, where he was recruited by Max Levchin to become one of the earliest engineers at PayPal. There hepled the implementation of PayPal's first real-time anti-fraud models for credit card and bank payments, working closely with Roelof Botha. As part of PayPal's Architecture Team (a group of five out of a total of over 100 engineers), he later worked on challenging scalability problems to ensure PayPal's ability to scale to 80 million users and beyond. He is currently a graduate student in computer science at Stanford.

Steve Chen is a co-founder of YouTube. As the Chief Technology Officer for YouTube, he is responsible for leading the engineering efforts in distributed video clusters and meeting the high-availability demands of video. Before YouTube, Steve spent 6 years at PayPal on the technology team. At PayPal, he led the engineering teams behind products such as PayPal China, PayPal Developer XML APIs, and PayPal Shopping Cart.

On 5/5/14, 8:22 AM, "Sheryl Sandberg" <sheryl@fb.com> wrote:

>Adding Fischer and Dan
>
>I love the basic vision - performance-based ads. Lots of work to do to
>make this happen so we need to prioritize, as Mark points out.
>
>I think figuring out the prioritization, especially on the
>business-facing side is important. We need to give businesses quick
>and easy - but important ways - to think of their Page or FB presences
>(whatever it might be) as their hub for mobile as there will be a huge
>push to be first in doing this and once businesses start investing,
>easier to get them to do more. The good news is that with 25M SMB
>Pages, we are ahead.
>
>One other point is that both our ads system and Google's have the
>property that we have built-in incentives for ads to be relevant and
>perform well. We need those for our ad delivery mechanisms too. I
>believe that is part of what mark is saying below - but worth calling
>out as this is so important.
>
>-----Original Message-----
>From: Mark Zuckerberg
>Sent: Monday, May 05, 2014 1:09 AM
>To: Javier Olivan; Mike Vernal; Sheryl Sandberg; Dan Rose; Mike
>Schroepfer; Tom Stocky; Deborah Liu; Sam Lessin; Andrew Bosworth
>Subject: Thoughts on Messenger business ecosystem
>
>In this note, I'm going to sketch out how I think the Messenger
>business ecosystem will work.
>
>At the highest level, I believe Messenger will be a performance-based
>ads business. That is, I expect businesses to pay us to get people to
>perform concrete actions within Messenger or within their stores.
>
>When I say performance-based ads, I am specifically contrasting to two
>other potential businesses: brand ads and payments.
>
>I do not believe Messenger is a good medium for brands ads because
>people need to choose to open messages, which makes it inferior for
>mass reach of rich content, especially compared with our other products
>like News Feed and Instagram.
>
>I also do not believe our business will be payments directly, because
>charging for payments themselves will not allow us to price
>discriminate and receive a higher percentage of the value delivered like ads do.
>
>That said, I do expect payments and transactions to be critical in this
>ecosystem. A great payment system dramatically reduces friction in all
>transactions and therefore significantly increases the value of ads.

>For example, consider the value of search ads on desktop vs mobile ads today.
>The mobile ads are worth far less because of all the friction to
>transacting: the landing pages are worse and payments are worse.
>
>So even though businesses will bid to pay us for performance actions
>like getting someone to buy something or getting someone into their
>store rather than paying us for the payments directly, building out
>payments and transactions is strategically important despite not being
>our direct business. In fact, I think our ideal strategy is to give
>away payments for free -- or at no profit margin for ourselves -- in
>order to build up the transactional capacity of our network so we can
>ultimately have the best performing ads business.
>
>----------
>
>Like any ads business, the two levers to understand its potential scale
>are how many ads you can show and how well the ads perform.
>
>I'm going to start by outlining some of the touch points for people to
>interact with businesses in Messenger. Further below, I'll outline a
>framework for how many ads we can show at different stages in the
>evolution of this business.
>
>At the most basic level, there are three ways that I expect people will
>interact with business content:
>
>- A business can send you a message just like a person can today.
>Alternatively, you can send the business a message and it can reply.
>
>- We will have a discovery tab within Messenger where, in addition to
>highlighting organic suggestions like people nearby, we can also
>highlight relevant businesses, paid content or suggest apps to install.
>
>- While you're in a thread messaging with a person, we can show content
>inline if it's very relevant to your conversation.
>
>I'll discuss how much inventory will be available in each of these in
>more detail below, but for now I just want to call out that while the
>first and third touch points will eventually make up the vast majority
>of our inventory, they each need to have an extremely high quality bar
>before we start inserting any paid content there. The discovery tab
>will have much less traffic, but it will be very important for building
>this ecosystem by enabling people to engage with businesses organically
>as we build enough scale and quality to fill the first two touch points
>with good content.
>
>You can think about the discovery tab roughly like how we or Google
>thought about our right hand column ads before putting ads in News Feed
>or on top of search respectively. It's lower volume but enough to start
>building quality and building the business.
>
>Next, I'll go through each of those three basic touch points in a bit

>more detail.
>
>----------
>
>The first touch point is message threads with businesses.
>
>This branches into two very different experiences: a business messaging
>you out of the blue, and you messaging a business and it replying to you.
>
>The first experience -- a business messaging you out of the blue -- is
>where I expect most of our business to be over time. However, it's also
>one of the most sensitive experiences that we need to be careful with.
>The whole value proposition of Messenger is that it is a high signal
>channel where every message you receive has an expectation of intimacy
>and urgency. If we start buzzing your pocket with ads daily, then we
>could easily destroy this experience.
>
>There are a couple ways around this over the long term. The first is to
>not send you a push notification for these messages, so you just see
>them in your inbox when you open the app but they don't interrupt you
>otherwise. A "silent message" like this is a new behavior we'd have to
>build since it doesn't exist today. WeChat and Line both support this
>notion today. The second is to make sure the quality is high enough so
>people actually want these pushes. My guess is that we'll eventually do
>both: we'll have silent messages for most paid messages, but for ones
>that are very relevant we will consider doing pushes.
>
>As we phase these in, we'll need to make the product perform such that
>most businesses pay on a per-action rather than per-impression basis.
>The basic math of this is that even in the limit there will be so many
>fewer impressions here than in News Feed ‹ both because total time
>spent is lower in Messenger and because the intimacy of the product
>affords fewer intrusions ‹ that if we only support the same kinds of
>advertiser value propositions we do in News Feed, this will never be as
>big of a business for us as we hope.
>
>Instead, I think we will need to do the hard work to make payments and
>offers work frictionlessly inline. This can create much higher value
>impressions ‹ more similar to search ‹ that take advantage of the
>intimate and interruptive nature of the environment. For example, a
>business will be able to message people with specific offers when
>people are nearby and people will be able to redeem them inline,
>include paying right there.
>
>Even though this is fundamentally structured as an ads auction, a large
>percent of the work will be doing everything necessary to make the
>payment experience seamless so these offers actually convert and
>deliver value for both people and businesses. It will be easy for us to
>underestimate the amount of payments work required here compared to ads
>work since we have historically focused on ads rather than payments,
>but I expect there will be a very deep thread of work to do to make
>this payments experience integrated enough ‹ both into people's

>accounts and businesses' workflows ‹ that this experience really works end to end.
>
>If we can pull this off, then we can enable experiences like you're
>walking down the street and get a notification for a personalized offer
>to a nearby shop based on your identity and history there. You can open
>the notification and tell the cafe or store what you want, pay inline,
>and have it ready for you as soon as you walk in, all while receiving a
>discount and building a profile to have better personalized experiences
>in the future.
>
>Interruptive examples like this may be the long term, but before we get
>there we will likely want to explore silent messages first since
>they1re less disruptive. These can still be a good testing ground for
>inserting relevant nearby content when you1re in the app.
>
>‹
>
>Regardless, even silent messages are disruptive to the high signal and
>intimate feeling of the product today, so I wouldn't even start there.
>Instead, I'd start by building person-initiated threads with businesses
>and over time work up to enabling businesses to message people out of
>the blue.
>
>That brings us to the second experience -- you messaging a business and
>having it reply to you. In the Messenger business ecosystem, a thread
>with a business is the equivalent of a page on Facebook. It will be
>relatively low frequency that a person visits this thread -- just like
>it's relatively low frequency that a person visits a business page
>directly -- but it's a fundamental part of how businesses exist in the
>ecosystem and an organic way that people can interact with them.
>
>The next question is how will the business actually reply to messages?
>
>The naive answer is that the business owner can reply when they get
>around to it. I think we can support this behavior, but this is very
>slow and not a great experience for the person messaging the business.
>
>Instead, I think we should build an automated system that understands
>basic natural language so that business entities can respond
>automatically and instantaneously to people.
>
>This would enable businesses to respond to both informational questions
>like "Are you open now?" as well as actionable questions like "Can you
>make me a tall mocha frappucino?". In the first case, the business,
>could just answer with the information. In the second, ideally this
>would then ask the person to pay inline in the thread and then tell a
>barista to start making the frappucino so it would be ready as soon as
>you walked into the Starbucks.
>
>There are a few reasons this is a very powerful new way to interact
>with businesses, especially local businesses. First, everyone knows
>language but people hate calling businesses, so texting is a natural

>way to interact that doesn't require learning anything new. Second, the
>payment experience can be stored and optimized, which takes a huge
>amount of friction out of these interactions, especially compared with
>web-based interfaces or other apps you'd have to install. Third, most
>businesses you want to interact with will be on Messenger eventually,
>which is vastly preferable to using a large number of different apps.
>
>I expect that when you want to interact with a business, you'll search
>for them on Messenger and then begin a message thread with them. Before
>you send a message, I imagine each business will have some default
>message that starts every thread with them. This default message can
>outline what things the business knows how to do on Messenger, like
>order a frapuccino, buy tickets or so on. This message can also contain
>structured links to different functionality directly, so you can do
>some things without having to type any text at all. We should look at
>what others have done here, like WeChat, for example, has links to
>inline [3]stores[2] that graphically list the business[1]s inventory and let
>you browse and purchase inline.
>
>You'll also be able to type whatever you want, and we'll have to build
>a system that is smart enough at understanding your input and easy
>enough for businesses to configure for themselves that we can take your
>input and map it to what the business knows how to do, or at least come
>up with some other intelligent response.
>
>It will be difficult to build a good natural language system like this
>and it will require real investment, but it should be possible. The
>technological advantage we'll develop doing this will also be a
>competitive barrier for other messaging products like WeChat that try
>to compete with us for either consumer attention or business dollars.
>
>Over time, it will be possible for our systems to deliver more nuanced
>responses. It will also be possible to deliver types of replies that
>don't make sense in traditional search- or web-based interfaces, like
>time-delayed replies or follow-on replies later when more information
>becomes available. You should be able to ask a business a question like
>"tell me when a table becomes available" and in addition to being able
>to reply immediately to confirm it will do this, it should also be able
>to message you at a future point when it has the answer to your question.
>
>It's worth noting that time-delayed responses to person-initiated
>messages could be a great way to ease people into getting push
>notifications when businesses message them. We should probably ease
>people into this use case by building organic use cases like this
>before enabling purely paid messages that send push notifications.
>
>In addition to being able to message businesses back and forth with
>text, we will want the ability to send money and other kinds of
>structured data
>-- like loyalty card data -- as well. These kinds of interactions will
>be necessary to make sure that businesses actually get value from
>interacting with people on Messenger, especially since the branding

>value will be relatively minimal.
>
>Payments as a primitive is simple to explain but will be very
>complicated to fully implement. Within a messages thread, anyone should
>be able to either send money to or request money from anyone else.
>Within the UI, this would take the form of another kind of content you
>could attach to a message, just like a photo, sticker or voice clip.
>
>To make this really work as a social behavior, we'll need to create a
>social norm around people being comfortable sending money through
>messaging. To make this work as a product, we'll need to make it
>frictionless and cheap, which means we'll need credentials on file for
>large percentages of people. Over time, we'll need not only credit
>cards but also bank account information so we can make transfers cheap.
>
>A whole thread of our strategy is going to need to be focused on
>increasing payments usage and helping people add credentials. We'll
>need to support use cases like person-to-person money transfer to help
>establish this norm, even though it won't be a direct revenue driver
>for our business. As part of this, I imagine we're going to need to run
>constant promotions like WeChat has to encourage people to pay and
>transfer money in different ways -- as gifts on new years, paying for
>taxis, investing in mutual funds, etc. This is a very deep thread of
>work that will require a lot of work, but will ultimately be necessary
>for making the ads and interactions that businesses pay for valuable.
>
>In addition to investment of people on our teams and financial
>resources, we'll also need to dedicate real estate within our app to
>this promoting interactions with payments. At a minimum, I expect
>payments will be a permanent item within the message composer in
>message threads, a major part of the real estate on the Settings tab,
>and initially a large number of the promotions and recommended content
>on the discovery tab. We1ll also need to do significant work on the
>business side, probably integrating into our own business-facing UIs
>like Page Manager as well as making sure we support businesses' own payment systems.
>
>Another example of structured exchange between people and businesses is
>loyalty programs. We should be able to build the best loyalty programs
>in the world based on our understand of people1s identity and locations
>coupled with the business interfaces we1ve built. If you can message a
>business to initiate a loyalty card / relationship and then ever time
>you go to that business from then on you get a message updating you on
>your status and available offers, that could be very compelling.
>
>Of course, a lot of the nuance of designing business threads is going
>to come down to important details around how interruptive they can be,
>what they need to do to get permission to be interruptive, how easily
>you can mute them or turn them off, and so on. These rules can evolve
>over time, but making sure we get them right at each stage will be very important.
>
>Finally, it1s worth noting that even though everything I1ve discussed
>here has been in the context of businesses, these kinds of business

>threads should be available to anyone who would currently have a page
>on Facebook today, including celebrities, politicians, bands and other
>types of entities that we don[1]t typically think of as businesses but
>who produce important content for our ecosystem.
>
>----------
>
>After message threads, the second business touch point is the discovery
>tab.
>
>Imagine this tab as a new second tab in the app's main navigation,
>between Recent and Groups.
>
>The primary purpose of the discovery tab is to introduce people to new
>people, businesses and content that can improve their messaging
>experience.
>
>This is important because people will not just wake up one morning and
>start messaging businesses. First, we need to introduce the idea of
>businesses within Messenger to people and show people how they can be
>useful. The brute force way of doing this would be by starting to
>inject business content into the main inbox that the person had not
>directly asked for yet. That seems dangerous and unnatural, so the
>alternative is giving people a space where they can discover this
>business content on their own and start messaging businesses themselves
>rather than just having businesses start messaging them out of the blue.
>
>Of course, this presents its own problem: why would people ever go to
>the discovery tab? The answer is that we have to include content here
>that is relevant not just to the business ecosystem, but also for the
>social experience people are looking to have with Messenger.
>
>For example, you could imagine an early incarnation of the discovery
>tab being called Nearby and focusing on people and business that are nearby.
>We could use Aura to show friends nearby, highlight friends visiting
>from out of town and potentially even show other people nearby if they
>want to meet new people -- which is a very popular feature on WeChat.
>We could expand it beyond Nearby over time to include friends with
>birthdays or major life events, etc. I think this tab would quickly
>become more useful and more used than the static Groups and People
>tabs, which is why I suggested we'd place it second in the nav above.
>
>Once we build an experience here that is organically useful, the second
>stage is to insert business-related content to educate people about the
>value of the business ecosystem we're building. We could highlight
>businesses that can do useful things over Messenger and get you to
>engage with those first. Perhaps we'd start by making partnerships with
>a few chains or larger companies to increase the coverage of people who
>would have relevant business content here.
>
>For example, we might make a nationwide deal with Starbucks that
>enables you to order drinks through Messenger. You could tap on

>Starbucks in nearby and it would create a thread that would sit in your
>inbox from then on. When you first open the thread, you'd see
>Starbucks's default message and maybe some structured menu items, and
>you could tap or type to order something, pay inline, and then when you
>show up the barista will have your drink ready and hand it to you,
>knowing who you are because your identity shows up on an iPad at the cashier.
>
>Beyond Starbucks, another good example could be ordering a cab. This is
>worth mentioning because it's how WeChat started building up their
>payment base, and we are currently in discussions with Uber about doing
>something similar with them. That said, I don't think WeChat made this
>a great experience beyond just sending you to the taxi app, so there's
>a lot more we'd want to do here as well. I'll get into that more below.
>
>Initially, I expect we'd highlight these businesses on Messenger for
>free or very cheaply. But once we have a good number in there, then the
>third stage of evolution for the discovery tab is to turn this into a
>market and start charging for paid placement in addition to showing
>good organic people and business content.
>
>As I said above, the discovery tab is like the right hand column of
>Facebook or Google. It will be enough volume to get some interesting
>behaviors going within the ecosystem and to start building the
>business, but given the much smaller volume of visits compared the main
>inbox, this will never turn into a huge business by itself. This
>roadmap by itself is a stepping stone to the main business of
>interacting with businesses in the main inbox by getting people used to
>engaging with businesses in Messenger.
>
>One open question is whether we want to use the discovery tab to only
>promote business interactions on Messenger, or whether we want to run
>more general ads here, including app install ads.
>
>The argument for app install ads is that it's easier and more
>understandable for businesses, especially early on. For example, the
>taxi integration that WeChat did was primarily just about driving app
>installs to the taxi app rather than doing much actual integration.
>It's easy to imagine how we could make some money adding app install
>ads, especially early on, before we had a full business ecosystem.
>
>The argument against app install ads is that any space we allocate to
>them has a large opportunity cost against building the business we
>eventually want in the main inbox. Any app install ad that sends a
>person to another app is a wasted opportunity to educate people on
>interacting with businesses in Messenger. Arguably, WeChat is stuck at
>the stage of running ads in a secondary discovery tab because they took
>the easy money and never built out a full enough ecosystem to be able
>to monetize the main inbox where most of the traffic is. They're still
>doing at a bit more than ~$3 per person annually, but our goal is to
>reach the monetization levels we see in News Feed of greater than $10
>per person, if not more.
>

>There are other types of content to consider, like stickers or
>in-message games. These could help us make money, but they will also
>have the property that they make Messenger better for people and get
>people more invested in the product. So these are a different kind of
>tradeoff and opportunity cost that we'll have to weigh when we get
>there. It's easy to say these things are silly, but I think this is how
>WeChat and Line make 30-50% of their revenue today.
>
>My guess is that we'll want to experiment with all of these things but
>will need to be careful. We'll need to be disciplined about starting
>off by building a valuable people-centric consumer experience, then we
>can add some business content with the goal of educating people that
>you can have good business experiences within Messenger. Only after
>these two should we really think about adding other content and making
>any real money from the discovery tab itself.
>
>----------
>
>After message threads and the discovery tab, the third business touch
>point is inline during message threads with people you[1]re talking to.
>
>This is different from the ecosystem of interacting with business
>entities described in the first two touch points above because in this
>case you're not actually communicating with a business.
>
>Instead, this plays on the technical work we're going to have to do to
>understand the context of messages in order to support automatic,
>instantaneous replies from business for the above use cases. Once we
>have the technical ability to do this, we can use it to show relevant
>context in other places as well.
>
>The basic idea here is that if you ask a friend a question as part of
>your message thread with them and we know the answer, it could be
>useful for to show you the answer inline in your conversation. For
>example, if you ask a friend if a movie is playing or when an event is,
>we can quickly add that information to the thread. If you ask your
>friend if they want to get dinner but you don[1]t know where to meet, we
>can also show suggestions inline.
>
>Intuitively, this seems like it would be useful, but there's a very
>high quality and relevance bar before this becomes annoying. It would
>be very easy to create terrible experiences by inserting the wrong
>information at the wrong times. Because of this risk, we should be very
>conservative about when and how we insert information while we[1]re ramping up.
>
>It's worth noting that what businesses pay us for here will be
>different from in the ecosystem above where people interact with
>business entities directly. In the ecosystem of interacting with
>businesses, person-initiated interactions are free for businesses, and
>businesses will need to pay for distribution to get in front of people
>in non-person-initiated cases. In a way, this has similarities to a
>traditional display ads business. However, this next ecosystem of

>inserting relevant context inline is closer to a traditional search
>business. We can show only show relevant context inline in response to
>the right prompt, and when that prompt appears, we can show whichever
>bit of relevant context we think is most valuable, taking into account
>both engagement and revenue.
>
>Because this is a different kind of business, we could postpone
>developing this touch point until later and just focus on the touch
>points above for the first few years.
>
>However, the technology required to understand natural language context
>to power this touch point will be significantly overlapping with the
>technology required to build the first ecosystem above, so once we've
>developed it I see little reason to wait to get started here.
>
>Further, getting good at showing relevant content in response to
>contextual cues is something we're already working on in Utility with
>After Party, where we show relevant contextual information after you
>check in or post with other structured minutia from the composer in our
>main app. That means we should be able to take that team's effort,
>apply it to Messenger and start seeing an early experience here without
>many months of work.
>
>Focusing After Party on Messenger is also about where there's the most
>leverage. There are currently only ~50 million After Party-eligible
>actions in the main composer today, so the ~7 billion mobile messages
>in Messenger and >20 billion in WhatsApp should be a more leveraged
>surface to redirect this work once it[1]s a good experience. Even if only
>1% of messages have any relevant context for an After Party experience,
>that would still be more After Party actions in Messenger alone than in
>the main app.
>
>---
>
>There are other threads of work related to contextual understanding and
>inline replies as well.
>
>One question I've thought a lot about is how people will find the right
>businesses to message in the first place. One possible answer to this
>is that you'll search for them. For example, if you want to see if a
>restaurant is open or get reservations, you could search for that
>restaurant and then ask it your question. But this seems clunky to me.
>
>So much of the value in the messages UI paradigm is that it's not search.
>If people wanted to use search to find out something about a business,
>it's probably easier to just use Google. The reason people would use
>this is because it's a more natural and less search-based UI than where
>Google is today.
>
>There's a good reason to believe the future of search is moving in this
>direction -- and it's that even Google (as well as Microsoft and Apple)
>seem to think it is. They're all focused on building the next version

>of their search products as digital assistants that you communicate
>with by asking conversational questions, and they try to provide you
>with answers rather than a list of links.
>
>If search companies think that conversation is the future of search
>rather than initiating queries by searching, then why would we want our
>conversational UI to be initiated by searching? It doesn't make much
>sense.
>
>Instead, what makes more sense to me is that we'd develop our own kind
>of assistant that lives inside Messenger. Think of it as the entity
>"Facebook" and you could message it just like you'd message any other
>business in this system. The only difference is that this entity
>performs one special task that the others don't -- it mediates between
>all of the other entities. If the other business entities act as
>digital assistants for interacting with those businesses, then the
>Facebook entity is a sort of meta-assistant that helps you interact
>with all of those other assistants. This means that instead of ever
>having to search for a business, you could just message the Facebook
>business entity and it will connect you with the right business entity directly.
>
>For example, you could ask this special entity when some business is
>open until, and this entity would be able to do two things: first, it
>could communicate with the other entity in the background and answer
>your question for you; and second, it could connect you directly to the
>right entity to talk to in the future so you don't have to search for
>it yourself.
>
>This may sound very abstract and complex, but I actually think it would
>be relatively simple to build once we had the technology we needed for
>business entities to make automatic, instantaneous replies themselves,
>which is required to build this ecosystem anyway.
>
>Once we have that technology, then we'll already be able to understand
>the meaning of many questions. We'll also already have a registry of
>what businesses know how to answer which questions and do which things,
>since this is required for us to have them reply automatically. With
>these pieces, building this meta-assistant is just a matter of enabling
>our special Facebook entity to answer any question that has a
>registered response from any other entity in our system.
>
>The biggest technical problems we'd have to solve would be figuring out
>which of the entities that say they can answer a question are actually
>the best to do it.
>
>For example, if I message Facebook and say I want a taxi, then we will
>likely know of multiple services that have registered with us to be
>able to answer queries about wanting a taxi, so we'll need to decide
>which one is best and connect you with that service. The solution here
>will be a mix of machine learning reputations and quality scores for
>the different entities, plus figuring out how we accept financial bids
>in our system. I assume that if we are in a position where we're

>deciding which taxi service you're going to use, then we will make
>money from whichever service we send you to.
>
>This meta-assistant vision may seem far-fetched right now. It's
>possible we don't need to start working on it today. But I would. From
>two different perspectives, this seems like the right approach. First,
>digital assistants from Google, Apple and Microsoft are becoming more
>useful and important over time, so I don't see why this metaphor
>wouldn't hold for us too. Second, this really is the simplest way to
>interact with all of the different businesses in our system. It's much
>better than searching and starting a thread yourself.
>
>If we follow this approach, I think there's a good chance our
>meta-assistant could become the most useful of all. Google and everyone
>else are building their assistants by trying to have a single
>search-like system understand everything. We're taking the opposite
>approach by having everyone create individual entities, and then we're
>just linking all those different entities together.
>
>In the real world, there doesn't tend to be one person or assistant
>that you want to ask all your questions to. There are lots of different
>people you ask different questions to. We're constructing our system
>the way people interact in the real world. There would be one
>meta-assistant that could help you navigate who you talk to, but in
>general you'd be asking questions and interacting with different domain
>experts rather than always with a single assistant.
>
>If we can succeed in building the most useful assistant -- for which
>the most important step would be getting as many businesses as possible
>into Messenger -- then this could actually be the future of search in
>addition to a big part of the future of advertising and commerce.
>
>----------
>
>Those are all of the main touch points for people to interact with
>businesses in this ecosystem.
>
>Now here's a list of all the different threads of work that I discussed
>above.
>
>1. Business entities
>
>   - Entity accounts and scaffolding
>
>   - Natural language response system
>
>   - Menus and structured stores
>
>   - Loyalty programs
>
>   - Policies around when businesses can message and interrupt you
>

>2. Payments
>
>   - Basic primitives of sending and requesting money
>
>   - Optimizing friction, credentials and rates for people
>
>   - Integrating with businesses' workflows
>
>   - Promotions and deals to drive adoption and credentials
>
>3. Discovery tab
>
>   - Nearby people recommendations
>
>   - Business entity recommendations
>
>   - App install ads
>
>   - Other content, like stickers and games
>
>4. Inline content suggestions
>
>   - After Party for messages
>
>   - Inline games
>
>5. Meta-assistant
>
>   - Registry of all entity knowledge and actions
>
>   - Mediate requests with multiple handlers
>
>   - Special UI for meta-assistant
>
>6. Ad system integration
>
>   - Auction for inbox messages and discovery space
>
>   - Performance-based bid options
>
>7. Language technology investments
>
>   - Natural language research
>
>   - Voice recognition improvements
>
>----------
>
>Thanks for reading all the way through this. I know it was very long,
>as I tried to be as detailed as possible. I'm looking forward to
>discussing further soon.
>

Mark Zuckerberg
I'm glad we got a chance to talk yesterday. I appreciate the open style you have for working through these issues. It makes me want to work with you even more.

I was thinking about our conversation some more and wanted to share a few more thoughts.

On the thread about Instagram joining Facebook, I'm really excited about what we can do to grow Instagram as an independent brand and product while also having you take on a major leadership role within Facebook that spans all of our photos products, including mobile photos, desktop photos, private photo sharing and photo searching and browsing. This would be a role where we'd be working closely together and you'd have a lot of space to shape the way that the vast majority of the workd's photos are shared and accessed.

We have ~300m photos added daily with tens of billions already in the system. We have almost 100m mobile photos a day as well and it's growing really quickly -- and that's without us releasing and promoting our mobile photos product yet. We also have a lot of our infrastructure built p around storing and serving photos, querying them, etc which we can do some amazing things with. Overall I'm really excited about what you'd be able to do with this and what we could do together.

One thought I had on this is that it might be worth you spending some time with [redacted] to get a sense for the impact you could have here and the value of using all of the infrastructure that we've built up rather than having to build everything from scratch at a startup. This would probably be a useful perspective for you to have.

On the thread of integrating OG deeply (whether or not Instagram joins Facebook), you expressed some doubt about whether it would be good for Instagram to send so many photos over to Facebook. I think it would be quite good for everyone -- users, Instagram and Facebook -- and I wanted to share one mental model I use for thinking about this.

I often think about Wikipedia as the best example of a crowd-sourced corpus of content. One interesting thing about it is that they allow anyone to download their whole encyclopedia and copy it to use as their own. This might seem like a bad business strategy for the same reasons you're concerned, but in fact it's really helpful for them and doesn't hurt them at all. The reasons why it helps them are obvious -- they get more distribution, authors want to contribute more since they know their work will be in many places, etc. The reasons why it doesn't hurt them are more interesting. I think the best way to look at this is that the value of Wikipedia isn't really that it's an Encyclopedia; it's that it is a community and engine that continually produces the best Encyclopedias. Because of this, they know that even if people use their data that they have all the leverage since they're the engine that produces the core data set.

I actually think you guys are in a similar position with us. By pushing a lot of data into OG, you get distribution but you remain the engine that produces Instagram photos, which will become more powerful over time. From this perspective you may wonder why Facebook is happy with the arrangement, and the answer is that we're playing a meta-game. Rather than being the engine that produces photos or any specific kind of content, our goal is to be the engine (or platform) that helps produce other engines (or apps) that produce content. That's the only way we'll ever scale to helping people share every kind of thing they want.

So in short: I'm really excited about the acquisition and I think it would set up Instagram and you personally to have the biggest impact possible. If we do that -- or even if we don't -- I still think having a deep OG integration is very good for both companies and all of or users.

Let me know when you want to talk some more. If you have any feedback on my offer I'd love to hear it. I'm looking forward to continuing the conversation.

March 19Kevin Systrom
Hey - I wanted to go away and think about our conversation a bit and have a reply that was well formed. I know where our head's at now and I'll drop you a longer note today. Thanks man

March 20Kevin Systrom
Hey Mark -

I've been thinking a lot since we talked last, and I wanted to share how my thinking has evolved. Getting to chat about our paths and how they cross has been eye-opening I think for us in many ways.

First, it's humbling to to know that you guys look at what we're doing in the mobile space and think it's as innovative and strong as we'd like it to be. I've always been a fan of what you're doing – and in many ways I've shared similar passions for the problems that you've wanted to solve along the way as well. There's a mutual respect that I think will help us get a bunch of things done together around OG going forward.

Second, I've never had to stand back and look at our company at a 50k foot level and ask what it might look like as part of something larger. For this reason alone I wanted to meet with you to understand what Instagram would mean to you and to Facebook.

In many ways we're aligned. We both believe in the power of mobile to change the way people share information. We see the transformation happening very quickly as people adopt new products like Instagram, etc. We are both, at our core, engineering-driven in culture and vision. We both have a passion for social products, and realize that by building what we're building we can (and have the responsibility to) positively influence culture and the world at large.

I also realize that Instagram is a foreign citizen in the world of Facebook. We produce more photos week over week that have found a home inside Facebook. At the same time, we have a very independent and disparate browsing and 'friend' experience within our own network. Most of the photos on Instagram are not social photos, but instead tend towards photos of the world around us. Our graphs are significantly different as well. For one, we have an asymmetric visual interest graph – one which I'm sure differs from most peoples' fb graphs. Also, we're primarily mobile in experience, we have no web in our DNA as of yet, and for this reason we've focused on mobile photos rather than photos in general.

Regardless, I think there's a world where Instagram with Facebook just makes a lot of sense. Though the particular balance at this time makes Mike and I feel that we'd like to stay independent for the time being. Really it just comes down to wanting complete independence to pave our own path. This in particular means not limiting the scope of Instagram to just photos - but to explore other mediums as well which support the original vision of Burbn being to improve the way we communicate and share in the real world. There's volatility and optionality that make both Mike and I really excited to build a long-term viable business from where we are today long into the future.

To be clear, you've been nothing but helpful. When asked if it made sense for you to think about acquiring our company, there wasn't any fuss around it – it was a straightforward yes/no decision that you made with confidence and for that I'm thankful. I'm not coming back at you asking to change the offer because I don't think that's what drives us. Of course there's a limit to that logic, but honestly I'm not sure at the point we discuss those limits that we're doing this for the right reason.

Either way I think we should start a more open discussion because even if it's not now it could make sense in the future. Of course this may mean the economics are less favorable given a large raise, but it's worth it to me to explore what we're actually building here. Is it a next-generation photos app or is it a next-generation communication app? I don't mean to get overly philosophical, but the limits of our ambitions have really yet to be tested, and I want to see that through at least for now. The desire to have an effect at the scale of FB is real and tangible, and one that is actually quite hard to balance in our minds. That being said, I think you should meet Mike my co-founder and we should spend more time with your leadership going forward. I hope this clarifies my current position and if anything helps you understand the depth of our ambition to create something really meaningful in the world.

***

On the OG stuff, you're right. I do think there's a valid question in thinking through whether or not sending all our photos to FB makes sense. I actually don't think we'd ever go out of our way to discourage or make it difficult for anyone to share from Instagram to Facebook, we just want to make sure it's up to the user. Right now, users are voting that 15% of all photos on Instagram end up on Facebook. Whether or not that's because it's a different audience, or a different type of content I'm really not sure. All I can go on is data - and I think we're giving a pretty good experience so far in the form of full photos in the timeline with absolutely no restrictions. We win when users are happy - and users seem to be really happy with that option of selectively sending over content. We rarely if ever hear complaints that the share to a service toggle not being sticky is a problem, so it makes me feel that we shouldn't go out of our way to make that the default without a really clear thesis on why it's better for everyone.

I think your comparison to Wikipedia has its merits, but in some ways isn't as applicable. Wikipedia doesn't care that their content is distributed and copied elsewhere because they realize that the freshest and most up to date content will always be on Wikipedia. Since they have the economies of scale, there's no incentive for people to go anywhere other that WP to make edits, etc.

With FB, we have a different situation. You guys actually have all the economies of scale around photos. That is, you guys have all the systems to make a photos experience really awesome. In many ways, once we send our original content over to FB, it starts getting likes, comments, etc and takes a life of its own. It's as if a Wikipedia article gets copied somewhere else, and starts evolving on another site with larger scale. Trust me, I realize the comparison is a bit tenuous but I hope it shows where I'm coming from and why I think the Wikipedia comparison is hard for me to grok exactly.

At the same time, I think your point around being the meta-engine makes total sense. I agree that FB should be really happy when engines like us come along and plug in. I guess I wouldn't feel nearly as strongly if independently you weren't building a mobile photos app that makes people choose which engine to use. Listen, this is all based on me not actually knowing what the overlap in what you're doing and what we're doing is – rather it's based on the speculation that there's a future where all our content flows away from Instagram and over time Instagram becomes less of the place for people to share and interact with content from the real world because the scale and tools exist elsewhere (FB).

I actually think that if done well, complete integration around likes + maybe even comments could be really cool. I think have my preferences expressed to my fb friends could be really valuable to me as a user but also to Instagram for distribution.

I don't want to seem as though I'm against the idea of open graph at all - I think it could totally set us up for incredible distribution. It's just very hard to balance sending over all our original content that lives inside a very separate photos experience which creates a fractured experience of two comment streams, two like streams and two feeds for Instagram and Fb separately.

I hope you take this as open and honest feedback for how a developer in the ecosystem is trying to balance the decisions of sharing/not-sharing with the hope that it sets of a discourse where we are both very happy about the integration going forward.

Either way I think I've had some of the most interesting conversations I've had in a long time with you over the last few weeks. It's made me think about our company in a different way, and also helped push me to form a stronger opinion about what we are and what we aren't. Regardless, it's been super valuable and I hope we can continue that going forward.

I'm happy to chat about this more in person – just let me know. And thanks again for all your support for everything we're trying to do.

Best,
Kevin

March 20Mark Zuckerberg
A few thoughts on both pieces:

On acquisition, everything you're saying seems reasonable, but it's a pretty unfulfilling conclusion for me since it doesn't feel like you've explored it fully. The process began with you asking if we'd do this at $500m, but then you didn't want to end up doing it at that valuation. I am curious to know at what valuation you would do this, and then I can just let you know whether we'd do that. I get that you're not primarily doing this for money, but there usually is some continuum here and given the time we've put into this so far I do think it would be worth it to be honest about where that is.

Related, you reference flexibility and things you'd like to do independently that you couldn't do at Facebook. I'm curious what you think you couldn't do at Facebook, given that what I offered was for you to keep building out Instagram as a separate product and brand. I actually think you'll be able to do all the same things with Instagram at Facebook plus you'll have more distribution firepower behind you, so there will be a bigger chance anything you do takes off. So I'm curious to hear what your concerns are here.

A final sub-point on this is that if you choose to stay independent, it's really important to me that this doesn't become a public story about how you guys turned us down to go do something independently. That just isn't a positive story. I know it won't leak from my team so I'd ask that you make sure it doesn't leak from yours either.

On Open Graph, there's a lot of nuance here that you haven't captured in your note.

I'm not suggesting that you make your current setting sticky. What I've specifically suggested is making it so there's a toggle where all of your social activity -- photos, likes, comments and follows -- get synced to your timeline in the background. In this mode, these items wouldn't show up on in News Feed as you post them, but you'd still have them as a collection on your timeline. This addresses a major pain point for people which is that they don't want to spam their friends. I would implement this so that when a user connects to Facebook this is turned on and they can turn it off at any time. In addition to this, I'd also keep the current option you have to broadcast any individual photo to your friends on Facebook.

If you did this, I think you'd create a lot of value for your users, Instagram and Facebook. People may not be asking for a sticky toggle, but that's not what this is. If you listen to your user feedback on why people share more or less on different networks a lot of it is because they don't want to spam their friends/followers on different networks, but they want to share these photos and are comfortable doing it in a photo-specific setting like Instagram. Using Open Graph the way I'm suggesting allows that. It's not simply a matter of people voting that they want to share 15% of their photos. The actual dynamics around how this works are very important.

Most photos on Instagram are public and many people follow all of their friends, so this clearly isn't a privacy issue -- it's an issue of how the photos are shared. Simply saying that people want to share only 15% of photos is overly simplistic. I think you know that, so making this argument just makes me think you don't want to do this for some other reason.

The whole point of Open Graph is to create a social dynamic where it is socially acceptable to sync all of your social activity in another app with your timeline without spamming your friends, so this is the core problem we're trying to solve. This creates better timelines for our users and lots of distribution and brand awareness for you. You can use Open Graph to sync individually photos like you're experimenting with now, but fundamentally there's nothing special about using Open Graph over our traditional APIs for this, so over time we wouldn't really consider this a deep Open Graph implementation.

At some point soon, you'll need to figure out how you actually want to work with us. This can be an acquisition, through a close relationship with Open Graph, through an arms length relationship using our traditional APIs, or perhaps not at all. I'm willing to put effort into whichever approach you'd like to take, but you should be clear and honest with me about what you'd like to do so I don't waste time working on things you're not interested in. Of course, at the same time we're developing our own photos strategy, so how we engage now will also determine how much we're partners vs competitors down the line -- and I'd like to make sure we decide that thoughtfully as well.

Overall though, I'm still very optimistic about what you're doing and would love to find a way to work together. My preference is to work together extremely deeply since I think there are lots of things we can do together than can't currently be exposed through our current Open Graph implementation that we'd need to work on closely together -- either as one company or two.

March 20Kevin Systrom
Hey Mark - thanks for the thoughts. I would never leak this, and I think it would be really bad for a bunch of reasons for us so I'm on the same page. I've messaged that to [redacted] and Mike so we're on the same page.

I realize it's unfulfilling - and I agree we haven't explored it fully. We have a board meeting today. I'm going to spend a significant amount of time discussing our relationship with Facebook. I want to be respectful of your time as I know you have many things to deal with, so let us come to you with a clear thesis. I tried my best to explain where my head's at, but I take your points and I'm going to work on it.

I have a feeling we should probably discuss this in person as the sincerity for how I'd like to work with you probably gets lost in a message. Would you be ok with that?

March 20Mark Zuckerberg

FYI, apparently it leaked to the Wall Street Journal that we and Twitter were talking to you about acquisition. I didn't tell anyone on my side that you were talking to Twitter, so this must have come from your end.

March 20Kevin Systrom
Hey - honestly it didn't come from me or anyone inside my circle (you know [redacted] an [redacted]). It's absolutely not in my interest for this to be out

March 20Kevin Systrom
If you're down, I'd like to chat live - can be phone or in person. Have some thoughts after our board mtg that I can share. Let me know

March 21Mark Zuckerberg
Sure -- I'm around later this afternoon and evening if you want to talk.

March 21Kevin Systrom
Ok. 7:30 phone? Wsj/spencer just reached out to me via email btw. My plan would be to chat with him and stonewall on anything around financing/our discussions. If you guys have talked to him and I should have context let me know
(not responding may be more of a signal than not)

March 21Mark Zuckerberg
Let's talk at 7:30. We can cover this other stuff then too.

March 21Kevin Systrom
Ok. Call me?[redacted]

March 22Mark Zuckerberg
Following up from last night:

- On acquisition, I'll wait to hear more from you here. Given the leaks and that I put the last offer on the table, it doesn't make sense for me to put another offer on the table before you provide more guidance on what you'd accept. If you're not comfortable doing this then we can just discuss this down the line, but it seems like the right next step now and one you should be able to do is for you to give me clear guidance on what you'd accept.

- On partnership and Open Graph, the ball is also in your court here. Although you've said that you want Instagram users to be able to share and sync whatever they want on Facebook and elsewhere, it seems like you have real strategic discomfort around the idea of moving the percent of photos synced to Facebook from 15% up to 40-50%. Obviously if you don't actually want your users to be able to do this then we won't produce something good together, so I'm just going to wait for you to answer this question before engaging further.

I'm obviously happy to help out and support you guys in any way I can. On these two things issues, let me know when you want to talk more.

April 2Mark Zuckerberg
I just got back from my trip to China. I'm not sure if you're ready to follow up on either of these things, but if so I'm back in town now.

April 3Kevin Systrom
I am - sorry about the lack of response. Was on a trip overseas and today was (am) dealing with android stuff. What's your week looking like? We can do in person or over phone
Haven't slept in 36 hrs so bear with me

April 3Mark Zuckerberg
Congrats on the Android launch. It looks great. I just got back a trip out of the country as well, so no worries on that. I'm around tomorrow evening and around lunch time Thursday if either of those work for you.

April 3Kevin Systrom
Let me check on tomorrow night and get back to ya. Thanks again for your patience

April 4Kevin Systrom
Tonight 7:30ish at your place or somewhere in palo alto work?

April 4Mark Zuckerberg
Sure -- want to come by my place?

April 4Kevin Systrom
Sounds good. Looking fwd to hanging

April 4Mark Zuckerberg
BTW, I've already eaten, but I'm happy to go out and grab some food if you're hungry.

April 4Kevin Systrom
No prob at all. I'm down for meeting elsewhere but don't want to call attention to the conversation given the topics. Up to you - I was

going to grab something before I left.

April 4Mark Zuckerberg
If you're eating too, then let's just meet at my place. See you in a bit.

April 4Kevin Systrom
Traffic is stopped here at millbrae. Will be there 745 if that's ok

April 4Mark Zuckerberg
No worries

April 5Kevin Systrom
Hey can we schedule a call for whenever your free post lunch?

April 5Mark Zuckerberg
Hey, I had a chance to talk to Sheryl and David last night and then again this morning for a while. I was planning to call you during lunch after a couple of meetings I have, but I was wondering instead if you'd be up for getting together in person this afternoon or evening.

April 5Kevin Systrom
I am yes. What're you thinking?

April 5Mark Zuckerberg
I'm done with meetings today around 3:30. Want to meet up then?

April 5Kevin Systrom
Yes where's good?

April 5Mark Zuckerberg
If you're down here then we can meet at my place again.

April 5Kevin Systrom
Ok 3:30?

April 5Mark Zuckerberg
Also, just to be clear so I don't waste your time here, I can't get to $2 billion. But if you're open to doing something in the range and structure we discussed last night, with an earn-out, valuing Facebook aggressively, etc, then I'm optimistic we can do something -- especially since we both seem to want to work together. If that's not worth discussing for you, then I totally understand though.

April 5Mark Zuckerberg
How about 4 so I have time to get home.

April 5Kevin Systrom
We should have the discussion - 2 was my yes absolutely number. Less is just something to think through together is that ok?
4 is good

April 5Mark Zuckerberg
Okay, see you then.

April 5Kevin Systrom
Ok

April 5Kevin Systrom
Any chance we could meet ASAP? It's really the pressure of this round. I don't mean to make you cancel meetings but a few hours makes a big difference. We could also just chat on the phone

April 5Mark Zuckerberg
I can move some meetings around and end early. Want to come down now? I can meet at 2.

April 5Kevin Systrom
Yes I will leave in 10

April 5Mark Zuckerberg
Great, see you in a bit.

April 5Mark Zuckerberg
Are you still coming?

April 5Kevin Systrom
Can I come over and chat?

April 5Mark Zuckerberg
Sure

April 5Kevin Systrom
Be there in 5

April 5Mark Zuckerberg
Just wrapped up my interview. Ready to talk more?

April 5Kevin Systrom
Ya finishing up a call in 10ish
Coming now

April 5Kevin Systrom
On a call with the guys.

April 5Mark Zuckerberg
Okay, let me know when you're done.

This doesn't have to be so long. Just tell them you want to do this and they'll let you!

April 5Kevin Systrom
Sorry give me 5

April 5Mark Zuckerberg
Take your time.

April 6Kevin Systrom
Can mike and I meet with you when you're free? 10 would work

April 6Mark Zuckerberg
Sure, I'll see you guy at 10.

April 6Mark Zuckerberg
Hey -- when I was explaining the terms to [redacted] I realized I misspoke on one important term. Most of the upfront deal consideration portion for you guys also needs to vest in addition to the retention package. It will have the same provisions of double-trigger etc to guarantee you eventually get it, but we can't just transfer all of the money immediately. You probably understood what I was saying here from other deals you've done, but I just wanted to clear this up since I think I misspoke on it.

April 6Kevin Systrom
Ok I understand now. Let's push forward. We need a term sheet to start the lawyers say. Can you guys put something together?

April 6Mark Zuckerberg
Yeah, [redacted] is getting started on this.

April 6Kevin Systrom
Ok

April 7Mark Zuckerberg
Want to talk this morning to try to finalize the open high level terms, like cash amount, cash/stock exchange rate, etc?

April 7Kevin Systrom
Yes but can I finish my calls with the lawyers over here?
Prob 11:30ish

April 7Mark Zuckerberg
Yeah, of course. I just woke up so I wanted to send you a note so you know I can talk whenever.

April 7Kevin Systrom
Great. Sounds good

April 7Mark Zuckerberg
How is everything going from your perspective?

April 7Kevin Systrom
Good, you? Want to meet in person and discuss this stuff? I think it's probably best

April 7Mark Zuckerberg

Sure. Want to come by at 11:45?

April 7Kevin Systrom
Sure I'm up in the city and need to pack up. Will try to hit 11:45 maybe closer to 12?

April 7Mark Zuckerberg
Sure, come by whenever.
12 is fine. I was just suggesting 11:45 earliest so I'd have time to finish waking up, getting dressed, etc.

April 7Kevin Systrom
Haha no worries. I'll get down there

April 7Kevin Systrom
More like 12:15 now just. As a heads up

April 7Kevin Systrom
Hey just to let you know things are going well and I'm here with [redacted] ironing things out

April 7Mark Zuckerberg
Awesome. I'm at home but let me know of there's anything I can help out with.

April 7Kevin Systrom
Ok cool

April 8Kevin Systrom
Congrats, man - really excited for everything. Looking forward to working together

April 8Mark Zuckerberg
Congrats to you too! This is going to be great. I'm looking forward to working more closely together as well.

April 9Mark Zuckerberg
Excited to announce this?
How is it going with your team?

April 9Kevin Systrom
Yes! Lots of talking and questions

April 9Mark Zuckerberg
But everyone is generally excited and happy?
T-minus 15 minutes on the announcement

April 9Kevin Systrom
Yes! Totally excited and surprised
I think you should spend a little time with everyone explaining how excited you are. I think maybe we're coming down?

April 9Mark Zuckerberg
Yeah, I'm definitely happy to do that whenever.

April 9Kevin Systrom
Ok will work out with schrep

April 9Mark Zuckerberg
Posted. Congrats!

A memo drafted by David Ogilvy for the management to circulate as they saw fit:

September 7, 1982

How To Write

The better you write, the higher you will go in Ogilvy & Mather.
People who *think* well, *write* well.

Good writing is not a natural gift. You have to *learn* to write well.
Here are 10 hints:

(1) Read the Roman-Raphaelson book on writing.* Read it three times.
(2) Write the way you talk. Naturally.
(3) Use short words, short sentences and short paragraphs
(4) Never use jargon words like *reconceptualize*, *demassification*, *attitudinally*, *judgmentally*. They are hallmarks of a pretentious ass.
(5) Never write more than two pages on any subject.
(6) Check your quotations.
(7) Never send a letter or a memo on the day you write it. Read it aloud the next morning—and then edit it.
(8) If it is something important, get a colleague to improve it.
(9) Before you send your letter or memo, make sure it is crystal clear what you want the recipient to do.
(10) If you want ACTION, *don't write*. Go and tell the guy what you want.

David

Ogilvy

*Writing That Works, Harper & Row, 1981

ATTACHMENT B

[Redactions [Filed Under Seal.]

From: Steve Jobs <sjobs@apple.com>
To: Eddy Cue <cue@apple.com>
Subject: Fwd: HarperCollins
Received(Date): Sun, 24 Jan 2010 22:31:31 -0800

My last email to James Murdock.

Sent from my iPhone

Begin forwarded message:

> **From:** Steve Jobs <sjobs@apple.com>
> **Date:** January 24, 2010 11:31:24 AM PST
> **To:** James Murdoch [REDACTED]
> **Cc:** Steve Jobs <sjobs@apple.com>
> **Subject: Re: HarperCollins**
>
> James,
>
> Our proposal does set the upper limit for ebook retail pricing based on the hardcover price of each book. The reason we are doing this is that, with our experience selling a lot of content online, we simply don't think the ebook market can be successful with pricing higher than $12.99 or $14.99. Heck, Amazon is selling these books at $9.99, and who knows, maybe they are right and we will fail even at $12.99. But we're willing to try at the prices we've proposed. We are not willing to try at higher prices because we are pretty sure we'll all fail.
>
> As I see it, HC has the following choices:
>
> 1. Throw in with Apple and see if we can all make a go of this to create a real mainstream ebooks market at $12.99 and $14.99.
>
> 2. Keep going with Amazon at $9.99. You will make a bit more money in the short term, but in the medium term Amazon will tell you they will be paying you 70% of $9.99. They have shareholders too.
>
> 3. Hold back your books from Amazon. Without a way for customers to buy your ebooks, they will steal them. This will be the start of piracy and once started there will be no stopping it. Trust me, I've seen this happen with my own eyes.
>
> Maybe I'm missing something, but I don't see any other alternatives. Do you?
>
> Regards,
> Steve

On Jan 23, 2010, at 1:56 PM, James Murdoch wrote:

Steve,

I think the crux of this is our flexibility to offer product elsewhere at price-points you don't like.

If we could offer to you that a certain percentage of releases (>50%) would be available within your pricing structure (< or = 14.99), does that give you enough comfort?

I think we are worried more about the absolute holdback of product elsewhere, and our ceding of pricing to Apple, than we are about the actual haggle over what the price will be.

I haven't shared this with HC directly -- so this is only hypothetical. But if you were willing to accept that a supplier can exploit other avenues (at prices not disadvantageous to you), with a guarantee of substantial volume through Apple -- maybe I could work with HC to get to some common ground.

Please let me know.

A different question: we have four areas of discussion (related to our product) between our teams right now: Books, US Video, Int'l Video, and newspapers. All at different stages of maturity, these discussions are all centered, for us, around the desire to make our product widely available, and to make yours and our products more attractive for our customers. It seems though that we in each one we largely encounter a "take it or leave it" set of terms, and predictably we've so far failed to really strike the kind of partnerships that could move things forward.

Is it worth considering in the round, over the next few months or weeks, whether or not some of these loose ends can be tidied up? It's clear that Apple is already becoming an attractive platform for so many of our customers -- all over the world. As a creative company at our core, NWS should be more engaged with Apple, and I think Apple could be more engaged with NWS, globally, than either of us are today.

Best,

JRM

James,

A few thoughts to consider (I'd appreciate it if we can keep this between you and me):

1. The current business model of companies like Amazon distributing ebooks below cost or without making a reasonable profit isn't sustainable for long. As ebooks become a larger business, distributors will need to make at least a small profit, and you will want this too so that they invest in the future of the business with infrastructure, marketing, etc.

2. All the major publishers tell us that Amazon's $9.99 price for new releases is eroding the value perception of their products in customer's minds, and they do not want this practice to continue for new releases.

3. Apple is proposing to give the cost benefits of a book without raw materials, distribution, remaindering, cost of capital, bad debt, etc., to the customer, not Apple. This is why a new release would be priced at $12.99, say, instead of $16.99 or even higher. Apple doesn't want to make more than the slim profit margin it makes

distributing music, movies, etc.

4. $9 per new release should represent a gross margin neutral business model for the publishers. We are not asking them to make any less money. As for the artists, giving them the same amount of royalty as they make today, leaving the publisher with the same profits, is as easy as sending them all a letter telling them that you are paying them a higher percentage for ebooks. They won't be sad.

5. Analysts estimate that Amazon has sold slightly more than one million Kindles in 18+ months (Amazon has never said). We will sell more of our new devices than all of the Kindles ever sold during the first few weeks they are on sale. If you stick with just Amazon, B&N, Sony, etc., you will likely be sitting on the sidelines of the mainstream ebook revolution.

6. Customers will demand an end-to-end solution, meaning an online bookstore that carries the books, handles the transactions with their credit cards, and delivers the books seamlessly to their device. So far, there are only two companies who have demonstrated online stores with significant transaction volume - Apple and Amazon. Apple's iTunes Store and App Store have over 120 million customers with

credit

cards on file and have downloaded over 12 billion products. This is

the type of online assets that will be required to scale the ebook

business into something that matters to the publishers.

So, yes, getting around $9 per new release is less than the $12.50 or

so that Amazon is currently paying. But the current situation is not

sustainable and not a strong foundation upon which to build an ebook

business. [REDACTED]
[REDACTED]

Apple is the only other company currently capable of making a serious

impact, and we have 4 of the 6 big publishers signed up already. Once

we open things up for the second tier of publishers, we will have

plenty of books to offer. We'd love to have HC among them.

Thanks for listening.

Steve

On Jan 22, 2010, at 3:54 PM, James Murdoch wrote:

Steve,

Thanks for your call earlier today, and for the time last week.

I spoke to Brian Murray and Jon Miller tonight -- and Brian is

sending a

note to Eddy today. I thin I have a handle on this now. In short -- we

would

like to be able to get something done with Apple -- but there are

legitimate

concerns.

The economics are simple enough. Kindle pays us a wholesale price of

$13 and

sells it for 9.99.

An author gets $4.20 on the sale of a hardcover and $3.30 on the sale

of the

e-book on the Kindle. [REDACTED]
[REDACTED]

[REDACTED]

[REDACTED]

Basically -- the entire hypothetical benefit of a book without raw

materials

and distribution cost accrues to Apple, not to the publisher or to the

creator of the work.

The other big issue is one of holdbacks. If we can't agree on the fair

price for a book, your team's proposal restricts us from making that

book

available elsewhere, even at a higher price. This is just a bridge too

far

for us.

Also, we are worried about setting prices to high -- lots of ebooks are

$9.99. A new release window with a lower commission (say 10) for the

first

six months would enable us to proce much more kenly for Apple customers.

We'd like to da that.

More on this below in Brian's note to Eddy. We outline a deal we can do.

Feel free to call or write anytime over the weekend to discuss if you

like.

I am in the UK (so eight hours ahead of CA). My home number is
[REDACTED]

[REDACTED]

I check the email regularly.

Steve, make no mistake that across the board (TV, Studios, Books, and

Newspapers) we would much rather be working with apple than not. But

we, and

our partners who produce, write, edit, and otherwise make all this

with us,

have views on fair pricing, and care a lot about our future

flexibility. I

hope we can figure out a way, if not now and in time for this launch of

yours, then maybe in the future.

Best,

JRM

From: Murray, Brian (HarperCollins US)

Sent: Friday, January 22, 2010 6:16 PM

To: Eddy Cue

Subject: Apple / HarperCollins

Eddy,

Thanks for coming in again this morning. We'ive talked over the

proposal and

I want to make sure that you have a summary of the deal that

HarperCollins

would be willing to do in your timeframe.

1. Pricing: We need flexibility to price on a title by title basis outside the prescribed tiers in the contract. We will use our best efforts to meet the tiers we discussed.

2. MFN: In the event that HarperCollins and Apple disagree on a consumer price for a title, HarperCollins needs to ability to make that title available through other agents who support the higher price.

3. Commissions: We need a lower commission (10%) on new releases for the economics to work for us and our authors. We believe a 30% commission will lead to more authors asking for ebooks to be delayed a result that will not work for Apple or HarperCollins.

4. The new release window: We need to have flexibility on the agency window. We believe this window should be 6 months rather than 12 months in the event that one or more large retailers do not move to an agency model.

Leslie will be sending Kevin a contract that reflects these points in

the

event you wish to move forward on these terms.

Thanks

Brian

"Please consider the environment before printing this e-mail"

The Newspaper Marketing Agency: Opening Up Newspapers:

http://www.nmauk.co.uk/

International Limited or any member of its group. News International

Limited may monitor outgoing or incoming emails as permitted by law.

It accepts no liability for viruses introduced by this e-mail or

attachments.

"Please consider the environment before printing this e-mail"

The Newspaper Marketing Agency: Opening Up Newspapers:

http://www.nmauk.co.uk/

Subject: Communication Within Tesla

There are two schools of thought about how information should flow within companies. By far the most common way is chain of command, which means that you always flow communication through your manager. The problem with this approach is that, while it serves to enhance the power of the manager, it fails to serve the company.

Instead of a problem getting solved quickly, where a person in one dept talks to a person in another dept and makes the right thing happen, people are forced to talk to their manager who talks to their manager who talks to the manager in the other dept who talks to someone on his team. Then the info has to flow back the other way again. This is incredibly dumb. Any manager who allows this to happen, let alone encourages it, will soon find themselves working at another company. No kidding.

Anyone at Tesla can and should email/talk to anyone else according to what they think is the fastest way to solve a problem for the benefit of the whole company. You can talk to your manager's manager without his permission, you can talk directly to a VP in another dept, you can talk to me, you can talk to anyone without anyone else's permission. Moreover, you should consider yourself obligated to do so until the right thing happens. The point here is not random chitchat, but rather ensuring that we execute ultra-fast and well. We obviously cannot compete with the big car companies in size, so we must do so with intelligence and agility.

One final point is that managers should work hard to ensure that they are not creating silos within the company that create an us vs. them mentality or impede communication in any way. This is unfortunately a natural tendency and needs to be actively fought. How can it possibly help Tesla for depts to erect barriers between themselves or see their success as relative within the company instead of collective? We are all in the same boat. Always view yourself as working for the good of the company and never your dept.

Thanks,

Elon

From: Mike Beckerman

Sent: Friday, January 17, 2003 5:09 PM

To: Ian Mercer; John Martin, Michael Halcoussis, Linda Averett

Cc: Chadd Knowlton; Ming-Chieh Lee; Allan Poore

Subject: RE: Windows Usability Systematic degradation flame

So, I take from this that we have lots of opinions and input However, no one appears to be saying that we, WMPG, are chartered and/or should own this. So my feedback on the thread would then be that Dave should take ownership for driving groups around today's inconsistencies, and that we should send this mail to Bharat (owns WU) as well and ask who in his team can take requirements from DMD.

Any disagreement on this?

---- Original Message ----
From: Ian Mercer
Sent: Friday, January 17, 2003 5:02 PM
To: John Martin; Mike Beckerman; Michael Halcoussis; Linda Averett
Cc: Chadd Knowlton; Ming-Chieh Lee; Allan Poore
Subject: RE: Windows Usability Systematic degradation flame

I don't think you can abdicate this entirely to marketing. If WU is the preferred way to deliver bits to end users we all need to drive WU to deliver what we need, both individually and as a collective request from DMD.

One of the biggest issues today is that WU provides no way to *promote* a download to an end-user. We want to promote MM2 and WMP9S to end-users as something new and cool that they can get for Windows. Three lines of text describing it buried under "Windows XP" in a page that the user has to purposefully go find just isn't good enough. Why can't the WU client-side piece proactively display a bubble "Look! Cool, new features for Windows XP" and the option to display a much richer "advertisement" for the feature if the user wants to read more?

Other issues:-

MUI - I guess this is getting fixed now but it's always been an issue for us

Link to download through WU - why can't we send a user right in to WU to get MM2 without them having to wade through the whole site?

Critical updates that aren't really critical - if you machine is behind a firewall many just aren't critical

Too many fixes bombarding users all the time - I routinely ignore them now and perhaps update once a month as otherwise I'd be rebooting all the time

WU's inflexible release schedule. If there is a major tradeshow at which we want to announce we need flexibility in timing the release

-Ian

-----Original Message-----
From: John Martin
Sent: Friday, January 17, 2003 11:52 AM
To: Mike Beckerman; Ian Mercer; Michael Halcoussis; Linda Averett
Cc: Chadd Knowlton; Ming-Chieh Lee
Subject: RE: Windows Usability Systematic degradation flame

I have always been concerned about this and feel that this has a lot of engineering implications. I also feel that the reason is it such a mess is because marketing teams own release to web in this company. Frankly, we should be up in arms about this and want to program manager and develop whatever code we need to to ensure that every customer that even thinks they want to download our bits can do so in as easy and painless a way as possible. Downloading is the first step to setup and we should think of them equally or as one experience. But, if

you want nothing revolutionary and want to band-aid (which is fine and understandable) then I agree with your plan to give it to Dave.
John

---- Original Message ----
From: Mike Beckerman
Sent: Friday, January 17, 2003 7:36 AM
To: Mike Beckerman; John Martin; Ian Mercer; Michael Halcoussis; Linda Averett
Cc: Chadd Knowlton; Ming-Chieh Lee
Subject: RE: Windows Usability Systematic degradation flame
Importance: High

haven't heard anything from any of you on this.

My take is that this web-experience mess spans many groups and deliverables (like Plus), that we need one person/team to own the overall picture, driving it, tracking the experience, etc., and that WMPG isn't really the right place. I'm thinking Dave's team. What do you think?

From: Mike Beckerman
Sent: Wed 1/15/2003 4:39 PM
To: John Martin; Ian Mercer; Michael Halcoussis; Linda Averett
Cc: Chadd Knowlton; Ming-Chieh Lee
Subject: FW: Windows Usability Systematic degradation flame

More.

---- Original Message ----
From: Dave Fester
Sent: Wednesday, January 15, 2003 4:31 PM
To: Mike Beckerman; Amir Majidimehr; Tim Lebel
Subject: RE: Windows Usability Systematic degradation flame

I am working with MS.com to directly address the download/discoverability of our bits (both MP9S and MM2)

---- Original Message ----
From: Mike Beckerman
Sent: Wednesday, January 15, 2003 4:28 PM
To: Dave Fester; Amir Majidimehr; Tim Lebel
Subject: RE: Windows Usability Systematic degradation flame

I'm thinking about this and am discussing with my team.

I don't know what it means to "own website issues", nor am I yet sure the best way to handle the complex mess of coordinating between product teams, WU, and MS.COM. Dave, would you please forward the other reply you mentioned?

I expect to send more on this thread in a day or two.

---- Original Message ----
From: Dave Fester
Sent: Wednesday, January 15, 2003 3:58 PM
To: Amir Majidimehr; Mike Beckerman; Tim Lebel
Subject: RE: Windows Usability Systematic degradation flame

I replied as well. I am owning the website issues, but Mike should own the others.

---- Original Message ----
From: Amir Majidimehr
Sent: Wednesday, January 15, 2003 3:55 PM
To: Mike Beckerman; Tim Lebel; Dave Fester
Subject: FW: Windows Usability Systematic degradation flame

Can you guys coordinate between you on how to deal with this situation on our bits? Bill's situation is worse than my personal experience but still, this aspect of the system needs to be looked at carefully and become a sign off item for each release.

Please let me know which one of you going to be BOL for this moving forward.

Amir

---- Original Message ----
From: Will Poole
Sent: Wednesday, January 15, 2003 1:27 PM
To: Amir Majidimehr; Chris Jones (WINDOWS)
Cc: Dave Fester; Rick Thompson
Subject: FW: Windows Usability Systematic degradation flame

Guess we should start working on a list of things that need to be fixed w/ the web sites, WU, and with windows, and identify owners. Bill's frustration is not unreasonable.

---- Original Message ----
From: Bill Gates
Sent: Wednesday, January 15, 2003 10:05 AM
To: Jim Allchin
Cc: Chris Jones (WINDOWS); Bharat Shah (NT); Joe Peterson; Will Poole; Brian Valentine; Anoop Gupta (RESEARCH)
Subject: Windows Usability Systematic degradation flame

I am quite disappointed at how Windows Usability has been going backwards and the program management groups don't drive usability issues.

Let me give you my experience from yesterday.

I decided to download Moviemake and buy the Digital Plus pack r so I went to Microsoft.com. They have a download place so I went there.

The first 5 times I used the site it timed out while trying to bring up the download page. Then after an 8 second delay I got it to come up

This site is so slow it is unusable.

It wasn't in the top 5 so I expanded the other 45.

These 45 names are totally confusing. These names make stuff like: C:\Documents and Settings\billg\My Documents\My Pictures seem clear.

They are not filtered by the system I can in on and so many of the things are strange.

I tried scoping to Media stuff. Still no moviemaker. I typed in moviemaker. Nothing. I typed in movie maker. Nothing.

So I gave up and sent mail to Amir saying - where is this Moviemaker download? Does it exist?

So they told me that using the download page to download something was not something they anticipated

They told me to go to the main page search button and type movie maker (not moviemaker!).

I tried that The site was pathetically slow but after 6 seconds of waiting up it came.

I thought for sure now I would see a button to just go do the download.

In fact it is more like a puzzle that you get to solve. It told me to go to Windows Update and do a bunch of incantations.

This struck me as completely odd. Why should I have to go somewhere else and do a scan to download moviemaker?

So I went to Windows update. Windows Update decides I need to download a bunch of controls. Now just once but multiple times where I get to see weird dialog boxes.

Doesn't Windows update know some key to talk to Windows?

Then I did the scan. This took quite some time and I was told it was critical for me to download 17megs of stuff.

This is after I was told we were doing delta patches to things but instead just to get 6 things that are labeled in the SCARIEST possible way I had to download 17meg.

So I did the download. That part was fast. Then it wanted to do an install. This took 6 minutes and the machine was so slow I couldn't use it for anything else during this time.

What the heck is going on during those 6 minutes? That is crazy. This is after the download was finished.

Then it told me to reboot my machine. Why should I do that? I reboot every night - why should I reboot at that time?

So I did the reboot because it INSISTED on it. Of course that meant completely getting rid of all my Outlook state.

So I got back up and running and went to Windows Update again. I forgot why I was in Windows Update at all since all I wanted was to get Moviemaker.

So I went back to Microsoft.com and looked at the instructions. I have to click on a folder called WindowsXP. Why should I do that? Windows Update knows I am on Windows XP.

What does it mean to have to click on that folder? So I get a bunch of confusing stuff but sure enough one of them is Moviemaker.

So I do the download. The download is fast but the install takes many minutes. Amazing how slow this thing is.

At some point I get told I need to go get Windows Media Series 9 to download.

So I decide I will go do that. This time I get dialogs saying things like "Open" or "Save". No guidance in the instructions which to do. I have no clue which to do.

The download is fast and the install takes 7 minutes for this thing.

So now I think I am going to have Moviemaker. I go to my add/remove programs place to make sure it is there.

It is not there.

What is there? The following garbage is there. Microsoft Autoupdate Exclusive test package, Microsoft Autoupdate Reboot test package, Microsoft Autoupdate testpackage1. Microsoft AUtoupdate testpackage2, Microsoft Autoupdate Test package3.

Someone decided to trash the one part of Windows that was usable? The file system is no longer usable. The registry is not usable. This program listing was one sane place but now it is all crapped up.

But that is just the start of the crap. Later I have listed things like Windows XP Hotfix see Q329048 for more information. What is Q329048? Why are these series of patches listed here? Some of the patches just things like Q810655 instead of saying see Q329048 for more information.

What an absolute mess.

Moviemaker is just not there at all.

So I give up on Moviemaker and decide to download the Digital Plus Package.

I get told I need to go enter a bunch of information about myself.

I enter it all in and because it decides I have mistyped something I have to try again. Of course it has cleared out most of what I typed

I try tryping the right stuff in 5 times and it just keeps clearing things out for me to type them in again.

So after more than an hour of craziness and making my programs list garbage and being scared and seeing that Microsoft com is a terrible website I haven't run Moviemaker and I haven't got the plus package

The lack of attention to usability represented by these experiences blows my mind. I thought we had reached a low with Windows Network places or the messages I get when I try to use 802.11. (don't you just love that root certificate message?)

When I really get to use the stuff I am sure I will have more feedback.

To	Executive Staff and direct reports
From	Bill Gates
Date	May 26, 1995

The Internet Tidal Wave

Our vision for the last 20 years can be summarized in a succinct way. We saw that exponential improvements in computer capabilities would make great software quite valuable. Our response was to build an organization to deliver the best software products. In the next 20 years the improvement in computer power will be outpaced by the exponential improvements in communications networks. The combination of these elements will have a fundamental impact on work, learning and play. Great software products will be crucial to delivering the benefits of these advances. Both the variety and volume of software will increase.

Most users of communications have not yet seen the price of communications come down significantly. Cable and phone networks are still depreciating networks built with old technology. Universal service monopolies, and other governmental involvement around the world have kept communications costs high. Private networks and the Internet which are built using state of the art equipment have been the primary beneficiaries of improved communication technology. The PC is just now starting to create additional demand that will drive a new wave of investment. A combination of expanded access to the Internet, ISDN, new broadband networks justified by video based applications and interconnections between each of these will bring low cost communication to most businesses and homes within the next decade.

The Internet is at the forefront of all of this and developments on the Internet over the next several years will set the course of our industry for a long time to come. Perhaps you have already seen memos from me or others here about the importance of the Internet. I have gone through several stages of increasing my views of its importance. Now I assign the Internet the highest level of importance. In this memo I want to make clear that our focus on the Internet is crucial to every part of our business. The Internet is the most important single development to come along since the IBM PC was introduced in 1981. It is even more important than the arrival of graphical user interface (GUI). The PC analogy is apt for many reasons. The PC wasn't perfect. Aspects of the PC were arbitrary or even poor. However a phenomena grew up around the IBM PC that made it a key element of everything that would happen for the next 15 years. Companies that tried to fight the PC standard often had good reasons for doing so but they failed because the phenomena overcame any weaknesses that resisters identified.

The Internet Today

The Internet's unique position arises from a number of elements. The TCP/IP protocols that define its transport level support distributed computing and scale incredibly well. The Internet Engineering Task Force (IETF) has defined an evolutionary path that will avoid it running into future problems even as virtually everyone on the planet connects up. The HTTP protocols that define HTML Web browsing are extremely simple and have allowed servers to handle incredible traffic reasonably well. All of the predictions about hypertext - made decades ago by pioneers like Ted Nelson - are coming true on the Web. Although other protocols on the Internet will continue to be used (FTP, Gopher, IRC, Telnet, SMTP, NNTP), HTML with extensions will be the standard that defines how information will be presented. Various extensions to HTML including content enhancements like tables, and functionality enhancements like secure transactions, will be widely adopted in the near future. There will also be enhanced 3D presentations providing for virtual reality type shopping and socialization.

Another unique aspect of the Internet is that because it buys communications lines on a commodity bid basis and because it is growing so fast, it is the only "public" network whose economics reflect the latest advances in communications technology. The price paid for corporations to connect to the Internet is determined by the size of your "on-ramp" to the Internet and not by how much you actually use your connection. Usage isn't even metered. It doesn't matter if you connect nearby or half way around the globe. This makes the marginal cost of extra usage essentially zero encouraging heavy usage.

Most important is that the Internet has bootstrapped itself as a place to publish content. It has enough users that it is benefiting from the positive feedback loop of the more users it gets, the more content it gets, and the more content it gets, the more users it gets. I encourage everyone on the executive staff and their direct reports to use the Internet. I've attached an appendix which Brian Fleming helped me pull together that shows some hot sites to try out. You can do this by either using the .HTM enclosure with any Internet browser or, if you have Word set up properly, you can navigate right from within this document. Of particular interest are the sites such as "YAHOO" which provide subject catalogs and searching. Also of interest are the ways our competitors are using their Websites to present their products. I think SUN, Netscape and Lotus do some things very well.

Amazingly it is easier to find information on the Web than it is to find information on the Microsoft Corporate Network. This inversion where a public network solves a problem better than a private network is quite stunning. This inversion points out an opportunity for us in the corporate market. An important goal for the Office and Systems products is to focus on how our customers can create and publish information on their LANs. All work we do here can be leveraged into the HTTP/Web world. The strength of the Office and Windows businesses today gives us a chance to superset the Web. One critical issue is runtime/browser size and performance. Only when our Office – Windows solution has comparable performance to the Web will our extensions be worthwhile. I view this as the most important element of Office 96 and the next major release of Windows.

One technical challenge facing the Internet is how to handle "real-time" content —specifically audio and video. The underlying technology of the Internet is a packet network which does not guarantee that data will move from one point to another at a guaranteed rate. The congestion on the network determines how quickly packets are sent. Audio can be delivered on the Internet today using several approaches. The classic approach is to simply transmit the audio file in its entirety before it is played. A second approach is to send enough of it to be fairly sure that you can keep playing without having to pause. This is the approach Progressive Networks Real Audio (Rob Glaser's new company) uses. Three companies (Internet Voice Chat, Vocaltec, and Netphone) allow phone conversations across the Internet but the quality is worse than a normal phone call. For video, a protocol called CU-SeeMe from Cornell allows for video conferencing. It simply delivers as many frames per second as it sees the current network congestion can handle, so even at low resolution it is quite jerky. All of these "hacks" to provide video and audio will improve because the Internet will get faster and also because the software will improve. At some point in the next three years, protocol enhancements taking advantage of the ATM backbone being used for most of the Internet will provide "quality of service guarantees". This is a guarantee by every switch between you and your destination that enough bandwidth has been reserved to make sure you get your data as fast as you need it. Extensions to IP have already been proposed. This might be an opportunity for us to take the lead working with UUNET and others. Only with this improvement and an incredible amount of additional bandwidth and local connections will the Internet infrastructure deliver all of the promises of the full blown Information Highway. However, it is in the process of happening and all we can do is get involved and take advantage.

I think that virtually every PC will be used to connect to the Internet and that the Internet will help keep PC purchasing very healthy for many years to come. PCs will connect to the Internet a variety of ways. A normal phone call using a 14.4k or 28.8k baud modem will be the most popular in the near future. An ISDN connection at 128kb will be very attractive as the connection costs from the RBOCs and the modem costs come down. I expect an explosion in ISDN usage for both Internet connection and point-to-point connections. Point-to-point allows for low latency which is very helpful for interactive games. ISDN point-to-point allows for simultaneous voice data which is a very attractive feature for sharing information. Example scenarios include planning a trip, discussing a contract, discussing a financial transaction like a bill or a purchase or taxes or getting support questions about your PC answered. Eventually you will be able to find the name of someone or a service you want to connect to on the Internet and rerouting your call to temporarily be a point-to-point connection will happen automatically. For example when you are browsing travel possibilities if you want to talk to someone with expertise on the area you are considering, you simply click on a button and the request will be sent to a server that keeps a list of available agents who can be working anywhere they like as long as they have a PC with ISDN. You will be reconnected and the agent will get all of the context of what you are looking at and your previous history of travel if the agency has a database. The reconnection approach will not be necessary once the network has quality of service guarantees.

Another way to connect a PC will be to use a cable-modem that uses the coaxial cable normally used for analog TV transmission. Early cable systems will essentially turn the coax into an Ethernet so everyone in the same neighborhood will share a LAN. The most difficult problem for cable systems is sending data from the PC back up the cable system (the "back channel"). Some cable companies will promote an approach where the cable is used to send data to the PC (the "forward channel") and a phone connection is used for the back channel. The data rate of the forward channel on a cable system should be better than ISDN. Eventually the cable operators will have to do a full upgrade to an ATM-based system using either all fiber or a combination of fiber and Coax—however, when the cable or phone companies will make this huge investment is completely unclear at this point. If these buildouts happen soon, then there will be a loose relationship between the Internet and these broadband systems. If they don't happen for some time, then these broadband systems could be an extension of the Internet with very few new standards to be set. I think the second scenario is very likely.

Three of the biggest developments in the last five years have been the growth in CD titles, the growth in On-line usage, and the growth in the Internet. Each of these had to establish critical mass on their own. Now we see that these three are strongly related to each other and as they come together they will accelerate in popularity. The On-line services business and the Internet have merged. What I mean by this is that every On-line service has to simply be a place on the Internet with extra value added. MSN is not competing with the Internet although we will have to explain to content publishers and users why they should use MSN instead of just setting up their own Web server. We don't have a clear enough answer to this question today. For users who connect to the Internet some way other than paying us for the connection we will have to make MSN very, very inexpensive - perhaps free. The amount of free information available today on the Internet is quite amazing. Although there is room to use brand names and quality to differentiate from free content, this will not be easy and it puts a lot of pressure to figure out how to get advertiser funding. Even the CD-ROM business will be dramatically affected by the Internet. Encyclopedia Brittanica is offering their content on a subscription basis. Cinemania type information for all the latest movies is available for free on the Web including theater information and Quicktime movie trailers.

Competition

Our traditional competitors are just getting involved with the Internet. Novell is surprisingly absent given the importance of networking to their position however Frankenberg recognizes its importance and is driving them in that direction. Novell has recognized that a key missing element of the Internet is a good directory service. They are working with AT&T and other phone companies to use the Netware Directory Service to fill this role. This represents a major threat to us. Lotus is already shipping the Internotes Web Publisher which replicates Notes databases into HTML. Notes V4 includes secure Internet browsing in its server and client. IBM includes Internet connection through its network in OS/2 and promotes that as a key feature.

Some competitors have a much deeper involvement in the Internet than Microsoft. All UNIX vendors are benefiting from the Internet since the default server is still a UNIX box and not Windows NT, particularly for high end demands. SUN has exploited this quite effectively. Many Web sites, including Paul Allen's ESPNET, put a SUN logo and link at the bottom of their home page in return for low cost hardware. Several universities have "Sunsites" named because they use donated SUN hardware. SUN's Java project involves turning an Internet client into a programmable framework. SUN is very involved in evolving the Internet to stay away from Microsoft. On the SUN Homepage you can find an interview of Scott McNealy by John Gage where Scott explains that if customers decide to give one product a high market share (Windows) that is not capitalism. SUN is promoting Sun Screen and HotJava with aggressive business ads promising that they will help companies make money.

SGI has also been advertising their leadership on the Internet including servers and authoring tools. Their ads are very business focused. They are backing the 3D image standard, VRML, which will allow the Internet to support virtual reality type shopping, gaming, and socializing.

Browsing the Web, you find almost no Microsoft file formats. After 10 hours of browsing, I had not seen a single Word .DOC, AVI file, Windows .EXE (other than content viewers), or other Microsoft file format. I did see a great number of Quicktime files. All of the movie studios use them to offer film trailers. Apple benefited by having TCP support before we did and is working hard to build a browser that built from OpenDoc components. Apple will push for OpenDoc protocols to be used on the Internet, and is already offering good server configurations. Apple's strength in education gives them a much stronger presence on the internet than their general market share would suggest.

Another popular file format on the Internet is PDF, the short name for Adobe Acrobat files. Even the IRS offers tax forms in PDF format. The limitations of HTML make it impossible to create forms or other documents with rich layout and PDF has become the standard alternative. For now, Acrobat files are really only useful if you print them out, but Adobe is investing heavily in this technology and we may see this change soon.

Acrobat and Quicktime are popular on the network because they are cross platform and the readers are free. Once a format gets established it is extremely difficult for another format to come along and even become equally popular.

A new competitor "born" on the Internet is Netscape. Their browser is dominant, with 70% usage share, allowing them to determine which network extensions will catch on. They are pursuing a multi-platform strategy where they move the key API into the client to commoditize the underlying operating system. They have attracted a number of public network operators to use their platform to offer information and directory services. We have to match and beat their offerings including working with MCI, newspapers, and other who are considering their products.

One scary possibility being discussed by Internet fans is whether they should get together and create something far less expensive than a PC which is powerful enough for Web browsing. This new platform would optimize for the datatypes on the Web. Gordon Bell and others approached Intel on this and decided Intel didn't care about a low cost device so they started suggesting that General Magic or another operating system with a non-Intel chip is the best solution.

Next Steps

In highlighting the importance of the Internet to our future I don't want to suggest that I am alone in seeing this. There is excellent work going on in many of the product groups. Over the last year, a number of people have championed embracing TCP/IP, hyperlinking, HTML, and building clients, tools and servers that compete on the Internet. However, we still have a lot to do. I want every product plan to try and go overboard on Internet features. One element that will be crucial is coordinating our various activities. The challenge/opportunity of the Internet is a key reason behind the recent organization. Paul Maritz will lead the Platform group to define an integrated strategy that makes it clear that Windows machines are the best choice for the Internet. This will protect and grow our Windows asset. Nathan and Pete will lead the Applications and Content group to figure out how to make money providing applications and content for the Internet. This will protect our Office asset and grow our Office,

MS98 0112876.3
CONFIDENTIAL

M 1028052
CONFIDENTIAL

Consumer, and MSN businesses. The work that was done in the Advanced Technology group will be extremely important as it is integrated in with our products

We must also invest in the Microsoft home page, so it will be clear how to find out about our various products Today it's quite random what is on the home page and the quality of information is very low If you look up speeches by me all you find are a few speeches over a year old I believe the Internet will become our most important promotional vehicle and paying people to include links to our home pages will be a worthwhile way to spend advertising dollars. First we need to make sure that great information is available One example is the demonstration files (Screencam format) that Lotus includes on all of their products organized by feature. I think a measurable part of our ad budget should focus on the internet. Any information we create - white papers, data sheets, etc., should all be done on our Internet server

ITG needs to take a hard look at whether we should drop our leasing arrangements for data lines to some countries and simply rely on the Internet.

The actions required for the Windows platform are quite broad. Paul Maritz is having an Internet retreat in June which will focus on coordinating these activities. Some critical steps are the following:

1. Server. BSD is working on offering the best Internet server as an integrated package We need to understand how to make NT boxes the biggest performance HTTP servers Perhaps we should have a project with Compaq or someone else to focus on this Our initial server will have good performance because it uses kernel level code to blast out a file We need a clear story on whether a high volume Web site can use NT or not because SUN is viewed as the primary choice Our plans for security need to be strengthened. Other Backoffice pieces like SMS and SQL server also need to stay out in front in working with the Internet. We need to figure out how OFS can help perhaps by allowing pages to be stored as objects and having properties added. Perhaps OFS can help with the challenge of maintaining Web structures. We need to establish distributed OLE as the protocol for Internet programming. Our server offerings need to beat what Netscape is doing including billing and security support. There will be substantial demand for high performance transactions servers We need to make the media server work across the Internet as soon as we can as new protocols are established. A major opportunity/challenge is directory. If the features required for Internet directory are not in Cairo or easily addable without a major release we will miss the window to become the world standard in directory with serious consequences. Lotus, Novell, and AT&T will be working together to try and establish the Internet directory. Actually getting the content for our directory and popularizing it could be done in the MSN group.

2. Client. First we need to offer a decent client (O'Hare) that exploits Windows 95 shortcuts. However this alone won't get people to switch away from Netscape. We need to figure out how to integrate Blackbird, and help browsing into our Internet client. We have made the decision to provide Blackbird capabilities openly rather than tie them to MSN. However, the process of getting the size, speed, and integration good enough for the market needs work and coordination. We need to figure out additional features that will allow us to get ahead with Windows customers. We need to move all of our Internet value added from the Plus pack into Windows 95 itself as soon as we possibly can with a major goal to get OEMs shipping our browser preinstalled This follows directly from the plan to integrate the MSN and Internet clients. Another place for integration is to eliminate today's Help and replace it with the format our browser accepts including exploiting our unique extensions so there is another reason to use our browser We need to determine how many browsers we promote Today we have O'Hare, Blackbird, SPAM MediaView, Word, PowerPoint, Symetry, Help and many others Without unification we will lose to Netscape/HotJava

   Over time the shell and the browser will converge and support hierarchical/listquery viewing as well as document with links viewing The former is the structured approach and the later allows for richer presentation We need to establish OLE protocols as the way rich documents are shared on the Internet. I am sure the OpenDoc consortium will try and block this

MS98 0112876.4
CONFIDENTIAL

M 1028053
CONFIDENTIAL

3 **File sharing/Window sharing/Multi-user.** We need to give away client code that encourages Windows specific protocols to be used across the Internet. It should be very easy to set up a server for file sharing across the Internet. Our PictureTel screen sharing client allowing Window sharing should work easily across the Internet. We should also consider whether to do something with the Citrix code that allows you to become a Windows NT user across the Network. It is different from the PictureTel approach because it isn't peer to peer. Instead it allows you to be a remote user on a shared NT system. By giving away the client code to support all of these scenarios, we can start to show that a Windows machine on the Internet is more valuable than an arbitrary machine on the net. We have immense leverage because our Client and Server API story is very strong. Using VB or VC to write internet applications which have their UI remoted is a very powerful advantage for NT servers.

4 **Forms/ Languages.** We need to make it very easy to design a form that presents itself as an HTML page. Today the Common Gateway Interface (CGI) is used on Web servers to give forms 'behavior' but its quite difficult to work with. BSD is defining a somewhat better approach they call BGI. However we need to integrate all of this with our Forms3 strategy and our languages. If we make it easy to associate controls with fields then we get leverage out of all of the work we are doing on data binding controls. Efforts like Frontier software's work and SUN's Java are a major challenge to us. We need to figure out when it makes sense to download control code to the client including a security approach to avoid this being a virus hole.

5 **Search engines.** This is related to the client/server strategies. Verity has done good work with Notes, Netscape, AT&T and many others to get them to adopt their scaleable technology that can deal with large text databases with very large numbers of queries against them. We need to come up with a strategy to bring together Office, Mediaview, Help, Cairo, and MSN. Access and Fox do not support text indexing as part of their queries today which is a major hole. Only when we have an integrated strategy will we be able to determine if our in-house efforts are adequate or to what degree we need to work with outside companies like Verity.

6 **Formats.** We need to make sure we output information from all of our products in both vanilla HTML form and in the extended forms that we promote. For example, any database reports should be navigable as hypertext documents. We need to decide how we are going to compete with Acrobat and Quicktime since right now we aren't challenging them. It may be worth investing in optimizing our file formats for these scenarios. What is our competitor to Acrobat? It was supposed to be a combination of extended metafiles and Word but these plans are inadequate. The format issue spans the Platform and Applications groups.

7 **Tools.** Our disparate tools efforts need to be brought together. Everything needs to focus on a single integrated development environment that is extensible in an object oriented fashion. Tools should be architected as extensions to this framework. This means one common approach to repository/projects/source control. It means one approach to forms design. The environment has to support sophisticated viewing options like timelines and the advanced features SoftImage requires. Our work has been separated by independent focus on on-line versus CD-ROM and structured display versus animated displays. There are difficult technical issues to resolve. If we start by looking at the runtime piece (browser) I think this will guide us towards the right solution with the tools.

The actions required for the Applications and Content group are also quite broad. Some critical steps are the following:

1 Office. Allowing for collaboration across the Internet and allowing people to publish in our file formats for both Mac and Windows with free readers is very important. This won't happen without specific evangelization. DAD has written some good documents about Internet features. Word could lose out to focused Internet tools if it doesn't become faster and more WYSIWYG for HTML. There

is a crucial strategy issue of whether Word as a container is a strict superset of our DataDoc containers allowing our Forms strategy to embrace Word fully.

2 MSN The merger of the On-line business and Internet business creates a major challenge for MSN It can't just be the place to find Microsoft information on the Internet. It has to have scale and reputation that it is the best way to take advantage of the Internet because of the value added A lot of the content we have been attracting to MSN will be available in equal or better form on the Internet so we need to consider focusing on areas where we can provide something that will go beyond what the Internet will offer over the next few years Our plan to promote Blackbird broadly takes away one element that would have been unique to MSN. We need to strengthen the relationship between MSN and Exchange/Cairo for mail security and directory We need to determine a set of services that MSN leads in - money transfer, directory, and search engines Our high-end server offerings may require a specific relationship with MSN

3 Consumer. Consumer has done a lot of thinking about the use of on-line for its various titles On-line is great for annuity revenue and eliminating the problems of limited shelf-space However, it also lowers the barriers to entry and allows for an immense amount of free information. Unfortunately today an MSN user has to download a huge browser for every CD title making it more of a demo capability than something a lot of people will adopt. The Internet will assure a large audience for a broad range of titles However the challenge of becoming a leader in any subject area in terms of quality, depth, and price will be far more brutal than todays CD market. For each category we are in we will have to decide if we can be #1 or #2 in that category or get out. A number of competitors will have natural advantages because of their non-electronic activities

4 Broadband media applications. With the significant time before widescale ITV deployment we need to look hard at which applications can be delivered in an ISDN/Internet environment or in a Satellite PC environment. We need a strategy for big areas like directory, news, and shopping We need to decide how to pursue local information. The Cityscape project has a lot of promise but only with the right partners

5 Electronic commerce. Key elements of electronic commerce including security and billing need to be integrated into our platform strategy. On-line allows us to take a new approach that should allow us to compete with Intuit and others. We need to think creatively about how to use the internet/on-line world to enhance Money. Perhaps our Automatic teller machine project should be revived. Perhaps it makes sense to do a tax business that only operates on on-line. Perhaps we can establish the lowest cost way for people to do electronic bill paying Perhaps we can team up with Quickbook competitors to provide integrated on-line offerings Intuit has made a lot of progress in overseas markets during the last six months All the financial institutions will find it very easy to buy the best Internet technology ~~tools for~~ from us and others and get into this world without much technical expertise.

The Future

We enter this new era with some considerable strengths Among them are our people and the broad acceptance of Windows and Office I believe the work that has been done in Consumer, Cairo, Advanced Technology, MSN, and Research position us very well to lead Our opportunity to take advantage of these investments is coming faster than I would have predicted The electronic world requires all of the directory, security, linguistic and other technologies we have worked on It requires us to do even more in these areas than we were planning to There will be a lot of uncertainty as we first embrace the Internet and then extend it Since the Internet is changing so rapidly we will have to revise our strategies from time to time and have better inter-group communication than ever before

Our products will not be the only things changing. The way we distribute information and software as well as the way we communicate with and support customers will be changing We have an opportunity to do a lot more with our resources. Information will be disseminated efficiently between us and our customers with less chance that the press miscommunicates our plans. Customers will come to our "home page" in unbelievable numbers and find out everything we want them to know.

The next few years are going to be very exciting as we tackle these challenges and opportunities. The Internet is a tidal wave. It changes the rules. It is an incredible opportunity as well as incredible challenge. I am looking forward to your input on how we can improve our strategy to continue our track record of incredible success.

HyperLink Appendix

Related reading, double click to open them On-line! (*Microsoft LAN only, Internet Assistant is not required for this part!!*):

- Gordon Bell on the Internet email by Gordon Bell
- Affordable Computing: advertising subsidized hardware. by Nicholas Negroponte
- Brief Lecture Notes on VRML & Hot Java email by William Barr
- Notes from a Lecture by Mark Andreessen (Netscape) email by William Barr
- Application Strategies for the World Wide Web by Peter Pathe (Contains many more links!)

Below is a hotlist of Internet Web sites you might find interesting. I've included it as an embedded .HTM file which should be readable by most Web Browsers. Double click it if you're using a Web Browser like O'Hare or Netscape.

HotList.htm

A second copy of these links is below as Word HTML links. *To use these links, you must be running the Word Internet Assistant, and be connected to the Web*

Cool, Cool, Cool...

The Lycos Home Page
Yahoo
RealAudio Homepage
HotWired - New Thinking for a New Medium

Competitors

Microsoft Corporation World-Wide-Web Server
Welcome To Oracle
Lotus on the Web
Novell Inc. World Wide Web Home Page
Symantec Corporation Home Page
Borland Online
Disney/Buena Vista
Paramount Pictures
Adobe Systems Incorporated Home Page
MCI
Sony Online

MS98 0112876.7
CONFIDENTIAL

M 1028056
CONFIDENTIAL

Sports

- ESPNET SportsZone
- The Gate Cybersports Page
- The Sports Server
- Las Vegas Sports Page

News

- CRAYON
- Mercury Center Home Page

Travel/Entertainment

- ADDICTED TO NOISE
- CDnow! The Internet Music Store
- Travel & Entertainment Network home page
- Virtual Tourist World Map
- City Net

Auto

- Dealernet
- Popular Mechanics

I was at Amazon for about six and a half years, and now I've been at Google for that long. One thing that struck me immediately about the two companies -- an impression that has been reinforced almost daily -- is that Amazon does everything wrong, and Google does everything right. Sure, it's a sweeping generalization, but a surprisingly accurate one. It's pretty crazy. There are probably a hundred or even two hundred different ways you can compare the two companies, and Google is superior in all but three of them, if I recall correctly. I actually did a spreadsheet at one point but Legal wouldn't let me show it to anyone, even though recruiting loved it.
I mean, just to give you a very brief taste: Amazon's recruiting process is fundamentally flawed by having teams hire for themselves, so their hiring bar is incredibly inconsistent across teams, despite various efforts they've made to level it out. And their operations are a mess; they don't really have SREs and they make engineers pretty much do everything, which leaves almost no time for coding - though again this varies by group, so it's luck of the draw. They don't give a single shit about charity or helping the needy or community contributions or anything like that. Never comes up there, except maybe to laugh about it. Their facilities are dirt-smeared cube farms without a dime spent on decor or common meeting areas. Their pay and benefits suck, although much less so lately due to local competition from Google and Facebook. But they don't have any of our perks or extras -- they just try to match the offer-letter numbers, and that's the end of it. Their code base is a disaster, with no engineering standards whatsoever except what individual teams choose to put in place.
To be fair, they do have a nice versioned-library system that we really ought to emulate, and a nice publish-subscribe system that we also have no equivalent for. But for the most part they just have a bunch of crappy tools that read and write state machine information into relational databases. We wouldn't take most of it even if it were free.
I think the pubsub system and their library-shelf system were two out of the grand total of three things Amazon does better than google.
I guess you could make an argument that their bias for launching early and iterating like mad is also something they do well, but you can argue it either way. They prioritize launching early over everything else, including retention and engineering discipline and a bunch of other stuff that turns out to matter in the long run. So even though it's given them some competitive advantages in the marketplace, it's created enough other problems to make it something less than a slam-dunk.
But there's one thing they do really really well that pretty much makes up for ALL of their political, philosophical and technical screw-ups.
Jeff Bezos is an infamous micro-manager. He micro-manages every single pixel of

Amazon's retail site. He hired Larry Tesler, Apple's Chief Scientist and probably the very most famous and respected human-computer interaction expert in the entire world, and then ignored every goddamn thing Larry said for three years until Larry finally -- wisely -- left the company. Larry would do these big usability studies and demonstrate beyond any shred of doubt that nobody can understand that frigging website, but Bezos just couldn't let go of those pixels, all those millions of semantics-packed pixels on the landing page. They were like millions of his own precious children. So they're all still there, and Larry is not.

Micro-managing isn't that third thing that Amazon does better than us, by the way. I mean, yeah, they micro-manage really well, but I wouldn't list it as a strength or anything. I'm just trying to set the context here, to help you understand what happened. We're talking about a guy who in all seriousness has said on many public occasions that people should be paying him to work at Amazon. He hands out little yellow stickies with his name on them, reminding people "who runs the company" when they disagree with him. The guy is a regular... well, Steve Jobs, I guess. Except without the fashion or design sense. Bezos is super smart; don't get me wrong. He just makes ordinary control freaks look like stoned hippies.

So one day Jeff Bezos issued a mandate. He's doing that all the time, of course, and people scramble like ants being pounded with a rubber mallet whenever it happens. But on one occasion -- back around 2002 I think, plus or minus a year -- he issued a mandate that was so out there, so huge and eye-bulgingly ponderous, that it made all of his other mandates look like unsolicited peer bonuses.

His Big Mandate went something along these lines:

1. All teams will henceforth expose their data and functionality through service interfaces.
2. Teams must communicate with each other through these interfaces.
3. There will be no other form of interprocess communication allowed: no direct linking, no direct reads of another team's data store, no shared-memory model, no back-doors whatsoever. The only communication allowed is via service interface calls over the network.
4. It doesn't matter what technology they use. HTTP, Corba, Pubsub, custom protocols -- doesn't matter. Bezos doesn't care.
5. All service interfaces, without exception, must be designed from the ground up to be externalizable. That is to say, the team must plan and design to be able to expose the interface to developers in the outside world. No exceptions.
6. Anyone who doesn't do this will be fired.
7. Thank you; have a nice day!

Ha, ha! You 150-odd ex-Amazon folks here will of course realize immediately that #7 was a little joke I threw in, because Bezos most definitely does not give a shit about your day.

#6, however, was quite real, so people went to work. Bezos assigned a couple of Chief Bulldogs to oversee the effort and ensure forward progress, headed up by Uber-Chief Bear Bulldog Rick Dalzell. Rick is an ex-Armgy Ranger, West Point

Academy graduate, ex-boxer, ex-Chief Torturer slash CIO at Wal*Mart, and is a big genial scary man who used the word "hardened interface" a lot. Rick was a walking, talking hardened interface himself, so needless to say, everyone made LOTS of forward progress and made sure Rick knew about it.
Over the next couple of years, Amazon transformed internally into a service-oriented architecture. They learned a tremendous amount while effecting this transformation. There was lots of existing documentation and lore about SOAs, but at Amazon's vast scale it was about as useful as telling Indiana Jones to look both ways before crossing the street. Amazon's dev staff made a lot of discoveries along the way. A teeny tiny sampling of these discoveries included:

- pager escalation gets way harder, because a ticket might bounce through 20 service calls before the real owner is identified. If each bounce goes through a team with a 15-minute response time, it can be hours before the right team finally finds out, unless you build a lot of scaffolding and metrics and reporting.
- every single one of your peer teams suddenly becomes a potential DOS attacker. Nobody can make any real forward progress until very serious quotas and throttling are put in place in every single service.
- monitoring and QA are the same thing. You'd never think so until you try doing a big SOA. But when your service says "oh yes, I'm fine", it may well be the case that the only thing still functioning in the server is the little component that knows how to say "I'm fine, roger roger, over and out" in a cheery droid voice. In order to tell whether the service is actually responding, you have to make individual calls. The problem continues recursively until your monitoring is doing comprehensive semantics checking of your entire range of services and data, at which point it's indistinguishable from automated QA. So they're a continuum.
- if you have hundreds of services, and your code MUST communicate with other groups' code via these services, then you won't be able to find any of them without a service-discovery mechanism. And you can't have that without a service registration mechanism, which itself is another service. So Amazon has a universal service registry where you can find out reflectively (programmatically) about every service, what its APIs are, and also whether it is currently up, and where.
- debugging problems with someone else's code gets a LOT harder, and is basically impossible unless there is a universal standard way to run every service in a debuggable sandbox.

That's just a very small sample. There are dozens, maybe hundreds of individual learnings like these that Amazon had to discover organically. There were a lot of wacky ones around externalizing services, but not as many as you might think. Organizing into services taught teams not to trust each other in most of the same ways they're not supposed to trust external developers.
This effort was still underway when I left to join Google in mid-2005, but it was

pretty far advanced. From the time Bezos issued his edict through the time I left, Amazon had transformed culturally into a company that thinks about everything in a services-first fashion. It is now fundamental to how they approach all designs, including internal designs for stuff that might never see the light of day externally. At this point they don't even do it out of fear of being fired. I mean, they're still afraid of that; it's pretty much part of daily life there, working for the Dread Pirate Bezos and all. But they do services because they've come to understand that it's the Right Thing. There are without question pros and cons to the SOA approach, and some of the cons are pretty long. But overall it's the right thing because SOA-driven design enables Platforms.

That's what Bezos was up to with his edict, of course. He didn't (and doesn't) care even a tiny bit about the well-being of the teams, nor about what technologies they use, nor in fact any detail whatsoever about how they go about their business unless they happen to be screwing up. But Bezos realized long before the vast majority of Amazonians that Amazon needs to be a platform.

You wouldn't really think that an online bookstore needs to be an extensible, programmable platform. Would you?

Well, the first big thing Bezos realized is that the infrastructure they'd built for selling and shipping books and sundry could be transformed an excellent repurposable computing platform. So now they have the Amazon Elastic Compute Cloud, and the Amazon Elastic MapReduce, and the Amazon Relational Database Service, and a whole passel' o' other services browsable at aws.amazon.com. These services host the backends for some pretty successful companies, reddit being my personal favorite of the bunch.

The other big realization he had was that he can't always build the right thing. I think Larry Tesler might have struck some kind of chord in Bezos when he said his mom couldn't use the goddamn website. It's not even super clear whose mom he was talking about, and doesn't really matter, because nobody's mom can use the goddamn website. In fact I myself find the website disturbingly daunting, and I worked there for over half a decade. I've just learned to kinda defocus my eyes and concentrate on the million or so pixels near the center of the page above the fold.

I'm not really sure how Bezos came to this realization -- the insight that he can't build one product and have it be right for everyone. But it doesn't matter, because he gets it. There's actually a formal name for this phenomenon. It's called Accessibility, and it's the most important thing in the computing world.

The. Most. Important. Thing.

If you're sorta thinking, "huh? You mean like, blind and deaf people Accessibility?" then you're not alone, because I've come to understand that there are lots and LOTS of people just like you: people for whom this idea does not have the right Accessibility, so it hasn't been able to get through to you yet. It's not your fault for not understanding, any more than it would be your fault for being blind or deaf or motion-restricted or living with any other disability. When software -- or idea-ware

for that matter -- fails to be accessible to anyone for any reason, it is the fault of the software or of the messaging of the idea. It is an Accessibility failure.
Like anything else big and important in life, Accessibility has an evil twin who, jilted by the unbalanced affection displayed by their parents in their youth, has grown into an equally powerful Arch-Nemesis (yes, there's more than one nemesis to accessibility) named Security. And boy howdy are the two ever at odds.
But I'll argue that Accessibility is actually more important than Security because dialing Accessibility to zero means you have no product at all, whereas dialing Security to zero can still get you a reasonably successful product such as the Playstation Network.
So yeah. In case you hadn't noticed, I could actually write a book on this topic. A fat one, filled with amusing anecdotes about ants and rubber mallets at companies I've worked at. But I will never get this little rant published, and you'll never get it read, unless I start to wrap up.
That one last thing that Google doesn't do well is Platforms. We don't understand platforms. We don't "get" platforms. Some of you do, but you are the minority. This has become painfully clear to me over the past six years. I was kind of hoping that competitive pressure from Microsoft and Amazon and more recently Facebook would make us wake up collectively and start doing universal services. Not in some sort of ad-hoc, half-assed way, but in more or less the same way Amazon did it: all at once, for real, no cheating, and treating it as our top priority from now on.
But no. No, it's like our tenth or eleventh priority. Or fifteenth, I don't know. It's pretty low. There are a few teams who treat the idea very seriously, but most teams either don't think about it all, ever, or only a small percentage of them think about it in a very small way.
It's a big stretch even to get most teams to offer a stubby service to get programmatic access to their data and computations. Most of them think they're building products. And a stubby service is a pretty pathetic service. Go back and look at that partial list of learnings from Amazon, and tell me which ones Stubby gives you out of the box. As far as I'm concerned, it's none of them. Stubby's great, but it's like parts when you need a car.
A product is useless without a platform, or more precisely and accurately, a platform-less product will always be replaced by an equivalent platform-ized product.
Google+ is a prime example of our complete failure to understand platforms from the very highest levels of executive leadership (hi Larry, Sergey, Eric, Vic, howdy howdy) down to the very lowest leaf workers (hey yo). We all don't get it. The Golden Rule of platforms is that you Eat Your Own Dogfood. The Google+ platform is a pathetic afterthought. We had no API at all at launch, and last I checked, we had one measly API call. One of the team members marched in and told me about it when they launched, and I asked: "So is it the Stalker API?" She got all glum and said "Yeah." I mean, I was joking, but no... the only API call we offer is to get

someone's stream. So I guess the joke was on me.
Microsoft has known about the Dogfood rule for at least twenty years. It's been part of their culture for a whole generation now. You don't eat People Food and give your developers Dog Food. Doing that is simply robbing your long-term platform value for short-term successes. Platforms are all about long-term thinking.
Google+ is a knee-jerk reaction, a study in short-term thinking, predicated on the incorrect notion that Facebook is successful because they built a great product. But that's not why they are successful. Facebook is successful because they built an entire constellation of products by allowing other people to do the work. So Facebook is different for everyone. Some people spend all their time on Mafia Wars. Some spend all their time on Farmville. There are hundreds or maybe thousands of different high-quality time sinks available, so there's something there for everyone.
Our Google+ team took a look at the aftermarket and said: "Gosh, it looks like we need some games. Let's go contract someone to, um, write some games for us." Do you begin to see how incredibly wrong that thinking is now? The problem is that we are trying to predict what people want and deliver it for them.
You can't do that. Not really. Not reliably. There have been precious few people in the world, over the entire history of computing, who have been able to do it reliably. Steve Jobs was one of them. We don't have a Steve Jobs here. I'm sorry, but we don't.
Larry Tesler may have convinced Bezos that he was no Steve Jobs, but Bezos realized that he didn't need to be a Steve Jobs in order to provide everyone with the right products: interfaces and workflows that they liked and felt at ease with. He just needed to enable third-party developers to do it, and it would happen automatically.
I apologize to those (many) of you for whom all this stuff I'm saying is incredibly obvious, because yeah. It's incredibly frigging obvious. Except we're not doing it. We don't get Platforms, and we don't get Accessibility. The two are basically the same thing, because platforms solve accessibility. A platform is accessibility.
So yeah, Microsoft gets it. And you know as well as I do how surprising that is, because they don't "get" much of anything, really. But they understand platforms as a purely accidental outgrowth of having started life in the business of providing platforms. So they have thirty-plus years of learning in this space. And if you go to msdn.com, and spend some time browsing, and you've never seen it before, prepare to be amazed. Because it's staggeringly huge. They have thousands, and thousands, and THOUSANDS of API calls. They have a HUGE platform. Too big in fact, because they can't design for squat, but at least they're doing it.
Amazon gets it. Amazon's AWS (aws.amazon.com) is incredible. Just go look at it. Click around. It's embarrassing. We don't have any of that stuff.
Apple gets it, obviously. They've made some fundamentally non-open choices, particularly around their mobile platform. But they understand accessibility and

they understand the power of third-party development and they eat their dogfood. And you know what? They make pretty good dogfood. Their APIs are a hell of a lot cleaner than Microsoft's, and have been since time immemorial.

Facebook gets it. That's what really worries me. That's what got me off my lazy butt to write this thing. I hate blogging. I hate... plussing, or whatever it's called when you do a massive rant in Google+ even though it's a terrible venue for it but you do it anyway because in the end you really do want Google to be successful. And I do! I mean, Facebook wants me there, and it'd be pretty easy to just go. But Google is home, so I'm insisting that we have this little family intervention, uncomfortable as it might be.

After you've marveled at the platform offerings of Microsoft and Amazon, and Facebook I guess (I didn't look because I didn't want to get too depressed), head over to developers.google.com and browse a little. Pretty big difference, eh? It's like what your fifth-grade nephew might mock up if he were doing an assignment to demonstrate what a big powerful platform company might be building if all they had, resource-wise, was one fifth grader.

Please don't get me wrong here -- I know for a fact that the dev-rel team has had to FIGHT to get even this much available externally. They're kicking ass as far as I'm concerned, because they DO get platforms, and they are struggling heroically to try to create one in an environment that is at best platform-apathetic, and at worst often openly hostile to the idea.

I'm just frankly describing what developers.google.com looks like to an outsider. It looks childish. Where's the Maps APIs in there for Christ's sake? Some of the things in there are labs projects. And the APIs for everything I clicked were... they were paltry. They were obviously dog food. Not even good organic stuff. Compared to our internal APIs it's all snouts and horse hooves.

And also don't get me wrong about Google+. They're far from the only offenders. This is a cultural thing. What we have going on internally is basically a war, with the underdog minority Platformers fighting a more or less losing battle against the Mighty Funded Confident Producters.

Any teams that have successfully internalized the notion that they should be externally programmable platforms from the ground up are underdogs -- Maps and Docs come to mind, and I know GMail is making overtures in that direction. But it's hard for them to get funding for it because it's not part of our culture. Maestro's funding is a feeble thing compared to the gargantuan Microsoft Office programming platform: it's a fluffy rabbit versus a T-Rex. The Docs team knows they'll never be competitive with Office until they can match its scripting facilities, but they're not getting any resource love. I mean, I assume they're not, given that Apps Script only works in Spreadsheet right now, and it doesn't even have keyboard shortcuts as part of its API. That team looks pretty unloved to me.

Ironically enough, Wave was a great platform, may they rest in peace. But making something a platform is not going to make you an instant success. A platform needs a killer app. Facebook -- that is, the stock service they offer with walls and

friends and such -- is the killer app for the Facebook Platform. And it is a very serious mistake to conclude that the Facebook App could have been anywhere near as successful without the Facebook Platform.
You know how people are always saying Google is arrogant? I'm a Googler, so I get as irritated as you do when people say that. We're not arrogant, by and large. We're, like, 99% Arrogance-Free. I did start this post -- if you'll reach back into distant memory -- by describing Google as "doing everything right". We do mean well, and for the most part when people say we're arrogant it's because we didn't hire them, or they're unhappy with our policies, or something along those lines. They're inferring arrogance because it makes them feel better.
But when we take the stance that we know how to design the perfect product for everyone, and believe you me, I hear that a lot, then we're being fools. You can attribute it to arrogance, or naivete, or whatever -- it doesn't matter in the end, because it's foolishness. There IS no perfect product for everyone.
And so we wind up with a browser that doesn't let you set the default font size. Talk about an affront to Accessibility. I mean, as I get older I'm actually going blind. For real. I've been nearsighted all my life, and once you hit 40 years old you stop being able to see things up close. So font selection becomes this life-or-death thing: it can lock you out of the product completely. But the Chrome team is flat-out arrogant here: they want to build a zero-configuration product, and they're quite brazen about it, and Fuck You if you're blind or deaf or whatever. Hit Ctrl-+ on every single page visit for the rest of your life.
It's not just them. It's everyone. The problem is that we're a Product Company through and through. We built a successful product with broad appeal -- our search, that is -- and that wild success has biased us.
Amazon was a product company too, so it took an out-of-band force to make Bezos understand the need for a platform. That force was their evaporating margins; he was cornered and had to think of a way out. But all he had was a bunch of engineers and all these computers... if only they could be monetized somehow... you can see how he arrived at AWS, in hindsight.
Microsoft started out as a platform, so they've just had lots of practice at it.
Facebook, though: they worry me. I'm no expert, but I'm pretty sure they started off as a Product and they rode that success pretty far. So I'm not sure exactly how they made the transition to a platform. It was a relatively long time ago, since they had to be a platform before (now very old) things like Mafia Wars could come along.
Maybe they just looked at us and asked: "How can we beat Google? What are they missing?"
The problem we face is pretty huge, because it will take a dramatic cultural change in order for us to start catching up. We don't do internal service-oriented platforms, and we just as equally don't do external ones. This means that the "not getting it" is endemic across the company: the PMs don't get it, the engineers don't get it, the product teams don't get it, nobody gets it. Even if individuals do,

even if YOU do, it doesn't matter one bit unless we're treating it as an all-hands-on-deck emergency. We can't keep launching products and pretending we'll turn them into magical beautiful extensible platforms later. We've tried that and it's not working.
The Golden Rule of Platforms, "Eat Your Own Dogfood", can be rephrased as "Start with a Platform, and Then Use it for Everything." You can't just bolt it on later. Certainly not easily at any rate -- ask anyone who worked on platformizing MS Office. Or anyone who worked on platformizing Amazon. If you delay it, it'll be ten times as much work as just doing it correctly up front. You can't cheat. You can't have secret back doors for internal apps to get special priority access, not for ANY reason. You need to solve the hard problems up front.
I'm not saying it's too late for us, but the longer we wait, the closer we get to being Too Late.
I honestly don't know how to wrap this up. I've said pretty much everything I came here to say today. This post has been six years in the making. I'm sorry if I wasn't gentle enough, or if I misrepresented some product or team or person, or if we're actually doing LOTS of platform stuff and it just so happens that I and everyone I ever talk to has just never heard about it. I'm sorry.
But we've gotta start doing this right.

THE ELEVEN LAWS OF SHOWRUNNING

Javier Grillo-Marxuach

1.20.16

Upon finding this essay, any number of showrunners with whom I have worked in the past will assume it is a personal attack in the language of a management lesson. No matter that what follows is a distillation twenty years of experience - and has been in the works since I ran my first show, *The Middleman* - I expect to be excoriated by some who will believe I am writing out of envy, or to avenge some perceived slight, or was just too cowardly to say it to their faces.

It takes that level of ego to be a television writer/producer: the conviction that what you have to say matters so much that it is worth not only mastering the tropes of an entire medium, but also the risk that all the intermediaries required to create the finished product will ruin it all with some fatal blend of incomprehension, or incompetence.

For many, the undeniable triumph that is pitching a series idea, having a pilot ordered, successfully producing it, and then having it ordered to series is nothing less than a validation: not only of their voice and talent, but also their Way of Doing Things. This often translates to an intractable adherence to the notion that "my creative process" is so of the essence that all other concerns must be made subordinate lest the delicate alchemy that made success possible be snuffed.

This often leads to incompetent and - whether through ignorance or ego - abusive senior management. I'm not talking about "the lack of experienced showrunners" currently written about in industry publications, but rather that the management culture of television shows as represented by both experienced and novitiate showrunners is beset by a cult of idiosyncrasy over professionalism, and tolerance of toxic behavior; all enabled by the exigencies of getting the show on-air, and keeping it there by any means necessary.

This is exacerbated by there only being two sins for which a showrunner pays with a pink slip: wasting time and squandering money. However, these contingencies are amply prepared for in studio plans and budgets; and an entire army of dedicated professionals stands beneath the showrunner day in and out to ensure neither occurs.

Why? Because they depend on the show - and the perceived creative and managerial genius of the showrunner - for their living. So, once they have a show on the air, even the worst managers muddle through on something resembling time and budget: usually by the sweat of a lot of talented individuals doing everything humanly possible to keep the ship afloat.

One of the most jealously guarded secrets of TV is the reality that those who get their pilots made and show picked up on any given year are usually no more gifted, visionary, or prodigious, than the ones who did not. There are as many television writers who work regularly as there are professional NBA players at any given time - by that metric, we are all breathing rarefied air - but the process by which television shows are made and selected is by no means some mystical divination by which the artistry of very special snowflakes is empowered that it may elevate the art form as a whole.

Television is - quite simply - a business: with winners, losers, seasonal patterns, production schedules, budgets, and deliverables... just like any other business.

What we do is nothing more - or less - than hard work... hard work that is not exclusive to any one person, but helped along by scores of competent, experienced professionals whose job security is tied to the longevity of the endeavor... hard work that can be done efficiently, thoughtfully, and in a way that doesn't ask anyone involved to sacrifice their personal life, dignity, and - sometimes - personal safety.

Historically, there never was much of an apprenticeship/ mentorship mentality in television. Writers are notoriously taciturn and parochial about their "creative process." However, when there were only three to five broadcast networks and a much longer queue to the top, someone who worked their way up from staff writer (the lowest and least paid position) to show creator/executive producer/showrunner could at least be reliably understood to have at least spent many years learning how to make the trains run on time under the tutelage of writer/producers who had endured the same trials.

Nowadays, programming outlets are as likely to buy television pilots from more junior writers, as well as playwrights, screenwriters, novelists, investigative journalists, and bloggers whose "my year of doing this and not that" article managed to break the Internet as they are from seasoned writer/producers -

and then put them in the position of having to manage what is essentially a start-up corporation with a budget in the eight figures and a hundred-plus employee workforce. More often than not, the weight of that responsibility sends both the experienced and inexperienced into the warm embrace of a mistaken belief that it was all put there to service their creative process and nothing else.

As special and wonderful as creativity and process may be, they are assets that can be channeled, managed, made to work on call, and sent to bed at a decent hour. Any television show - from the most formulaic, to the most genre-defining, medium-transforming phenomenon - can be made on time, on budget, and without demanding that any of the employees put more time at the mine than they absolutely have to, if the showrunners simply apply basic, commonsensical management strategy to their stewardship of the enterprise.

Why is it so hard for showrunners to implement simple strategies in the name of running the show efficiently and humanely?

The answer is that "simple" doesn't mean "easy". The simplest decisions are often hardest because they demand a painful concession to an unpleasant truth. Every one of the Eleven Laws asks for the same thing: the surrender of a quantum of attachment to a showrunner's idea of themselves as the fountainhead of the show's greatness to serve the show and those who work to make it.

It seems like a contradiction - to ask someone from whom visionary leadership is demanded to surrender their ego - but it isn't, because of...

THE FIRST LAW OF SHOWRUNNING
IT'S ALL ABOUT YOU STOP MAKING IT ALL ABOUT YOU

You pitched an idea, sold a script, and got it made. Now you have sixty million dollars and thirteen hours of network airtime - with a strong possibility for much more - for a bully pulpit. Nothing goes in front of the lens that you do not approve. Nothing gets on the screen without your stamp. To the studio, network - and the general public - you and your show are one and the same.

Because it's all about you, you also need to face the truth that your staff works for you in exchange for a paycheck, not out of a genuflecting admiration of your genius. They will do whatever you need done because they enter every conversation knowing that you can <u>fire</u> them. Their indenture is a given. Their loyalty is not.

It's on you to invest your staff in the vision of the show - in your vision - and turn them into true believers and dedicated workers who will go the extra mile. You can do that by giving them the opportunity to express themselves within the framework you have created.

You can also do that by instilling fear - of job insecurity, of the loss of political capital in the show's hierarchy, or simply the harsh judgment of a capricious father figure. You have the power to be either an enabler of your employees's creativity, or make them the enablers of your whims.

What will you do with that power? Will you garret yourself until you absolutely have to emerge to tell your staff what to do? Will you demand that everyone jockey for your favor in order to have the information they need to do their job... or will you provide that information freely so that creativity blooms because - and not in spite - of you?

Are you strong and secure enough in your talent and accomplishment to accept the possibility that other people - properly empowered by you - can actually enhance your genius... or will you cling to the idea that only you can be the source of that genius?

How you answer that question determines the leader you will be.

THE SECOND LAW OF SHOWRUNNING
KNOW YOUR SHOW AND TELL EVERYONE WHAT IT IS

It seems weird that someone would sell a show and then not really "know" what it is - or be unwilling to share that information. Kind of like Steve Jobs not telling his staff more about the iPod than that "it's white and needs a dial"... and yet, not knowing - or not telling - what the show is a common showrunner dysfunction.

Your employees need specific knowledge of the tone, texture, and technique of the show to do their jobs. Even after producing the pilot episode, most of that crucial information still remains in your head. The pilot episode was a prototype. Now you have to discern what it was that worked so well in the pilot and turn that into a reproducible result. You also have to figure out the things that didn't work - with a certain amount of honesty and self-reflection - and then articulate to your team how you want them fixed. Most of your work as a showrunner is to communicate information to other people so that they can execute it within their field of expertise.

One of the great contradictions of the way we make television in the United States is that writers are given managerial control over the entire enterprise... but writers are very often bad communicators outside the page. Also, talking to people non-stop, all day, with great specificity about a project this size is hard, and tiring. That much said, there are seven words no competent showrunner should ever say:

"I'll know it when I see it."

When you're a showrunner, it is on you to define the tone, the story, and the characters. You are NOT a curator of other people's ideas. You are their motivator, their inspiration, and the person responsible for their implementation.

Bottom line: the creativity of your staff isn't for coming up with your core ideas for you, it's for making your core ideas bigger and better once you've come up with them. To say "I'll know it when I see it" is to abdicate the hard work of creation while hoarding the authority to declare what is or isn't good.

While anyone can say "I'll know it when I see it," it is the writer's ability to create that is the reason we are the showrunners in American television. To be effective, you have to articulate what Maya Lin referred to as "a strong, clear vision." You have to draw the boundaries of the sandbox with precision, detail, consistency, and integrity.

This is a difficult task that requires intellectual and creative rigor, a measure of non-solipsistic introspection, and that you make a discipline out of talking to other people and being on message at all times. As a showrunner, you must communicate your vision so that everyone understands it, and then preach it, day in and out, to the point of exhaustion until everyone feels it in their soul like a gospel. And here's the great part of successfully communicating a shared vision: your employees will love you for it.

Loyalty to an employer begins with the knowledge of what the job is. Loyalty comes from knowing that your bosses have your back both in the form of giving out the information necessary to do what you do and do it right, and the empowerment to use your own abilities to improve on the baseline.

THE THIRD LAW OF SHOWRUNNING
ALWAYS DESCRIBE A PATH TO SUCCESS

Describing a path to success is the natural outgrowth of the Second Law. This advice was given to me by the non-writing Executive Producer on my show *The Middleman* - a very seasoned production executive who strove to create an environment where I could excel in communicating the goals of the show to all comers.

"Always Describe a Path to Success" means - in its most practical form - "Do not leave a meeting without letting everyone there know what they are expected to do/deliver next."

If you tell your staff how to please you, two out of three times they will come back with a way to do exactly what you want. If they can't, they will often come up with a number of better ideas out of a desire to address the spirit, if not the letter, of a clear directive.

Every clear directive you issue is a gift because it relieves your staff of the stress of having to divine your goals. A clear directive is an indication of trust: your way of saying "I have taken the time and effort to figure out our goal. I now acknowledge that you have the knowledge and resources to figure out the process."

To successfully define a path to success, you don't even have to know the exact hill to take. The grinding race that is television often means that you may not always know the next goal; but even if you articulate your order as "Help me figure out the next hill to take," or "Let me know what our resources are so that I can make an educated decision about where to attack next," that alone constitutes a directive with a defined outcome.

You will be amazed at how much even that measure of clarity will galvanize a team. When you define the problems, you not only control the direction of the enterprise, you also free your staff to do what they do best: dedicate their unique skills to their solution.

THE FOURTH LAW OF SHOWRUNNING
MAKE DECISIONS EARLY AND OFTEN

As the days, weeks, and months churn away, you will find that - whether you like it or not, and whether it's in your comfort zone or not - everyone constantly solicits decisions from you. Remember the First Law.

And yet, an aversion to making decisions is a massively common showrunning dysfunction. It comes out of an understandable insecurity: once you make a decision, the world knows where you stand. Once you say "This is what this is," you have made your taste and opinion clear: the world will judge you. Decision aversion can also be a stalling tactic designed to let you have it your way without ruffling too many feathers on an interpersonal and creative level. Wanting to be seen as "a nice person" and a "good employer" are understandable desires.

While "nice" can mean "affable" and "pleasant," a second definition of "nice" is also "precise and demanding careful attention." In my experience, nice people - and good bosses - rip off the Band-Aid early, make the case for their decision, hear out any remaining arguments, then shut down the discussion and send everyone off to get on with their work.

Avoiding decisions causes your staff to run themselves ragged coming up with contingencies and robs them of the time they need to properly execute your vision. There's also the sad - and very frustrating and demoralizing to your employees - truth that most decision-averse managers usually return to one of the first things they were pitched as their final answer.

Your job is to make ideas come to life. The first step is to commit. Commit early. Commit often. Make committing the same as breathing: you might as well do it now, because you will have to do it eventually.

Most importantly, the sooner you make a decision, the sooner you will know from your crew what is achievable, and the sooner they will be able to expand upon - and use their talents to - elevate it. The time you spent not deciding is time you rob from your staff's ability to make whatever the object of the decision the best it can be. The show simply cannot go on until you say what the show is.

THE FIFTH LAW OF SHOWRUNNING
DO NOT DEMAND A FINAL PRODUCT AT THE IDEA STAGE

When you sold your pilot, you didn't take an eight million dollar film of your script to the network meeting. You talked the executives through your idea for a series, the characters, and your story for the pilot, and they proceeded to entrust you with millions of dollars to fulfill your vision. Considering how much the creation of a TV series depends on a studio and network's ability to visualize a bunch of words coming out of some writer's mouth, it is surprising that many showrunners lack the skill to visualize story when pitched to them by their own staff.

Architects can see buildings off blueprints. That's their job. Yours is to see the gross anatomy of the stories the writers pitch you off the shorthand of the board, and to let them run with the details. The next step is to visualize even further down the line as the writers refine the muscular, circulatory, and nervous systems in the slightly more detailed treatment of the story, plot, and scenes in an outline, and - if you don't like the shape of the surface once the script come in - for you to give notes and rewrite if necessary.

If, as a showrunner, you repeatedly have to return stories to the board after they have been outlined or scripted - or find yourself sending your writers off to script and outline in frustration, only to then rewrite from page one, you need to consider doing some work on your own ability to create and discern story from the foundations up.

Not all writers have this ability, but it is something that can and should be learned - and which is crucial to making television - because the physical production of the scripts depends on the departments having consistent, and accurate communication from the writers office as to what is coming down the pike.

One of things increasingly lost as showrunners are no longer asked to work their way up the ranks in the television hierarchy is a comfort level with collaboration in the form of the writers room, and a knowledge of story - usually born of coming up with one story after another on other people's shows. It is from this longitudinal experience of collaboration and story generation that most showrunners learn how to visualize.

How, then, if you do not come from a lifetime of conference and teamwork, but find yourself forced into collusion with a writers room - whom you need, if for no other reason, to generate the sheer volume of material the show demands - do you develop this skill? The answer is trust. You take the leap of faith that the professionals you hired can execute on the page what is shorthanded on the board. You trust that someone pitching you "meet cute" knows how to render that on the page given an adequate amount of time. You trust that other writers occasionally need to retire to their keyboards to do their job to the fullest... and understand that, because you will decide whether or not they have to be fired after they turn their draft, they are profoundly invested in doing a good job...

As showrunner, you have to divest yourself from the desire to be the audience. You are the chief designer and architect. Sure, you can demand to be "entertained" by work that feels complete in its gestational phase, but often, the inevitable product of that demand is that will you be bored by it by the time it reaches your desk because you will have effectively destroyed a crucial part of your staff's creative process.

Ironically, it's the part of the process that many dysfunctional showrunners guard jealously for themselves...

THE SIXTH LAW OF SHOWRUNNING
WRITE AND REWRITE QUICKLY

Scripts are an expression of a writers soul... but that's not all they are. A script is also work order.

Without a complete script, no one can decide where they are going to take the trucks with all the lights and cameras and costumes, and for how long. Without a script, no one can figure out how much it's going to cost to make this episode of your series. Without a script, the actors can't prepare for their work in front of the camera.

A script is the most specific description of the work ahead of the production for weeks to come. If you procrastinate - or allow yourself to become precious - you are creating a void in which no one knows what their job is; especially your writing staff.

A studio has given you millions of dollars to hire a group of people whose mission is to learn how to produce work that reads and sounds like your voice. Reproducing that voice is the primary goal of your writing staff. The best and most efficient way they can do that is by reading your prose and dialogue. The faster you write, the sooner they can integrate your idiosyncrasies into the process... and the faster you rewrite their work, the faster they can internalize your changes to their work into the matrix of that learning process.

For most competent writers working under the exigencies of a television season, a week to a week and a half is considered ample time to write the first draft of a script from a solid story break and outline... and yet, dysfunctional showrunners routinely avail themselves significantly longer spans of time to write their own scripts. This destroys morale - as your staff sees you taking liberties you would not give to any of them - and causes chaos in production. Your show's scripts, as written - or rewritten - by you are your most effective tool in your performance of the Second Law. You can't talk to everyone at all times, and eventually, you have a responsibility to take your talk from the theoretical to the real.

A script ultimately represents the concretization of your voice and gesture. A script is your proof of concept, and if its fate is to fail that proof, then you are better off knowing sooner rather than later, so that you - and all of your employees - can use the time to fix what's broken and right the ship while there is still time.

Scripts are how you talk to cast, crew, studio, and network. Write them quickly, rewrite them impassively and efficiently. Work your scripts until they are ready, but recognize that in a fast-moving business like television, most of the time they will only be ready enough.

Your best ideas will survive criticism, the worst ones... there's no amount of attachment that can keep them alive, and it may not be worth fighting so hard for your precious children: the horizon is full of other children, all of whom need your immediate attention and will quickly make you forget the ones you've had to leave behind.

THE SEVENTH LAW OF SHOWRUNNING
TRACK MULTIPLE TARGETS EFFICIENTLY BY DELEGATING RESPONSIBILITY

In the 1980's, the members of the Berlin Symphony told joke about their imperious conductor, Herbert Von Karajan: The *maestro* gets into a taxi. The driver asks "Where to?" "It doesn't matter," Von Karajan declaims, "I'm needed EVERYWHERE!"

With or without the colossal arrogance, that is one of the essential truths of showrunner life. This is why understanding the First Law, and practicing the Second, are so important. At any given moment during the course of a season, there are six stories that have to be minded: the story in development on the board in the writers room, the story in outline, the story being scripted, the story being prepared for production, the story in production, and the story being completed in editing and post production.

That means meetings. Costume meetings, set decoration meetings, hair and make-up meetings, budget meetings, casting concept calls, network and studio notes calls on multiple drafts of multiple scripts, outlines, and stories, sound and special effects spotting in post-production... enough meetings to wear down even the most extroverted mass-communicator.

And yet, your job is to track all those targets. Because that is a manifestly impossible task, you have a secret weapon in your arsenal designed to combat the fatigue that comes from always having someone at your door who needs to be told What is What.

That weapon is, of course, your writers.

Though you don't realize it just yet, your writers are, in fact, your <u>apostles</u>. Yes: that motley bunch is a band of spiritual warriors ready to spread your Evangel to every corner of your show's domain.

The reason the ranking system of writers goes from staff writer, to story editor, to executive story editor, to co-producer, producer, supervising producer, and co-executive producer, is because you're not just running a show - you're also running a producer/showrunner academy. Even if you are woefully uninterested in teaching/under qualified to teach this discipline, this is the duty that fate has thrust upon you. The way you run a producer/showrunning academy is by making the writers in the room the privileged bearers of your knowledge of What The Show Is and then sending them off to all these meetings to give voice to your unique vision.

The reason the Second Law is so important is that, once you use it to empower your people to spread the Word, it actually takes stress and labor off your hands. TV production is a nigh-insurmountable, and ever-rising, Everest of work. It is for that reason that, over decades, a system evolved by which a team of highly creative people were put in a privileged position of access to the seat of power and knowledge. All you have to do is share with your writer/producers/showrunners-in-training What You Want, then send them off to all the meetings and have them report back. You do not have to give up your command authority: remember the First Law, and remember that there will always be a final meeting on all these matters before the scenes are shot.

Why should you ask for this help and take yourself out of at least part of the loop? Because it all begins with the story: you need to focus your energy on making sure that the stories are developed to your satisfaction from the ground up. The writers room is the forge of your show's creation - the single most important place in the universe as far as you should be concerned - even though everything conspires to keep you away from it; jealously guarding your time in the writers room should be your prime target.

The more your stories represent the purest version of your vision, the more involved will be your writers's knowledge of that vision... and the better your scripts are going to convey the vision to everyone else involved with the production (as well as the outlying regions, like the people who cut your promos at the network, or the people who license the show for merchandising).

This is why conveying your vision clearly - making sure the work of the writers room reflects it first and foremost - and delegating the conveyance of that vision to others is so important. You are in the business of telling stories: you must strive to free your mental bandwidth to make sure they are your first, and final priority.

<u>THE EIGHTH LAW OF SHOWRUNNING</u>
RESIST THE SIREN CALL OF THE "SEXY GLAMOROUS JOBS"

In the business of entertaining people, many facets of the process of entertaining people are entertaining in and of themselves. Consider the costume designer's workshop. They have drawings of pretty girls on the walls, the costumers are frequently young and attractive - and have a great sense of style and design - and, every once in a while, beautiful actors come in and put on a fashion show for you.

The same applies for production design and prop fabrication - festooned as they are with blueprints, concept art, fabric samples, and awesome gizmos in various stages of construction. And wait 'til you hit the VFX office, where the boffins will regale you with endless tales of pre-vis and fluid dynamics simulations.

Then there's casting. That's where you can hear actors come in and say your lines in every manner possible. That's right, pretty people come in, say your words back to you, and you get to JUDGE them with impunity!

These are "the sexy, glamorous jobs." You can convince yourself that your direct supervision of these tasks is of the essence... especially if you are stuck on a difficult story knot and the other writers keep telling you the direction you want to go isn't going to untangle it. But you're damaging the show by believing it.

There's another pernicious aspect to the siren song of the sexy glamorous jobs; the longer you spend with your other departments, the more you rob from them the time they need to actually do their job (the designing and construction of things that will look great before the camera and not just sound great in your conversation)... and, by and large, most of them will be too nice to tell you to go away and let them work.

So don't be a Time Bandit (or a "Time Vampire"). Tell people what you want concisely... and then <u>leave</u>... or better yet, tell one of your writer/producers, let them have the discussion with the different department heads first, and then make course corrections later when there's an adequate level of proof of concept.

All of this brings me to post-production. In the late twentieth century - thanks to advances in computer software and memory, and the development of the non-linear/non-destructive editing workflow - post-production changed from a fairly recondite and artisanal process to becoming the single most seductive time suck for showrunners. A showrunner can now go into the editing suite with a large leather couch and massive high-definition screens with a pipeline to the editing system, and watch an episode, a sequence, a scene - even a single sequence of shots - over and over again, and demand any change that enters his/her mind... and, thanks to the miracle of computerized cut-and-paste and endless levels of "undo" and "redo" see it all in real time, and continue to demand changes until every combination of every frame that was shot has been considered.

It feels like real work, but it isn't, I promise. More often than not, all of the consideration and reconsideration done by showrunners of the material in post-production is a distraction from the the far less immediately rewarding work of the writers room. The trick to maintaining a healthy balance between the editing room and the writers room is to not fool yourself into thinking that post-production is where the show truly is. If you repeatedly find yourself "looking for the show" in post, it is because you most likely lost it in the writers room.

So how do you mitigate the siren call? By keeping your eye on the story, and by delegating to those who know the story best the task of making sure that the cut has been maximized toward the telling of the story before you step foot in post. Instead of going into the editing room to watch the first cut of the show from the leather couch - where you can be tempted to start taking things apart before the theme music plays - watch it in your office with the editor and the episode writer. Have a thorough discussion with them as to whether the scenes are telling the story (concerns of style and flair can wait until the story is solid) while an assistant takes notes, and then send the editor off to perform the notes.

When the editor is ready with the next iteration of the episode, do NOT look at it. Send the writer of the episode in to look at the next cut and let him or her decide whether the notes were addressed and give the next round of feedback: again, focussing on whether or not the film is telling the story. Only after you've allowed these steps to take place - maybe more than once - should you get on the leather couch and make it sing.

When you begin to work this way, you may feel like you're abandoning a child during a crucial developmental stage, but I promise you - what you are doing is giving the children being conceived a fighting chance at life.

Now, just because I am an advocate of delegating to your staff doesn't mean I am blind to the truth that all of your hires may be up to the tasks you assign for them, which leads to...

THE NINTH LAW OF SHOWRUNNING
EXPECT YOUR STAFF TO PERFORM AT VARYING LEVELS OF COMPETENCE

As I mentioned previously, you are not just running a corporation, but also a spoke of the apprentice-to-master wheel which many of your writers will ride all the way to becoming senior level writer/producers themselves. Among the many keys to being a successful mentor is the understanding that - when you have a room full of writers of different ranks and levels of ability - they will all perform on the page, and in the writers room, differently.

The executive producer-level writer with twenty-five years of experience - who ran his or her own show last year and is now on your staff as your Number Two - should be reliably expected to turn in drafts in which the story and scene structure are solid, and the characters speak with a voice close to what you have established. You may not ultimately like this writer's execution- that part is subjective - but you should have no doubt that you are in the hands of a pro.

This is what your senior level writer/producer has been doing for twenty-five years: learning how to solve story problems in script, mastering the craft of creating scenes that have a discrete beginning, middle, and end, and figuring out how to weave the prosaic concerns of plot and theme into dialogue that conceals the storytelling machinery beneath.

The assistant whom you promoted to staff writer as a reward for loyalty, hard work, and support - and because you read a spec script that you don't really know how long they took to write (or how much input they had from others in its creation) - cannot be expected to deliver on that level. It's on you to not only budget your time and energy to both give them thoughtful notes and rewrite their material, but also to muster the *largesse* to judge their work leniently.

To most showrunners, this seems unfair... and it is, to be honest, something of a damned nuisance. Nevertheless, it's on you to help your junior staff up the long ladder to mastery. The more well-considered your feedback, the better the scripts your writers will produce. It isn't some glacial process: give your staff accurate and specific information about what you want, and constructive feedback as to the how and why (and yes, describing to them WHAT to write counts - don't think they will resent your telling them exactly what you want the scene to look/sound like), and you will see marked improvement from script to script.

It sounds simple, and yet, many showrunners can't wrap their heads around that concept. Sometimes it's just more expedient to stall until you find the time to fix it yourself. It's also wrong. You hired them. You teach them.

The flip side of judging writers without considering their level of experience is the privileging of notes and feedback from "trusted" outsiders. I have seen every variation in this over twenty years, and have been called upon to perform notes given on scripts by the parents, spouses, and children of showrunners, as well as longtime assistant, and even the line cook of a restaurant (whom the showrunner believed was his link to staying "real").

Though it is the accepted wisdom in creative disciplines that "the best idea wins, regardless of where it came from," the most well-meaning attempts to enact this belief end often badly for all parties involved. Imagine a relatively benign version of this scenario: a showrunner asks an assistant to come in from the bullpen and pitch a script note to the twenty-five year veteran.

Here's a few of the reasons why this well-meaning gesture often ends in tears:

A. By the time a pitch/outline/script comes to the showrunner, the writers room has undoubtedly discussed it to every possible endgame. The outsider's idea was most likely already tossed around, taken for a test drive, kicked on the tires, and judged wanting for reasons that you have not yet had the time to examine.
B. You have told the more senior staffer - the one whom you should be trusting with the stewardship of your vision - that you trust them so little that you are looking for help anywhere you can get it.
C. You have sent the message that it's OK for an inexperienced staffer to speak out against a superior. That's not necessarily a sin, but applied capriciously and frequently, it breeds an entitlement in which junior staffers hold back the process because they believe they have the right to veto marching orders from anyone but the showrunner.
D. You have put a younger member of the hierarchy in the awkward position of being shut down in front of you by another one of his/her mentors. Everyone loses face.
E. You are privileging the counsel of people whose power differential with yours is so steep that they will <u>never question your decisions in a productive way</u>.

Now let's say that someone who answers the phones in the front office comes to you with an idea that you do find undeniable. How do you present it to your staff without triggering the awkwardness described above? You give the note yourself without the staffer in the room: if it succeeds the tests, you then graciously give credit to the junior member, also preferably without them in the room, and then later let them know that their idea is being used and that everyone knows where it came from. If the idea is proven to have already been talked about and discarded - and you realize you yourself are behind the mainstream of the creative process in your own room by pitching it - you take the blame, shrug it off, and move on. You're the boss, it will not damage you.

Conversely, if you are the youngest/least experienced/lowest-ranked writer on a staff and have an objection to the work of a more senior writer (and I am giving this advice here because it behooves showrunners to teach this behavior), and have an idea as to how you might fix it, then run your criticism/idea by the next person from you in the hierarchy... and maybe then go with that person to the next person up. You build consensus, insure that the ground under your feet is solid, and then make your move.

These last two points do bring up one, frequently very difficult managerial issue: what do you do when your writers room truly includes a bad apple? Does that fall under the rubric of "expecting writers to behave at different levels of competence?"

Sometimes, yes: bad behavior is often the result of lack of experience and education, That doesn't mean you have to tolerate it, and there are a lot of very useful strategies to mitigate the damage done by negative actors in your staff.

These are the three most common kinds of bad apples that show up in writers rooms:

1. The "Doctor No" - A writer who responds to most ideas that are not theirs with "that sucks" and then lets everyone know how and why, usually without providing ideas about how to fix the problem.
2. The "Hostage Taker" - Sometimes, Doctor Noes cross the line into Hostage Taker, refusing the let the room move on until their objections have been addressed. In younger and less experience staffers, this behavior is career-destroying. Another brand of hostage-taking comes from the writer who mistakes the open environment of the ideal room - to which its

participants should be able to bring their personal business, within the parameters of it being germane to the story - for their personal psychotherapy session/PhD thesis defense.
3. The Politician/Manipulator/Insulter - This refers to those who, through either tone-deafness, a desire to be heard and appreciated, or just plain malice, use information divulged in the open forum of the writers room to publicly or privately hurt, undermine, or make a punchline out of the other writers. This can be especially cancerous: the room runs on a certain amount of trust and sensitivity, and repairing that trust is an exponential investment of time from the speed with which it can be broken.

The strategies you need to correct these problems are simple and straightforward. Oftentimes the people doing these things do not realize that they are negative actors. Showrunners are often conflict-averse: many staffers will go through entire careers without ever being told they are behaving badly.

Here are the simplest ways of clearing the barrels of Bad Apples:

1. Throw the problem back at Doctor No - Doctor No tells you that they disapprove of something, you reply "You break it, you bought it." If you can pitch an objection, but not a solution, you have not earned the right to speak. As showrunner, you get to express that, first politely, then in escalating levels of exasperation until it sticks. More importantly, expressing this is an important part of your job as a teacher: the critical faculty develops earlier than the more craft-focused, patience-requiring, spade-and-trowel discipline of story generation and repair. If you don't correct Doctor No-ism early and often, you are causing yourself and other showrunners more trouble down the line.
2. Confront problems early, head on, and earnestly - If someone is chronically hijacking the room, tell them firmly, but politely (and preferably privately) that "You have a tendency to overshare, it's not always useful, and it undermines the times when what you have to say helps move the story forward," or "You need to watch the jokes about people's personal lives, they come across as hurtful," or (this was once said to me, and to this day, I thank the bearer of the bad news) "Your graphic descriptions of your self-loathing and body image issues are making the other writers uncomfortable, you may want to take your hand off the throttle." You don't have to be artful - or artfully impolite and cruel - to tell people what you need from them. If they push back, don't engage or become

defensive, hear them out, and let them know that they have been heard but that - their defense notwithstanding - you have identified a problem and want it worked on. This is often a crucial aspect of problem-solving: many people need to know they are on the record, even if it doesn't change the outcome. Remember, you're not anyone's best friend: you're the boss.

3. Discuss the problem with your closest subordinate, have them deal with it in one of the ways described above, and save your intervention as a court of final appeal - The reason a twenty-five year veteran is being paid to be your right hand is because they bring the experience and weight to deal with problems like this. Use them: let them deal with the problem, have their back, and if the recalcitrant writer insists on not changing, use the power of your office to reinforce the message at a later time. If, in spite of all this, the pushback continues, then there's always the nuclear options:
4. Exile - Some are so incorrigible that it eventually necessary to figure out a better use for their talent. Writers who perform well on the page but badly in the room can be used in draft writing and rewriting, and kept out of the room altogether. I have often seen Hostage Takers sent to perform producorial services on the set. So much of what happens on the set is about clarifying - especially for the actors - the context of the work at hand, that the sort of fine tooth-combed discussion that can turn into hostage-taking in the room can serve a useful purpose. This is not an optimal solution: writers are paid to write, but some writers are so incompatible with the collaborative process that you may find yourself cornered into finding an alternate use for them.
5. Firing - Sometimes, there's just no two ways about it. The merciful way (once you have dotted all your i's and crossed all your t's with the studio's HR) is to rip off the Band-Aid and be done with it, then everyone can move on.

Nothing above is easy or comfortable. The seduction of the "writing-staffs-as-democracies" fallacy - the desire to believe that you can abdicate your teaching responsibilities because everyone in the staff is "equal" - is aided by how tangential and time consuming these interactions feel. It is far easier to believe that everyone should have one voice and one vote. It is also very damaging.

A writer gains mastery over the form and function of television in the same way that chess players master their game: by studying old games, internalizing the patterns, and practicing, practicing, practicing. Lay-people mistake both chess and writing as explosions of genius-level creativity: but where does the black powder for that explosion come from? Pattern recognition. That's why the twenty-five year veteran is usually so good at the job of breaking story, even if the younger writers demonstrate a greater flair for dialogue, or can render the rhythms of the current popular culture with greater fidelity. Veterans don't have to reinvent the wheel every time out. The veteran looks at the board and recognizes the ten different ways the game can go from that point to a win, or a draw, or a defeat.

There are only so many variations in chess and story telling - the reason you rely on the veteran is that they don't have to play every variation in order to predict how to reach the outcome you want. The art of writing is in how you disguise the mechanics of this assembly, just as the art of chess comes from fooling your opponent into not seeing your endgame thirty moves ahead.

You may be tempted by the idea of a cabinet of equals - with yourself as the first among them, of course - but your job is to lead and teach. You earn love by recognizing that everyone's gifts are different and giving your employees an environment in which is it safe to try, and both succeed and fail. Every member of a writing staff is on the hook for the education of the next person below them; recognizing that everyone is working at a different level is your first step toward building camaraderie.

Hierarchy is neither a dirty word, nor the sign of a hidebound mind that resists change and innovation. Hierarchy is not proof that you're a square and sell-out. Properly enacted, and thoughtfully maintained, hierarchy is the flak jacket that allows each member of your staff to reach their highest potential without being shredded by gunfire.

THE TENTH LAW OF SHOWRUNNING
DELIVER GOOD AND BAD NEWS EARLY AND OFTEN

TV shows are natural incubators for the sort of dramas that come along when your force a hundred or more temperamental people into close communion under the pressure of intense work performed under great stress. Invariably, drama comes from secrets. In my experience, secrets are poison - especially when you are exposed as their bearer. Sunlight is the best disinfectant.

The Tenth Law of showrunning is a close dependent of the Second. As the source of the show's vision and the one best qualified to say What It Is and What It Is not, make truth-telling your business, rumor control your secondary vocation, and complete transparency your ultimate goal. Save the drama for the screen.

The reasons for this are of the essence of the First and Second Laws. You want and need to be the source of all that is true about your show - even if that truth is unpleasant. The worst position for a leader is as the bearer of bad news everyone already knows.

Any information that aids the speed and efficiency of creation - even if it temporarily hurts feelings - is worth exposing early, tactfully, and often... and if that information exposes you as the cause of a blunder, you are better off putting your pride aside and owning up than expecting everyone who works for you become the unwilling accomplices in - and hostages of - the protection of your own self-concept. Whenever a rumor, a lie, or a truth that you have not sanctioned takes on a life of its own, it undermines your own ability to set the tone, define the parameters, and describe a path to success.

Transparency is not just a moral imperative to the life of a showrunner; it's a necessary lifeline. If you need to devote one iota of your energy to deception tracking and maintenance, that's an iota that's not going to the work you need to accomplish in the writers room. Transparency streamlines your life. Being transparent before anyone can be transparent for you means you control the narrative. Giving bad news before they crash land means no one can claim surprise at a bad break.

Being transparent also helps to break down a commonplace fallacy in television: the idea that network and studio are your adversaries. In fact, these are your production partners and your financial backers - as invested in the success of the series as you are - and they deserve to have a clear picture of the process.

In short, when everyone knows the truth, no one can be surprised by its arrival. When it comes from you, no one can say that you lost control.

THE ELEVENTH LAW OF SHOWRUNNING
SHARE CREDIT FOR SUCCESS TO A FAULT

The Eleventh Law of showrunning is the tail of the snake in the mouth of the First... never miss an opportunity to point out how another person's work has made you look good. It’s your name on the show and it’s all about you anyway, so you lose nothing by sharing credit.

It sounds counter-intuitive. Most showrunners feel embattled in a job that is manifestly greater than any one person's ability to perform, and feel that - because of their daily marshaling of the resources necessary to commit to that level of intensity - they deserve to be recognized as the sole author of the production.

In truth, that recognition is already there. I'm not just talking about the First Law: the validation of your primacy comes weekly in the form of the largest check on the payroll, the biggest office in the suite, the parking spot closest to the front door, and the Executive Producer credit in the main titles of every episode of the show... along with your production company card after the end titles.

Everyone knows who and what you are. Everyone is hanging on your words.

The wonderful thing about credit is that it's not a finite resource. The more credit you give, the more credit you get - for being a genius and hiring a great staff, for being a good boss and a nice person (finally!) who can acknowledge the contributions of others, for fostering a positive work environment, and - most crucially - for being the kind of showrunner who protects their writers from the kinds of short term judgments that you have the liberty rethink in the long term.

By that I mean this: because of your feelings of embattlement, you will often be tempted to tell the studio or network about which writers are not performing to your expectations in order to explain a temporary stop in the script pipeline, or a missed deadline, or to assuage your own temporary feelings of annoyance. There are few things a showrunner can do that are less becoming of their station than to throw a staff member under the bus.

The first reason is that the road is long and you may find yourself discovering - as this writer does further work for you - that you actually quite like their writing. You have the liberty to change your mind, but a single bad remark (like a yawn from the emperor in *Amadeus*) can paint a writer's career at network or studio for far longer than you imagine. The second reason is that - when you impugn your own staff - it makes your own stewardship of the show, your ability to communicate to your staff effectively, and your own hiring decisions appear suspect.

And yet there will be times when the studio or network will ask for a draft that you are not prepared to hand over because you need to do a lot of work on it because the writers didn't nail it. You know what you say? You say: "There's still work to be done." That's it - be honest but be fair to the writers and their process, even if it frustrates you.

If there is pushback from the studio or network, take the responsibility yourself: own it and revel in the truth that a blow that would cripple the career of someone of lesser rank is but a ding on your door.

The reason this is the final Law of Showrunning is not just that it feeds right back into the First Law, but also that it is the biggest test of character before you as someone who has just been handed something close to absolute power in the business.

How you deal with praise - and success, and all the concomitant slings and arrows thrown at you for your position - and whether you recognize that you have within you the strength to be that aforementioned flak jacket to your staff, is as true a test of your self-esteem and worth as a person as anything you will ever face.

EPILOGUE

It may be a gross generalization to say that leadership is not a defining characteristic of most writers, but in my experience, it is where we most often fall short. And when we fall - or see something brewing we do not want to face - the natural thing to do is seek refuge. The place where most of us find it is a vast and impregnable fortress called "my creativity." Surrounded by a crocodile-infested moat known as "my process," it is in this fortress that all other concerns are banished in the name of you doing "what I have to do" to be "brilliant on the page."

As a showrunner, this is about as far from a safe space as can exist. The symptoms addressed by the Eleven Laws swirl around this delusion like debris around that scientifically inaccurate black hole in the eponymous Disney sci-fi disaster from the late 70s. It is in this fortress that you think it's OK to excuse yourself your managerial shortcomings under the mistaken impression that - because you have gone there to find your muse - you are entitled to any accommodation, deferral of difficult responsibility, or abdication of a human obligation, that you deem necessary.

All writers indulge this kind of magical thinking to some level: we cling to our depressions, darknesses, and deceptions thinking they are the source of our genius. We mistakenly believe that our creativity is a karmic recompense for whatever traumas we suffered in the past, and use the excuse of "my process" for any number of toxic activities that we believe service the creativity, but which only prolong misery.

For a showrunner, this clinging is toxic not just for the obvious reasons, but because it provides place to run away from all of the very real responsibilities of your position.

The price you pay to play to an audience of millions on the word stage is that you have to make concessions between the tempestuous *artiste* you idealized for yourself when your pain was something that pushed you toward self-expression. The cost of admission to the Majors is that you have people who depend on you: not just for their living, but also their creative, emotional - and, occasionally, physical - well-being... and, oh yes, you also have an audience that's waiting to be entertained.

As a showrunner, your reality is that you are a senior-level professional: someone who earns more for producing a single episode of television than most Americans do in a year, and has earned the power to either indulge their worst side, or aspire to their best.

Whether you choose to embrace this truth, you owe it to the people who have signed up to work for you to not visit upon them the traumas of your past because that is the only way you think you can perform on the page. You also owe it to them to come to reckoning with the truth that you creativity and your pain are not one and the same, and that the need to believe that in order to get the work done is incompatible with your current lot.

Facing this may be the hardest and most painful truth for any writer. While one certainly informs the other, your darkness and your writing come from different places... losing the former - or at least dispelling it long enough to be a fair leader to your employees - will not affect the latter. Your creativity is a renewable resource - just like praise, and credit, and is fed by everything around you - especially the great people you hired to facilitate this difficult undertaking. Your creativity is not some finite thing that must be hoarded and protected with arcane devices and traps, but rather a gift that you should bestow on every one of your charges if you want them to succeed to the best of their ability.

And, if you don't have the time or energy to lay down your affectations, you can at least shield others from your insanity by building a scaffold of professionalism around yourself. Suffer for your art if you must - but make the effort to prevent others from becoming participants in your daily reenactment of your trauma. It will make your show a better workplace place for you and every member of your staff.

Of course, you don't have to take my word for this.

As I said previously, even the worst - and most abusive - of managers are generally propped up into functionality, not just by their writers, but by everyone who depends on their ability to perform for their profit. These may, then, be the only Laws that are not only completely optional, but - in all honesty - tangential to the most commonly accepted definition of success in this field.

Nothing I have described above will guarantee profit, fame, awards show recognition, and cultural currency and influence: but I can guarantee that, if you make a habit of practicing any number of these Laws, they will make your life, and your relationships - both in and out of the job - at least a little bit better.

So I will just leave them here - as they say in the business of show - "For Your Consideration."

What happens next is up to you.

COMPLETED STAFF WORK

"During the war, I left an operating squadron in the field and after a short schooling at the Staff School in Leavenworth, found myself thrown into a very large headquarters. The attached article called "Completed Staff Work" was circulated in the Pentagon during World War II. It was a considerable help to me and other officers in attempting to learn to do our jobs with Headquarters, Army Air Forces."

It seemed to me that some of the recommendations had quite a bearing on the operations of a business and I am passing this memo along so that all of you will have an opportunity of looking it over. You will have to overlook the military terminology, and it isn't our intention to start organizing HQ on a military basis, but I still thought the article worthwhile."

TJW, JR.

"Completed Staff 'Work" is the study of a problem, and presentation of a solution, by a staff officer, in such form that all that remains to be done on the part of the head of the staff division, or the commander, is to indicate his approval or disapproval of the completed action. The words "completed action" are emphasized because the more difficult the problem is, the more the tendency is to present the problem to the chief in piecemeal fashion. It is *your duty as a staff officer* to work out the details. You should not consult your chief in the determination of those details, no matter how perplexing they may be. You may and should consult other staff officers. The product, whether it involves the pronouncement of a new policy or affects an established one, should, when presented to the chief for approval or disapproval, be worked out in finished form.

The impulse which often comes to the inexperienced staff officer to ask the chief what to do, recurs more often when the problem is difficult. It is accompanied by a feeling of mental frustration. It is so easy to ask the chief what to do, and it appears so easy for him to answer. Resist that impulse! You will succumb to it only if you do not know your job. It is your job to advise your chief what he ought to do, not ask him what you ought to do. He needs answers, not questions. Your job is to study, write, restudy and rewrite until you have evolved a single proposed action -- the best one of all you have considered. Your chief merely approves and disapproves.

Do not worry your chief with long explanations and memoranda. Writing a memorandum to your chief does not constitute completed staff work, but writing a memorandum for your chief to send to someone else does. Your views should be placed before him in finished form so that he can make them his views simply by signing his name. In most instances, completed staff work results in a single document prepared for the signature of the chief without accompanying comment. If the proper result is reached, the chief will usually recognize it at once. If he wants comment or explanation, he will ask for it.

The theory of completed staff work does not preclude a "rough draft", but the rough draft must not be a half-baked idea. It must be completed in every respect except that it lacks the requisite number of copies and need not be neat. But a rough draft must not be used as an excuse for shifting to the chief the burden of formulating the action.

The completed staff work theory may result in more work for the staff officer, but it results in more freedom for the chief. This is as it should be. Further, it accomplishes two things:

1. The chief is protected from half-baked ideas, voluminous memoranda, and immature oral presentations.

2. The staff officer who has a real idea to sell is enabled more readily to find a market.

When you have finished your "completed staff work" the final test is this:

1. If you were the chief, would you be willing to sign the paper you have presented, and stake your professional reputation on its being right?

2. If the answer is in the negative, take it back and work it over, because it is not yet "completed staff work".

Microsoft Memo

To: Applications developers and testers
From: Chris Mason
Date: 6/20/89
Subject: Zero-defects code
Cc: Mike Maples, Steve Ballmer, Applications Business Unit managers and department heads

Zero defects

On May 12th and 13th, the applications development managers held a retreat with some of their project leads, Mike Maples, and other representatives of Applications and Languages. My discussion group[1] investigated techniques for writing code with no defects. This memo describes the conclusions which we reached.

Zero-defects code is the Holy Grail of programming. We are not suggesting that this phantasm is attainable on the first try, but we think we know how to get there. There is a crucial need to do this. In OBU, for example, Mac and PC Word were very late, and Win Word continues to be late, in each case because we had many more bugs than we anticipated. Large numbers of bugs at the end of a project make scheduling impossible for project leads and life unbearable for programmers and testers.

Zero defects has actually been achieved on software projects; it is not an impossible goal. Zero defects must be the new performance standard for development. A “defect” occurs when something that is labeled “done” does not conform to the requirements. We need to understand our methods, and strive to improve them in order to prevent defects from happening, or recover from them if they do happen. You’ll be able to measure your success by the reduced time from code complete to shipping.

You *can* improve the quality[2] of your code, and if you do, the rewards for yourself and for Microsoft will be immense. *The hardest part is to decide that you want to write perfect code.*

The problem

There are a lot of reasons why our products seem to get buggier and buggier. It’s a fact that they’re getting more complex, but we haven’t changed our methods to respond to that complexity.

The problems listed below are not an indictment. Some programmers write perfect code today, and the rest of us have good, honest reasons for coding the way we do. The point of enumerating our problems is to realize that our current methods, not our people, cause their own failure.

---

[1] Brian Arbogast, Dennis Canady, Jon DeVaan, Ed Johns, Doug Klunder, Brian MacDonald, Tom Reeve, Charles Simonyi.

[2] Dave Moore’s definition of quality: “Conforms to the requirements.” This means a feature works the way it was specified, at a given level of performance. Quality doesn’t mean the code is perfect or infinitely fast. Oftentimes exceeding the requirements is not worth the cost.

Minimal success

Our scheduling methods and Microsoft's culture encourage doing the minimum work necessary on a feature. When it works well enough to demonstrate, we consider it done, everyone else considers it done, and the feature is checked off the schedule. The inevitable bugs months later are seen as unrelated. By investing the minimum effort, we guarantee the minimum return.

We slip things because it's easier to postpone bad news than to face up to it when it happens. This is "mentally lazy and morally weak."

Schedules and other high winds

We forget that the schedule is not a product, it's a tool. Its purpose is to predict when we will finish, so that other people can schedule their own work accordingly. The schedule has nothing (directly) to do with the quality of the product.

When the schedule is jeopardized, we start cutting corners. We worry about getting features implemented quickly. We ignore warning signs that serious problems exist, or we cut "non-critical" items like size and speed tuning.

Missing the point

The reason that complexity breeds bugs is that we don't understand how the pieces will work together. This is true for new products as well as for changes to existing products.

I don't believe that any of our products are so complex that our programmers can't understand them. Code that is too complex to understand should probably be rewritten; complex code can still be straightforward. The real problem has two facets: we don't want to spend the time to understand exactly how a new feature will affect or be affected by the rest of the program, and too often we think we understand this but do not.

The wrong people write too much code

Imagine a well-intentioned programmer who gets a feature done very quickly, as requested, with minimal unit testing and almost no system testing, marks it off on the schedule, then starts on a new feature. Now imagine another programmer who also works quickly, but very carefully checks his assumptions, handles boundary cases, writes good test suites, verifies all the cases, and then checks it off on the schedule.

The first programmer gets to write more features than the second. The first programmer also gets to spend a lot of time, six months from now, working the bugs out of code he dimly remembers, while the second programmer will have little to do.

This is exactly the reverse of the ideal.

No commitment to completeness

No one is charged with the responsibility for ensuring the completeness of code. Development is too often concerned with *appearing* to make progress (my opinion of this should be clear by now), and with having a clean product *at ship time.* Testing can only verify that the product works as specified; this is a poor test of completeness. Program management, marketing, and user education concentrate on the schedule and a minimum usability level.

Development is at fault here. No one can know if the code is complete but the author or his peers. We have not been charged with this responsibility in the past, so we have not shouldered the burden.

"We'll do that later" doesn't work, because "later" you're going to be up to your neck in alligators trying to figure out how you got there.

Lack of ownership

Under pressure, we tend to hunker down and just try to get our part of the job done. But part of the job is to stand up and look around. Each developer should take the responsibility to consider the entire product, use common sense, and not just take the spec as gospel.

Over-confidence

This is perfectly natural, but wrong. Every programmer I know writes good code, looks at it in satisfaction, and declares that it should work. I have rarely seen new code that does so. (The occasions are easy to spot: people dancing and hooting in the halls.) What piece of code has withstood six months of testing with no bugs reported? Or been reviewed in the next version without a shudder?

"Bugs are inevitable"

This is an insidious idea. The fact that we must rid ourselves of this idea seems to contradict the implications I've been making, namely that we should anticipate bugs in our code and winnow them out early. There is no contradiction: when everyone feels that bugs will happen no matter what we do, we stop taking action to prevent *any* bugs from appearing.

In fact, bugs *are* inevitable. But if we act that way, we make it more horribly true.

The solution

First, I have to admit that there is no single solution. Every project team must evaluate itself and its product and determine what will help to achieve zero defects. It doesn't matter whether we can actually achieve zero on the first attempt, but we should start *right now* and get closer on every project.

This section gives a broad overview of the solution. The following sections describe how to change your attitudes and work habits to reach that goal. A few of the ideas *must* be done or the whole thing will collapse, but for the most part each project should pick and choose what works best for them.

Zero bugs every day

I mean this literally: your goal should be to have a working, nearly-shippable product every day.

This doesn't mean that when you go home every night you have removed all the bugs from work in progress. It simply means that when a programmer says a feature is complete, it is totally complete: all error and boundary cases work, all interactions with the rest of the product have been dealt with, test documentation or code to exercise the feature are checked in.

Your project should have a state or directory from which anyone can create a current "clean" copy of the product. One way to handle this is to stage the checkin. Modules can be checked in to a "working" directory for history and as insurance against hard disk failure, then checked in to the "clean" directory when the feature is complete.

Fix it now

Since human beings themselves are not fully debugged yet, there will be bugs in your code no matter what you do. When this happens, you must evaluate the problem and resolve it immediately. Remember that the goal is to have a perfect "clean" copy at all times.

Testers shall not

Bob Matthews often says, "We should write quality into our products, not test it in." Perhaps testing is a bad name for what our testing department should do. If our programmers ensure the quality of their work by the time testing sees it, then testing's function is quality assurance, not finding bugs.

This doesn't necessarily change the methods that testing uses, although testing's function may evolve if we truly succeed in giving them high quality code. But it's an important attitude shift, and in solving the problem of code quality, attitude is almost everything.

A new attitude

Zero defects is a strategy that can't have results unless we decide to make it work. This section gives ideas for aligning yourself with the new attitude.

Think twice before you code

You make hundreds of assumptions when you write a new routine, from the mundane (parameters of called subroutines) to the grandiose (how the user will perceive the feature). Experience has shown that many of these are wrong.

Minor changes are even worse, because the investment in time to fully understand the context of the change seems to outweigh the magnitude of the change. When we make assumptions, we must explicitly state them (with asserts or checking code).

A related problem is not taking the time to think about various situations at all. Incomplete understanding is a huge source of bugs, and has a simple fix: investments in understanding and thinking about the context of a change *always* pay off.

Take the time

Programming speed is highly overrated. Speed with quality is a worthy goal, but quality usually suffers. Evidence suggests that you can spend your time thinking about side-effects and planning up front, or you can spend it patching fixes to bugs later on. These options take about the same amount of time, but the latter results in an inferior product and burnt-out programmers, and you can't predict how long it will take.

Take the heat

Once you have committed yourself to zero-defects code, you're going to encounter pressures to drop back to the old methods. Some of this will be temporary until other groups (user education and program management, for example) learn that the new method results in better products whose progress can be measured and predicted.

Don't give in. Your first schedules will look infinitely padded, when in fact they will simply be true (a new thing in the world). Mike Maples has agreed to stand behind any schedule that can be defended as realistic.

If problems do occur, slip the schedule. Your goal should be to keep the schedule realistic (descriptive as well as prescriptive). It's better to take the little heat now than the nova later on.

Be ashamed of bugs

If you think that there will be bugs in your code no matter what you do, and someone actually finds one (or a hundred), there's no cause for alarm: "I knew it." If you think that there won't be any bugs in your code, but someone finds them anyway, you probably react with resignation: "I guess I was wrong."

Both of these are counter-productive strategies for dealing with bugs. Plan carefully so they don't happen. If they happen anyway, you *should* be embarrassed, and find out why your plans failed. Then take action to prevent the same failures in the future.

Coding is the major way we spend our time. Writing bugs means we're failing in our major activity. Hundreds of thousands of individuals and companies rely on our products; bugs can cause a *lot* of lost time and money. We could conceivably put a company out of business with a bug in a spreadsheet, database, or word processor. We have to start taking this more seriously.

Reward quality

It's difficult to say what it is we're rewarding now. What we should be rewarding are people who do the job right the first time. If we can't find anyone like that, we should reward whoever comes closest. One means of reward is simply to let them do more of the fun stuff. The way you do that is to enforce the rule that if something is broken, it must be fixed right away.

Another means of reward is a better performance review, which in turn leads to monetary reward.

"Fat and slow" is a bug

Users measure our products by their speed (a major part of usability) as much as by their features. Our methods do not reveal this. We often let hand native, swap tuning, and other important optimizations slip until there's no time to do them.

Hand native should be done in parallel with the C from the start. This may seem to "waste" time, but you'll always know if the program is fast enough, and have time to correct it if it's not. Algorithmic optimization should *never* be postponed. Swap tuning is a difficult issue, especially under Windows and with the state of our current tools; each project lead should decide how to schedule it.

The intent is not to do unnecessary optimizations, but to schedule, *and never postpone*, known optimizations.

Code quality measures programmer performance

If we value quality, then quality should be a criterion in performance reviews: not the only criterion, but as important as any other.

A new way to work

All of the concrete suggestions in this section came from a few hours' discussion by nine people who had changed their attitude. These are ideas for how to implement a zero-defects strategy in your project. If you have others, please let everyone know.

Stop guessing

Here are ideas for making sure you do it right. Not all of these techniques will work for everyone, so pick and choose.

Cleanroom

This technique has been described by Harlan Mills[3], and was once used unintentionally by Charles Simonyi. Both report good results in small- to medium-sized projects. One aspect of this approach is to do things in a more mathematical manner, leading to informal proofs of correctness.

To use the cleanroom technique, imagine that your hardware has not been delivered yet, so you can't debug your program. After designing and writing your code, you and your colleagues review it carefully and in detail, over and over if necessary until you're absolutely sure that it will run the first time. Mills' and Simonyi's experience is that it nearly will run the first time.

Code review

No group of more than two programmers can agree on the best format for code reviews, so we won't make a claim for a "best" format. We do think code reviews are critical. Here are some ideas.

The old-style presentation code review, in which the author walks through his code with his peers, does not catch any but the most superficial bugs. It is an excellent teaching tool, however, and we encourage its use for that purpose.

A more rigorous method is for the author to prepare an introduction to the code, including written documentation, and give a high-level walk-through of the code to one or more of his peers. The reviewers then use the author's materials to actually step through and test the code. A variation is for the reviewers to simply read the code thoroughly until they understand it. In both cases, the reviewers should be looking for missing logic, for how exception cases are handled, and for bad assumptions. Then the reviewers report their results to the author.

Another variation is for the reviewers to review the code privately and report whether or not they found problems, without saying what the problems were. The author must try to find the problems independently.

Don't trust anyone

Since so many problems are caused by misunderstandings, assume nothing without verification. This can take the form of asserts and state verification code that runs on demand or at idle time.

Debugging tools never find their way into the schedule—this has to change. Every development postmortem[4] promises that more time will be spent on essential debug tools next time. Stop postponing it. PAs that can write code are a great way to get these done; almost all of the debugging tools in Mac Word 4 were done by a PA.

We all claim to use asserts, but almost all code could use more of them. Spend the time to identify what your assumptions are, then make the code prove that the assumptions are correct.

Document your design and interface

Each project should determine what level of documentation is adequate. Only one thing is certain: your current level of documentation is probably *in*adequate.

3 In "Cleanroom Software Engineering." Dave Moore can provide copies of the article.

4 OBU now calls these Project Epilogues.

Improvements may require nothing more than enforcing meaningful header comments on all routines. It would probably help to have at least a high-level document describing the basic logic and data structures for every major part of the product. Don't forget to schedule time to write these, and don't wait until after the product ships: by then it's too late to help anyone.

If you don't do this, people will continue to make bad assumptions about your code. The resulting bugs will be your fault.

Part of the documentation effort must be to simply talk to each other. Too often there is not enough communication even *within* a team. This turns you into a bug factory.

Training sessions

New people on the project (or on a feature) are a great source of bugs. You can avoid this by teaching them what they need to know. An orientation document is a great help; the Mac Word Fundamentals document has really helped.

Have regular meetings where someone presents the ideas behind part of the product. If you have a weekly development meeting, do it then. Discuss the basic logic of the code and how it interferes with the rest of the product. You may want to videotape the presentations so you can show them to new people later on.

Encourage everyone on the project to know the entire product well.

Write tests before debugging

This is critical. *Before* you start debugging, determine what you'll be looking for and *write it down*. If you can automate the tests, better yet. As you find cases you missed, add them to the script.

We don't want you to waste time managing unwieldy scripts, so keep them as brief as possible. But if you write down what you'll be testing, you get these benefits:

- You can give the script to testing when you check in the code. They'll have a better chance of verifying your code, or finding problems.
- You'll know for sure what you tested.
- You'll think of things you missed before anyone else even sees it.

Competing designs and implementations

This is a dark horse. One way to be sure you have the best design is to have two different teams develop a solution to the same problem independently, then accept the better design. You may want to take parts of each design for the final product. You can use the same technique for implementation: have two teams write the same feature.

Ths sounds expensive, and it is. But by simply doubling your cost, you guarantee a better product.

There is another problem: how do you tell which is better? Nathan Myrhvold suggests examples in which competing designs couldn't be distinguished until they were implemented. So, if you're thinking of trying this, you should plan on carrying the competition through the coding phase.

Self-validation

Before you call something done, you should convince yourself it is correct. Mathematical proofs suffer from Groucho's disease: they can only prove algorithms that are so simple we don't care. So try the techniques below.

Step in it

As in, "You don't know it until you_"

A common technique for verifying the "correctness" of new code is to run it and see if it crashes. If it doesn't crash, and it seems to produce the correct result, then it "works".

Step in it means step through every line of code with a debugger. Stop at crucial points and examine important variables. Watch closely at important logic points.

In Mac Word 4, we stepped through code for two reasons: to verify the correctness of hand native, and because the profiler wasn't giving us the right kind of information[5]. The result was extremely clean hand native, and a lot of insight into how the program *really* worked, which allowed us to improve its speed dramatically.

The only way to be sure code works is to watch it.

Code review

This must be said again. The educational benefits alone make code reviews worthwhile. But their real value is to get more than one person thinking about the code, and verifying it. Use whatever format works best for you, but schedule code reviews and then *do* them.

Glass box testing

Sometimes called white box testing. PAs would make great glass box testers. This is an interactive code review: having someone other than the author test the code with a listing open, looking again for missed cases, bad assumptions, or simple mistakes.

Presumed guilty

The U.S. judicial system is a terrible model for testing software. Assume that your code does not work (a good bet), and make it prove itself. This is where your scripts come in. Figure out before debugging how your code could be broken, then prove that it's not.

This is a crucial change in attitude. We must stop writing code and then testing it to find the bugs. Instead, we need to write the code and convince ourselves that it works. Not finding bugs is not a proof of correctness.

Self-correction

When you've expended your best efforts, and you still find bugs in your code, don't give up and don't accept the situation. Do these instead.

Do not pass Go

Fix it right now.

Your commitment to zero bugs every day has broken down. Stop working on that jazzy new feature, forget about the schedule, and fix the problem.

Reassess and scream

Simply fixing the bug isn't enough. Take a moment to figure out why the bug happened. Why didn't your test scripts or asserts catch it earlier? What assumptions were wrong, what rules did you break?

---

5 The profiler can tell you how long was spent in the code that ran. It can't tell you if the right code was run, for example if a cache eliminated unnecessary work.

If you find something, look hard for other instances—bugs travel in swarms. Then let everyone else on the project know. It's likely that someone else made the same wrong assumptions. Bring these up at the weekly development meetings.

Three strikes

When a lot of bugs have been found in the same area, there's something seriously wrong. Find out what it is. Perhaps someone isn't spending enough time to verify the code before checking it in. Perhaps there are serious design problems.

When design problems do occur, be ready to throw it out and start again. You can easily spend as much time trying to patch a bad design as you can fixing it right. Take the heat: adjust the schedule if necessary, but don't force users and your team to live with mistakes that could be corrected and will compound if they're not.

Reassign bugs

A possible extension of code reviews is to have someone other than the author fix some of the bugs in an area, especially problem areas. There are many variations: assign the bug to someone who has reviewed the code in question, or assign it to someone at random. You may find that getting a new perspective on the area will help to identify the larger problem.

Fix one, find one

Consider using a quota system: for every bug found in your area, you must find another bug and fix it. (This is not recursive: you're free after the second fix.)

The second bug doesn't have to be in the same area, or even in your code at all. This technique will motivate you to not create bugs, and it will also force you to examine the product more closely.

Projects in progress

Projects that are already well advanced can still use some of the concepts of zero defects.

- Do code reviews. Even if you're in crunch mode to fix bugs, *good* code reviews can find more problems and are worth the time.
- Step through new code, even small bug fixes.
- Add asserts and state verification code.
- Be very careful when fixing bugs. Examine assumptions and verify them. Stop and think about what else you're affecting.
- When an area is showing severe problems, consider throwing it out and doing it over.
- Update function header comments; stop and document areas that everyone uses but which are not well understood.
- Have training and discussion sessions.
- Have your PAs do glass box testing.
- Implement the fix one, find one scheme.

Benefits

Zero defects is a lofty goal, but it can have tangible results.

Predictability

The stabilization phase of the project is the hardest to schedule. The smaller that phase becomes, the better we can predict the entire project. If we always check in high-quality code, then we have a good idea how much time the remaining tasks will take, and everyone benefits.

Spread out the fun

Imagine that, late in the project, you're not fixing bugs for twelve hours a day! Instead, you're writing quality code that you're not going to have to come back to later and patch incessantly.

Put your time into thinking up front, and the fun stuff will last all through the project.

Less conflict

Between programmers and between groups.

Pride and productivity

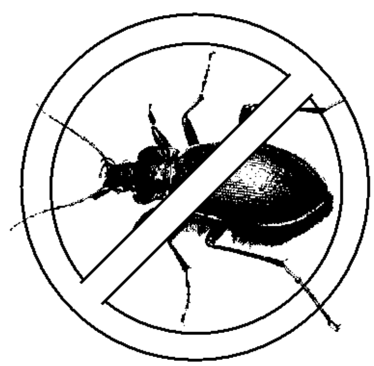
When the quality of your code goes up, you'll feel a sense of pride and accomplishment *throughout* the project, not just when the good reviews come in. Also, Dave Moore has studies that show that when you think consciously about quality, and work to improve it, your productivity also increases. That's rewarding both for you and for the company.

Self-leveling

When projects follow zero-defects strategies, the people who write the best code will get to write more of it. This rewards the best coders and gives everyone a way to measure and improve themselves.

Learning together

This isn't the final word. If you find techniques that help you produce better-quality code, please tell Dave Moore, Doug Klunder, or myself so we can make everyone aware of them.



The Bitter Lesson

Rich Sutton

March 13, 2019

The biggest lesson that can be read from 70 years of AI research is that general methods that leverage computation are ultimately the most effective, and by a large margin. The ultimate reason for this is Moore's law, or rather its generalization of continued exponentially falling cost per unit of computation. Most AI research has been conducted as if the computation available to the agent were constant (in which case leveraging human knowledge would be one of the only ways to improve performance) but, over a slightly longer time than a typical research project, massively more computation inevitably becomes available. Seeking an improvement that makes a difference in the shorter term, researchers seek to leverage their human knowledge of the domain, but the only thing that matters in the long run is the leveraging of computation. These two need not run counter to each other, but in practice they tend to. Time spent on one is time not spent on the other. There are psychological commitments to investment in one approach or the other. And the human-knowledge approach tends to complicate methods in ways that make them less suited to taking advantage of general methods leveraging computation. There were many examples of AI researchers' belated learning of this bitter lesson, and it is instructive to review some of the most prominent.

In computer chess, the methods that defeated the world champion, Kasparov, in 1997, were based on massive, deep search. At the time, this was looked upon with dismay by the majority of computer-chess researchers who had pursued methods that leveraged human understanding of the special structure of chess. When a simpler, search-based approach with special hardware and software proved vastly more effective, these human-knowledge-based chess researchers were not good losers. They said that ``brute force'' search may have won this time, but it was not a general strategy, and anyway it was not how people played chess. These researchers wanted methods based on human input to win and were disappointed when they did not.

A similar pattern of research progress was seen in computer Go, only delayed by a further 20 years. Enormous initial efforts went into avoiding search by taking advantage of human knowledge, or of the special features of the game, but all those efforts proved irrelevant, or worse, once search was applied effectively at scale. Also important was the use of learning by self play to learn a value function (as it was in many other games and even in chess, although learning did not play a big role in the 1997 program that first beat a world champion). Learning by self play, and learning in general, is like search in that it enables massive computation to be brought to bear. Search and learning are the two most important classes of techniques for utilizing massive amounts of computation in AI research. In computer Go, as in computer chess, researchers' initial effort was directed towards utilizing human understanding (so that less search was needed) and only much later was much greater success had by embracing search and learning.

In speech recognition, there was an early competition, sponsored by DARPA, in the 1970s. Entrants included a host of special methods that took advantage of human knowledge---knowledge of words, of phonemes, of the human vocal tract, etc. On the other side were newer methods that were more statistical in nature and did much more computation, based on hidden Markov models (HMMs). Again, the statistical methods won out over the human-knowledge-based methods. This led to a major change in all of natural language processing, gradually over decades, where statistics and computation came to dominate the field. The recent rise of deep learning in speech recognition is the most recent step in this consistent direction. Deep learning methods rely even less on human knowledge, and use even more computation, together with learning on huge training sets, to produce dramatically better speech recognition systems. As in the games, researchers always tried to make systems that worked the way the researchers thought their own minds worked---they tried to put that knowledge in their systems---but it proved ultimately counterproductive, and a colossal waste of researcher's time, when, through Moore's law, massive computation became available and a means was found to put it to good use.

In computer vision, there has been a similar pattern. Early methods conceived of vision as searching for edges, or generalized cylinders, or in terms of SIFT features. But today all this is discarded. Modern deep-learning neural networks use only the notions of convolution and certain kinds of invariances, and perform much better.

This is a big lesson. As a field, we still have not thoroughly learned it, as we are continuing to make the same kind of mistakes. To see this, and to effectively resist it, we have to understand the appeal of these mistakes. We have to learn the bitter lesson that building in how we think we think does not work in the long run. The bitter lesson is based on the historical observations that 1) AI researchers have often tried to build knowledge into their agents, 2) this always helps in the short term, and is personally satisfying to the researcher, but 3) in the long run it plateaus and even inhibits further progress, and 4) breakthrough progress eventually arrives by an opposing approach based on scaling computation by search and learning. The eventual success is tinged with bitterness, and often incompletely digested, because it is success over a favored, human-centric approach.

One thing that should be learned from the bitter lesson is the great power of general purpose methods, of methods that continue to scale with increased computation even as the available computation becomes very great. The two methods that seem to scale arbitrarily in this way are *search* and *learning*.

The second general point to be learned from the bitter lesson is that the actual contents of minds are tremendously, irredeemably complex; we should stop trying to find simple ways to think about the contents of minds, such as simple ways to think about space, objects, multiple agents, or symmetries. All these are part of the arbitrary, intrinsically-complex, outside world. They are not what should be built in, as their complexity is endless; instead we should build in only the meta-methods that can find and capture this arbitrary complexity. Essential to these methods is that they can find good approximations, but the search for them should be by our methods, not by us. We want AI agents that can discover like we can, not which contain what we have discovered. Building in our discoveries only makes it harder to see how the discovering process can be done.

July 22nd, 1976

Mr. George D. Young,
National Indemnity Company,
3024 Harney Street,
Omaha, Nebraska. 68131.

Dear George:

Thanks very much for your memo of July 19th regarding GEICO which I believe summarizes well the problems attendant to the specific property treaty we are discussing, as well as the general problems associated with reinsurance of any type at GEICO. I still am willing to explore further the GEICO property treaty - if they subsequently decide that it fits their needs - and today committed to Jack Byrne that we would take a 1% quota share of their entire book. This increase from .8 of 1% was pursuant to his request in order to help him attain the 25% mark by the shareholders meeting tomorrow.

I consider the overall quota share to be an acceptable - but not exciting - piece of business. Under normal conditions we would take nothing like 1%, obviously, since that makes it by far the largest reinsurance treaty on our books, and involves substantial risks along with a limited prospect of profit. I also do not like the feature that provides for a credit to GEICO for interest earnings on funds held by us. In effect, we are making this contract number one in size for the reinsurance department, whereas the contractual terms make it less attractive than most of our other contracts.

However, I have three reasons for taking this unusually large portion of the quota share arrangement, and these same reasons also apply to my interest in the property treaty.

1. I hope it is not a governing factor in any way, but I do have some sentimental reasons for wishing GEICO to survive. GEICO has enumerated all of the hard headed reasons, such as the State Financial Guaranty funds, etc. I just have

pulled out of the bottom drawer of my desk a statement of my net worth at the end of 1951 when I was 21 years old. I showed net assets of $19,737, of which $13,125 was in GEICO stock. That was the year when I first started selling securities, and I told everyone who would listen to me that they should put every cent they could scrape together into GEICO. A number of friends and relatives did so, and enjoyed a significant change in their financial fortunes because of this. It provided the first big boost to my own small savings, as well as an even more important boost to my reputation in the Omaha investment community.

During those early years, when I followed the company, the people involved couldn't have been nicer. Leo Goodwin was running things then and was helpful. Even moreso was L. A. Davidson. He was personally encouraging and forthcoming with information regarding the business, which enabled me to develop a depth of conviction which I have felt few times since about any security.

2. At that time I felt that GEICO possessed an extraordinary business advantage in a very large industry that was going to continue to grow. Since that time they never have lost that advantage - the ability to give the policyholder back in losses a greater percentage of the premium dollar than any other auto insurance company in the country, while still providing a profit to the company. I always have been attracted to the low cost operator in any business and, when you can find a combination of (i) an extremely large business, (ii) a more or less homogenous product, and (iii) a very large gap in operating costs between the low cost operator and all of the other companies in the industry, you have a really attractive investment situation. That situation prevailed twenty-five years ago when I first became interested in the company, and it still prevails.

The company managed to nullify this advantage - and even more than nullify it - by inadequate recognition of loss costs through poor techniques of loss reserving. This led to improper pricing of product, with the result that a product which <u>could</u> have been sold at a profit <u>was</u> sold at a loss. But the important point to note is that the company had not lost its position as a low cost operator; they merely had mismanaged their loss information which caused the product to be priced inadequately. I believe the advantages of a 13% acquisition cost ratio are as important as ever. I also believe that practically no other companies are going to achieve costs near that figure in the future. Therefore, GEICO, properly managed, should prosper if they can pull themselves back from the financial precipice.

I like very much what Jack Byrne says about reducing policies in force. It seems to me that such an approach - rather than an obsession with growth - is very likely to reconstruct the situation whereby they can give the policyholder an unusually high percentage of the dollar back in losses and still make good profits for themselves

3. The crucial factor, then, becomes whether they can get past their present financial difficulties. Much of the press - witness Time last week - assumes that they can't. Until recently, I was unclear myself as to their possibilities in this regard. If they had been at all wishy-washy in obtaining rate increases or biting the bullet generally, I don't think they would have made it. However, the size of the rate increases they have instituted, along with the underwriting results they have published for April and May, have convinced me that their combined ratio will come down to tolerable limits within a fairly short time.

Even this would not have been enough if Mr. Wallach were inclined to put them into receivership because of the unwillingness of the industry to accept his 40% plan. When he did not move to do so after the June 23rd deadline, it convinced me that he was not going to act precipitously to terminate a business that fundamental economic logic still dictated had a bright future ahead of it. When he did not bow his back over the non-subscription to his 40% plan, I believe the company's future became assured. I decided then to buy stock, which is the most tangible evidence I can give you as to my assessment of the Company's chances for survival.

Therefore, George, I will take the responsibility for making the decision that GEICO survives as a business entity. You should make any underwriting judgments that you wish, with this as the premise - if I am wrong about their survival, it will be my fault and not yours. I do not want to go overboard because of sentiment, but I certainly want us to make every effort to come up with proposals that make business sense to us and are useful to them. I do not want more of the overall quota share because I consider the terms too disadvantageous to the reinsurer, all things considered. But, if a property treaty can be put together with a prospect of gain that more than balances the risk of loss, let's proceed.

Sincerely,

Warren E. Buffett

WEB/glk

December 13th, 1972

~~Mr.~~ ~~Charles N.~~ Huggins, President,
See's Candy Shops, Inc.,
~~3423 LaCienega Boulevard,~~
Los Angeles, California. 90016.

Dear Chuck:

I was out at Brandeis a couple of days ago, and have a few strong impressions to pass along:

1. People are going to be affected not only by how our candy tastes but, obviously, by what they hear about it from others as well as the "retailing environment" in which it appears. The latter includes the class of store, the method of packaging, the condition in which it appears, and the surrounding merchandise. Just as the New Yorker creates a different "editorial environment" for a Lord & Taylor ad than does the Village Voice, so do the surroundings in which our candy is offered affect potential customers' mental - and even gastronomical - impression of our quality. You, of course, know this far better than I.

2. To date, we have always maintained an incredibly pure approach to distribution which undoubtedly contributes substantially to the public's image of our product.

3. At Brandeis, our product suffers in every comparative way against Stover's. They have an extremely well organized, well displayed and attractive area featuring nothing but their candy. Brandeis has taken a number of our boxes and placed them on a counter with 25 other offerings of cheap bulk candy, and other run-of-the-mill products. They have taken a standard card sign out of their own display department and put a few descriptive lines on it, which is not much different than the card next to it which might say "Jelly Beans, 99¢ a lb.". The one open package displaying the contents of our box has pieces out of place, empty wrappers, and generally presents a jumbled appearance.

4. In the case of the average customer at Brandeis, we are not maintaining an image but developing an image. It seems obvious to me that if we push further with department store distribution, we are going to

have to have very tight controls regarding merchandising conditions. They will have to be offered in a way that establishes them as something very special - and this probably means adequate display area insulated from inferior products, appropriate signs relating to the See's legend, and attractive open display boxes which are packaged so as to insure a first-class presentation.

All of this, of course, reflects the benefit of a first small scale test. If we decide to go ahead, we will have ample time to prepare for next year so that we can be sure we are represented only in quality stores in an absolutely quality manner.

When we get outside of our own territory, we may well want to have some descriptive material. Perhaps we could have a little booklet called "The Most Famous Kitchen in the World", or something of that sort. Coor's gets a lot of mileage out of the fact that all of their beer comes from one brewery, and I do think there is a certain mystique attached to products with a geographical uniqueness. Maybe grapes from one little eighty-acre vineyard in France are really the best in the whole world, but I have always had a suspicion that about 99% of it is in the telling and about 1% is in the drinking.

We might be able to tell quite a story about the little kitchen in California that has become the kitchen known 'round the world. If we prepare something along this line, it ought to be extremely well done and should form the basis of the legend that we eventually want to have permeate the country. Such a booklet, along with really classy display and appropriate advertising by Marshall Field's, Rich's, Jordan Marsh, etc., could well enhance our image rather than diminish it - which would be the case if we merchandised in the Brandeis manner. Incidentally, I also think we should put territorial limitations on the franchise. Younker's should not be allowed to come over to Omaha, nor Brandeis to go to Des Moines and sell the candy. It should be very hard to get, available only periodically, and then (to the consumer) apparently only in limited quantities.

With best personal regards,

Sincerely,

Warren E. Buffett

WEB/glk

c c: Mr. J. P. Guerin
Mr. C. T. Munger

husky m: Jeff Raikes >
> To: Warren Buffett, Berkshire < >
> Subject: Go Huskers!
> Date: Sunday, August 17, 1997 9:37 PM
>
> Warren, I apologize in advance for this being a long note. I do hope
> you find it interesting, and be certain I don't expect a long reply (or
> any reply at all for that matter). Perhaps sometime we'll get a few
> minutes where I can get your reaction to the thoughts on business below.
>
> Go Huskers!
>
> We're looking forward to seeing you in a few weeks for the Husker game.
> Please let me know if there is anything I can do to make your stay in
> Washington more enjoyable (and a little more Husker-oriented!), and I
> will also check with BillG on the plans and how I might help.
>
> I'm sad to say I'm very pessimistic about our prospects. You've
> probably noted that Washington is very highly ranked this year. They
> have Huard, arguably one of the top 2or 3 pro-style quarterbacks in the
> country - and only a sophomore. And they have an outstanding defense.
> In the meantime, the Huskers are replacing eight starters on defense,
> and the spring game showed that Frost still can't throw the ball well
> enough. Without a balanced attack on offense, we'll have difficulty
> against their speed. And Huard has the potential to pick apart our
> secondary - we'll need an outstanding plan on pass rush, equivalent to
> the "Philadelphia Blitz" employed at the Nebraska vs. Florida Fiesta
> Bowl championship game.
>
> I hope you're hearing better news from fall practice. People here know
> I'm a huge Husker fan -- I can't tell you how painful it would be for me
> to go through two more losses to the Huskies.
>
> The Making of An American Capitalist...
>
> Tricia and I took the kids to Disney World, followed by a short vacation
> to Nantucket and Cuttyhunk (a small island off Martha's Vineyard). I
> spent part of the vacation reading Lowenstein's book (The Making of an
> American Capitalist) - and really enjoyed it! On the way from Cuttyhunk
> to Boston/Logan airport, we drove down Cove Road in New Bedford trying
> to find the Berkshire-Hathaway mill. While I saw a few old mills, I'm
> not really sure which might have been the one - I was looking for the
> clock tower. Or perhaps it has been torn down.
>
> The book got me thinking about your golf tournament, the after-dinner
> "Talk with Warren", and the inevitable question - why don't you invest
> in Microsoft or high technology? The Lowenstein book provided some
> stimulus to ponder the question, and I thought it would be fun to share
> some thoughts with you on the subject. But I should emphasize my intent
> in doing so is not to try to change your viewpoint (though I hope it
> doesn't reinforce your view!). I just view this as a fun discussion or
> intellectual exercise. While many people would see our business as
> complicated or hard to understand, I am absolutely convinced an astute
> investor can learn our business in only 3 to 4 hours (and probably less
> than two hours if BillG explained it!).
>
> In some respects I see the business characteristics of Coca Cola or
> See's Candy as being very similar to Microsoft. I think you would love
> the simplicity of the operating system business. E.g. in FY96 there
> were 50 million PC's sold in the world, and about 80% of them were
> licensed for a Microsoft operating system. Although I would never write
> down the analogy of a "toll bridge", people outside our company might
> describe this business in that way. Those 40 million licenses averaged
> about $45 per, for a total of about $1.8B in revenue. By the way, the
> remaining 10M PC's were largely running Microsoft operating systems - we
> just didn't get paid for them. This problem - piracy - if reduced, is
> one of the key upsides to our business.
>
> In FY2000, there will be about 100M PC's sold. We think we can reduce
> piracy to 10% and license 90% or 90M of the PC's. But we also have
> "pricing discretion" -- I think I heard this term used in conjunction
> with your pricing decisions on See's Candy. We will be transitioning
> the world to a new version of our operating system, Windows NT. Today,
> we get more than $100 per system for NT, but only on a small percentage
> of the PC's. But NT will be on closer to 70% of the PC's sold in
> FY2000. We can achieve average license revenue of $80. So 90M licenses
> at $80 per license totals about $7.2B, up from just under $2B in 3 to 4
> years. And since there are effectively no COGs and a WW sales force of
> only 100-150 people this is a 90%+ margin business. There is an R&D
> charge to the business, but I'm sure the profits are probably as good as
> the syrup business!
>
> There is actually upside in the number of PC's sold. Similar to your
> analysis of Coca Cola, the penetration of PC's in International markets
> leaves a lot of room for growth. In the US, the number of PC's per 1000
> people is around 400 or so, but the number drops off rapidly to 100 or
> less in most countries, even in some of the European countries.
> (Unfortunately, I'm not in Seattle now so I don't have these numbers at

> my fingertips, but Steve Ballmer can recite them from memory.)
>
> The business described above is what we call the OEM (Original Equipment
> Manufacturer) business, meaning our revenue comes from the manufacturers
> of the PC's. The majority of the rest of the business is called the
> "finished goods" business. It consists of businesses or individuals
> buying office productivity software, educational or entertainment
> software, etc. Again the structure is very simple. A PC is just a
> razor that needs blades, and we measure our revenue on the basis of $
> per PC. In FY96, nearly 50M PC's were purchased and Microsoft averaged
> about $140 in software revenue per PC or $7B. This amount is in
> addition to the OEM royalty business I described above. (Steve Ballmer
> can recite the number of PCs and $ per PC to you off the top of his head
> for just about any country in the world; BillG can probably do the same
> though he doesn't spend as much time on that as Steve.)
>
> So in some sense that is it. There are a certain number of PC's that
> get sold, a growing amount of Microsoft software per PC, the power to
> use the brand to sell even more software, some pricing discretion,
> international market growth, and the opportunity to grow revenue by
> further reduction in piracy. Obviously I'm not going through all the
> details we'd discuss in a couple hour session, but that is the heart of
> the business. Of course there is the R&D invested to build the
> software, but that is similar to Disney continuing to produce new
> content, or Nebraska Furniture Mart continuing to keep their format
> fresh, and an investment that BillG manages very closely.
>
> Even some of the new "media" businesses are really not that new or
> different. Take our WebTV acquisition or the Comcast deal. I see
> articles covering those investments and describing Microsoft as becoming
> a media company. The real goal is to figure out a way to get an
> "operating system" royalty per TV. 10's of millions of TV's per year at
> $10-$20 per TV is a nice little "operating system" business.
>
> There is a tremendous strategic synergy between the "finished goods
> business" and the OEM operating system business. E.g. we have about 90%
> share of office productivity software with Microsoft Office, and that is
> a great business (about $5B, also 85%+ operating margin). But also
> important is the fact that this software is heavily valued by the actual
> users (operating systems are a bit more invisible to the user), and they
> resist shifting brands. If we own the key "franchises" built on top of
> the operating system, we dramatically widen the "moat" that protects the
> operating system business. I.e. if I owned the most successful daily
> newspaper in Buffalo, I wouldn't want to leave it to my competitor to
> own the Sunday edition.
>
> Let's build on this analogy and the strategic synergy between the
> operating system and the software that runs on it. It helps explain the
> investments we are making in Pete Higgins business (Interactive Media,
> like MSN, MSNBC, Expedia, Sidewalk, etc.). Again, some newspaper and
> magazine articles would say that Microsoft is trying to become a media
> company. But I prefer to view it as investing in the potential "user
> franchises" that will help protect our operating systems businesses in
> the future. We hope to make a lot of money off these franchises, but
> even more important is that they should protect our Windows royalty per
> PC, and hopefully our royalty per TV. And success in those businesses
> will help increase the opportunity for future pricing discretion.
>
> So I really don't see our business as being significantly more difficult
> to understand than the other great businesses you've invested in. But
> there is one potential difference that worries me, and it is a key part
> of the reason I spent the time to share these thoughts with you. The
> difference I worry about is the "width of the moat." With Coca Cola,
> you can feel pretty confident that there won't be a fast shift in user
> preferences away from drinking sodas, and in particular Coke. In
> technology, we may more frequently see "paradigm shifts" where old
> leaders are displaced by new. Graphical user interface replaces
> character user interface, the Internet explodes, etc.
>
> In the absence of a paradigm shift in technology, market shares seldom
> change by more than a few points. With a paradigm shift, the shares can
> rapidly change by dozens of points. I spent my first ten years at

> Microsoft building Microsoft Office. We were way behind in share most
> of that time (less than 10%), but the shift to graphical user interface
> was the paradigm shift that allowed us to displace the old leaders
> (Lotus 1-2-3 and WordPerfect) and now be at 90% share. Of course key to
> this shift in share, was their failure to identify the computing
> paradigm shift and properly invest in it. They were the leaders and
> they could have chosen to cannibalize themselves. But they didn't act
> fast enough and were scared that investing in the new paradigm would
> open the door for us - ironically it was their slow pace that opened the
> door.
>
> I remember one of our very first conversations in 1991. You asked me my
> view on what happened to IBM. I don't remember exactly what I said. I
> think their addiction to the power they had in the previous generations
> of computing, really blindsided them from the paradigm shift of the PC
> and client-server computing.
>
> In technology, the moats may be narrower. It is amazing how fast the
> Internet exploded. Or how quickly Java gained notoriety. We have some
> great moats, but even so, 18 months ago analyst were questioning whether
> we could move quickly enough. (Obviously, that turned out to be a great
> time to buy Microsoft!)
>
> I am very confident about our business for the next 5 to 10 years. But
> I will admit it is easier to be confident about Coke's business for the
> next 10 years. In short, I've long had this sneaking suspicion that it
> is not that you don't understand this business. (In fact, BillG has
> probably already explained all of the above to you and I apologize for
> boring you with this, but it was fun and good for me to write it down.)
> My theory is that you don't invest in technology or Microsoft because
> you see the moats as narrower; too much risk and the potential for a
> fast paradigm shift that would too quickly undermine your equity
> position.
>
> Since Microsoft is the business I understand (i.e. I have a narrow
> circle of competence!) and I subscribe to your views on investments,
> well over 90% of my net worth is tied up there. (Thanks to BillG, I'm
> well into the nine digit range.) I feel fine about having 90%+ tied up
> in Microsoft. We have a "safety net" of tax free municipal bonds so I
> know the family will be OK if something happens. And we don't intend to
> leave much to the kids, so I'm simply building a huge pile of chits to
> someday turn back to society. I do wonder about the time period ten or
> twenty or more years down the road. If at some point then the outlook
> for Microsoft has changed, I hope I will have learned enough from your
> approach such that I will have the ability to identify new areas of
> intrinsic value and continue to grow the pile of chits at a high rate.
> But for now, I'm heads down selling more software...
>
> I'm curious as to what you think about the Lowenstein book. I'm sure it
> is difficult to have so much of your life spread across the pages, on
> the other hand, there are so many things for you to be proud of. It was
> great to gain an understanding of Graham's approach, and more
> importantly your significant advancement of the approach. I found the
> arguments of the EMT (efficient market theoreticians) just laughable.
> They should spend a few days at Disney World so they can observe crowd
> theory in action. Believe me, the longest lines don't necessarily
> translate into the best value! But the best part of the book was to
> learn more about your values, and in particular the discipline of
> character that leads to your success in investing. I wish there were a
> magic formula for teaching this to our children!
>
> This leaves me one final task for this note. I've done a very poor job
> of adequately thanking you for all the great things you've done for me -
> golf at Augusta, Seminole, the Buffett Classic, and in particular, the
> opportunity to listen in on great conversations and learn from you. I
> want you to know I've really appreciated your kindness, and if there is
> ever anything I might do to reciprocate, please let me know.
>
> Thanks. Jeff Raikes
>
>

From: Warren Buffett [ ]
Sent: Thursday, August 21, 1997 3:13 PM
To: Jeff Raikes
Subject: Re: Go Huskers!

hi, jeff;

i have so few friends who use e-mail that I only look for it once a week or so (and usually find nothing) so excsue the slowness in responding. I am also reasonably fast at typing but poor in the accuracy department and fine it easier just to plow ahead rather than correct, knowing i am always writing to those who will find a little deciphering an interesting but easy challenge.

I am afraid you have the Husker-Husky situation correctly handicapped. We need a miracle and it's unlikely to happen in a sstadium in which Frost will not be able to hear a word he shouts. I hope Osborne has had him working on hand signals all summer.

Your analysis of Microsoft, why I should invesdt in it, and why I dont could not be more on the money. In effect the company has a royalty on a communication stream that can do nothing but grow.It's as if you were getting paid for every gallon of water starting in a small stream but with added amounts received as tributaries turned the stream into an Amazon. The toughest question is how hard to push prices and I wrote a note to Bill on that after our December meeting last year. Bell should have anticipated Bill and let someone else put in the phone infrastructure while he collected by the minute and distance (and even importance of the call if he could have figured a wait to monitor it) in perpetuity.

Coke is now getting a royalty on swallows; probably 7.2 billion a day if these average gulp is one ounce. I feel 100% sure (perhaps mistakenly) that I know the odds of this continuing-again 100% as long as cola doesnt cause cancer. Bill has an even better royalty-one which I would never bet against but i dont feel i am capable of assessing probabilities about, except to the extent that with a gun to my head and forced to make a guess, i would go with it rather than against. But to calibratre whether my certainty is 80% or 55%, say, for a 20-year run would be folly. If I had to make such decisions, i would do my best but I prefer to structure investing as a no-called-strikes game and just wait for the fat one/

I watched Ted Williams on cable the other day and he referred to a book called the science of hitting which i then ran down. It has a drawing of the batters box in it that he had referred to on the show with lots of little squares in it, all parts of the strike zone. In his favorite spot, the box showed .400 reflecting what he felt he would hit if he only swung at pitches in that area. Low and outsided, but still in the strike zone, he got down to .260. Of course, if he had two strikes on him, he was going to swing at that .260 pitch but otherwise he waited for one in the "happy zone" as he put it. I think the same approach makes sense in investing. Your happy zone, because of the business experience you have had, what you see every day, your natural talents, etc. is going to be different than mine. I am sure, moreover that you can hit balls better in my happy zone than I can in yours just because they are fatter pitches in general.

Lets talk more about this when we get together. Aas a beginner I always feel that when i send off any e-mail, it is going to vanish into the ether and i would hate to have that happen with everything I know. GO HUSKERS----warren

* DID HE PITCH THIS CASE TO WASHINGTON?
* WHY NOT GO DIRECTLY TO NERO?

The World's Largest Hedge Fund is a Fraud

EQUITY TRADE FUNDING?

November 7, 2005 Submission to the SEC
Madoff Investment Securities, LLC
www.madoff.com

Opening Remarks:

I am the original source for the information presented herein having first presented my rationale, both verbally and in writing, to the SEC's Boston office in May, 1999 before any public information doubting Madoff Investment Securities, LLC appeared in the press. There was no whistleblower or insider involved in compiling this report. I used the Mosaic Theory to assemble my set of observations. My observations were collected first-hand by listening to fund of fund investors talk about their investments in a hedge fund run by Madoff Investment Securities, ~~LLC, a SEC registered firm.~~ I have also spoken to the heads of various Wall Street equity derivative trading desks and every single one of the senior managers I spoke with told me that Bernie Madoff was a fraud. Of course, no one wants to take undue career risk by sticking their head up and saying the emperor isn't wearing any clothes but.... → NAMES → NAME

I am a derivatives expert and have traded or assisted in the trading of several billion $US in options strategies for hedge funds and institutional clients. I have experience managing split-strike conversion products both using index options and using individual stock options, both with and without index puts. Very few people in the world have the mathematical background needed to manage these types of products but I am one of them. I have outlined a detailed set of Red Flags that make me very suspicious that Bernie Madoff's returns aren't real and, if they are real, then they would almost certainly have to be generated by front-running customer order flow from the broker-dealer arm of Madoff Investment Securities. LLC.

Due to the sensitive nature of the case I detail below, its dissemination within the SEC must be limited to those with a need to know. The firm involved is located in the New York Region.

As a result of this case, several careers on Wall Street and in Europe will be ruined. Therefore, I have not signed nor put my name on this report. I request that my name not be released to anyone other than the Branch Chief and Team Leader in the New York Region who are assigned to the case, without my express written permission. The fewer people who know who wrote this report the better. I am worried about the personal safety of myself and my family. Under no circumstances is this report or its contents to be shared with any other regulatory body without my express permission. This report has been written solely for the SEC's internal use.

As far as I know, none of the hedge fund, fund of funds (FOF's) mentioned in my report are engaged in a conspiracy to commit fraud. I believe they are naïve men and women with a notable lack of derivatives expertise and possessing little or no quantitative finance ability. → MULTIBILLION DOLLAR FIRMS. DO NO DUE DILIGENCE?

There are 2 possible scenarios that involve fraud by Madoff Securities:

1. Scenario # 1 **(Unlikely):** I am submitting this case under Section 21A(e) of the 1934 Act in the event that the broker-dealer and ECN depicted is actually providing the stated

returns to investors but is earning those returns by front-running customer order flow. Front-running qualifies as insider-trading since it relies upon material, non-public information that is acted upon for the benefit of one party to the detriment of another party. Section 21A(e) of the 1934 Act allows the SEC to pay up to 10% of the total fines levied for insider-trading. We have obtained approval from the SEC's Office of General Counsel, the Chairman's Office, and the bounty program administrator that the SEC is able and willing to pay Section 21A(e) rewards. This case should qualify if insider-trading is involved.

2. Scenario # 2 **(Highly likely)** Madoff Securities is the world's largest Ponzi Scheme. In this case there is no SEC reward payment due the whistle-blower so basically I'm turning this case in because it's the right thing to do. Far better that the SEC is proactive in shutting down a Ponzi Scheme of this size rather than reactive.

What Does This Mean?

Who: The politically powerful Madoff family owns and operates a New York City based broker-dealer, ECN, and what is effectively the world's largest hedge fund. Bernard "Bernie" Madoff, the family patriarch started the firm.

According to the www.madoff.com website, *"Bernard L. Madoff was one of the five broker-dealers most closely involved in developing the NASDAQ Stock Market. He has been chairman of the board of directors of the NASDAQ Stock Market as well as a member of the board of governors of the NASD and a member of numerous NASD committees. Bernard Madoff was also a founding member of the International Securities Clearing Corporation in London.*

His brother, Peter B. Madoff *has served as vice chairman of the NASD, a member of its board of governors, and chairman of its New York region. He also has been actively involved in the NASDAQ Stock Market as a member of its board of governors and its executive committee and as chairman of its trading committee. He also has been a member of the board of directors of the Security Traders Association of New York. He is a member of the board of directors of the Depository Trust Corporation.*

What:

1. The family runs what is effectively the world's largest hedge fund with estimated assets under management of at least $20 billion to perhaps $50 billion, but no one knows exactly how much money BM is managing. That we have what is effectively the world's largest hedge fund operating underground is plainly put shocking. But then again, we don't even know the size of the hedge fund industry so none of this should be surprising. A super-sized fraud of this magnitude was bound to happen given the lack of regulation of these off-shore entities. My best guess is that approximately $30 billion is involved.

Wrong →

2. However the hedge fund isn't organized as a hedge fund by Bernard Madoff (BM) yet it acts and trades exactly like one. BM allows third party Fund of Funds (FOF's) to private label hedge funds that provide his firm, Madoff Securities, with equity tranch funding. In return for equity tranch funding, BM runs a trading strategy, **as agent**, whose returns flow to the third party FOF hedge funds and their investors who put up equity capital to

FoF Responsibility ?

fund BM's broker-dealer and ECN operations. *BM tells investors it earns its fees by charging commissions on all of the trades done in their accounts.*

Red Flag # 1: *Why would a US broker-dealer organize and fund itself in such an unusual manner? Doesn't this seem to be an unseemly way of operating under the regulator's radar screens? Why aren't the commissions charged fully disclosed to investors? Can a SEC Registered Investment Advisor charge* ***both*** *commissions and charge a principle fee for trades?* ***MOST IMPORTANTLY****, why would BM settle for charging only undisclosed commissions when he could earn standard hedge fund fees of 1% management fee + 20% of the profits? Doing some simple math on BM's 12% average annual return stream to investors, the hedge fund, before fees, would have to be earning average annual returns of 16%. Subtract out the 1% management fee and investors are down to 15%. 20% of the profits would amount to 3% (.20 x 15% = 3% profit participation) so investors would be left with the stated 12% annual returns listed in Attachment 1 (Fairfield Sentry Ltd. Performance Data). Total fees to the third party FOF's would amount to 4% annually. Now why would BM leave 4% in average annual fee revenue on the table unless he were a Ponzi Scheme? Or, is he charging a whole lot more than 4% in undisclosed commissions?*

3. The third parties organize the hedge funds and obtain investors but 100% of the money raised is actually managed by Madoff Investment Securities, LLC in a purported hedge fund strategy. The investors that pony up the money don't know that BM is managing their money. That Madoff is managing the money is purposely kept secret from the investors. Some prominent US based hedge fund, fund of funds, that "invest" in BM in this manner include:

   A. Fairfield Sentry Limited (Arden Asset Management) which had $5.2 billion invested in BM as of May 2005; 11th Floor, 919 Third Avenue; ~~New York~~, NY 10022; Telephone 212.319.606; The Fairfield Greenwich Group is a global family of companies with offices in New York, London and Bermuda, and representative offices in the U.S., Europe and Latin America. Local operating entities are authorized or regulated by a variety of government agencies, including Fairfield Greenwich Advisors LLC, a U.S. SEC registered investment adviser, Fairfield Heathcliff Capital LLC, a U.S. NASD member broker-dealer, and Fairfield Greenwich (UK) Limited, authorized and regulated by the Financial Services Authority in the United Kingdom.

5.2 is incorrect According to our Documents from June only 2.8 ? ?

   B. Access International Advisors; www.aiagroup.com; a SEC registered investment advisor, telephone # 212.223.7167; Suite 2206; 509 Madison Avenue, New York, NY 10022 which had over $450 million invested with BM as of mid-2002. The majority of this FOF's investors are European, even though the firm is US registered.

   C. Broyhill All-Weather Fund, L.P. had $350 million invested with BM as of March 2000.

   D. Tremont Capital Management, Inc. Corporate Headquarters is located at 555 Theodore Fremd Avenue; Rye, New York 10580; T: (914) 925-1140 F: (914) 921-3499. Tremont oversees on an advisory and fully discretionary basis over $10.5 billion in assets. Clients include institutional investors, public and private pension plans, ERISA plans, university endowments, foundations, and financial institutions, as well as high net worth individuals. Tremont is owned by Oppenhiemer Funds Inc. which is owned by Mass Mutual Insurance Company so they should have sufficient reserves to make investors whole. Mass Mutual is currently under investigation by the Massachusetts Attorney General, the Department of Justice, and the SEC.

Names ?

E. During a 2002 marketing trip to Europe every hedge fund FOF I met with in Paris and Geneva had investments with BM. They all said he was their best manager! A partial list of money managers and Private Banks that invest in BM is included at the end of this report in Attachment 3.

4. Here's what smells bad about the idea of providing equity tranch funding to a US registered broker-dealer:
   A. The investment returns passed along to the third party hedge funds are equivalent to BM borrowing money. These 12 month returns from 1990 – May 2005 ranged from a low of 6.23% to a high of 19.98%, with an average 12 month return during that time period of 12.00%. Add in the 4% in average annual management & participation fees and BM would have to be delivering average annual returns of 16% in order for the investors to receive 12%. No Broker-Dealer that I've ever heard of finances its operations at that high of an implied borrowing rate (source: Attachment 1; Fairfield Sentry Limited return data from December 1990 – May 2005). Ask around and I'm sure you'll find that BM is the only firm on Wall Street that pays an average of 16% to fund its operations.
   B. BD's typically fund in the short-term credit markets and benchmark a significant part of their overnight funding to LIBOR plus or minus some spread. LIBOR + 40 basis points would seem a more realistic borrowing rate for a broker-dealer of BM's size.
   C. **Red Flag # 2**: *why would a BD choose to fund at such a high implied interest rate when cheaper money is available in the short-term credit markets? One reason that comes to mind is that BM couldn't stand the due diligence scrutiny of the short-term credit markets. If Charles Ponzi had issued bank notes promising 50% interest on 3 month time deposits instead of issuing unregulated Ponzi Notes to his investors, the State Banking Commission would have quickly shut him down. The key to a successful Ponzi Scheme is to promise lucrative returns but to do so in an unregulated area of the capital markets. Hedge funds are not due to fall under the SEC's umbrella until February 2006.*

5. The third party hedge funds and fund of funds that market this hedge fund strategy that invests in BM don't name and aren't allowed to name Bernie Madoff as the actual manager in their performance summaries or marketing literature. Look closely at Attachment 1, Fairfield Sentry Ltd.'s performance summary and you won't see BM's name anywhere on the document, yet BM is the actual hedge fund manager with discretionary trading authority over all funds, as agent.
   Red Flag # 3: *Why the need for such secrecy?* *If I was the world's largest hedge fund and had great returns, I'd want all the publicity I could garner and would want to appear as the world's largest hedge fund in all of the industry rankings. Name one mutual fund company, Venture Capital firm, or LBO firm which doesn't brag about the size of their largest funds' assets under management. Then ask yourself, why would the world's largest hedge fund manager be so secretive that he didn't even want his investors to know he was managing their money? Or is it that BM doesn't want the SEC and FSA to know that he exists?*

6. The third party FOF's never tell investors who is actually managing their money and describe the investment strategy as: This hedge fund's objective is long term growth on

Invests in US Equity

a consistent basis with low volatility. The investment advisor invests exclusively in the U.S. and utilizes a strategy often referred to as a "split-strike conversion." Generally this style involves purchasing a basket of 30 – 35 large-capitalization stocks with a high degree of correlation to the general market (e.g. American Express, Boeing, Citigroup, Coca-Cola, Dupont, Exxon, General Motors, IBM, Merck, McDonalds). To provide the desired hedge, the manager then sells out-of-the-money OEX index call options and buys out-of-the-money OEX index put options. The amount of calls that are sold and puts that are bought represent a dollar amount equal to the basket of shares purchases.

7. I personally have run split-strike conversion strategies and know that BM's approach is far riskier than stated in 6 above. His strategy is wholly inferior to an all index approach and is wholly incapable of generating returns in the range of 6.23% to 19.98%. BM's strategy should not be able beat the return on US Treasury Bills Due to the glaring weakness of the strategy:

   A. Income Part of the strategy is to buy 30 – 35 large-cap stocks, sell out-of-the-money index call options against the value of the stock basket, There are three possible sources of income in this strategy.

      1) We earn income from the stock's dividends. Let's attribute a 2% average return to this source of funds for the 14 ½ year time period. This explains 2% of the 16% average gross annual returns before fees and leaves 14% of the returns unexplained.

      2) We earn income from the sale of OTC OEX index call options. Let's also assume that we can generate an additional 2% annual return via the sale of OTC out-of-the-money OEX index call options which leaves 12% of the 16% gross returns unexplained. On Friday, October 14, 2005 the OEX (S&P 100) index closed at 550.49 and there were only 163,809 OEX index call option contracts outstanding (termed the "open interest"). 163,809 call option calls outstanding x $100 contact multiplier x 550.49 index closing price = $9,017, 521,641 in stock equivalents hedged.

      3) We can earn income from capital gains by selling the stocks that go up in price. This portion of the return stream would have to earn the lion's share of the hedge fund strategy's returns. We have 12% of the return stream unexplained so far. However, the OTC OEX index puts that we buy will cost AT LEAST <8%> per year (a lot more in most years but I'm giving BM the benefit of every doubt here). Therefore, BM's stock selection would have to be earning an average of 20% per year. That would mean that he's been the world's best stock-picker since 1990 beating out such luminaries as Warren Buffet and Bill Miller. Yet no one's ever heard of BM as being a stock-picker, much less the world's best stock-picker. Why isn't he famous if he was able to earn 20% average annual returns?

Red Flag # 4: *$9.017 billion in total OEX listed call options outstanding is not nearly enough to generate income on BM's total amount of assets under management which I estimate to range between $20 - $50 billion. Fairfield Sentry Ltd. alone has $5.1 billion with BM. And, while BM may say he only uses Over-the-Counter(OTC) index options, there is no way that this is* *possible. The OTC market should never be several times larger than the exchange listed market for this type of plain vanilla derivative.*

B. Protection Part of the strategy is to buy out-of-the-money OEX index put options. This costs you money each and every month. This hurts your returns and is the main reason why BM's strategy would have trouble earning 0% average annual returns much less the 12% net returns stated in Fairfield Sentry Ltd.'s performance summary. Even if BM earns a 4% return from the combination of 2% stock dividends and 2% from the sale of call options, the cost of the puts would put this strategy in the red year in and year out. No way he can possibly be delivering 12% net to investors. The math just doesn't support this strategy if he's really buying index put options.

Red Flag # 5: *BM would need to be purchasing at-the-money put options because he has only 7 small monthly losses in the past 14 ½ years. His largest monthly loss is only <0.55%>, so his puts would have to be at-the-money. At-the-money put options are very, very expensive. A one-year at-the-money put option would cost you <8%> or more, depending upon the market's volatility. And <8%> would be a cheap price to pay in many of the past 14 ½ years for put protection!! Assuming BM only paid< 8%> per year in put protection, and assuming he can earn +2% from stock dividends plus another +2% from call option sales, he's still under-water <4%> performance wise. <8%> put cost + 2% stock dividends + 2% income from call sales = <4%>. And, I've proven that BM would need to be earning at least 16% annually to deliver 12% after fees to investors. That means the rest of his returns would have to be coming from stock selection where he picked and sold winning stocks to include in his 35-stock basket of large-cap names. Lots of luck doing that during the past stock market crises like 1997's Asian Currency Crises, the 1998 Russian Debt / LTCM crises, and the 2000-2002 killer bear market. And index put option protection was a lot more expensive during these crises periods than 8%. Mathematically none of BM's returns listed in Attachment 1 make much sense. They are just too unbelievably good to be true.*

C. The OEX index (S&P 100) closed at 550.49 on Friday, October 14, 2005 meaning that each put option hedged $55,049 dollars worth of stock ($100 contract multiplier x 550.49 OEX closing index price = $55,049 in stock hedged). As of that same date, the total open interest for OEX index put options was 307,176 contracts meaning that a total of $16,909,731,624 in stock was being hedged by the use of OEX index puts (307,176 total put contracts in existence as of Oct 14th x $55,049 hedge value of 1 OEX index put = $16,909,731,624 in stock hedged). Note: I excluded a few thousand OEX LEAP index put options from my calculations because these are long-term options and not relevant for a split-strike conversion strategy such as BM's.

Red Flag # 6: *At my best guess level of BM's assets under management of $30 billion, or even at my low end estimate of $20 billion in assets under management, BM would have to be over 100% of the total OEX put option contract open interest in order to hedge his stock holdings as depicted in the third party hedge funds marketing literature. In other words, there are not enough index option put contracts in existence to hedge the way BM says he is hedging! And there is no* *way the OTC market is bigger than the exchange listed market for plain vanilla S&P 100 index put options.*

D. Mathematically I have proven that BM cannot be hedging using listed index put and call options. One hedge fund FOF has told me that BM uses only Over-the-Counter options and trades exclusively thru UBS and Merrill Lynch. I have not called those two firms to check on this because it seems implausible that a BD would trade $20 - $50 billion worth of index put options per month over-the-counter thru only 2 firms. That plus the fact that if BM was really buying OTC index put options, then there is no way his average annual returns could be positive!! At a minimum, using the cheapest way to buy puts would cost a fund <8%> per year. To get the put cost down to <8%>, BM would have to buy a one-year at-the-money put option and hold it for one-year. No way his call sales could ever hope to come even fractionally close to covering the cost of the puts.

Red Flag # 7: *The counter-party credit exposures for UBS and Merrill would be too large for these firms credit departments to approve. The SEC should ask BM for trade tickets showing he has traded OTC options thru these two firms. Then the SEC should visit the firms' OTC derivatives desks, talk the to heads of trading and ask to see BM's trade tickets. Then ask the director of operations to verify the tickets and ask to see the inventory of all of the stock and listed options hedging the OTC puts and calls. If these firms can't show you the off-setting hedged positions then they are assisting BM as part of a conspiracy to commit fraud. If any other brokerage firms equity derivatives desk is engaged in a conspiracy to cover for BM, then this scandal will be a doozy when it hits the financial press but at least investors would have firms with deep pockets to sue.*

Red Flag # 8: *OTC options are more expensive to trade than listed options. You have to pay extra for the customization features and secrecy offered by OTC options. Trading in the size of $20 - $50 billion per month would be impossible and the bid-ask spreads would be so wide as to preclude earning any profit whatsoever. These Broker/Dealers would need to offset their short OTC index put option exposure to a falling stock market by hedging out their short put option risk by either buying listed put options or selling short index futures and the derivatives markets are not deep and liquid enough to accomplish this without paying a penalty in prohibitively expensive transaction costs.*

Red Flag # 9: *Extensive and voluminous paperwork would be required to keep track of and clear each OTC trade. Plus, why aren't Goldman, Sachs and Citigroup involved in handling BM's order flow? Both Goldman and Citigroup are a lot larger in the OTC derivatives markets than UBS or Merrill Lynch.*

E. My experience with split-strike conversion trades is that the best a good manager is likely to obtain using the strategy marketed by the third-party FOF's is T-bills less management fees. And, if the stock market is down by more than 2%, the return from this strategy will range from a high of zero return to a low of a few percent depending upon your put's cost and how far out-of-the-money it is.

F. In 2000 I ran a regression of BM's hedge fund returns using the performance data from Fairfield Sentry Limited. BM had a .06 correlation to the equity market's return which confirms the .06 Beta that Fairfield Sentry Limited lists in its return numbers.

Red Flag # 10: *It is mathematically impossible for a strategy using index call options and index put options to have such a low correlation to the market where its returns are supposedly being generated from. This makes no sense! The strategy depicted retains 100% of the single-stock downside risk since they own only index put options and not single stock put options. Therefore if one or more stocks in their portfolio were to tank on bad news, BM's index put would offer little protection and their portfolio should feel the pain. However, BM's performance numbers show only 7 extremely small losses during 14 ½ years and these numbers are too good to be true. The largest one month loss was only -55 basis points (-0.55%) or just over one-half of one percent! And BM never had more than a one month losing streak! Either BM is the world's best stock and options manager that the SEC and the investing public has never heard of or he's a fraud. You would have to figure that at some point BM owned a WorldCom, Enron, GM or HealthSouth in their portfolio when bad or really bad news came out and caused these stocks to drop like a rock.*

8. **Red Flag # 11** *Two press articles, which came to print well after my initial May 1999 presentation to the SEC, do doubt Bernie Madoff's returns and they are:*
   A. The May 7, 2001 edition of Barron's, in an article entitled, ***"Don't Ask, Don't Tell; Bernie Madoff is so secretetive, he even asks his investors to keep mum,"*** written by Erin Arvedlund, published an expose about Bernie Madoff a few years ago with no resulting investigation by any regulators. Ms. Arvedlund has since left Barron's. I have attached a copy of the Barrons' article which lists numerous red flags.
   B. Michael Ocrant, formerly a reporter for MAR Hedge visited Bernie Madoff's offices and wrote a very negative article that doubted the source of BM's returns. He reported to a colleague that he saw some very unusual things while at Madoff's offices. The SEC should contact him. Michael Ocrant is currently serving as the Director of Alternative Investments; Institutional Investor; New York, NY 10001; Telephone # 212-224-3821 or 212-213-6202; Email: mocrant@iiconferences.com

9. Fund of funds with whom I have spoken to that have BM in their stable of funds continually brag about their returns and how they are generated thanks to BM's access to his broker-dealer's access to order flow. They believe that BM has perfect knowledge of the market's direction due to his access to customer order flow into his broker-dealer. **Red Flag # 12:** *Yes, BM has access to his customer's order flow thru his broker-dealer but he is only one broker out of many, so it is impossible for him to know the market's direction to such a degree as to only post monthly losses once every couple of years. All of Wall Street's big wire houses experience trading losses on a more regular frequency that BM. Ask yourself how BM's trading experience could be so much better than all of the other firms on Wall Street. Either he's the best trading firm on the street and rarely ever has large losing months unlike other firms or he's a fraud.*
10. **Red Flag # 13:** *I believe that BM's returns can be real ONLY if they are generated from front-running his customer's order flow. In other words, yes, if he's buying at a penny above his customer's buy orders, he can only lose one penny if the stock drops but can*

make several pennies if the stock goes up. For example, if a customer has an order to buy 100,000 shares of IBM at $100, BM can put in his own order to buy 100,000 share of IBM at $100.01. This is what's known as a right-tail distribution and is very similar to the payoff distribution of a call option. Doing this could easily generate returns of 30% - 60% or more per anum. He could be doing the same thing by front-running customer sell orders. However, if BM's returns are real but he's generating them from front-running there are two problems with this:

A. Problem # 1: front-running is one form of insider-trading and is illegal

B. Problem # 2: generating real returns from front-running but telling hedge fund investors that you are generating the returns via a complex (but unworkable) stock and options strategy is securities fraud.

Some time ago, during different market conditions, I ran a study using the Black-Scholes Option Pricing Model to analyze the value of front-running with the goal of putting a monetary value on front-running where the insider knew the customer's order and traded ahead of it. When I ran the study the model inputs were valued at: OEX component stocks annualized volatility on a cap-weighted basis was 50% (during a bear market period), the T-bill rate was 5.80%, and the average stock price was $46. I then calculated the value of an at-the-money call options over time intervals of 1 minute, 5 minutes, 10 minutes, and 15 minutes. I used a 253 trading day year. The SEC should be able to duplicate these results:

1 minute option = 3 cents worth of trade information value
5 minute option = 7 cents worth of trade information value
10 minute option = 10 cents worth of trade information value
15 minute option = 12 cents worth of trade information value

Conclusion: Bernie Madoff used to advertise in industry trade publications that he would pay 1 cent per share for other broker's order flow. If he was paying 1 cent per share for order flow and front-running these broker's customers, then he could easily be earning returns in the 30% - 60% or higher annually. In all time intervals ranging from 1 minute to 15 minutes, having access to order flow is the monetary equivalent of owning a valuable call option on that order. The value of these implicit call options ranges between 3 – 12 times the one penny per share paid for access to order flow. If this is what he's doing, then the returns are real but the stated investment strategy is illegal and based solely on insider-trading.

NOTE: I am pretty confident that BM is a Ponzi Scheme, but in the off chance he is front-running customer orders and his returns are real, then this case qualifies as insider-trading under the SEC's bounty program as outlined in Section 21A(e) of the 1934 Act. However, if BM was front-running, a highly profitable activity, then he wouldn't need to borrow funds from investors at 16% implied interest. Therefore it is far more likely that BM is a Ponzi Scheme. Front-running is a very simple fraud to commit and requires only access to inside information. The elaborateness of BM's fund-raising, his need for secrecy, his high 16% average cost of funds, and reliance on a derivatives investment scheme that few investors (or regulators) would be capable of comprehending lead to a weight of the evidence conclusion that this is a Ponzi Scheme.

11. **Red Flag # 14:** *Madoff subsidizes down months! Hard to believe (and I don't believe this) but I've heard two FOF's tell me that they don't believe Madoff can make money in big down months either. They tell me that Madoff "subsidizes" their investors in down months, so that they will be able to show a low volatility of returns. These types of stories are commonly found around Ponzi Schemes. These investors tell me that Madoff only books winning tickets in their accounts and "eats the losses" during months when the market sells off hard. The problem with this is that it's securities fraud to misstate either returns or the volatility of those returns. These FOF professionals who heard BM tell them that he subsidizes losses were professionally negligent in not turning BM into the SEC, FSA and other regulators for securities fraud.*

    Red Flag # 15: *Why would a fund of funds investor believe any broker-dealer that commits fraud in a few important areas – such as misstating returns and misstating volatility of returns – yet believe him in other areas? I'd really like to believe in the tooth fairy, but I don't after catching my mother putting a quarter underneath my pillow one night.*

12. **Red Flag # 16**: *Madoff has perfect market-timing ability. One investor told me, with a straight face, that Madoff went to 100% cash in July 1998 and December 1999, ahead of market declines. He said he knows this because Madoff faxes his trade tickets to his firm and the custodial bank. However, since Madoff owns a broker-dealer, he can generate whatever trade tickets he wants. And, I'll bet very few FOF's ask BM to fax them trade tickets. And if these trade tickets are faxed, have the FOF's then matched them to the time and sales of the exchanges? For example, if BM says he bot 1 million shares of GM, sold $1 million worth of OTC OEX calls and bot $1 million worth of OTC OEX puts, we should see prints somewhere. The GM share prints would show on either the NYSE or some other exchange while the broker-dealers he traded OTC options thru would show prints of the hedges they traded to be able to provide BM with the OTC options at the prices listed on BM's trade tickets.*

Could match

13. **Red Flag # 17**: *Madoff does not allow outside performance audits. One London based hedge fund, fund of funds, representing Arab money, asked to send in a team of Big 4 accountants to conduct a performance audit during their planned due diligence. They were told "No, only Madoff's brother-in-law who owns his own accounting firm is allowed to audit performance for reasons of secrecy in order to keep Madoff's proprietary trading strategy secret so that nobody can copy it. Amazingly, this fund of funds then agreed to invest $200 million of their client's money anyway, because the low volatility of returns was so attractive!! Let's see, how many hedge funds have faked an audited performance history?? Wood River is the latest that comes to mind as does the Manhattan Fund but the number of bogus hedge funds that have relied upon fake audits has got to number in the dozens.*

where audit > The Fund - No,

14. **Red Flag # 18**: *Madoff's returns are not consistent with the one publicly traded option income fund with a history as long as Madoff's. In 2000, I analyzed the returns of Madoff and measured them against the returns of the Gateway Option Income Fund (Ticker GATEX). During the 87 month span analyzed, Madoff was down only 3 months versus GATEX being down 26 months. GATEX earned an annualized return of 10.27% during the period studied vs. 15.62% for Bernie Madoff and 19.58% for the S&P 500. GATEX has a more flexible investment strategy than BM, so GATEX's returns should be*

superior to BM's but instead they are inferior. This makes no sense. How could BM be better using an inferior strategy?

15. **Red Flag # 19**: *There have been several option income funds that went IPO since August 2004. None of them have the high returns that Bernie Madoff has. How can this be? They use similar strategies only they should be making more than BM in up months because most of these option income funds don't buy expensive index put options to protect their portfolios. Thus the publicly traded option income funds should make more money in up markets and lose more than Madoff in down markets. Hmm....that Madoff's returns are so high yet he buys expensive put options is just another reason to believe he is running the world's largest Ponzi Scheme. A good study for the SEC would be to compare 2005 performance of the new option income funds to Bernie Madoff while accounting for the cost of Bernie's index put option protection. There's no way Bernie can have positive returns in 2005 given what the market's done and where volatility is.*
16. **Red Flag # 20**: *Madoff is suspected of being a fraud by some of the world's largest and most sophisticated financial services firms. Without naming names, here's an abbreviated tally:*
    A. A managing director at Goldman, Sachs prime brokerage operation told me that his firm doubts Bernie Madoff is legitimate so they don't deal with him.

B. From an Email I received this past June 2005 I now suspect that the end is near for BM. All Ponzi Schemes eventually topple of their own weight once they become too large and it now appears that BM is having trouble meeting redemptions and is attempting to borrow sizeable funds in Europe.

Ask RBC or BSK

ABCDEFGH and I had dinner with a savvy European investor that studies the HFOF market. He stated that both RBC and Socgen have removed Madoff some time ago from approved lists of individual managers used by investors to build their own tailored HFOFs.

More importantly, Madoff was turned down, according to this source, for a borrowing line from a Euro bank, I believe he said Paribas. Now why would Madoff need to borrow more funds? This Euro Investor said that Madoff was in fact running "way over" our suggested $12-14 billion (Fairfield Sentry is running $5.3 BB by themselves!) . Madoff's 12 month returns is about 7% net of the feeder fund's fees. Looks like he is stepping down the pay out.

C. An official from a Top 5 money center bank's FOF told me that his firm wouldn't touch Bernie Madoff with a ten foot pole and that there's no way he's for real.

17. **Red Flag # 21:** *ECN's didn't exist prior to 1998. Madoff makes verbal claims to his third party hedge FOF's that he has private access to ECN's internal order flow, which Madoff pays for, and that this is a substantial part of the return generating process. If this is true, then where did the returns come from in the years 1991 – 1997, prior to the ascendance of the ECN's? Presumably, prior to 1998, Madoff only had access to order flow on the NASDAQ for which he paid 1 cent per share for. He would have no such advantage pre-1998 on the large-cap, NYSE listed stocks the marketing literature says he buys (Exxon, McDonalds, American Express, IBM, Merck, etc...).*

18. **Red Flag # 22:** *The Fairfield Sentry Limited Performance Chart (Attachment 1) depicted for Bernie Madoff's investment strategy are misleading. The S&P 500 return line is accurate because it is moving up and down, reflecting positive and negative returns. Fairfield Sentry's performance chart is misleading, it is almost a straight line rising at a 45 degree angle. This chart cannot be cumulative in the common usage of the term for reporting purposes, which means "geometric returns." The chart must be some sort of arithmetic average sum, since a true*

cumulative return line, given the listed monthly returns would be exponentially rising (i.e. curving upward at an increasing rate). My rule of thumb is that if the manager misstates his performance, you can't trust him. Yet somehow Madoff is now running the world's largest, most clandestine hedge fund so clearly investors aren't doing their due diligence. And why does he provide the S&P 500 as his benchmark when he is actually managing using a S&P 100 strategy? Shouldn't the performance line presented be the S&P 100's (OEX) performance?

19. **Red Flag # 23:** *Why is Bernie Madoff borrowing money at an average rate of 16.00% per anum and allowing these third party hedge fund, fund of funds to pocket their 1% and 20% fees bases upon Bernie Madoff's hard work and brains? Does this make any sense at all? Typically FOF's charge only 1% and 10%, yet BM allows them the extra 10%. Why? And why do these third parties fail to mention Bernie Madoff in their marketing literature? After all he's the manager, don't investors have a right to know who's managing their money?*

20. **Red Flag # 24:** *Only Madoff family members are privy to the investment strategy. Name one other prominent multi-billion dollar hedge fund that doesn't have outside, non-family professionals involved in the investment process. You can't because there aren't any. Michael Ocrant, the former MAR Hedge Reporter listed above saw some highly suspicious red flags during his visit to Madoff's offices and should be interviewed by the SEC as soon as possible.*

21. **Red Flag # 25:** *The Madoff family has held important leadership positions with the NASD, NASDAQ, SIA, DTC, and other prominent industry bodies therefore these organizations would not be inclined to doubt or investigate Madoff Investment Securities, LLC. The NASD and NASDAQ do not exactly have a glorious reputation as vigorous regulators untainted by politics or money.*

22. **Red Flag # 26:** *BM goes to 100% cash for every December 31st year-end according to one FOF invested with BM. This allows for "cleaner financial statements" according to this source. Any unusual transfers or activity near a quarter-end or year-end is a red flag for fraud. Recently, the BD REFCO Securities engaged in "fake borrowing" with Liberty, a hedge fund, that made it appear that Liberty owed REFCO over $400 million in receivables. This allowed REFCO to mask its true debt position and made all of their equity ratios look better than they actually were. And of course, Grant Thorton, REFCO's external auditor missed this $400 million entry. As did the two lead underwriters who were also tasked with due-diligence on the IPO - CSFB and Goldman Sachs. BM uses his brother-in-law as his external auditor, so in this case there isn't even the façade of having an independent and vigilant auditor verifying the accounting entries.*

23. **Red Flag # 27:** *Several equity derivatives professionals will all tell you that the split-strike conversion strategy that BM runs is an outright fraud and cannot possibly achieve 12% average annual returns with only 7 down months during a 14 ½ year time period. Some derivatives experts that the SEC should call to hear their opinions of how and why BM is a fraud and for some insights into the mathematical reasons behind their belief, the SEC should call:*

   a. Leon Gross, Managing Director of Citigroup's world-wide equity derivatives research unit; 3rd Floor, 390 Greenwich Street; New York, NY 10013: Tel# 800.492.9833 or 212.723.7873 or leon.j.gross@citigroup.com [Leon can't believe that the SEC hasn't shut down Bernie Madoff yet. He's also amazed that FOF's actually believe this stupid options strategy is capable of earning a positive return much less a 12% net average annual return. He thinks the strategy would have trouble earning 1% net much less 12% net. Leon is a free spirit, so if you ask him he'll tell you but you'd understand it better if you met him at his workplace in a private conference room and tell him he won't need to have Citigroup lawyers present, you're just there for some friendly opinions. He talks derivatives at a high level, so ask simple "yes or no" type questions to start off the interview then drill down.]

b. Walter "Bud"Haslett, CFA; Write Capital Management, LLC; Suite 455; 900 Briggs Road; Mount Laurel, NJ 08065; Tel#: 856.727.1700 or bud.haslett@writecapital.com www.writecapital.com [Bud's firm runs $ hundreds of millions in options related strategies and he knows all of the math.]

c. Joanne Hill, Ph.D.; Vice-President and global head of equity derivatives research, Goldman Sachs (NY), 46th Floor; One New York Plaza, New York, NY 10004; Tel# 212.902.2908 [Again, make sure she doesn't lawyer up or this conversation will be useless to you. Tell her you want her opinion and no one will hold her to it or ever tell she gave the SEC an opinion without legal counsel present.]

24. **Red Flag # 28:** *BM's Sharpe Ratio of 2.55 (Attachment 1: Fairfield Sentry Ltd. Performance Data) is UNBELIEVABLY HIGH compared to the Sharpe Ratios experienced by the rest of the hedge fund industry. The SEC should obtain industry hedge fund rankings and see exactly how outstanding Fairfield Sentry Ltd.'s Sharpe Ratio is. Look at the hedge fund rankings for Fairfield Sentry Ltd. and see how their performance numbers compare to the rest of the industry. Then ask yourself how this is possible and why hasn't the world come to acknowledge BM as the world's best hedge fund manager?*

25. **Red Flag # 29:** *BM tells the third party FOF's that he has so much money under management that he's going to close his strategy to new investments. However, I have met several FOF's who brag about their "special access" to BM's capacity. This would be humorous except that too many European FOF's have told me this same seductive story about their being so close to BM that he'll waive the fact that he's closed his funds to other investors but let them in because they're special. It seems like every single one of these third party FOF's has a "special relationship" with BM.*

Conclusions:

1. I have presented 174 months (14 ½ years) of Fairfield Sentry's return numbers dating back to December 1990. Only 7 months or 4% of the months saw negative returns. Classify this as "definitely too good to be true!" No major league baseball hitter bats .960, no NFL team has ever gone 96 wins and only 4 losses over a 100 game span, and you can bet everything you own that no money manager is up 96% of the months either. It is inconceivable that BM's largest monthly loss could only be -0.55% and that his longest losing streaks could consist of 1 slightly down month every couple of years. Nobody on earth is that good of a money manager unless they're front-running.

2. There are too many red flags to ignore. REFCO, Wood River, the Manhattan Fund, Princeton Economics, and other hedge fund blow ups all had a lot fewer red flags than Madoff and look what happened at those places.

3. Bernie Madoff is running the world's largest unregistered hedge fund. He's organized this business as "hedge fund of funds private labeling their own hedge funds which Bernie Madoff **secretly** runs for them using a split-strike conversion strategy getting paid only trading commissions which are not disclosed." If this isn't a regulatory dodge, I don't know what is. This is back-door marketing and financing scheme that is opaque and rife with hidden fees (he charges only commissions on the trades). If this product isn't marketed correctly, what is the chance that it is managed correctly? In my financial industry experience, I've found that wherever there's one cockroach in plain sight, many more are lurking behind the corner out of plain view.

4. Mathematically this type of split-strike conversion fund should never be able to beat US Treasury Bills much less provide 12.00% average annual returns to investors net of fees. I and other derivatives professionals on Wall Street will swear up and down that a split-strike conversion strategy cannot earn an average annual return anywhere near the 16% gross returns necessary to be able to deliver 12% net returns to investors.

5. BM would have to be trading more than 100% of the open interest of OEX index put options every month. And if BM is using only OTC OEX index options, it is guaranteed that the Wall Street firms on the other side of those trades would have to be laying off a significant portion of that risk in the exchange listed index options markets. Every large derivatives dealer on Wall Street will tell you that Bernie Madoff is a fraud. Go ask the heads of equity derivatives trading at Morgan Stanley, Goldman Sachs, JP Morgan and Citigroup their opinions about Bernie Madoff. They'll all tell the SEC that they can't believe that BM hasn't been caught yet.

6. The SEC is slated to start overseeing hedge funds in February 2006, yet since Bernie Madoff is not registered as a hedge fund but acting as one but via third party shields, the chances of Madoff escaping SEC scrutiny are very high. If I hadn't written this report, there's no way the SEC would have known to check the facts behind all of these third party hedge funds.

Potential Fall Out if Bernie Madoff turns out to be a Ponzi Scheme:

1. If the average hedge fund is assumed to be levered 4:1, it doesn't take a rocket scientist to realize that there might be anywhere from a few hundred billion on up in selling pressure in the wake of a $20 - $50 billion hedge fund fraud. With the hedge fund market estimated to be $1 trillion, having one hedge fund with 2% - 5% of the industry's assets under management suddenly blow up, it is hard to predict the severity of the resulting shock wave. You just know it'll be unpleasant for anywhere from a few days to a few weeks but the fall out shouldn't be anywhere near as great as that from the Long Term Capital Management Crises. Using the hurricane scale with which we've all become quite familiar with this year, I'd rate BM turning out to be a Ponzi Scheme as a Category 2 or 3 hurricane where the 1998 LTCM Crises was a Category 5.

2. Hedge fund, fund of funds with greater than a 10% exposure to Bernie Madoff will likely be faced with forced redemptions. This will lead to a cascade of panic selling in all of the various hedge fund sectors whether equity related or not. Long –short and market neutral managers will take losses as their shorts rise and their longs fall. Convertible arbitrage managers will lose as the long positions in underlying bonds are sold and the short equity call options are bought to close. Fixed income arbitrage managers will also face losses as credit spreads widen. Basically, most hedge funds categories with two exceptions will have at least one big down month thanks to the unwinding caused by forced redemptions. Dedicated Short Funds and Long Volatility Funds are the two hedge fund categories that will do well.

[illegible]

3. The French and Swiss Private Banks are the largest investors in Bernie Madoff. This will have a huge negative impact on the European capital markets as several large fund of funds implode. I figure one-half to three-quarters of Bernie Madoff's funds come from overseas. The unwinding trade will hurt all markets across the globe but it is the Private European Banks that will fare the worst.

4. European regulators will be seen as not being up to the task of dealing with hedge fund fraud. Hopefully this scandal will serve as a long overdue wake-up call for them and result in increased funding and staffing levels for European Financial Regulators.

5. In the US Fairfield Sentry, Broyhill, Access International Advisors, Tremont and several other hedge fund, fund of funds will all implode. There will be a call for increased hedge fund regulation by scared and battered high net worth investors.

6. The Wall Street wire house FOF's are not invested in Madoff's strategy. As far as I know the wire house's internal FOF's all think he's a fraud and have avoided him like the plague. But these very same wire houses often own highly profitable hedge fund prime brokerage operations and these operations will suffer contained, but painful nonetheless, losses from loans to some hedge funds that go bust during the panic selling. As a result, I predict that some investment banks will pull out of the prime brokerage business deeming it too volatile from an earnings standpoint. Damage to Wall Street will be unpleasant in that hedge funds and FOF's are a big source of trading revenues. If the

hedge fund industry fades, Wall Street will need to find another revenue source to replace them.

7. US Mutual fund investors and other long-term investors in main stream investment products will only feel a month or two's worth of pain from the selling cascade in the hedge fund arena but their markets should recover afterwards.

8. Congress will be up in arms and there will be Senate and House hearings just like there were for Long Term Capital Management.

9. The SEC's critics who say the SEC shouldn't be regulating private partnerships will be forever silenced. Hopefully this leads to expanded powers and increased funding for the SEC. Parties that opposed SEC entry into hedge fund regulation will fall silent. The SEC will gain political strength in Washington from this episode but only if the SEC is proactive and launches an immediate, full scale investigation into all of the Red Flags surrounding Madoff Investment Securities, LLC. Otherwise, it is almost certain that NYAG Elliot Spitzer will launch his investigation first and once again beat the SEC to the punch causing the SEC further public embarrassment.

10. Hedge funds will face increased due diligence from regulators, investors, prime brokers and counter-parties which is a good thing and long overdue.

Potential Fall Out if Bernie Madoff is found out to be front-running customer order flow:

1. This would be just one more black eye among many for the brokerage industry and the NYSE and NASDAQ. At this point the reputations of both the NYSE and NASDAQ are already at rock bottom, so there's likely little downside left for these two troubled organizations.

2. The industry wouldn't miss a beat other than for the liquidation of Madoff Investment Securities, LLC. Figure it will be similar to REFCO's demise only there won't be a buyer of the firm given that they cheated customers who would all be embarrassed to remain customers once the news they've been ripped off is on the front-pages. These former customers are more likely to sue for damages than remain customers. Unsecured lenders would face losses but other than that the industry would be better off.

3. At least the returns are real, in which case determining restitution could keep the courts busy for years. The Class Action Bar would be thrilled. A lot of the FOF's are registered offshore in places where the long arm of the law might not reach. My guess is that the fight for the money off-shore would keep dozens of lawyers happily employed for many years.

4. The FOF's would suffer little in the way of damage. All could be counted on to say "*We didn't know the manager was generating returns illegally. We relied upon the NYSE and NASDAQ to regulate their markets and prevent front-running therefore we see no reason to return any funds.*"

Attachments:

1. 2 page Summary of Fairfield Sentry Ltd with performance data from December 1990 – May 2005

2. Copy of the May 7, 2001 Barrons' article, ***"Don't Ask, Don't Tell; Bernie Madoff is so secretetive, he even asks his investors to keep mum,"*** written by Erin E. Arvedlund.

3. Partial list of French and Swiss money-managers and private banks with investments in Bernie Madoff's hedge fund. Undoubtedly there are dozens more European FOF's and Private Banks that are invested with BM.

4. 2 page offering memorandum, faxed March 29, 2001, for an investment in what I believe is Fairfield Sentry Ltd., one of several investment programs run by Madoff Investment Securities, LLC for third party hedge fund, fund of funds. I do not know who the source was who faxed this document since the fax heading is blank. The document number listed at the bottom of the page appears to read I:\Data\WPDOCS|AG_\94021597

ATTACHMENT 1: Fairfield Sentry Performance Data

Fairfield Sentry Ltd

Fund Category(s):
Long/Short Equity

Strategy Description:
The Fund seeks to obtain capital appreciation of its assets principally through the utilization of a nontraditional options trading strategy described as "split strike conversion", to which the Fund allocates the predominant portion of its assets. This strategy has defined risk and profit parameters, which may be ascertained when a particular position is established. Set forth below is a description of the "split strike conversion" strategies ("SSC Investments"). The establishment of a typical position entails (i) the purchase of a group or basket of equity securities that are intended to highly correlate to the S&P 100 Index , (ii) the sale of out-of-the-money S&P 100 Index call options in an equivalent contract value dollar amount to the basket of equity securities, and (iii) the purchase of an equivalent number of out-of-the-money S&P 100 Index put options. An index call option is out-of-the-money when its strike price is greater than the current price of the index; an index put option is out-of-the-money when the strike price is lower than the current price of the index. The basket typically consists of approximately 35 to 45 stocks in the S&P 100. The logic of this strategy is that once a long stock position has been established, selling a call against such long position will increase the standstill rate of return, while allowing upward movement to the short call strike price. The purchase of an out-of-the-money put, funded with part or all of the call premium, protects the equity position from downside risk. A bullish or bearish bias of the positions can be achieved by adjustment of the strike prices in the S&P 100 puts and calls. The further away the strike prices are from the price of the S&P 100, the more bullish the strategy. However, the dollar value underlying the put options always approximates the value of the basket of stocks.

Contact Info		Fees & Structure	
Fund:	Fairfield Sentry Ltd	Fund Assets:	$5100.00million
General Partner:	Arden Asset Management	Strategy Assets:	$5300.00million
Address:	919 Third Avenue 11th th Floor New York NY 10022 USA	Firm Assets:	$8300million
		Min. Investment:	$ 0.10million
		Management Fee:	1.00%
		Incentive Fee:	20.00%
Tel:	212-319-6060	Hurdle Rate:	
Fax:		High Water Mark:	Yes
Email:	fairfieldfunds@fggus.com	Additions:	Monthly
Contact Person:	Fairfield Funds	Redemptions:	Monthly
Portfolio Manager:		Lockup:	
		Inception Date:	Dec-1990
		Money Invested In:	United States
		Open to New Investments:	Yes

Annual Returns

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
2.83%	18.58%	14.67%	11.68%	11.49%	12.95%	12.99%	14.00%	13.40%	14.18%	11.55%	10.68%	9.33%	8.21%	7.07%	2.52%

Year To Date:	2.52%
Highest 12 Month Return:	19.98%
Lowest 12 Month Return:	6.23%
[redacted]	[redacted]
Average Monthly Return:	0.96%
Highest Monthly Return:	3.36%
[redacted]	[redacted]
Average Gain:	1.01%
Average Loss:	-0.24%
[redacted]	[redacted]
Compounded Monthly Return:	0.96%
[redacted]	[redacted]
Maximum Drawdown:	-0.55%

Sharpe Ratio (Rolling 12):	2.56
[redacted]	[redacted]
Std. Dev. (Monthly):	0.75%
Std. Dev. (Rolling 12):	2.74%
Beta:	**0.06**
Alpha:	0.91
R:	0.30
R Squared:	0.09

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.83% E
1991	3.08% E	1.46% E	0.59% E	1.39% E	1.88% E	0.37% E	2.04% E	1.07% E	0.80% E	2.82% E	0.08% E	1.63% E
1992	0.49% E	2.79% E	1.01% E	2.86% E	[redacted]	1.29% E	0.00% E	0.92% E	0.40% E	1.40% E	1.42% E	1.43% E
1993	0.00% E	1.93% E	1.86% E	0.06% E	1.72% E	0.86% E	0.09% E	1.78% E	0.35% E	1.77% E	0.26% E	0.45% E
1994	2.18% E	[redacted]	1.52% E	1.82% E	0.51% E	0.29% E	1.78% E	0.42% E	0.82% E	1.88% E	[redacted]	0.66% E
1995	0.92% E	0.76% E	0.84% E	1.69% E	1.72% E	0.50% E	1.08% E	[redacted]	1.70% E	1.60% E	0.51% E	1.10% E
1996	1.49% E	0.73% E	1.23% E	0.64% E	1.41% E	0.22% E	1.92% E	0.27% E	1.22% E	1.10% E	1.58% E	0.48% E
1997	2.45% E	0.73% E	0.86% E	1.17% E	0.63% E	1.34% E	0.75% E	0.35% E	2.39% E	0.55% E	1.56% E	0.42% E
1998	0.91% E	1.29% E	1.75% E	0.42% E	1.76% E	1.28% E	0.83% E	0.28% E	1.04% E	1.93% E	0.84% E	0.33% E
1999	2.06% E	0.17% E	2.29% E	0.36% E	1.51% E	1.76% E	0.43% E	0.94% E	0.73% E	1.11% E	1.61% E	0.39% E
2000	2.20% E	0.20% E	1.84% E	0.34% E	1.37% E	0.80% E	0.65% E	1.32% E	0.25% E	0.92% E	0.68% E	0.43% E
2001	2.21% E	0.14% E	1.13% E	1.32% E	0.32% E	0.23% E	0.44% E	1.01% E	0.73% E	1.28% E	1.21% E	0.19% E
2002	0.03% E	0.60% E	0.46% E	1.16% E	2.12% E	0.26% E	3.36% E	[redacted]	0.13% E	0.73% E	0.16% E	0.06% E
2003	[redacted]	0.04% E	1.97% E	0.10% E	0.95% E	1.00% E	1.44% E	0.22% E	0.93% E	1.32% E	[redacted]	0.32% E
2004	0.94% E	0.50% E	0.05% C	0.43% C	0.66% C	1.28% C	0.08% C	1.33% E	0.53% E	0.03% E	0.79% E	0.24% E
2005	0.51% E	0.37% E	0.85% C	0.14% C	0.63% C	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[redacted]

Attachment 2: Barron's Article dated May 7, 2001

"Don't Ask, Don't Tell"

Bernie Madoff is so secretive, he even asks investors to keep mum

By ERIN E. ARVEDLUND
Barron's | Monday, May 7, 2001

Two years ago, at a hedge-fund conference in New York, attendees were asked to name some of their favorite and most-respected hedge-fund managers. Neither George Soros nor Julian Robertson merited a single mention. But one manager received lavish praise: Bernard Madoff.

Folks on Wall Street know Bernie Madoff well. His brokerage firm, Madoff Securities, helped kick-start the Nasdaq Stock Market in the early 1970s and is now one of the top three market makers in Nasdaq stocks. Madoff Securities is also the third-largest firm matching buyers and sellers of New York Stock Exchange-listed securities. Charles Schwab, Fidelity Investments and a slew of discount brokerages all send trades through Madoff.

Some folks on Wall Street think there's more to how Madoff (above) generates his enviable stream of investment returns than meets the eye. Madoff calls these claims "ridiculous."

But what few on the Street know is that Bernie Madoff also manages $6 billion-to-$7 billion for wealthy individuals. That's enough to rank Madoff's operation among the world's three largest hedge funds, according to a May 2001 report in MAR Hedge, a trade publication.

What's more, these private accounts, have produced compound average annual returns of 15% for more than a decade. Remarkably, some of the larger, billion-dollar Madoff-run funds have never had a down year.

When Barron's asked Madoff Friday how he accomplishes this, he said, "It's a proprietary strategy. I can't go into it in great detail."

Nor were the firms that market Madoff's funds forthcoming when contacted earlier. "It's a private fund. And so our inclination has been not to discuss its returns," says Jeffrey Tucker, partner and co-founder of Fairfield Greenwich, a New York City-based hedge-fund marketer. "Why Barron's would have any interest in this fund I don't know." One of Fairfield Greenwich's most sought-after funds is Fairfield Sentry Limited. Managed by Bernie Madoff, Fairfield Sentry has assets of $3.3 billion.

A Madoff hedge-fund offering memorandums describes his strategy this way: "Typically, a position will consist of the ownership of 30-35 S&P 100 stocks, most correlated to that index, the sale of out-of-the-money calls on the index and the purchase of out-of-the-money puts on the index. The sale of the calls is designed to increase the rate of return, while allowing upward movement of the stock portfolio to the strike price of the calls. The puts, funded in large part by the sale of the calls, limit the portfolio's downside."

Among options traders, that's known as the "split-strike conversion" strategy. In layman's terms, it means Madoff invests primarily in the largest stocks in the S&P 100 index -- names like General Electric, Intel and Coca-Cola. At the same time, he buys and sells options against those stocks. For example, Madoff might purchase shares of GE and sell a call option on a comparable number of shares -- that is, an option to buy the shares at a fixed price at a future date. At the same time, he would buy a put option on the stock, which gives him the right to sell shares at a fixed price at a future date.

The strategy, in effect, creates a boundary on a stock, limiting its upside while at the same time protecting against a sharp decline in the share price. When done correctly, this so-called market-neutral strategy produces positive returns no matter which way the market goes.

Using this split-strike conversion strategy, Fairfield Sentry Limited has had only four down months since inception in 1989. In 1990, Fairfield Sentry was up 27%. In the ensuing decade, it returned no less than 11% in any year, and sometimes as high as 18%. Last year, Fairfield Sentry returned 11.55% and so far in 2001, the fund is up 3.52%.

Those returns have been so consistent that some on the Street have begun speculating that Madoff's market-making operation subsidizes and smooths his hedge-fund returns.

How might Madoff Securities do this? Access to such a huge capital base could allow Madoff to make much larger bets -- with very little risk -- than it could otherwise. It would work like this: Madoff Securities stands in the middle of a tremendous river of orders, which means that its traders have advance knowledge, if only by a few seconds, of what big customers are buying and selling. By hopping on the bandwagon, the market maker could effectively lock in profits. In such a case, throwing a little cash back to the hedge funds would be no big deal.

When Barron's ran that scenario by Madoff, he dismissed it as "ridiculous."

Still, some on Wall Street remain skeptical about how Madoff achieves such stunning double-digit returns using options alone. The recent MAR Hedge report, for example, cited more than a dozen hedge fund professionals, including current and former Madoff traders, who questioned why no one had been able to duplicate Madoff's returns using this strategy. Likewise, three option strategists at major investment banks told Barron's they couldn't understand how Madoff churns out such numbers. Adds a former Madoff investor: "Anybody who's a seasoned hedge-fund investor knows the split-strike conversion is not the whole story. To take it at face value is a bit naïve."

Madoff dismisses such skepticism. "Whoever tried to reverse-engineer \, he didn't do a good job. If he did, these numbers would not be unusual." Curiously, he charges no fees for his money-management services. Nor does he take a cut of the 1.5% fees marketers like Fairfield

Greenwich charge investors each year. Why not? "We're perfectly happy to just earn commissions on the trades," he says.

Perhaps so. But consider the sheer scope of the money Madoff would appear to be leaving on the table. A typical hedge fund charges 1% of assets annually, plus 20% of profits. On a $6 billion fund generating 15% annual returns, that adds up to $240 million a year.

The lessons of Long-Term Capital Management's collapse are that investors need, or should want, transparency in their money manager's investment strategy. But Madoff's investors rave about his performance -- even though they don't understand how he does it. "Even knowledgeable people can't really tell you what he's doing," one very satisfied investor told Barron's. "People who have all the trade confirmations and statements still can't define it very well. The only thing I know is that he's often in cash" when volatility levels get extreme. This investor declined to be quoted by name. Why? Because Madoff politely requests that his investors not reveal that he runs their money.

"What Madoff told us was, 'If you invest with me, you must never tell anyone that you're invested with me. It's no one's business what goes on here,'" says an investment manager who took over a pool of assets that included an investment in a Madoff fund. "When he couldn't explain \ how they were up or down in a particular month," he added, "I pulled the money out."

For investors who aren't put off by such secrecy, it should be noted that Fairfield and Kingate Management both market funds managed by Madoff, as does Tremont Advisers, a publicly traded hedge-fund advisory firm.

URL for this article:
http://online.barrons.com/article/SB989019667829349012.html

END ATTACHMENT #2 BARRON'S ARTICLE

Attachment 3

Partial List of French & Swiss money-managers / Private Banks invested with Bernie Madoff who are likely to become insolvent if this is a Ponzi Scheme. More are out there.

Paris & Paris suburbs

1. AGF Asset Management; Mr. Jean Francois Bert; 14 Rue Havely 75009
2. Alterinvest; Mr. Etienne Bernier; 42 Avenue Montaigne; Tel # 33 1 53 67 53 27
3. Altigest; Mr. Lescoat; 23 Rue d'Antin 75002; Tel # 33 1 42 66 15 43
4. GT Finances; Mr. Moreau; 16 Place De La Madeleine; Tel # 33 1 53 43 20 41
5. John Locke Investments; Mr. Bertrand Savatier; Cyrille Finances; 2 Rue des Italiens
6. Oddo Asset Management; Mr. Philippe Oddo; 12 Boulevard De La Madeline 75009; Tel # 33 1 44 51 83 83
7. SV International; Mr. Voisin; 64 Bd Pereire 75017; Tel # 33 1 40 54 80 00
8. Tethys; Mr. Jean Paul Delattre; 5 Rue Du 8 Mai 1945; Clichy; Tel # 33 1 47 56 87 46

Geneva, Switzerland

1. Aforge; Mr. Henrvieux Causse; 7 Rue Francois Versonnex; 41 22 7078240
2. Banque Piguet; Mr. Tosi; 5 Place De L'universite; Tel # 41 22 3112700
3. Dexia Asset Management; Mr. Jean Sebastien Debusschere; 2 Rue Jargommant 1207 Tel # 41 22 7079011
4. Fund Invest; Mr. Roer Galor; 22 Rue de Villereuse; Tel # 41 592912
5. Fix Family Office; Mademoiselle Ayca Pars; 7-9 Rue De La Croix D'or; Tel # 41 22 3178866
6. SCS Alliance; Mr. Saba; 11 Roue de Florissant; Tel # 41 22 8390100

Notes:

1. French and Swiss money-managers and Private Banks are Bernie Madoff's largest investors because they lack quantitative finance skills.
2. I estimate that between 50% - 75% of Bernie Madoff's assets are European based.

ATTACHMENT 4

Copy of a Fax dated March, 21, 2001 3:57 p.m. from an unknown sender (I forgot who sent it) that explains the Use of Proceeds and Investment Program offered by Fairfield Sentry Ltd but managed by Bernie Madoff. The fax machine header reads NO.880_______P.1_______ so it is impossible for me to identify the source at this time. This looks to be pages 6 and 7 of an offering memorandum. I would be happy to turn over my original fax copy to the SEC. The document number listed on both pages is a bit blurry but appears to read I:\DATA\WPDOCS|AG_\94021597

USE OF PROCEEDS

The entire net proceeds from the sale of the interests will be available to the Partnership. The Partnership incurred approximately $5,000 in connection with the initial offering of Interests for the admission of Limited Partners (such costs consisting primarily of legal fees and blue sky filing fees. The General Partners do no intent to pay any commissions or fees to broker-dealers in connection with the offering. However, in the event any fees or commissions are paid, they will be paid by the General Partners rather than the Partnership. The General Partners have not established any maximum amounts for such fees and commissions, none of which have been paid or earned to date.

The Partnership's funds are allocated to an account at Bernard L. Madoff Investment Securities (see "INVESTMENT PROGRAM"). Funds not so allocated will be maintained in cash. Bernard L. Madoff Securities is employed solely as an agent of the Partnership. It has no ownership interest in the Partnership and no role in the overall management of the Partnership.

The Partnership will not make any loans to affiliated entities nor will it invest in any foreign government securities.

INVESTMENT PROGRAM

The Partnership seeks to obtain capital appreciation of its assets through the utilization of nontraditional options trading strategies. The General Partners have established a discretionary account for the Partnership at Bernard L. Madoff Investment Securities ("BLM"), a registered broker-dealer in New York, New York, which utilizes a strategy described as a "split strike conversion". This strategy has defined risk and profit parameters which may be ascertained when a particular position is established. All investment decisions in the account at BLM are effected by persons associated with BLM. The firm, which employs approximately 150 people, acts primarily as a market maker in stocks and convertible securities. Most of the stocks for which it acts as a market maker are also listed on the New York Stock Exchange. Set forth below is a description of the "split strike conversion strategies.

The establishment of a typical position entails (i) the purchase of equity shares, (ii) the sale of a related out of the money call option representing an amount of underlying shares equal to the number of equity shares purchased, and (iii) the purchase of a related put option which is at or out of the money. A call option is sold out of the money when its strike price is greater than the current price of the stock; a put option is out of the money when the strike price is lower than the current price of the stock.

The logic of this strategy is that once a long stock position has been established, selling a call against such along position will increase the standstill rate of return, while allowing upward movement to the short call strike price. The purchase of an at or out of the money put, funded with part or all of the call premium, protects the equity position from downside risk.

Equity index options are also utilized in this trading methodology. Such a strategy involves buying a group of equity securities that together will highly correlate to the S&P 100 Index ("the OEX"). Equivalent contract value dollar amounts of out of the money OEX call options are sold, and out of the money OEX put options are purchased, against the basket of stocks. The basket typically consists of approximately 35 stocks in the S&P 100 Index.

A bullish or bearish bias of the positions can be achieved by adjustment of the strike prices in the OEX puts and calls. The further away the strike prices are from the price of the S&P 100 Index, the more bullish the strategy. However, the dollar value underlying the put options always approximates the value of the basket of stocks.

The Partnership bears the cost of all brokerage fees and commissions charged in connection with the account at BLM. All interest earned on credit balances is credited to the Partnership.

BLM acts as principal in connection with its sale of securities to the Partnership, and the purchase of securities from the Partnership. BLM acts as a market-maker in the stocks purchased and sold by the Partnership. These market making activities enable BLM to trade with the Partnership as principal. See "CERTAIN RISK FACTORS".

The options transactions executed [redacted] are effected, primarily, in the over-the-counter, not on a registered options exchange.

There can be no assurance that the investment objectives of the Partnership will be achieved. THE PARTNERSHIP'S INVESMENT PROGRAM IS SPECULATIVE AND ENTAILS SUBSTANTIAL RISKS. MARKET RISKS ARE INHERENT IN ALL SECURITIES TO VARYING DEGREES. NO ASSURANCE CAN BE GIVEN THAT THE PARTNERSHIP'S INVESTMENT OBJECTIVE WILL BE REALIZED. (SEE "CERTAIN RISK FACTORS".)

Yelp

To: BVP Group
From: Jeremy Levine
Date: October 3, 2005
Re: Yelp

Summary

Yelp is a San Francisco-based early stage "Web 2.0" yellow pages company. The business was launched about a year ago and raised $1 million of angel financing from Max Levchin, the founding CTO of Paypal. The founders are both early Paypal entrepreneurs who worked for Max. They have spent less than half the capital they raised but have managed to accumulate what I believe is the most compelling (though far from complete) local merchant content on the web with a very loyal user base. We have an opportunity to lead the company's first venture financing with a $5 million one-handed investment at a $13 million pre-money valuation (there was a $1 million angel round).

I have been tracking the company for several months and was planning to propose an investment and bring them in for a presentation next week. However, Business Week named Yelp the top services company on the Internet (ahead of Craigslist) in their latest issue which hit newsstands on Friday 9/23 (see article). Therefore, I tried to pre-empt Yelp's financing plans with a term sheet last week and agreed to terms with the company over the weekend.

Market

Yelp is targeting local advertising markets across the globe starting with San Francisco, Boston and a few other US cities. Consumers conduct 80% of their commerce within 50 miles of home. Local advertising is a $94 billion market in the US and $150 billion globally. That market is led by yellow pages publishers which collect about $25 billion of annual listing fees, mostly from small- and medium-sized companies. Approximately 65% of all small and medium local businesses purchase ad space in local yellow page directories. Very little of this market has moved online (yet).

Over the last ten years, Internet advertising grew from nothing into a $10 billion industry in the US, and its defining characteristic is probably its performance-oriented, direct marketing nature. For the most part, however, local merchants (restaurants, salons, dentists, doctors, plumbers, etc) cannot partake in the most prevalent online ad marketplaces like Google and Yahoo, because a) a lot of the traffic represents out-of-town customers that physically cannot buy their services and b) they generally don't drive transactions through web sites, so the pay-per-click model that dominates Internet advertising does not work well.

Yelp and a number of online local services competitors are building solutions to improve the local search and discovery offerings for consumers and to shift local merchant ad spending to the Internet.

Product

Yelp is self explanatory. Try it at www.yelp.com. It offers consumers a way to discover and share their thoughts on local merchants while building a feeling of local community.

There are two ways for a consumer to use Yelp:

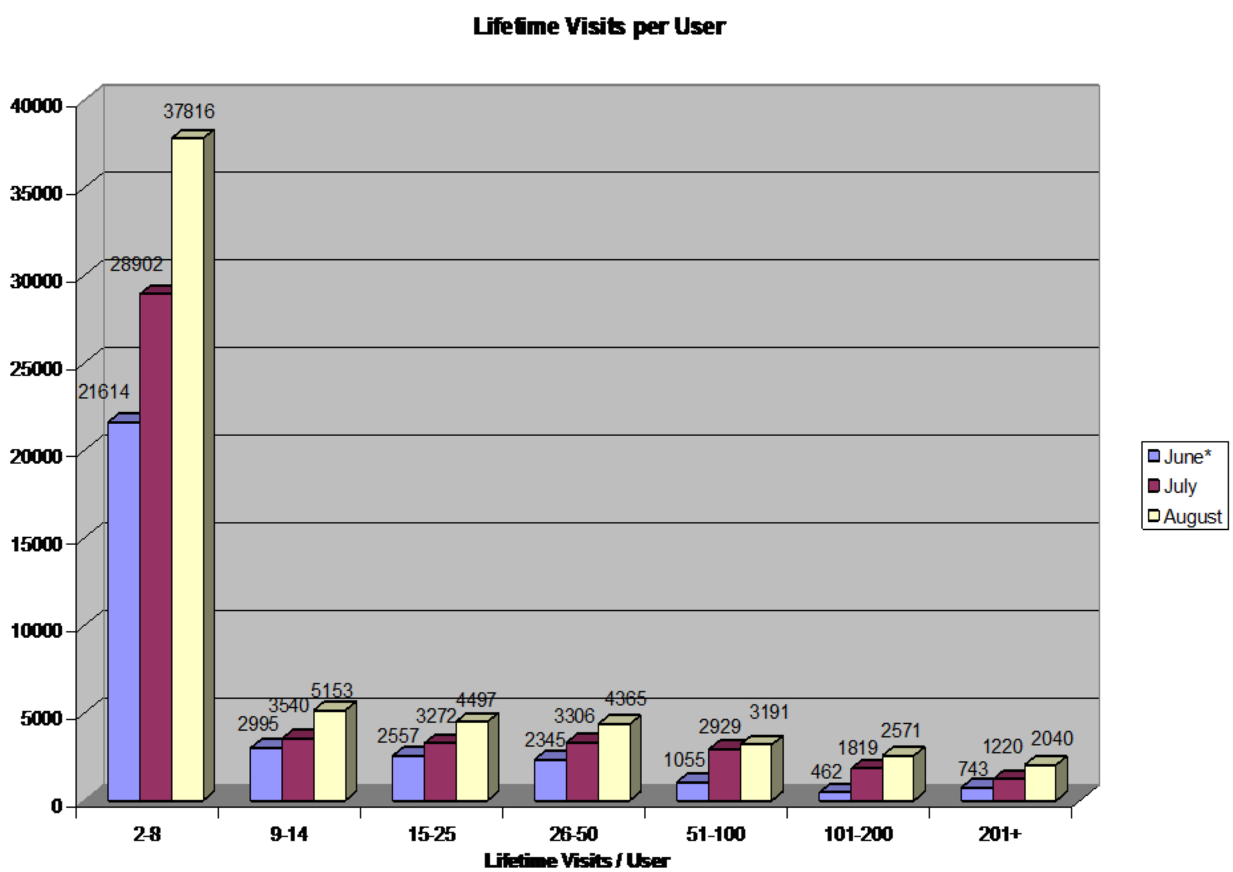
Strangers – anyone can use the site to learn about a specific merchant (e.g., is Oxenrose a good place to get my hair styled and what is the phone number) or discover a certain type of merchant (e.g., what are some good French restaurants in Soho?)

Members – members can customize the site (a la MyYahoo) to store their preferences, write their own reviews, and bookmark merchants and reviews of interest. (For example, visit my yelp profile at http://jeremyl.yelp.com) Users can also build a network of friends within the site to get "trusted" advice/reviews from people they know.

Since the current version of the site was launched in April, it has become apparent that a small segment of Yelp users (generally females aged 25-35) are rabid, viral users who invite dozens or even hundreds of friends to the service and write lots of reviews (Malcolm Gladwell "connectors"). These rabid users are responsible for the community feeling of the site and have driven part of Yelp's zero-cost growth. In addition, the Yelp tech team designed the site to leverage search engine optimization, and so Google searches for many top Yelp merchants (e.g., Oxenrose) return Yelp at or near the top of the result set despite the fact that Yelp's overall traffic numbers still pale in comparison to most large Internet sites.

A chart of Yelp's monthly visit count is below. The original service (pre April re-launch) required users to ask their friends about local attractions, and the growth did not accelerate until the current site went live in April. (Note that even with the little bit of marketing they recently initiated, the entire company cash burn is under $45k per month).

It is still early, but it also appears that Yelp's user base is quite loyal. The graph below shows an increasing number of consumers are frequenting the site more often each month.



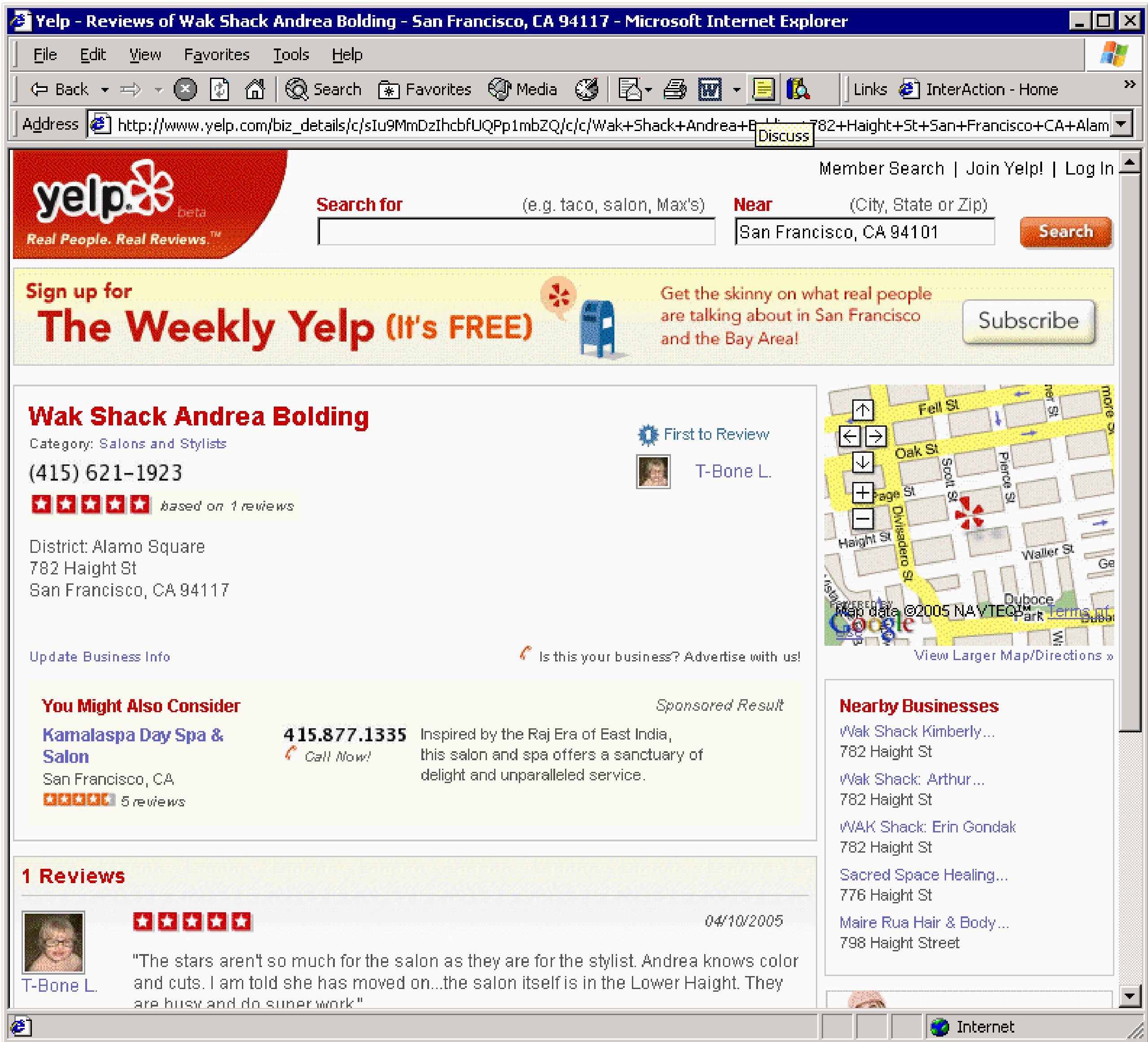
Business Model

Like most Web 2.0 businesses, all content on Yelp is free – in every sense. Consumers graciously generate the content at no cost to Yelp and then access it all for free. So how does Yelp make money?

Because doctors, restaurants, salons and the like generally don't have web-enabled appointment or reservation systems, business is still conducted over the phone. Yelp is an early pioneer of the pay-per-call advertising model emerging online for these local merchants. A merchant wishing to advertise on Yelp agrees to pay for every call it receives from consumers who find it on Yelp. The per-call fees currently range from $5 (typical low-end restaurant) to $30 (typical dentist or salon thinking about customer lifetime value). To track the calls, Yelp replaces an advertising merchant's phone number with a unique Yelp-controlled local phone number. Calls to the number get switched through Yelp to the local merchant (with a short message from Yelp).

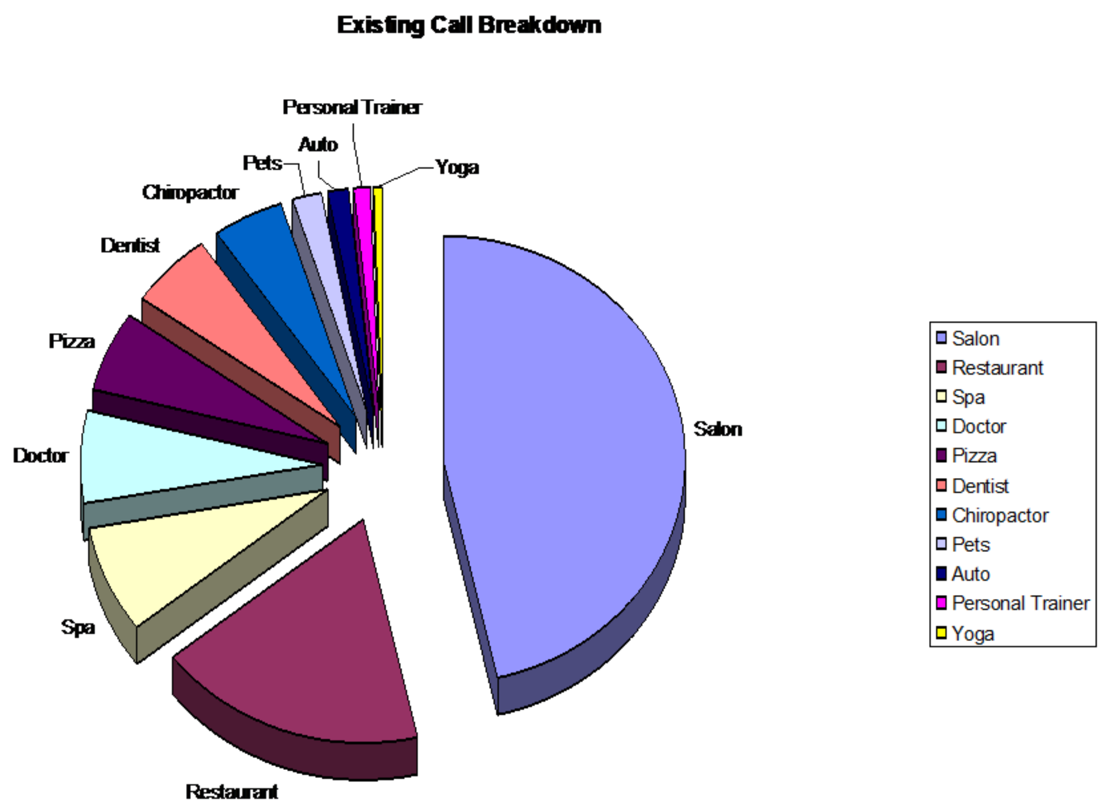
Potential advertisers currently have two reasons to participate in Yelp's pay-per-call program. The first reason is "**the carrot**," which is to get priority placement on the site. For example, if a consumer is searching for a salon in San Francisco, the salons participating in Yelp's pay-per-call program appear at the top of the result set. Eventually, the result set itself will be ordered according to the amount each merchant is willing to pay per call, but neither the volume nor the auction system required for such a feature is in place yet.

The second reason, which is driving a lot of the early sales, is "**the stick**." Yelp places competitor links on the pages of merchants that are not participating in Yelp's pay-per-call program. In the example below, note the "You Might Also Consider" section just below Wak Shack's location information and just above its review:



Since launching the pay-per-call program in the San Francisco market less than 2 months ago, Yelp has generated revenues from about 1,000 calls and is on a run-rate of 20-30 calls per day. It has done a small amount of outbound calling to sign up about 2/3 of its advertisers (average cost to acquire of about $38), and the remaining 1/3 have signed up after calling Yelp to inquire about how to remove the You Might Also Consider listing(s) from their Yelp page.

Although the call volume is still quite low, one promising element of the pay-per-call program is that it appears to work effectively across many different types of merchants. While salons account for almost half the calls (probably because of the demographics of Yelp's early user base), Yelp has demonstrated that restaurants, doctors, dentists and auto repair shops are all willing to advertise with pay-per-call.



Coming Soon

Yelp has a never-ending list of new consumer and advertiser features in the works, and one of the uses of capital is to triple the current team of two developers to accelerate progress. Among the more promising new capabilities are:

Endeca-like guided navigation to help consumers discover new merchants using Google maps. The idea is to let the user drill into and out of categories and geographies. This is already in private alpha testing and looks very impressive.

Content and pay-per-call network syndication. Many local newspaper sites are incapable of building Yelp-like community functionality on their own and so are discussing potential partnerships with Yelp to cobrand the content. This is akin to Google's early deals with Yahoo and AOL. We set up initial conversations for Yelp at Boston.com and the New York Times. In addition to driving more user volume to Yelp, links from these "trusted sources" will also improve Yelp's pagerank and move it higher up in Google's search results, further accelerating the virtuous cycle to generate free traffic.

Self-service pay-per-call signups (and auctions) for advertising merchants

Competition

Because the potential market opportunity is so large, competition in this sector is intense. It falls into four categories:

Direct competitors – these are other startups with products very similar to Yelp. The two leaders are **Insiderpages** and **Judysbook**. Insiderpages is an IdeaLab/Sequoia company (~$10M raised), and Judysbook is an Ignition Partners company ($2.5M raised). Though both companies have spent considerably more than Yelp, neither generates more traffic. Yelp's site is more impressive, but more importantly, the quality of Yelp's reviews is higher. Yelp has been able to leverage word-of-mouth marketing to attract users and maintain a strong Craigslist-style "community." Insiderpages and Judysbook have both stooped to cheap marketing tactics (e.g., write 10 reviews and get a $10 gas or coffee coupon). As a result, both sites have a lot of useless reviews, which are rarely found on Yelp.

Search engines – Google and Yahoo are both trying to tackle local search. **Google** has a Froogle-style offering which aggregates content from other sites but doesn't offer any content itself. It also lacks the community element found at all three startups in the space. It monetizes Google Local by charging other sites (like Insiderpages) to put links to their reviews near the top of Google's meta review pages. Yelp has declined to participate in this program (it's expensive), but may need to reconsider in an effort to maintain market share. **Yahoo** has a stronger offering than Google and is the company Yelp worries about the most. Its interface and functionality are not as compelling as Yelp's, and it lacks the community/network element, but Yahoo has more user generated content and is able to leverage its search engine traffic. However, local.yahoo.com still accounts for less than 1% of Yahoo's traffic.

Offline yellow pages – **Superpages.com** (Verizon), **Yellowpages.com** (SBC+Bell South) and **Zip2** (Infospace) are examples of companies who have taken offline Yellowpages content and put it on the web. The consumer experience of these sites is awful as they have simply "cut and pasted" yellow pages directory databases (merchant name, category, address and phone number) and put them on the web.

Citysearch – **Citysearch** is the leader in local search products today. Most of its content is editorial (composed by employees as opposed to generated by consumers), though it has started to collect consumer reviews as well. Because historically it charged advertisers for listings, it is impossible to find a merchant rated lower than 7 out of 10 by Citysearch's editorial staff (no poorly rated merchant wanted to advertise), and most merchants are 8 or higher. However, Citysearch is still the 250th most visited site on the web according to Alexa.

Management

The more I interact with Jeremy and Russ, the more I like them as early stage entrepreneurs. Their references are consistently excellent, and several members of the senior team from PayPal (Peter Thiel, CEO; Max Levchin, CTO; Keith Rabois, EVP Biz Dev) demonstrated their views through angel investments in Yelp. However, it is important to acknowledge that they are very young (~27 years old), and key challenges will be recruiting experienced sales and business development-oriented managers to the team and adding general management support as the number of people at the company grows.

CEO – Jeremy Stoppleman – Jeremy studied computer science at the University of Illinois and then was recruited as a developer at X.com. He continued at Paypal after its 50/50 merger with X.com and remained the VP of Engineering through eBay's acquisition by PayPal. He went to Harvard Business School for one year and then left the MBA program in the summer of 2004 to start Yelp as part of Max Levchin's incubator.

CTO – Russ Simmons – Russ was also a University of Illinois cs student recruited as the first non-founder to Paypal. He became Chief Architect under Jeremy and Max at Paypal. He left Paypal to co-found Yelp last year.

There is a lot of team building required here, but with their product and technology strength, Jeremy and Russ form a strong foundation. Max Levchin and Keith Rabois (another former Paypal EVP and current LinkedIn executive) are currently on the Board.

Deal

I wish this deal would be cheaper, but the Yelp founders anchored their expectations around the recent Sequoia investment in Insiderpages (Mike Moritz led an $8M Series B at ~$12M pre this past summer). Given the likely level of VC interest in Yelp and the fact that its product is better than the Insiderpages site, I believe a $13M pre-money price inclusive of a 20% post-money option pool represents an attractive set of terms. We will own 27.8% of the company for our $5M investment.

Risks

Monetization. The early progress of Yelp's pay per call program is promising, but this is an unproven business model. For the model to work, tens of thousands of local merchants must be willing to pay for customers on a per-call basis.

Consumer adoption. Yelp is currently delivering about a million page views per month but needs to grow 100x to 1,000x to become a truly significant player.

Competition. A lot of well-capitalized competitors are focused on the local search problem, and Yelp could find itself in a spending war as sites fight for market share. While Yelp is already at critical mass with a self-sustaining community in San Francisco, market share battles could seriously hinder Yelp's ability to establish thriving communities in other markets, which are critical to Yelp's growth plans.

Team. Jeremy (CEO) and Russ (CTO) are talented early stage entrepreneurs with the right mix of consumer product vision and technical execution capabilities. They are relatively inexperienced business managers, however, and so sales, business development and marketing talent needs to be added to this team.

Scenario Analysis

Scenario Description	Probability	Enterprise exit value	to BVP	Multiple	Value
Consumer adoption stagnates; business fails	25.0%	$0	$0.0	0.0x	$0.00
Builds strong communities in a few important cities; gets acquired by larger local portal	38.0%	$20	$5.6	0.8x	$2.11
Business scales to a dozen cities across the US and pay-per-call model works well. Achieves $30M revenues with 33% operating margins. Acquired.	22.0%	$80	$22.2	3.1x	$4.89
Yelp becomes one of two or three leading US local search companies and is acquired by web search major portal	12.0%	$200	$55.6	7.7x	$6.67
Yelp expands internationally and becomes standalone public company focused on local search	3.0%	$500	$139.0	19.2x	$4.17
check	100.0%				

Expected Value to BVP		$17.85
Expected Multiple		2.5x
	years	irr
Implied 3 yr IRR	3	35.2%
Implied 4 yr IRR	4	25.4%
Implied 5 yr IRR	5	19.8%

(IRRs calculated as if future financing closes immediately)

Conclusion

Yelp is a high-risk early stage consumer investment opportunity targeting a very large market. Though it would be preferable to invest after the business model risk is fully mitigated, I believe there are sufficiently promising signs of success here to justify an early stage investment. The winner of local Internet search will be an extremely large and valuable business. Therefore, I am recommending this early stage investment and look forward to the group's feedback.

LinkedIn

To: BVP Group
From: Jeremy Levine
Date: December 11, 2006
Re: Investment Recommendation:
LinkedIn

Summary

LinkedIn's business networking Internet site is a frequent pit stop for many of us at BVP, and we have been tracking the company's progress for many months now. More than 8 million white collar professionals have registered on the site since its launch in 2003, and the pace of growth has increased substantially driven by the network effects inherent in the model. On just over $10 million of invested capital, the company has reached breakeven on about $1.5 million of monthly revenues. We have an opportunity to lead a Series C round in which BVP would invest $12.5 million to purchase 5% of the fully diluted equity ($237.5 million pre-money valuation) inclusive of a new 10% unallocated option pool. While this is a fully-priced deal, I believe its risk/reward attributes are quite attractive. The potential upside associated with becoming the global namespace for business people coupled with limited downside given the nearly profitable existing business model and minimal invested capital make this a compelling opportunity.

Core Product

LinkedIn's core product offering is free. Anyone can sign up online and enter his business profile, which is effectively one's resume. Users are then encouraged to invite their business contacts to the network. Much like most social networking sites, LinkedIn derives all of its new user sign ups through referrals from its members. As a result, growth of the user base increases with its size:

Millionth user:	477 days after launch
2 millionth:	181 days later
3 millionth:	129 days later
4 millionth:	130 days later
5 millionth:	114 days later
6 millionth:	102 days later
7 millionth:	93 days later
8 millionth:	77 days later (on Nov 29, 2006)

LinkedIn is far and away the most popular business networking site on the Internet and could be described as Facebook or MySpace for business users. The primary difference between LinkedIn and other social networks is its focus on business people, and so the site is currently devoid of photos and other personalization elements that typically blanket social networks. A second important difference is that few users truly "live on the site" the way college students live on Facebook or teenagers live on MySpace.

For many users, LinkedIn is primarily an online resume. There are a few segments of users, however, which are, in fact, starting to "live" on the site. The primary group is executive recruiters. Because of the breadth and quality of LinkedIn's member base, recruiters are using it to identify, contact and check references on passive job seekers – i.e., individuals who are happily employed but potentially willing to entertain a new career opportunity. Secondary groups of heavy users include sales people (who use LinkedIn to find contacts at companies they are targeting for a sale) and those in networking-oriented professions like business development or venture capital.

As of last week, 58% of LinkedIn's 8.15M users had been on the site within the last 6 months. When excluding users who signed up within the last 6 months, 42% of LinkedIn's 6M users who are at least 6 months old have been on the site within the last 6 months. Clearly, there is room for improvement with regard to site usage. Most of the repeat visitors fall into the categories described above.

Although the mainstream business professional does not yet have a compelling reason to spend time on LinkedIn daily, a big focus of the company is to add features to motivate broader regular usage. Recent new feature examples include finding and endorsing service providers such as lawyers and accountants, re-connecting with former colleagues and classmates, and searching among available job postings. While none of these features has driven a step-function increase in usage, each has contributed to improvements. The fundamental idea underlying LinkedIn's strategy is to continue adding more functionality until there are several useful features for virtually every white collar professional.

Market and Paying Customers

LinkedIn generates revenues in a few large existing markets. The following is an overview of LinkedIn's 2006 (almost actual) and projected 2007 revenue breakdown, and below is a brief description of each product and market.

	projected FY 2007	estimates FY 2006	% Change
Advertising	4,313,724	2,083,826	107%
Jobs (site)	5,510,646	2,153,992	156%
Corporate Sales (phone)	5,387,582	1,389,633	288%
InMails (site)	105,582	145,540	-27%
Subscriptions (site)	11,026,646	5,346,927	106%
Data Licensing (other)	-	700,753	-100%
	26,344,180	11,820,671	123%

Advertising *($2.1M, 18% Of 06 revenues)* – According to Alexa, LinkedIn is the ~150th most popular site on the Internet. More important to advertisers, the site skews toward affluent professionals, which comprise an attractive demographic. Through a traditional ad sales force, the company has signed deals with about 25 advertisers including the likes of E*Trade, Microsoft, Vonage, Jeep, and VmWare. The ad deals tend to last 2 to 4 months and cover about $20,000 of inventory. The most notable deal is an $800,000 deal with Google to place a video ad on all user profile pages. In addition to the ads it sells directly, LinkedIn also monetizes pages with third party, self-service ad networks like Google AdSense and AdBrite.

Jobs on the site *($2.1M, 18% of 06 revenues)* – Any LinkedIn member can post a job listing on the site for promotion to the user base at a cost of $100 to $150 per job (depending on posting volume). This revenue stream is particularly attractive because it's entirely a self-serve process, and therefore the associated gross profit falls straight to the bottom line.

Corporate sales *($1.4M, 12% of 06 revenues)* – The internal telesales team sells packages of job listings and subscription accounts (see below) to companies such as Expedia, Google, Dell and Lockheed Martin. These are annual deals ranging from $10,000 to $150,000 each. The telesales effort is brand new but growing quite quickly, and the sales reps I spoke with were ecstatic with the ease of the sale driven by the strength of LinkedIn's brand, particularly in the technology industry, where recruiters are clamoring for better ways to recruit engineers.

With regard to market size, the jobs and corporate sales products fit into the $2 billion annual online jobs market currently led by Monster (50% share) with Yahoo Hotjobs and Career Builder filling in the top three. There are dozens of smaller private companies experimenting with the online jobs model, so this is a dynamic market. The market is also influenced heavily by macro economic conditions, though given LinkedIn's tiny current share, it will likely grow through any near-term recession.

InMails *($0.1M, 1% of 06 revenues)* – Any member can buy an a la carte package of InMails which enable a user to send an email to another LinkedIn member with whom he is not connected. InMails cost $10 each. This product makes economic sense to only a few users because most prefer the subscription packages described below.

Subscriptions *($5.4M, 45.8% of revenues)* – Members can buy monthly subscription packages to access three premium features on the site:

> Intros – these let you find a network path of more than one step to someone you want to contact and then let you pass a message through the path to request an introduction.
>
> InMails – described above
>
> Search results – at no charge, you can search your 'extended network' which is defined as everyone within 3 degrees. At no charge, you can also see 20 search results from outside your extended network. With paid searching capabilities, you can increase the number of results you see from outside your 3-degree network. To put these numbers in context, on LinkedIn I have 165 direct connections, 34,600 second degree connections and 1,126,000 third degree connections. To access more than 20 of the remaining 7 million LinkedIn members, I would need to pay for additional search results.

The subscriptions come in three flavors:

> Business level = $19.95/month for 15 Intros, 3 InMails, and 100 search results
>
> Business + level = $50/month for 25 Intros, 10 InMails, and 150 search results
>
> Pro level = $200/month for 40 Intros, 50 InMails, and 200 search results

Subscriptions can be purchased monthly or annually. The company was selling about $50k of subscriptions per week in January and sales grew steadily to about $200k during the last week of November. As with jobs sold on the site, there are no incremental costs associated with each dollar of subscription revenues, which makes for a very attractive business model.

Though there is no well defined existing market relevant to subscriptions, there are a few large target customer segments: headhunters are the most important and faithful customers, job seekers tend to subscribe for a period of time (until they find a job), and business development professionals often represent low-end, but steady customers.

Data licensing *($0.7M, 6% of revenues)* – This year, LinkedIn sold aggregate data to a hedge fund attempting to identify attractive short opportunities. The idea was to monitor when a sudden influx of employees from a public company signed up at LinkedIn or updated profiles. This influx was thought to represent brewing fear about layoffs or negative events at a company. The initial mock trading results looked quite promising, but after three quarters of less favorable results, the company no longer believes this is likely to be a viable offering. Nonetheless, it is a useful demonstration of the team's creativity and of the potential option value in the business.

Future products

In addition to the existing revenue sources, the company has a broad range of future opportunities to tap. The following are examples:

- A tailored InMail or Intro product for sales people to generate warm leads (i.e., compete with D&B or Hoovers)
- The ability to promote one's services or capabilities within the LinkedIn network for professional service providers like lawyers, accountants, web designers, etc.
- Functionality similar to Yahoo Answers to help professionals ask questions of people within or beyond their extended network

Intellectual Property

There are dozens of social networks on the internet, and they may all be infringing on a 1996 "six degrees" patent. When Reid Hoffman started thinking about launching LinkedIn, he and Mark Pincus did enough IP research to uncover this broad social networking patent and purchased it for about $500,000. Today, Reid personally owns half the company that holds the patent, and Tribe, Mark Pincus' startup, owns the other half. LinkedIn has a perpetual royalty-free license to the patent and an option to buy Reid's interest in the holding company at cost.

With LinkedIn (or, more likely, an affiliated holding company) owning the patent, there may be some offensive upside given the popularity and profitability of potential infringers like MySpace and Facebook, but I do not consider this a core element to our investment rationale.

Competition

The only true competitor is ***Xing*** (formerly known as ***Open Business Club***). Xing dominates the German and Austrian markets but has little traction elsewhere despite joint ventures in China and India. Xing announced 1.5 million members at the end of September, which means LinkedIn has more members in Europe than Xing has globally despite the fact that LinkedIn is available only in English while Xing operates in 16 languages. In fact, only half of LinkedIn's eight million members are based in the US.

Nonetheless, Xing is a serious competitor and recently raised 35 million euros through an IPO in Germany. Existing shareholders and management also sold just under 30 million euros of stock in the offering. Xing's market cap is now 167 million euros ($225 million), and the stock has traded up about 8% since the IPO 10 days ago.

It's also important to note that Xing offers a slightly different business model from LinkedIn. On Xing, free functionality is extremely limited, and the site is geared to compel users to sign up for the 6 euros per month premium access to get any real benefits. About 13% of its members are paying, and so its monthly revenue run-rate is about equal to LinkedIn's at just under $1.5M. Xing posted 2.8 million euros of revenues for the quarter ended September.

Beyond Xing, the only other comparable business of note is ***Viaduc***, which is a French language copycat. The company has 650,000 members in France and operates at breakeven with 40 employees. It raised 5 million euros in June from two French VC investors. By comparison, LinkedIn's member base includes 287,000 users in France.

In the recruiting / job posting segment, competitors include ***Zoominfo*** (Venrock-backed), ***Jobster*** (Ignition-backed) and ***Doostang*** (not yet backed)

In the sales lead segment, the leading competitor is ***Hoovers***. Hoovers announced a joint venture with Visible Path to create a LinkedIn copycat called Hoovers Connect, but it has not yet launched.

Management

Reid Hoffman – Founder/CEO

Reid is a brilliant strategist and product visionary. He's not a strong, detail-oriented manager. He is self-aware and amenable to bringing on a CEO, and a search process is currently underway. The initial set of candidates is quite attractive, though of course this type of change poses risk for the business. Before LinkedIn, Reid was a senior executive at Paypal. He spent his early career in product roles at Apple and Fujitsu. He is currently involved with about half a dozen startups as an active angel investor including our portfolio company Wikia. He is a Stanford grad with a masters from Oxford.

Sarah Imbach – Chief of Staff

Sarah is a talented nuts and bolts general manager. At Paypal, she ran Customer Service and Fraud, by far its largest division as measured by headcount. She seems like a strong general manager and everyone effectively reports to her at LinkedIn. She spent her early career in project management roles for large non-profit healthcare companies. She is a Penn/Wharton grad.

Keith Rabois – VP Business Development

Keith is a strong business development executive and spends a lot of time on product as well. He played a similar role at Paypal. He is a Harvard Law graduate and has a B.S. from Stanford.

Jean-Luc Vailant – VP Engineering, co-founder

On the management team, Jean-Luc is thought of as a perfectionist, which means the product back end is solid, but feature development and the pace of hiring are not as rapid as they could be. He has done an adequate job by all measures, and given that he has been in the role since day one of the company, there is a lot of important technical information about the service in his head.

There are capable director-level employees running sales and product (both reporting to Sarah) who are also talented but relatively inexperienced. One of the most important challenges in 2007 will be filling out the team.

Board

The current board consists of Mark Kvamme (Sequoia), David Sze (Greylock) and Reid. Bessemer will have typical observation rights, and the company will add one or two independent outside directors as interesting candidates emerge.

Financials

Below are the complete 2006 financials based on estimates from late November. The company is on a $17M run-rate ($1.4M per month) and operates at about breakeven. The 2007 projection is very preliminary, and there is some current debate about how aggressively to add staff next year. Reid's initial proposal is to be very aggressive and focus a lot of resources on product improvement by operating at break-even on $26M of revenues.

	2005 actual	2006 current forcast	2006 original plan	yr/yr change	plan variance	2006 current forcast	2007 prelim plan[1]	yr/yr change
Revenues								
Corp. Sales (telesales)	115	1,390	999	1109%	39%	1,390	5,388	288%
Subscriptions & Inmails (online)	716	5,492	4,364	667%	26%	5,492	11,131	103%
Jobs (online)	443	2,154	1,919	386%	12%	2,154	5,511	156%
Advertising (online and direct)	175	2,084	3,220	1091%	-35%	2,084	4,314	107%
Other	181	848	116	369%	631%	848	0	-100%
Total Revenues	**1,630**	**11,968**	**10,618**	634%	13%	**11,968**	**26,344**	120%
Operating Expenses								
Employee	4,779	7,474	7,339	56%	2%	7,474		
Operations	1,000	2,277	1,280	128%	78%	2,277		
Technology	775	1,567	570	102%	175%	1,567		
Total Operating Expenses	**6,554**	**11,318**	**9,189**	73%	23%	**11,318**	**25,000**	121%
Operating Income	**(4,924)**	**650**	**1,429**	n/a	-55%	**650**	**1,344**	n/a
Capital Expenditures (cash)	670	1012	780	51%	30%	1012	1000	-1%
Cashflow	**(5,594)**	**(362)**	**649**	n/a	-156%	**(362)**	**344**	n/a
Headcount	43	70	70	63%	0%	70	145	107%

(1) Topline projection for 2007 is the preliminary budget, but expense side still under review. The company could be quite profitable in 2007, but tentative plan is to grow the technology team and continue investing heavily in product.

Deal

At $237.5M pre, it feels fully-priced. We will be the only Series C investor as the existing investors are refusing to participate, so for $12.5 million we will own 5% of the fully diluted equity including a new 10% unallocated option pool. I expect the entire pool will get issued over the next couple of years to recruit a CEO a few new VPs.

Although other investors also own a healthy chunk of the company, we have sufficient voting provisions and downside protections to be confident in at least getting our capital back in all but the rarest of disaster scenarios given that the company is already breakeven and there will be less than $30 million of preferences on the balance sheet. For example, in any IPO, we have the right to sell enough shares to get all of our capital back at the greater of cost or the IPO price. The upside-related provisions are clean and simple (i.e., no participation).

Risks

Most of the typical early stage risks have been mitigated as the company is already nearing cash flow profitability, but here are the important things to worry about:

> Team – the team is full of very talented Silicon Valley entrepreneurs, but the senior management team is still thin. As we recruit a CEO and a couple of new VPs, the goal would be to have a positive influence on the culture and dynamics of the company, but these transitions go poorly almost as often as they go well.
>
> Usage – for LinkedIn to become a very large business, repeat usage by the average white collar professional must increase substantially. Though the company has an enviably long list of features in queue, if most fall flat and fail to motivate more usage, LinkedIn may get trapped in the jobs and executive search categories, which would limit the upside of our investment to very moderate returns.
>
> Industry expansion – though there are VPs from all but one Fortune 500 company on LinkedIn, there is a heavy concentration of technology professionals on the site. (In excess of 80% of Google's entire workforce, for example, has a LinkedIn account!) To become the truly dominant business network, LinkedIn has to achieve much more significant penetration outside the technology industry especially in areas where it is presently weak such as healthcare.

Though some of the key risks could lead to potential disaster scenarios, most relate to tapping upside potential, which drives my thinking in the scenario analysis in the next section.

Scenario Analysis

Given the deal pricing, the expected multiple is lower than what we see in many of the investments we evaluate. The limited downside risk helps to compensate by constraining the volatility. Therefore, on a risk adjusted basis it feels compelling. Put another way, I estimate the chance of capital loss is less than 1%, but the chance of at least a 2x gain is 35%. Here's the full outcomes table:

Exit Value	Scenario Description	to BVP	BVP Multiple	Probability	Value	Timing	IRR
$0M	Complete disaster. Everything falls apart. Fold up shop and go home.	$0.0	0.0x	0.5%	$0.0	2 yrs.	-100.0%
$30M	A dominating competitor emerges; LinkedIn stalls. Small strategic sale.	$12.5	1.0x	5.0%	$0.6	2 yrs.	0.0%
$75M	Falls short projections, growth stalls and usage slips. Sale to competitor or business publisher.	$12.5	1.0x	10.0%	$1.3	2 yrs.	0.0%
$150M	Strong 07 ($25M+ revenues with small profits), but growth slows to 30% range thereafter for a few years. Reaches $30-40M revenues with $10M profits but prospects of big win dissipate. Sold for 15x ebit.	$12.5	1.0x	25.0%	$3.1	2 yrs.	0.0%
$300M	Reaches $50M revenues with $20M profits by 2009. Sale in late 09 at 15x ebit.	$15.0	1.2x	25.0%	$3.8	3 yrs.	6.3%
$500M	Beats plan for 100% growth in 07-09 to reach $100M revenues in 2009 with $30M of ebit. Trade sale.	$25.0	2.0x	15.0%	$3.8	3 yrs.	26.0%
$750M	End of 2009 IPO based on 2010 projections of $150M revenues with $50M ebit (15x forward ebit).	$37.5	3.0x	13.5%	$5.1	3 yrs.	44.2%
$1250M	Becomes dominant business directory in US with leading recruiting and information network service. Major strategic acquisition.	$62.5	5.0x	5.0%	$3.1	4 yrs.	49.5%
$2100M	Becomes dominant business social network in US, most of Europe and many Asian markets. Reaches $300M of revenues with 30% profitability and goes public at 7x revenues at the end of 2011.	$105.0	8.4x	1.0%	$1.1	5 yrs.	53.1%
			check	100.0%			

Weighted average duration	2.7 yrs.
Weighted average IRR:	23%
Expected Value to BVP:	$21.7
Expected Multiple:	1.7x

Conclusion

LinkedIn is one of few consumer internet companies with the momentum and market potential to be a billion-dollar business. Though I'd certainly prefer to recommend this deal at a lower price, given the relatively attractive risk/reward profile of the opportunity available to BVP, I strongly support the investment.

The Memos

LifeLock

To: BVP Group
From: David Cowan, James Cham and Brian Neider
Date: September 25, 2006
Re: Life Lock, Inc.

We recommend that BVP invest $4.5m to lead the Series A round in LifeLock, an Arizona-based identity theft protection company. We have considered investments in this market for the last year as part of a consumer security roadmap. We believe that the company's marketing-led strategy and early lead in consumer adoption will establish Lifelock as the industry leader.

We signed a term sheet with the company last week to invest $4.5m at a $17.85m pre-money valuation but we received 35% warrant coverage (pushing the EEV down to $13.8m), a fat option pool, and no cap on participation. In addition, the company expects to raise another $2m shortly after we close our deal at twice our effective price with junior preferences. This should both fund the advertising budget and comfort strategic partners inquiring about the balance sheet. And if the company doesn't raise such a 2X junior round within 6 months, BVP will have the unilateral option to expand our investment by $1.5m (on our original terms).

When we introduced this company to BVP last month, we highlighted serious concerns with regulatory agencies and with the company's founder, Robert Maynard. Since then, we have had positive signs regarding potential regulatory issues and we believe we understand Maynard well enough to recommend this investment.

Identity Theft

Surveys suggest that the annual cost of identity theft to consumers has remained steady for the last few years, but due to California laws requiring disclosure of data breaches, recent high-profile losses of personal information have focused attention on the issue. The Federal Trade Commission receives about 700,000 complaints a year regarding identity theft and credit fraud, but according to a Better Business Bureau study, there were 9 million victims of identity theft in the US last year (down from 10 million in 2003) costing $54 billion (steady from 2003). But in the last 16 months, there has been extensive reporting on the loss of 4 million Citibank customers' information, the exposure of 40 million credit card accounts, and the theft of personal information for 26 million veterans from a computer a contractor left at home. (In fact, that recent theft of veterans' information drove 30% of Life Lock's new customers last month.)

In the current regulatory climate, consumers have three means of defense against credit application fraud.

In some states, consumers can request a credit freeze that prevents a Credit Rating Agency (CRA) from sharing your information with creditors even if they have your name and social security number. But then in order to apply for credit, you'd need to manually unfreeze your account information with a CRA. This service is not available in all states, it is cumbersome to suspend when you do wish to share your credit profile, and the current draft of new federal credit legislation will restrict credit freezes to documented victims of identity theft.

Thanks to the Fair and Accurate Credit Transaction Act of 2003 (FACTA), consumers can also demand credit fraud alerts by contacting a CRA in writing or over the phone, without charge. When a fraud alert is activated for a consumer, creditors are told that they must contact the consumer by telephone before extending credit, at the peril of being penalized with heavy federal fines. The fraud alert also entitles the consumer to a free credit report and, at the consumer's option, bans pre-approved credit offers. But CRAs and creditors dislike fraud alerts. The CRAs convinced legislators that the fraud alerts need to be renewed every 90 days, and they have not made activation of fraud alerts across different CRAs a reliable process. Because it has not become a widespread practice, some creditors are unsure what a fraud alert actually means. In practice, about 80% of creditors confirm a consumer's identity before extending credit.

Credit monitoring and fraud resolution products are currently sold to mitigate damages from identity theft. But these fail to prevent fraud—they only help you deal with it after it has occurred.

Life Lock Approach

Life Lock's product features manage fraud alerts for the consumer by handling interactions with the CRAs every 90 days. They also take the consumer off of most junk mailing lists. In addition, they provide telephone customer support if the consumer needs help explaining credit fraud alerts to confused creditors.

The CEO Todd Davis gives good interview, and he has been very effective at generating PR for the service. Provocatively, he is always quick to share his social security number on the air, drilling home the concept that our credentials are already public information. But with Life Lock, goes the pitch, thieves may know your SSN but they can't do anything with the information.

Cleverly, Life Lock's message to consumers doesn't dwell on the mechanics of the fraud alert, but instead conveys confidence that Life Lock can protect consumers from identity theft. Specifically, if a client becomes a victim of identity theft, Life Lock guarantees it will spend up to $1 million to fix the problem. To back up its claim, Life Lock has bought $500,000 of insurance coverage from Lloyd's of London.

*Sales and Marketing**

Life Lock has spent the last year experimenting with many different forms of advertising. We believe that their emphasis on communicating a clear value proposition is an important part of their success.

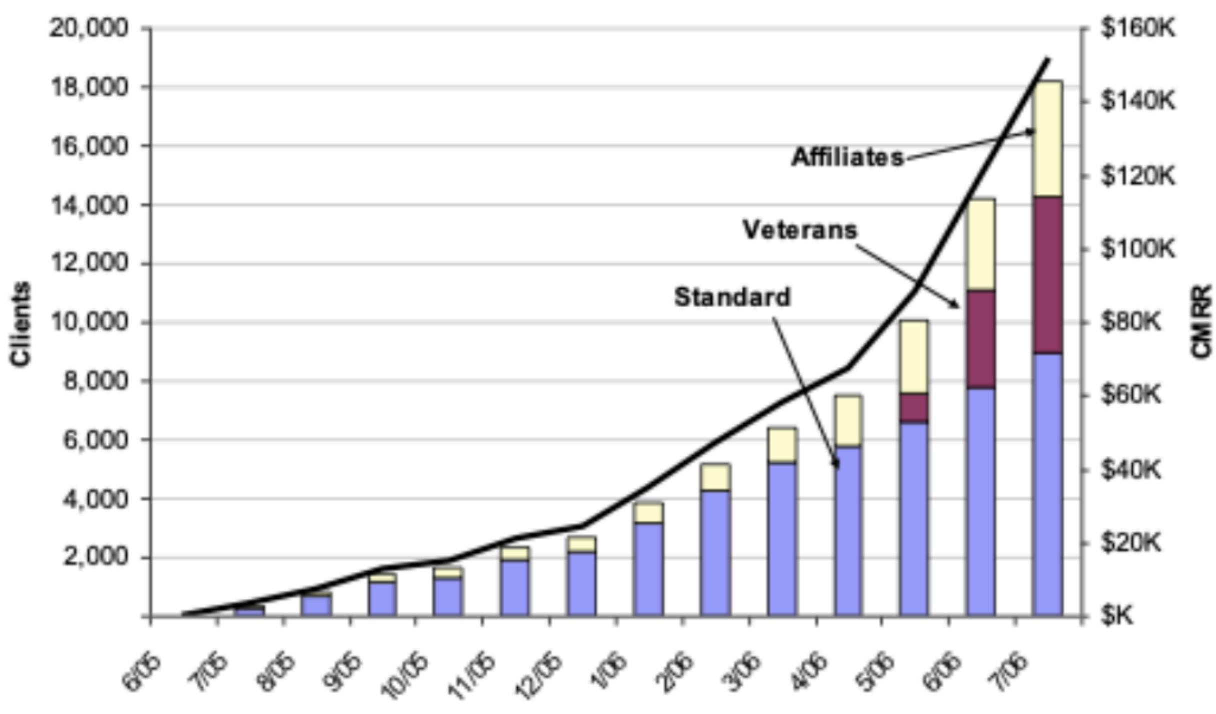
To drive prospects to their website and call center, Life Lock initially focused on PR with local television, radio and print—Davis has completed over 150 media appearances. Life Lock has a PR person on staff to find new venues, which continues to drive most new traffic. As these appearances are basically free, this has been their most cost effective means of reaching customers.

The company has also experimented with radio advertising and plans a push before Christmas. They tried a number of smaller radio celebrities before finding some success with the conservative talk show host Sean Hannity. Life Lock would advertise with Hannity in three cities for a few months before moving on to another set of cities. While effective, these radio ads are not cheap and have average cost per order of $60. But Life Lock believes that these radio ads offer important brand promotion in addition to straightforward customer acquisition. In the next month, Life Lock plans to expand its radio advertising and move from Hannity to the more prominent Rush Limbaugh. The deal is expensive--$1.2m for 6 months worth of endorsements but Life Lock's research into Limbaugh's relative effectiveness over Hannity suggest it will be worthwhile.

More serendipitously, Life Lock bought editorial space on military.com after it was announced that potentially 26m veterans' identities were exposed. That has yielded the same number of customers but at an average CPO of $10. Life Lock plans to continue testing a mix of broad media advertisements along with contributions to targeted communities. They will stop in October and then ramp up their advertising in January 2007.

Once the prospect calls or visits the web site, Life Lock has remarkable conversion ratios—12% on the web site, and 75% of people who call 1-877-LIFELOCK. While this is remarkable, TrustedID claimed a similarly high web conversion rate of 7%. It is too early to make too much of their other numbers, but churn is around 1%. Life Lock charges $10 per month for each adult in a subscribing household plus $10 per year for each minor, with a 10% discount for a one year prepayment. About 80% of customers choose the annual payment and they average 1.5 adults per order.

Since their launch in June 2005, they have had consistent double digit growth month to month. Even without their significant boost as a result of the veterans' identity theft, they have double digit month-over-month growth. They expect that growth will slow in October as consumers focus on the Holidays but then plan to launch more marketing in the beginning of the new year.



Life Lock does not believe that selling direct to consumers will scale quickly enough. Instead, they want to leverage indirect channels through affiliate sales and partnerships with large institutions. Right now, 20% of their sales come from online and offline affiliates. They plan to raise that to 80% by expanding their number of affiliates. To date, about 10 affiliates have sold more than 50 customers. Recently, they signed up with Commission Junction to expand their affiliate base, and added another 400 affiliates. Life Lock lets affiliates price up to 10% less than direct rates. Affiliates get 30% of the first year's revenue and then 10% of years two and three. They have had limited success in working with online affiliates and this exposed some weaknesses in their marketing team. We believe that Chini Krishnan, who will likely join the board, will be highly valuable here.

The company is also chasing larger affiliates. They have identified 8 types of large partnerships and have about 20 deals in their pipeline. These potential partnerships range from including a Life Lock flier in a Quicken Loans letter to automatically including Life Lock in the bill of a college student at Arizona State. They had a pilot deal with Home Depot to promote Life Lock and a deal with a paper shredder company. The Home Depot deal is on hold after Citibank, a more important Home Depot partner, objected to Life Lock promotion because they saw it as competitive to the fraud protection features of their credit card. They are also close to signing a promotional deal with Barclays Card. After AT&T exposed consumer data, we introduced Life Lock to their Chief Security Officer (thank you, Byron) and Life Lock is meeting with AT&T to discuss opportunities.

Even better, though, would be deals in which Life Lock was bundled with existing products with large consumer bases. They are currently working with Washington Mutual on a program to give Life Lock to up to half of its current 10 million credit card holders. This is attractive to WaMu because consumers view it as a value add and Wamu sees it as a legal way to keep competitors from offering consumers new, pre-approved credit cards. A deal like that would bring in 50X Life Lock's projected subscriber growth for 2007, but at a price of only $12 per customer per year. As the company reaches scale, they expect this to be profitable. Currently, Life Lock is set to start a pilot of the program at $40 per customer. A member of Life Lock's advisory board, Luke Helms, is a former executive at Bank of America and he plans to introduce Life Lock to Bank of America.

Technology/Operations

Life Lock has built a highly leveraged, scalable, fairly secure system that interfaces with credit rating agencies in a clever manner and with surprising capital efficiency. We initially thought it would be trivial to write interfaces with CRAs to manage fraud alerts but CRAs are uninterested in making the process easy. In 2005, CRAs made 20% of their profit from marketing consumer information to companies interested in extending credit. Fraud alerts prevent consumers from receiving pre-approved credit, thus reducing the number of consumers that CRAs can market and damaging a key revenue stream.

So Life Lock developed a scalable system to manage fraud alerts with CRAs. They built an IVR system to interface with a CRA's IVR systems. That is, an automated telephone system talks to the CRAs' automated telephone systems. Life Lock maps out each of the options that a CRA's IVR system offers and uses the length of the CRA's responses to determine status. Rather than using the internet and XML for machine to machine communications, Life Lock uses phone lines and touch tone. This allows them to use a CRA's system without the CRA's explicit consent. The interfaces are brittle and imperfect so they are constantly being tweaked, but LifeLock is usually able to achieve a 75% success rate with each CRA. Since they only need to successfully activate a credit fraud alert with one CRA (which must by law inform the others), Life Lock need manually intervene ~5% of the time. Life Lock believes that its approach is not patentable but considers it a trade secret.

Life Lock developed the IVR interface but they rely on an outside agency to run the process. In fact, their entire system is highly reliant on SaaS products. They use salesforce.com to manage partners and affiliates; RightNow to manage sensitive customer information; Prosodie to manage their IVR interface; a local service to handle secure mailings; and PayPal's PayFlow to manage payment. This architecture should allow them to scale up quickly, although it also makes them much more dependent on outside vendors.

Life Lock is upgrading their system and processes to satisfy potential large partners. While individual components may be secure, they are still a startup and sensitive customer information is not quite as secure as it should be. Consumers can't see the systems and feel comfort from the $1 million guarantee, but large partners are more sensitive to the PR implications of losing customer data. Barclays Card is planning to offer its customer Life Lock but Life Lock failed their first security audit. As a result, Life Lock is getting certified as compliant with ISO 27001—the relatively new Information Security Management System standards—and plans to move to a more secure location this October. Barclays has committed to proceed if Life Lock passes their next audit.

Currently, variable costs per adult are $12 per year (almost completely from support calls) but the company believes they can cut that in half as they reach scale.

*Team**

Life Lock has 26 employees. 15 are work at home sales and customer service representatives, and the software development team currently works remotely. Due to concerns that came up during our initial diligence process, we retained an investigation company and an ex-FTC Commissioner to give us more information. Our diligence process also raised a potentially serious issue with the company.

CEO Todd Davis was an early Dell employee and has had sales and business development roles in a number of Arizona-based technology startups. Immediately before starting Life Lock, he ran a sports marketing company. We like Davis because he is an honest, clear communicator, a natural leader, and a good salesman. He is the public face of Life Lock and acts as head of sales. He travels around the country pitching the company to consumers through TV, radio and print while also pitching the company to potential partners and affiliates. As Davis will tell you himself, he expects that at some point the company will recruit a more experienced CEO.

COO and Founder Robert Maynard is a former US Marine and a serial entrepreneur with a mixed background. Based on Maynard's disclosures about his own history and press accounts about his past, we were concerned enough to engage an investigation firm to run a background check on him.

In the early 1990's Maynard founded National Credit Foundation, a credit repair company that grew to a $30 million potential revenue run-rate in its first few months. In the mid-90's he was founder and CEO of Internet America, a Dallas-based ISP that went public in 1998. He then founded Dotsafe in 1998, a family friendly ISP, before its shutdown due to the burst of the dot com bubble in 2002.

Between the shutdown of Dotsafe in 2002 and the founding of LifeLock, Maynard was mostly incapacitated due to health problems but also started a precursor to LifeLock. He partnered with Paul Dvorscak, an Arizona entrepreneur, to found IDLock. Maynard and the IDLock team later left to start Life Lock.

References for Maynard emphasized his intelligence, energy, loyalty and occasional bad judgment. Press accounts describe Maynard bringing a gun to the office when laying off staff at NCF and friends talk about how he arrogantly blew off Mark Cuban and Sky Dayton when they approached him about merging with Internet America and his unwillingness to slow down his expansion plans for Dotsafe even in the face of a slowdown. These old friends also made vague inquiries into his health.

When we asked Maynard about this, he explained that he was unable to work steadily between 2001 and 2004 because he was bipolar and it took some time to diagnose and properly treat. He says that it is now under control with medical treatment, although he does have occasional bouts of depression. We share Maynard's view that his mental health history should not in itself disqualify him from entrepreneurship. Maynard has found a way to be productive within the limitations of his health, and we wish all entrepreneurs shared his self-awareness and growth mindset.

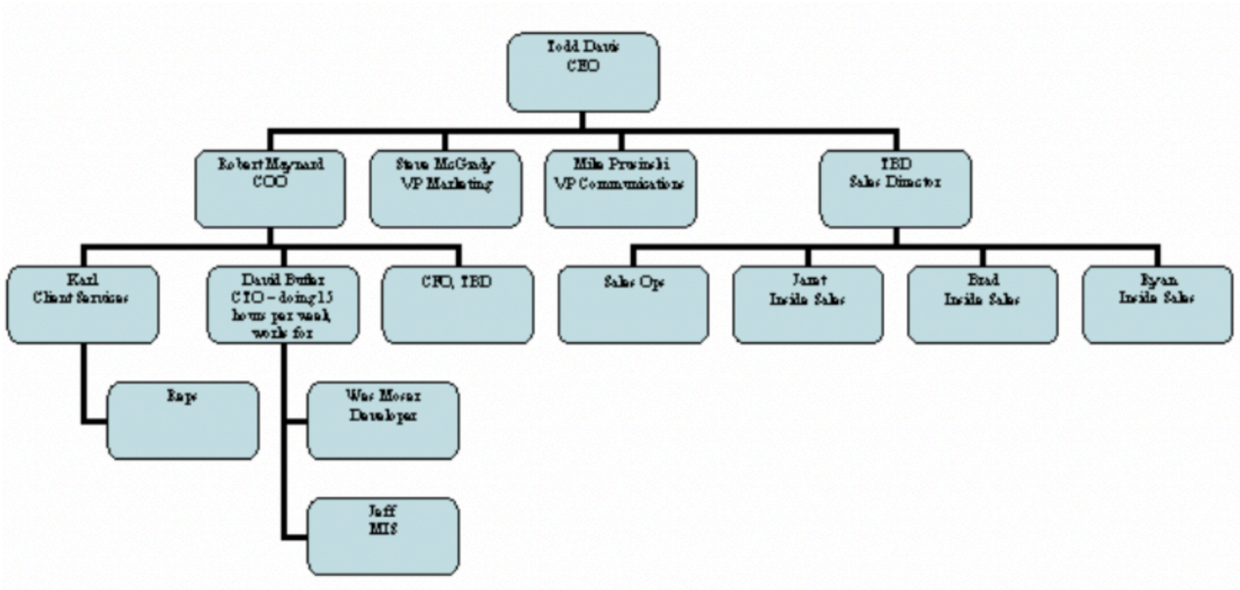
Our background check mostly corroborated the timeline and incidents that Maynard described to us. He filed for bankruptcy in 1990 and 2004. He had a number of legal disputes with past employees and, famously, filed a criminal complaint against an "Internet stalker" who then sued him for libel. In addition, the Arizona Attorney General and the FTC sanctioned him at NCF in the early 90s for making it difficult for people to cancel their service. The FTC did not fine Maynard but did prohibit him from working in the "credit improvement" industry. We were obviously concerned that Maynard's relationship with the FTC might affect LifeLock but the company should be fine as long it focuses on credit fraud prevention.

Maynard has continuously impressed us with his intellect and creativity. He clearly has the strengths and weaknesses of someone who is bipolar. He has asserted the same expectation that Davis did in terms of role flexibility, and has agreed not to serve on the board of directors.

VP Marketing Steve McGrady worked with Todd Davis in the past. He has experience in marketing and sales positions in technology and sports marketing companies.

CTO David Butler worked for Robert Maynard at Internet America and dotsafe. He is currently employed at Countrywide as an enterprise architect but he has been helping Life Lock 20 hours a week for the last few years out of loyalty to Maynard. He will soon join the company to work full time—although he will commute from Dallas as he is unable to move for personal reasons. The rather small development team is already distributed (one in Arizona and another in Indianapolis).

Although we also found Butler to be eccentric, he had the right mix of pragmatism and foresight to be a good technical architect. He is responsible for many of the clever, low-cost ways that they have built the system. He plans to add a middleware product to the system to ease the management of partner applications.



Competitors

There are many competitors that offer credit fraud protection. Credit monitoring solutions only help after an identity has been stolen and credit reports are not always updated in a timely fashion. Still, Intersections (NASDAQ: INTX) was able to go public based on this product. They sell monthly subscriptions for a credit monitoring service and had $165m in revenue last year. That was flat from the previous year and the company suffers from high churn so their market cap is $152m. We believe the churn is because they bundle their product in with new credit cards so consumers are often surprised to find it in their credit card bill.

Credit fraud resolution solutions are another alternative solution but suffer from a few business model problems. For example, Identity Theft 911 helps financial institutions resolve actual instances of identity theft. They are able to charge financial institutions recurring fees in order to help with resolving credit fraud after it happens. However, they are only able to charge a few dollars per year rather than $10 per month because the banks see it as a risk mitigation service, not a selling point to consumers.

There are a number of companies that offer credit fraud alerts. Most of them lack traction or good team. Last year, David and Justin looked at two companies that looked like they had potential. At the time, David even proposed that they should merge but one of the companies declined.

One of them was Trusted ID, a Redwood City startup. Compared to LifeLock, they have a more impressive team, a more elaborate technical architecture and a thoughtful approach to the market. They were initially focused on credit freezes, a more effective approach to fraud protection but one with many regulatory problems. Since then, Trusted ID received $5 million from DFJ and recently released a product called IDFreeze that drops the credit freeze feature and is almost identical to Life Lock (except with a $25,000 rather than a $1 million guarantee). In June, they had a website conversion ratio of 7% and about 2,000 customers paying $8 a month. We believe that Life Lock has benefited from releasing their product almost a year earlier and then spending their time refining their marketing position and PR.

The other startup, Debix, was even more impressive and had a better team. Last month, they launched iLock Credit, a very similar offering to LifeLock with a few key differences. They charge $10 a month for credit fraud alert service. They have built a telephone system ("the world's first telephone-based Identity Protection Network") that enables consumers to allow credit approvals with the press of a button rather than through a telephone conversation with a potential creditor. This is part of an elaborate technical infrastructure that Debix has built to work with consumers and credit rating agencies. Unfortunately, Debix's entire marketing message revolves around this feature. We believe that consumers are not interested in specific details of how identity fraud protection might work. Instead, they are looking for a simple value proposition with a strong proof point.

It is possible that Debix's strategy is actually to sell to financial institutions and their emphasis on their technical architecture is meant to market to potential partners rather than end consumers. It is also possible that Debix will extend the telephone network into other applications. However, we have not seen any evidence of that strategy succeeding yet.

Both Debix and Trusted ID are currently fundraising. Trusted ID is now raising an $8 million Series B based around a $20 million pre-money valuation. NEA is considering an investment in Debix. We believe that their emphasis on features and later entry put them at a disadvantage compared to Life Lock.

Risks

Market Risks

Initially, we believed that Life Lock's credit fraud protection service would be too easy to duplicate and financial institutions would decide to build it themselves. Having seen the system, we now believe it is complicated enough that it is a reasonable suggestion to buy rather than build. In addition, the ability to keep other firms from offering your customers new credit applications is valuable and it is a service that financial institutions could not offer by themselves.

We are also less concerned about how Life Lock threatens a substantial portion of the CRAs' revenue stream. As it is, Life Lock has been successful because they have found a clever way to interface with credit rating agencies without their direct consent. While clever, the automated phone interfaces are also quite brittle. If the credit rating agencies wanted to disrupt Life Lock, perhaps they can adjust their systems to make it difficult for Life Lock to use their phone APIs. But this issue is longer term and, if successful, Life Lock can leverage its consumer base and strike a deal with Transunion, the smallest of the major CRAs.

However, we remain concerned about pricing pressure. While the company believes that nobody else has discovered their low cost way of installing credit fraud protection through automated IVRs, Trusted ID charges 20% less and Debix hints that they have a similar interface. At scale, Life Lock expects annual costs per customer to drop below $7.

Regulatory Risks

Consumer credit is highly regulated and Life Lock faces three regulatory risks.

First, a state insurance agency may rule that the Company is illegally offering insurance. While Life Lock believes that their $1 million guarantee should be viewed as a warranty rather than insurance, three state insurance agencies have made inquiries. If they were judged to be insurance, then they would need to work with the 50 state insurance agencies and face potential fines. Life Lock would likely then eliminate the guarantee, losing one of their more successful marketing messages. When we first talked to Life Lock, Oklahoma, Florida and New York all made inquiries. Since then, Oklahoma has dropped its inquiry and Florida has concluded that the $1m guarantee is a warranty not insurance.

Second, Congress is currently rewriting consumer credit regulations. It seems that the credit rating agencies will be successful in making it more difficult for consumers to learn about identity theft or to apply for credit freezes. For such a small company, Life Lock has aggressively monitored the process and lobbied against changes that would hurt them. They believe that consumers will continue to be able to apply for fraud alerts under the same conditions. Davis has the latest draft of the bill and it does not include language unfavorable to Life Lock. However, when this regulation was first introduced in 2003, the credit rating agencies lobbied very hard to make it more difficult for consumers to ask for fraud alerts. It would be surprising if they were not trying to do this again. This remains an issue.

Third, the Federal Trade Commission pays close attention to claims revolving around consumer credit. In the past, as Maynard knows, the FTC has cracked down on companies that made what the FTC considered deceptive promises around consumer credit. When we asked an ex-FTC Commissioner, she initially thought that Life Lock's promises might be overblown and attract undue attention. Upon closer reading, she found that, with a few modifications, Life Lock's claims were legitimate and even compelling. We will ask Life Lock to make those changes but no longer consider this a major risk.

*Team Risks**

Maynard has said many times that he does not imagine being COO long term and has explicitly tried to keep a low profile.

Now that we understand he is bipolar, we believe that it is a risk that we will be able to manage. David has had a number of candid discussions with Maynard about his condition and ways to make him most effective.

*Legal Risks**

As mentioned in our diligence on Maynard, Paul Dvorscak has made vague references to "possible pending legal matters." Dvorscak, who funded a similar startup that Maynard founded, has said that he will not say more but we will clearly want to understand this situation before we close the deal.

*Security Risk**

The risk of data breach is very low, but the outcome would be disastrous for Life Lock. It's hard to imagine anyone would expose personal credentials to an anti-fraud service that had to disclose its own compromise of consumer data.

The Deal

The warrant coverage on our investment means that we are effectively buying about a quarter of the company for $4.5m. Our security participates without a cap. In addition, we have an option to invest $1.5m on the same terms unless the company raises $1.5m within six months at a 2X step-up, with junior, non-participating preferences.

Although we have been impressed by the team's scrappiness, they have been somewhat sloppy with their records (a lot has to be cleaned up prior to Closing). We have full anti-dilution protection if it turns out that the company has more liabilities, or outstanding shares, than it has represented to us.

Scenario Analysis*

Assumes Series B financing of $2M but no additional financing.	BVP ownership (w/ warrants)	24%
	BVP investment ($M)	$4.5
	BVP warrants ($M)	$1.58

Scenario	Likelihood	Value ($M)	To BVP ($M)	Years to exit
Disaster: FTC decides that credit fraud alerts will not be broadly granted; or Congress repeals FACTA; or company implodes and is unable to execute	30%	0	$0.0	0
Fizzle at current state as marketing and distribution deals turn out not to be successful. Redeem our shares at 1.5x	25%	n/a	$9.0	4
Middling success: Stalls with under a million customers, faces pricing pressure from competitors. Bought as a feature by a financial institution (low margins; low PE)	30%	$75.0	$16.4	4
Strong acquisition candidate: Blows past a million customers and gets acquired as a strategic engine for growth (high PE)	10%	$140.0	$32.0	4
IPO comparable to Intersections	5%	$200.0	$46.4	4
	100%	Expected:	$12.70	
		IRR:	30%	

Conclusion*

Life Lock is executing very well on a business plan we have been trying to fund in consumer security. The company has a strong, publicly traded business role model in Intersections. With scrappy IT systems and field tested marketing campaigns, Life Lock has leaped well ahead of the pack in this emerging market. We recommend an investment.

Wix

To: BVP Group
From: Adam Fisher
Date: October 19, 2007
Re: Wix Seed Investment Recommendation

We recommend BVP invest $2mm in the second seed round of Wixpress Ltd., a Tel Aviv-based consumer software company that has developed an easy-to-use, rich media authoring environment for mass market users building web content such as websites and widgets. Wix addresses an acute need of consumers who wish to create professional grade rich media easily and quickly. Aimed to be as powerful as Flash, yet as easy as PowerPoint, their mission is to become the default destination and application for consumer-created rich media content. The company was incorporated in September 2006, has been working on the product for two years, and is poised to launch its product by the end of the year.

The Deal

The fully diluted pre-money valuation of the company is $7mm. The $4.1mm seed round is divided into an initial investment of $2.9mm and a warrant of $1.2mm. BVP will invest $2mm in the first tranche, and has the option of purchasing $1mm in warrants at the same price per share anytime prior to the next financing round. A group of angel investors will fill out the round, investing $900K, with a $200K warrant. BVP will own 20% after the investment and 27% after the exercise of the warrant . The initial investment will provide the company with sufficient cash through the end of 2008, and the warrant would likely provide for an additional quarter of runway. I would anticipate exercising our warrant in conjunction with a round late next year, or as a means of bridging to a round a few months later.

Summary

The Wix composer is a web-based application that allows any user to create eye-grabbing content on the web by simply dragging and dropping content. Their mission is to become the default destination and application for building rich media content on the web including widgets and websites. The product is about to enter a closed beta and we are impressed with the early version we have seen.

This is probably not the ideal time to be funding an early stage Web 2.0 company, given the proliferation of start-ups, but the versatility of the platform along with a strong product team with a marketing/distribution oriented approach is refreshing. The purchase of the three letter URL www.wix.com showed a level of foresight and thinking around search engine optimization that was new to me.

I am very excited about the prospects of the Wix product because it coincides with the rapidly emerging trend of self expression and DIY content creation. After playing with the beta, scouring the Web for hints of a similar concept, and speaking to many of you, I have come to the conclusion that Wix is both compelling and unique as an application. I am still uncertain about the precise business model, and the ability of the team to hire strong business leaders, but have enjoyed brainstorming with the founders and think they will figure it out.

Self-Expression and Personalization on the Web

Self-expression is a very strong underlying trend on the Web that is fueling the growth of many sites, including social network pages, photo sites, blogs and others. Self-expression on the Web takes on many forms, depending on the type of content and the degree of customization. Initially Internet self-expression was about self-publication in the form of blogs and personal websites and is now manifest in the form of self-promotion, as can be seen on MySpace pages. The newer form of self-expression on the Web involves rich media, as evidenced by virtual worlds, dress-up dolls, imaginary pets, and animated human avatars. While self-expression is a core feature across these various sites and communities, it is actually still very limited.

A Website Builder

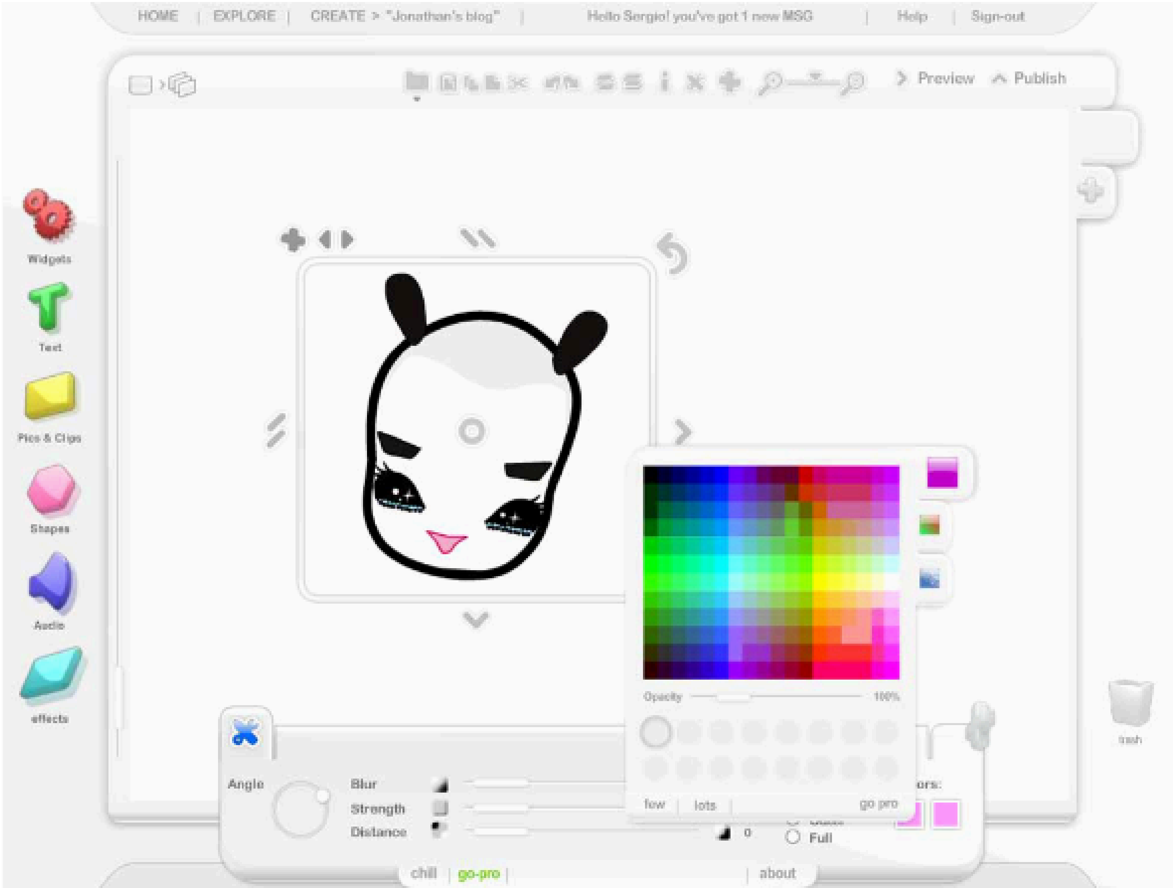
One of the core use cases being discussed is to focus on a website builder for rich media content. There is no way for the average person to build a flash website today, unless you pay a Flash designer to do it or use one of several fixed template website services. Once designed, one must pay a monthly hosting fee which ranges widely from $5.95 to hundreds of dollars a month (when paying through a designer). At the same time, there are plenty of html based website building applications with varying degrees of functionality and hosting fees (including free). The website creation space is a sizeable market, evidenced by the 3.5m websites created every month. The companies in this space are private, but we have anecdotal evidence of the market size from Intuit's acquisition of Homestead. Homestead is the 2nd largest player in terms of traffic, and was acquired by Intuit for $170m in 2007.

The thesis behind Wix is that there is a sizable user base that prefers the slick look, interactivity, and multimedia mash-up capabilities of Flash websites. In a sense, this is a market opportunity created on the one hand by MySpace users graduating to proper websites where they have full editorial and artistic control of content; and on the other hand by small businesses searching for more flexible and stylish web site designs than their uninspiring html-based site. These "small businesses" include artists, musicians, rental agencies, retail stores, design agencies, and every type of freelance of sole proprietorship job. Admittedly, Wix is still addressing MySpace users directly with their various makeover applications of a user's profile page, but the idea is to gradually convert these users to Wix premium. Out of the 26m small businesses in the US, 10m have a MySpace profile, which clearly demonstrated their need for web presence. However, most of them can not afford building, maintaining, and promoting their own website, and Wix is trying to solve that problem.

Wix Offering

From the onset, the founders of Wix had a vision of bringing Flash-like performance and capabilities to the average user. Aside from the technical challenge, this also implied creating a user interface that is easy to start using, but difficult to master. Wix decided to emulate aspects of in the UI found in online gaming, which is also designed to enable anyone to play, but challenging enough that users would spend considerable time in order to become proficient.

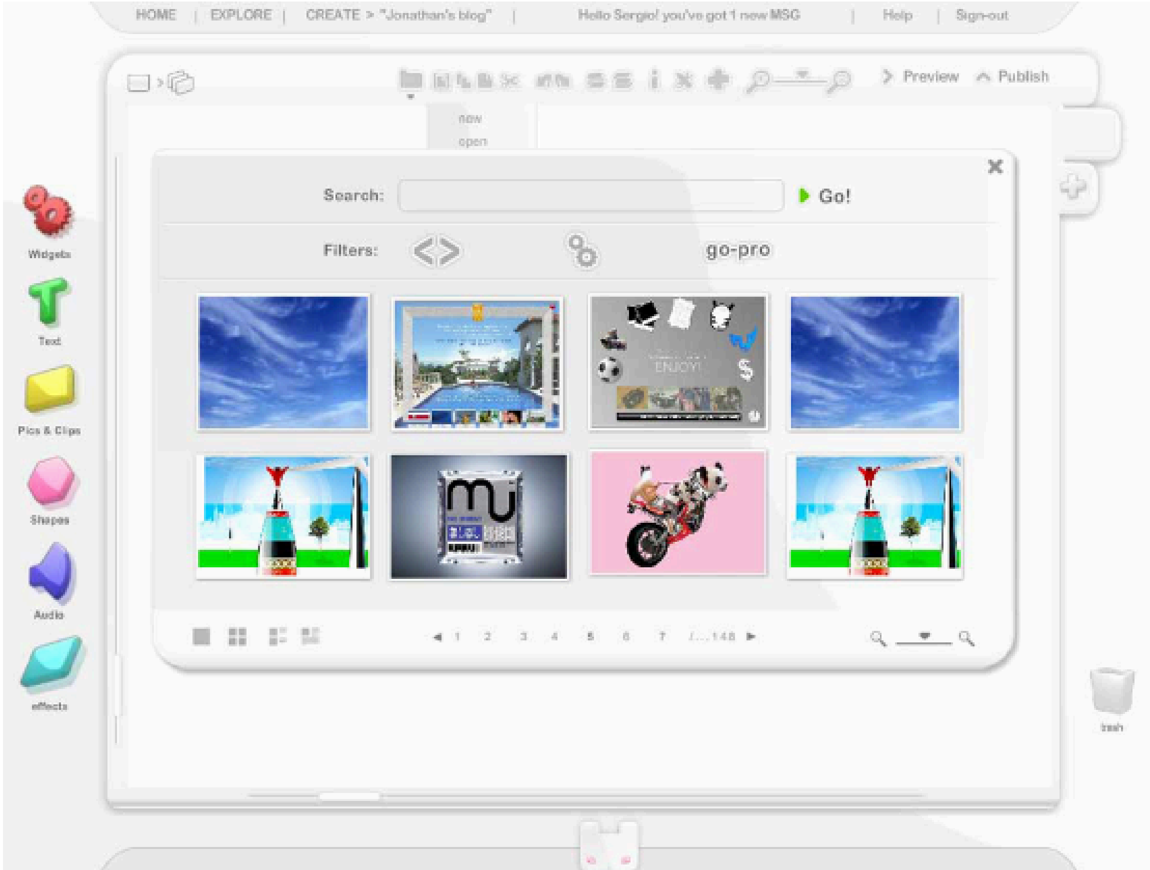
> Now would be the time to look at the demo video or beta site if you haven't already.



Wix Composer

Once someone has played with the Wix composer, many of the diverse use cases will become obvious. Aside from a website, Wix can create a greeting card, a comment on social networks, a party invite, a promotional electronic flier, a product gallery for eBay, desktop wallpaper, a guestbook, a photo album, website, a blog, or a presentation. It is difficult to anticipate the application that will appeal most to which demographic, so Wix will track users carefully in the months after beta launch, constantly testing new formats.

In order to appeal to this mass market, Wix plans to make extensive use of templates and its library of content to guide for user to quickly create exactly what they had in mind. This is still work in progress, but Wix will essentially provide relevant content based on whether the user is creating a birthday greeting card, or wedding photo album, or MySpace layout, which are all fairly different applications. Nevertheless, users will always have the ability to create a Wix in a freestyle mode, which may prove to be the most popular.



When compared with many of the sites and applications mentioned in the previous section, one can see how Wix offers something vastly different. At least for the time being, Wix views many of these sites, as potential partners, rather than competition.

Wix Community - User Generated Components and Content

Wix is more than just an application, because it was designed as an extensible framework that is constantly improved based on user input. As a result, the Wix product has a unique angle with regards to user generated content, which creates not only a barrier to entry for competition, but makes Wix.com the primary destination for rich media content. These users include developers, graphic artists and the general population, each contributing something different, yet valuable to the Wix community.

Developers - Due to the fact that the Wix editor can work with Flash, XML and html code, anyone with basic to advanced the programming skills can upload Web components for use on Wix. This is not about creating a full Flash presentation, but rather breaking down their creations into discrete Flash components that might include animation sequences, 3D images and other rich media objects. Using Wix, developers can share their creations, track their use, and receive credit and prizes for their use and re-use by other Wix consumers. To put this into perspective, Flash developers today have no way of sharing their skill and creativity with the general population.

Wix will have to court this developer community, but since it resembles an open source approach to rich media creation, there is reason to believe it will catch on. With just a few thousand developers uploading their components, Wix will soon host an extensive library of rich media that users can browse and explore when making their Wix creations.

Artists – Similarly, graphic artists on the web number in the millions. These individuals have the artistic and creative ability, but lack the programming skills to realize many of their ideas. These artists are expected to contribute 2D graphics, images and art to the Wix community. Wix has already started several online forums where Web artists congregate and contribute their creations. Wix hopes to use such guerilla marketing tactics to bring an initial base of contributing artists very quickly. Similar to developers, artists will be rewarded for their work initially in the form of recognition and pride in seeing their work used by others (but always receiving credit). A good example of a successful site that leverages the generosity of the artistic community is Threadless.com.

Business and Revenue Model

Although the application is powerful and widely applicable, Wix will not sell or rent its software to consumers. The company feels very strongly that rapid user adoption and contribution will secure a leadership position for Wix in the area of rich media creation.

Revenue models contemplated include:

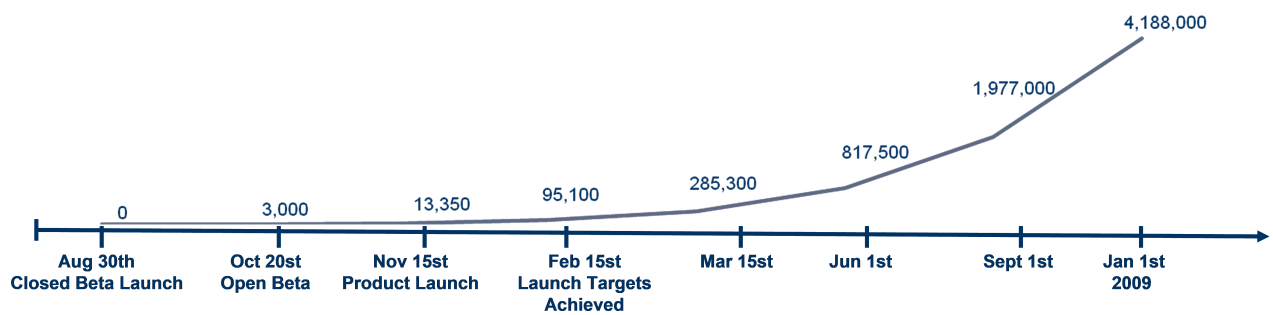
subscription based white label Wix composers for other sites

subscription based hosting of Wix on personal URLs (outside of mainstream sites)

subscription based use of specialized templates for certain types of small business (the kind found on Yelp)

subscription for using Wix to create engaging online ads (also Yelp-size clients)

Having said all this, the business and revenue models are clearly the riskiest part of the Wix proposition, and something that I am not entirely comfortable with just yet.



Planned Wix User Acquisition

Technology of Wix

The corner stone of Wix framework technology is its flexibility and extensibility, relying on a new object description language called WixML. Unlike most object description languages WixML describes more than object type and position, but also behaviors, the relationship between objects, and support native object extension. As a result, it is a real framework, where 3rd party developers can use WixML to extend the framework by adding new objects, behaviors and effects. Every Wix creation is written in WixML, which is then parsed, rendered and loaded to the screen by the Wix viewer(also written in WixML). The entire Wix editor or composer is written also in WixML, but rests on a foundation layer written in Flash.

Key attributes:

- Coded in the Flash, so supported nearly any OS browser with a Flash plug-in
- Supports all forms of rich media
- Complete support for positioning, layouts, animations, interactivity and effects
- Seamless meshing of web content
- Complete supports for RSS and web services
- WixML is searchable by all search engines (unlike Flash)
- Skin-able editor (written in WixML)
- Easily extended with an SDK and an API
- Future support for multiple pages on a Wix (like flipping through a PowerPoint)

Founders and Management

The founders are technical and products visionaries, but not yet business leaders. They are very open, engaging and easy to work with. Without going into too much detail, the founders of Wix.com have diverse software backgrounds, starting as teenage computer hackers, serving in army technology units and then working and founding start-ups. For Internet entrepreneurs, they are relatively experienced, and have been involved in numerous start-ups, some of them mildly successful. Their domain expertise spans consumer and educational software, online games, and classic enterprise software. Knowing they will hire several senior people in the US (including a co-CEO, see below), the core team currently does not assign titles to themselves.

Avishai Abrahami

Led successful startups as founder/senior manager incl. AIT, Sphera, ArelCom (sold for $30M)

Released over 15 software products reaching millions of users * Extensive expertise in web hosting as well as technology development, sales and marketing

Giora (Gig) Kaplan

Over 14 yrs of leading successful startups as founder and senior manager (TimeToKnow, Coolvision, Optimedia)

Expert in internet publishing incl. release of dozens of consumer focused publications

Extensive experience in product management and technology invention

Nadav Abrahami (younger brother of Avishai)

Over 10 years as senior programmer and software designer incl. Eric Cohen books, Miraco, Oberon

Developed many consumer facing software products including an adaptive framework for education titles (sold over 1 million copies)

The Wix founders claim to have 10 or so of the best Flash programmers in Israel, and recognize that they need business and marketing talent ASAP. Towards that goal, they have agreed to hire Allon Bloch as President, who will join coincident with the financing. Assuming this works out, the team has discussed him joining as co-CEO alongside Avishai. Allon is a former colleague of mine, who was already in contact with the team when we all broached the idea of him joining. He is likely to relocate to NY soon, which will work well as the company intends on establishing a strong US operation. Allon made multiple successful software investments at JVP and was at McKinsey prior to that.

Risks

Launch Fails to Generate User Growth – The biggest risk by far in investing at this stage is that is prior to the product beta and launch. We could be completely incorrect in assessing users' needs and habits, and may find that Wix is of little interest to the larger Internet community.

Competition – products from numerous Web companies make it difficult for Wix to stand out.

Business Model Stumbles – relying on an advertising model may prove difficult as users and partner sites reject advertising.. Without a revenue model, Wix will prove unviable as a company for the long-term.

Inexperienced Managemen – None of the founders have CEO experience and may end up clashing with one another over product and business direction.

Outcomes Analysis

Date	10/30/2007
Assumptions	
Cost basis	$2.00M
Ownership	20.20%

			Seed			
			BVP cost basis *$2.00M*			
			Ownership *20.20%*			
Outcome scenario	**Exit Value**	**Probability**	**Return to BVP**	**Multiple**	**Year**	**IRR**
BVP cuts its losses after launch failure, flameout	$ 0M	29%	$ 0.0M	0.0x	1	-100%
Company unable to ramp user base or monetize; sold for product/technology	$ 5M	30%	$ 2.0M	1.0x	2	0.0%
Company builds a loyal user base, and has initial revenues through advertising, but is unable to rise above widget noise	$ 25M	20%	$ 5.1M	2.5x	3	31.0%
Sizable user community of several million, and reaches a $1m monthly revenue run rate which can sustain the company and allow for growth; sold to large portal or social network	$ 70M	15%	$ 14.1M	7.1x	3	67.1%
Becomes a leading application on social networks, but not as a destination site	$ 100M	5%	$ 20.2M	10.1x	3	88.2%
Becomes leading destination and application for creating rich media	$ 200M	1%	$ 40.4M	20.2x	4	91.1%
			$ 5.1M	**2.6x**		**33%**

BVP Investment (First Tranche)
*assumes Second Tranche
**assumes additional round with BVP investing $1.5M and 20% shareholding
Avg. IRR **33%**

Dropcam

To: BVP Group
From: David Cowan, James Cham, and Ethan Kurzweil
Date: January 30, 2009
Re: Dropcam

We recommend a $200k seed investment in Dropcam, a developer of an Internet camera service for consumers. Dropcam has developed a prototype of software that overwrites the firmware of a typical net camera and streams it live over the Internet via the user's WiFi connection. By overwriting off the shelf net cameras, the company initially will not need to build hardware or take inventory risk. Their goal is to be the iPod of Internet cameras through focusing on streamlining the user experience to make the process of purchasing and setting up an Internet camera extremely simple.

The company is raising a $1-2m seed round, targeting a mix of angels and early-stage VCs. They have soft circled a syndicate of angels who are interested in a $1 million round and would propose that we participate in that syndicate. They are also talking to early-stage VCs about a $2 million Series A investment and are presenting to partnerships this week. We believe they would be better served by a smaller round with an eye towards a higher valued Series A in the future. A smaller round allows them to build the engineering team to develop and test market a working product. We would like to participate in this round as we continue to track their progress – positioning us to lead an eventual Series A if they succeed in developing a complete solution. We have been extremely impressed with the founders' thoughtfulness in thinking through user acquisition and user experience, and feel they have a very good chance of creating a category-defining product that expands the netcam market.

Dropcam Product

Dropcam plans to market a complete solution where users sign up on their website for a camera and associated online DVR package "in just 30 seconds." Users will choose from a limited number of plan choices. All will allow access to live video streams but will vary in terms of how much storage they provide with the basic package storing only the last 24 hours of activity and increasing from there. The company believes they can offer up to a month of storage at a very attractive price-point (initially $10/month). They will also offer choice in terms of camera – with models that pivot, zoom and offer other functionality.

Once the order is complete, Dropcam will have the camera hardware drop-shipped directly from Amazon, thereby never taking any inventory risk themselves.

During the ordering process, users will download and install Dropcam software onto their machine. The software then automatically captures the identity of the user's wireless router and continually scans for the IP camera that has been ordered. Once the user receives the camera, all they do is turn it on and Dropcam's software finds it and connects to it directly, overwriting the camera's firmware and establishing a direct connection between the camera and the user's wireless router. At this point, the camera is directly connected to the Internet and no further intervention by the user (or their computer) is required.

Eventually, they plan to overwrite the camera's firmware prior to shipping so that all the user needs to do is turn the camera on and it automatically connects to their router based on settings established during the ordering process. This technique requires enough volume that the camera manufacturers will work with them to perform this installation prior to shipping. Dropcam has had preliminary conversations with camera manufacturers that indicate this will be possible, although we haven't verified they will be able to do this without taking possession of the device at some point during the process.

Dropcam did a limited test of acquiring users through Google AdWords. Over a 3-day period, they bought several keywords related to wireless cameras and saw a 20% sign up rate. Admittedly, they merely asked each user for their name and email address – rather than taking them through the full ordering process including inputting payment information. However, they were pleased with this level of conversion and believe with additional optimization they can get to a user acquisition cost of less than $30.

Product Extensions

The team has a grand vision beyond live streaming and recording to offer a variety of extra services such as event detection and surveillance solutions that would allow Dropcam to tap into the $33 billion home security market. They also believe they can build pattern recognition technology to detect people's faces that they can use to provide extra functionality for users. For instance, they could email you a picture of everyone that appeared at your front door during a given day. They also believe they can build machine learning systems that will be able to detect anomalies and alert you to them in real-time (e.g., the bookshelf just got shaken).

In addition, the team also believes they can develop a destination site with the more interesting streams that users allow them to broadcast. Once they get to 64,000 users, they will have as much video footage as YouTube. Most of it is unexciting (e.g., the view of your front yard), they think there will be enough interest clips among the general noise to attract an audience.

While we hope they can deliver on some of these more far-fetched plans, they don't put much stock in them at this point and in fact are most excited by the core ability to seamlessly upload and store video on the Web seamlessly.

Competition

WiLife – WiLife, now part of Logitech, offers complete video surveillance solutions for personal and business use, selling through retailers like Amazon, Best Buy and Staples. Although WiLife also claims an easy installation and setup process, it required more manual work by the user. We are investigating the company's results and performance further.

Dropcam will also be competing indirectly with IP camera vendors like Axis, Panasonic, and Trendnet – all of whom may offer live streaming/direct uploading to the Internet as Logitech does with its WiLife offering. These vendors would have an advantage over Dropcam in terms of retail distribution, but would most likely be very poor competitors on the Internet.

And if Dropcam is successful, they may ultimately compete with security companies like ADT and Brinks who offer more robust surveillance systems along with monitoring services for upwards of $60 a month. However, this would require Dropcam to build a 24/7 monitoring team and as such is not something we are counting on.

Team

Greg Duffy, CEO, was formerly Principal Engineer at Xobni where he built Xobni search and the analytics tool. Prior to this he was lead software engineer at NCF Technologies, a telecom startup that built analog to VoIP telecom switches. And he's done short stints at Microsoft and IBM as well. In our limited interactions with Greg, we've found him to be very solid technically and former colleagues of his at Xobni describe him as "brilliant."

Aamir Virani, is Greg's co-founder and the only other team member currently. He previously worked as Lead Software Engineer at Xobni. Prior to this, he was an engineer at PowerReviews and NeuroPace. He started his career at National Instruments as a Hardware Engineer, which may be helpful to Dropcam's goal to work with a variety of IP cameras. He has a Masters in EE from Stanford.

Risks / Additional Questions to Pursue Prior to Series A

We would segment the additional proof points we'd be looking for into five general areas:

Technology: While they have developed an early prototype, it is still an open question as to whether than can build a system that is able to capture, encode, compress, and upload a video stream in real-time without unacceptable latency or degradation in quality. The current prototype leaves much to be desired here – although they have only just begun their work. They claim to have identified a codec that will meet the needs of the system and even allow streaming in HD if enough bandwidth is available.

User Experience: The process of connecting the camera to one's router wirelessly is fraught with potential points of failure. Will they be able to architect an installation process that identifies these proactively and offers a clear flow while at the same time remediating problems as they arise?

Customer Support: Given that they are targeting mainstream consumers, it is likely that many will require customer support, possibly at multiple times. Will they be able to serve their customers effectively while at the same time minimizing the support cost to Dropcam?

Marketing and Sales: The team is currently limited in their marketing beyond acquiring Google AdWords. They realize that mass media may be an effective channel for them but have no experience in mass marketing. They will look to hire this expertise, but there is risk that they may not be able to find and attract the right marketing talent.

Team: The team is made up of two engineers. While they are both very sharp, they have little management experience and no experience building a company around them.

Conclusion

Dropcam is currently pitching a mix of VCs and angel groups on a Series A of up to $2m with the exact amount to be determined based on interest. We are very excited about the concept of out-of-the-box Internet cameras and find this team to be the most thoughtful of any we have seen concerning technology, user experience and design. We'd like to participate in their large angel round in order to buy us access to what will most likely be a very competitive Series A once they build a working product and begin to acquire customers. We recommend this $200k seed investment.

Twilio

To: BVP Group
From: David Cowan, Ethan Kurzweil, James Cham, and Mark Lurie
Date: November 6, 2009
Re: Twilio Seed Investment - $125,000

We recommend that BVP participate along with Mitch Kapor in a $125,000 extension to Twilio's $800,000 seed round led by Founders Fund and Mitch Kapor in Q1 of this year. Twilio has created a simple XML-like web service API for building hosted IVR and PBX telephone applications. While growth has not been explosive (they are currently doing about $20k of MRR 9 months after launch), we've been very impressed with the company's rapid product development pace and think they are on the cusp of landing some very large accounts (Google, Best Buy, Deutsche Bank) that would significantly accelerate their growth. The company is currently seeking a full $3m Series A but we'd like to see market validation of the new features they are rolling out and the sales impact of the large accounts before making this size commitment. This extension to the seed round buys the company more time before they need to raise a Series A.

Product

The Twilio product makes the process of building a voice application extremely simple for web developers without any specialized training or need to deal with telecom companies or specialized integration service providers. Similar to consumer web apps, customers can sign up for an account with Twilio, pick a phone number (or port over an existing one), learn the five simple building blocks that make up the basis of Twilio, and start building voice applications right away. The five core verbs – architected to emulate XML – allow you to do much of the most commonly requested voice features, like gather a number from the caller (e.g., Press 1 to speak in English; 2 for Spanish; etc.), listen for voice input from the user (e.g., record a message), transfer a call, play a message, or disconnect the line. We built all of the functionality inherent in Grand Central (get one central number that transfers to all of your various lines) in about 5 minutes while on the phone with the CEO.

They are in the process of rolling out more advanced functionality, like asynchronous call redirecting (connect you to one party and then once that call has ended, transfer you to another), SMS, and 3-way conferencing as these features were frequently requested by early adopters. We've been extremely impressed with the speed at which they've rolled out new products and can pivot the company's development efforts based on feedback from the developer community. The company has also continued to build more complex functionality without straying from the simple and intuitive core building blocks that make up their markup language.

Sales and Marketing

The company has targeted the web development community in the hopes of getting web developers to build new voice applications using their system. At the same time, they have scored some early wins in getting web developers to rebuild existing voice applications using Twilio as often the original architect of the voice application is long gone when programming changes are needed. One early example of this is Earth911, which runs a national call-in number where you input your zip code and the system provides you with options on the nearest recycling center. The non-profit group needed to change some of the underlying logic of their voice application but didn't have any of the original developers on staff. Rather than paying to get it reprogrammed, their web team rebuilt the entire application in less than a day using Twilio. It's been up now for more than 6 months at 1-800-CLEANUP with positive results.

The company's initial sales and marketing approach has been to use contests, promotions and social marketing targeting the web development community to generate viral buzz and word-of-mouth referrals. They have a part-time contractor on staff that focuses on direct sales but this has not been an active focus for the company. Likewise, they haven't put in place any channel sales efforts – but see many opportunities to build indirect sales channels once they have the time and capital to focus here. As a result, the company's sales ramp has been slow (see appendix 2) but they have grown steadily to $17k in MRR.

The company has just landed Mobile Commons as a customer to build a custom application for the DNC where you can key in your zip code and the system will provide you with an issue to lobby for and then automatically dial all of your elected officials (one after the other). At the end of the call, it asks you to provide your friends' numbers and the system ropes them into the same loop. This is an example of using Twilio's new asynchronous call redirecting capabilities. Most importantly, they are all on the verge of landing three very high profile clients: Google's new lead generation effort (Google picked Twilio over their own internal Google Voice team), Best Buy / Support Space, and Deutsche Bank. We're very encouraged by these high-profile reference customers but haven't yet evaluated if they are just testing the service in a limited fashion or more committed to it.

Unit Economics

At the same time, they've been able to bring down their unit cost significantly to the point now where each minute costs them .6 cents while they can charge close to 3 cents (discounts accrue with volume). This has resulted in a blended gross margin of 56%. See appendix 3 for a historical look at infrastructure costs.

Team

The company's CEO ***Jeff Lawson*** is a serial entrepreneur who started Versity.com in 1999 during the bubble. Versity was a platform where college students uploaded their class notes and other students who missed the class could pay to download that launched at Stanford (no comment as to whether one of the authors of this memo may have used the service). He was then the founding CTO of StubHub before leaving StubHub to join Amazon as a Product Manager. His last entrepreneurial venture was a chain of Skateboarding and Snowboarding shops based in Southern California called Nine Star. He left in January 2008 to begin working on Twilio.

We haven't met the other two members of the founding team at this point but they have similar entrepreneurial backgrounds to Jeff.

Financing

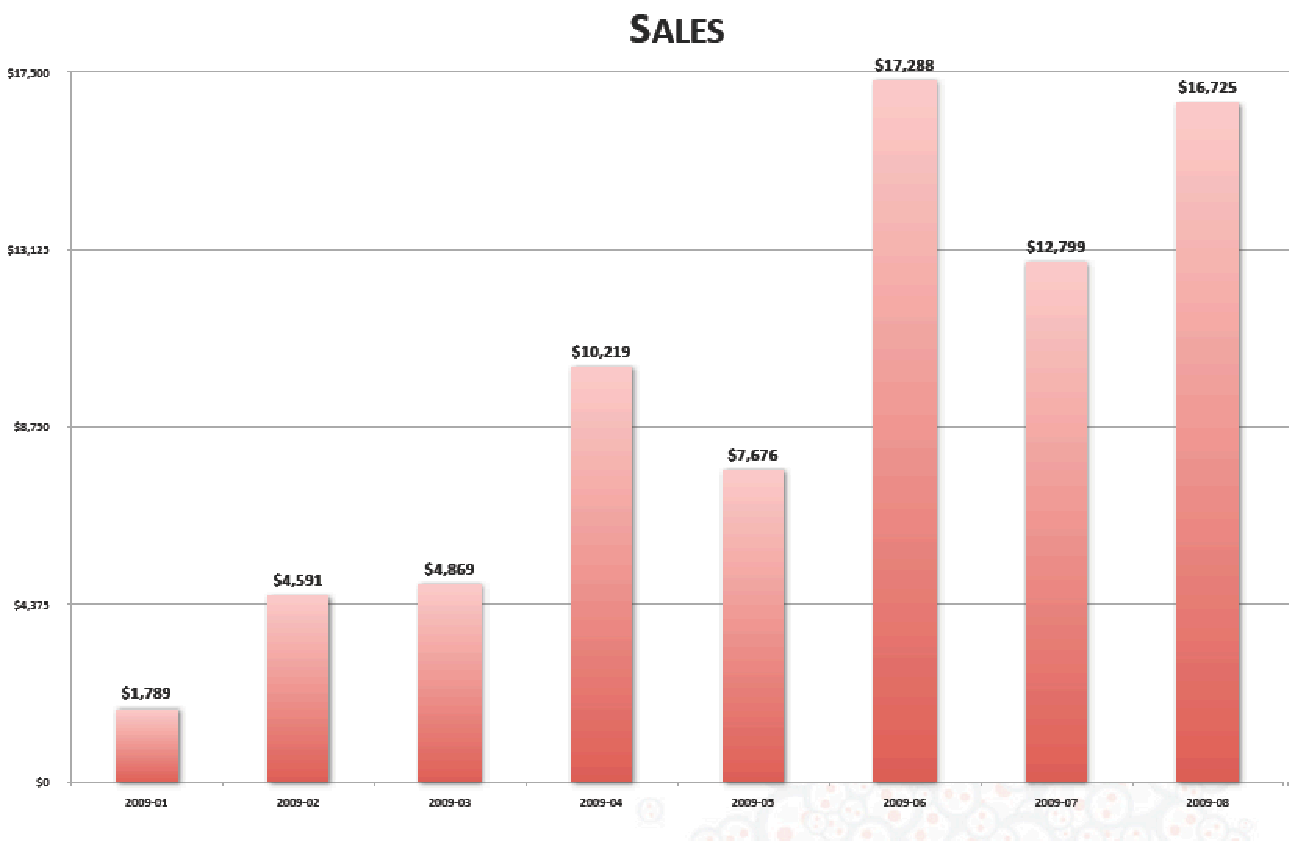
Jeff recently approached us to consider leading a Series A of $2.5-3m. He says he had been planning to raise the round early next year but was approached by another reputable firm about doing it now. Based on our relationship with Jeff (we've been tracking the company since they publicly launched last October), we believe his preference is to work with us over the other firm. He is proposing a convertible note with a 10% discount to the next round and an $8.5m pre-money cap, targeting $300-500k for this extension. This is a modest increase to the original $800k angel round which was a convertible note that converts at a 20% discount and a pre-money valuation cap of $3.5m. We think the increase is justified given the progress the company has made since the original financing and the slow but steady increases in sales over the past 6 months.

During this time, we'll be evaluating the efficacy of the company's direct and channel sales efforts and undertaking a more rigorous evaluation of the total market size. While the voice application telephony market is big enough to support a large profitable business, we haven't dug deep enough into the market dynamics to get comfort around what percentage of the pie will be addressable by Twilio. Most importantly, we'll see the results of their engagements with Google, Best Buy, and Deutsche Bank – companies that we believe to be good leading indicators as to broader adoption of the Twilio platform.

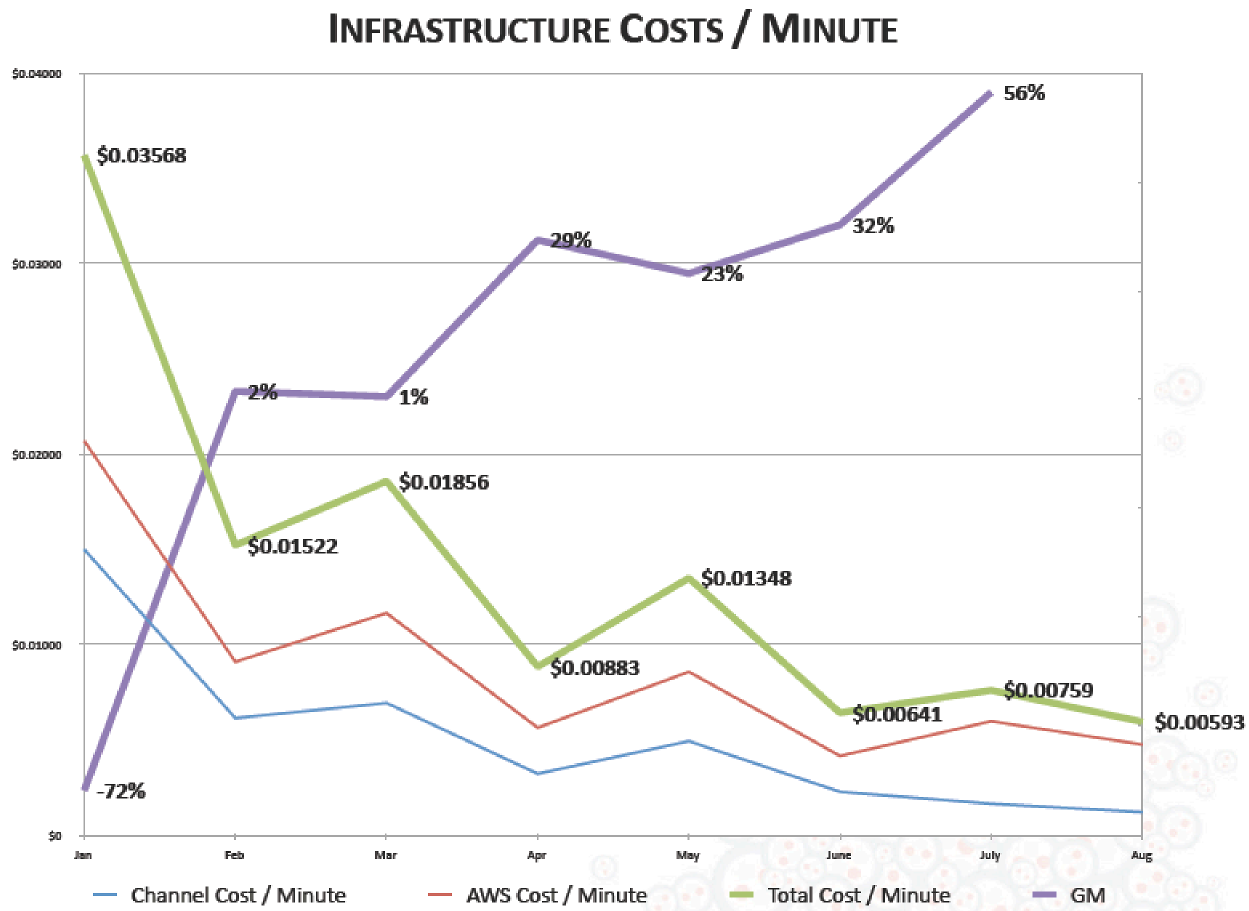
Conclusion

Twilio is a promising young company with a bold vision to make voice applications as easy to set up and maintain as web applications. They've built a clever, intuitive interface that simplifies the extreme complexities involved in building IVR and PBX capabilities and have received many early accolades from prominent Internet influencers. We'd like the opportunity to review more data before making a determination on the full Series A and therefore strongly recommend making this angel investment.

Appendix 2: Sales



Appendix 3: Costs and Gross Margin


INFRASTRUCTURE COSTS / MINUTE
$0.04000
$0.03000
$0.02000
$0.01000
$0
Jan
Feb
Mar
Apr
May
June
July
Aug
$0.03568
$0.01522
$0.01856
$0.00883
$0.01348
$0.00641
$0.00759
$0.00593
-72%
2%
1%
29%
23%
32%
56%
Channel Cost / Minute
AWS Cost / Minute
Total Cost / Minute
GM

The Memos

Mindbody

To: BVP Group
From: Jeremy Levine, Sarah Tavel, and Brian Feinstein
Date: July 2, 2010
Re: Mindbody Investment Recommendation

Summary

We expect to sign a term sheet to invest in MindBody, a San Luis Obispo, CA based provider of a SaaS appointment scheduling and business management suite for fitness centers, yoga/pilates studios, spas, salons and other similar establishments. We are investing $8m in an $11m preferred round at $42m pre and will own 16.3% of the company after the redemption of some early angel investors.

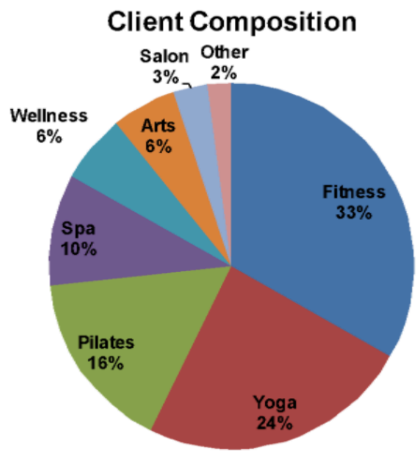
Mindbody launched its SaaS application in 2003 and has become the clear leader in the fitness market with over 8,500 clients, $867k in MRR and $1m in monthly revenues (as of May 31). We are impressed with Mindbody's position as the de facto standard in the yoga and pilates market (with over 30% share in both). It has gradually expanded into other verticals, including fitness centers, martial arts studios, dance studios, spas, and salons. At 4x annualized MRR, we believe $42m pre is a reasonable valuation given the company's growth characteristics, market potential and nominal operating burn ($120-150k per month).

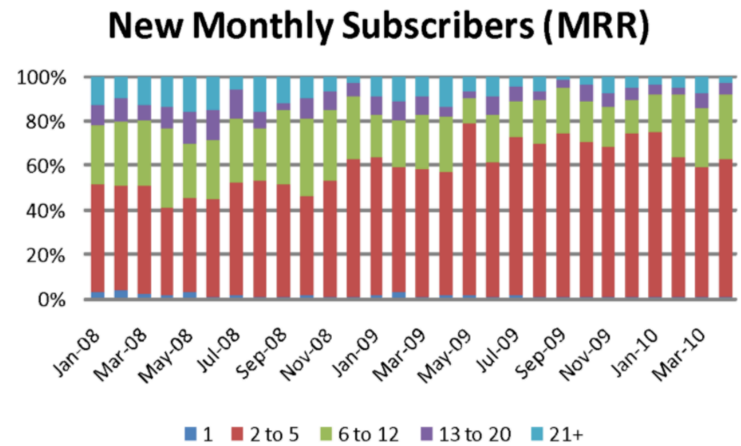
Mindbody has demonstrated strong financial performance to date with a recurring revenue base and low churn. The company has grown from $4.4m in recurring revenue in 2008 to $6.8m in 2009 and is currently growing at a 60% CAGR, on plan to reach $11.4 in 2010. The company has acquired customers through a capital-efficient telesales effort, with a gross profit customer acquisition payback of ~13 months. Annual gross churn is ~11%, which is particularly impressive in light of the relatively short natural lifespan of its customers. Assuming the current metrics hold constant, MindBody has an attractive 3.4x lifetime return on customer acquisition spend, and we believe MindBody will continue to improve those metrics over time by expanding the range of services offered to existing customers.

Market Size Potential (the big issue)

The primary focus of our due diligence (and the main feedback that emerged from the BVP partnership meeting following MindBody's presentation last month) is the company's ability to penetrate the salon and spa markets. The company is clearly winning in yoga and pilates, but with 30% penetration already, there is not as much room for growth. To reach $50m+ in annual revenues, MindBody needs to broaden its target customer verticals.

As shown in the chart below, 40% of Mindbody's customers are yoga and pilates studios. Another 33% of customers are represented by various types of fitness centers. The remaining ~25% consist of newer verticals such as spas, salons, and wellness facilities. Mindbody's customer footprint is concentrated in the US (50% in the Northeast and California), with about 10% of customers from overseas. The customer base is highly fragmented— with no single Mindbody client representing more than 2% of revenues and only four clients accounting for more than 1% revenues.





Today, 70% of Mindbody customer additions are new businesses or existing businesses with no software solution. Mindbody believes that it is acquiring more new customers each month than any of its competitors. Given the inherent switching costs associated with leaving existing on-premise vendors, we expect Mindbody's customer base additions to continue to skew toward greenfield opportunities.

As evident from the table below, reaching $50m in annual recurring revenues will require meaningful penetration of the salon/spa market where MindBody has only begun to add customers.

	Number of Locations	Current Subscribers	% Penetration	% Addressable	Market Size
Yoga Studio	5781	1790	31%	40%	$2,774,880
Pilates Studios	3050	1068	35%	40%	$1,464,000
Health Clubs	45600	83	0%	20%	$10,944,000
Personal Training Studios	23490	648	3%	20%	$5,637,600
Martial Arts	25000	152	1%	20%	$6,000,000
Sport Instruction	8298	152	2%	20%	$1,991,520
Physical Therapy	86500	14	0%	5%	$5,190,000
Total Wellness					$34,002,000
	Number of Locations	**Current Subscribers**	**% Penetration**	**% Addressable**	**Market Size**
Day & Health Spas	21307	660	3%	10%	$2,556,840
Hair Salon	256000	145	0%	10%	$30,720,000
Massage Therapists	33450	64	0%	10%	$4,014,000
Skin Care & Nail Salon	48165	45	0%	10%	$5,779,800
Total Beauty					$43,070,640
	Number of Locations	**Current Subscribers**	**% Penetration**	**% Addressable**	**Market Size**
Dance studios	19265	251	1%	10%	$2,311,800
Music Instruction	2637	23	1%	10%	$316,440
After School	9298	79	1%	10%	$1,115,760
Total Arts					$3,744,000
Total Addressable ARR at $100/mth MRR					$80,816,640

If MindBody can achieve 10% share in salon/spa (compared to its current 30% share in yoga/pilates), we estimate the company can reach ~$80m in ARR over the next ~5 years at its current $100/month average MRR per client. We also believe ARPU and margin per account will grow as Mindbody increases its payment processing penetration and starts to drive traffic from its newly-launched consumer-facing offering.

Our due diligence efforts to better understand the market dynamics in the salon/spa verticals suggest they are ripe for a SaaS solution. We are less confident in Mindbody's ability to penetrate those markets cost effectively, but we believe that after continued investment in product enhancements tailored to spa and salon customers, MindBody has a reasonable chance to win big and steal share from the incumbents which sell on-premise solutions. Through the first five months of the year, MindBody added 367 salon and spa customers, which represents 18% of the company's new customer additions in 2010 and a doubling of its customers in those verticals.

In summary, we are optimistic that MindBody will achieve meaningful traction in the salon and spa markets, which is critical for growth. If we are wrong, however, we expect the business to stall in the $20-30m annual recurring revenue range, at which point we have two options.

The first option would be to encourage management to run the business for dividends. Without the need to invest in customer acquisition beyond churn replacement, the company's monthly marketing expenses would drop by about 80%. Customer acquisition marketing represents more than 50% of total monthly expenses today, so the result of such a drop is a business with 25%+ operating margins. Therefore, we believe the company should generate $6-7m of annual operating profit and with a total preference stack of less than $20m, and we should be able to eke out a moderate 1.5x return.

The second option is to pursue a trade sale. Today, Saas businesses trade at anywhere from 2-6x ARR, and even at the low end of the range, we would expect roughly a 2x return. There is a limited universe of potential buyers with a clear strategic fit, but we would include publicly-traded companies like Opentable and Netsuite among them.

Product Overview

Mindbody is a SaaS suite that allows business owners to handle all aspects of operating a wellness or beauty facility, including yoga/pilates studios, fitness centers, spas, and salons. Pricing ranges from $29/mth for a single professional facility to $155/mth for facilities with 20+ professionals, with an average price of $75/mth per client.

Gyms and spas use Mindbody to host consumer-facing and mobile websites — allowing consumers to register for appointments and make purchases online. The software helps business owners manage internal operations, such as scheduling staff, setting appointments, preparing payroll statements, tracking customers, and monitoring sales activity. In addition, the product offers the ability to handle retail sales and process payments/subscriptions.

Mindbody offers three core advantages over its competitors. First, Mindbody gives a client operating with paper and pencil a way to manage his business more efficiently and increase revenues through online bookings. Second, at an average of $75/mth, Mindbody offers a comprehensive set of features at a competitive price point. Third, as one of the few SaaS vendors in the market, Mindbody's delivery model appeals to clients who want to host a consumer-facing website, eliminate IT issues, and operate their business from home.

The product is comprehensive and functional. It is also admittedly underwhelming and dated in its user experience. Our sense is that Mindbody's product is successful due to weak competition. Most of Mindbody's competitors are on-premise incumbents founded in the mid-1990s that lack the advantages of SaaS. The handful of SaaS competitors are poorly capitalized and sub-scale. For this reason, Mindbody has grown to be the only SaaS offering with 200+ customers in the fitness, salon, and spa markets. Based on our conversations with the team, we believe they understand the usability/interface challenges with their product and are committed to investing to improve them.

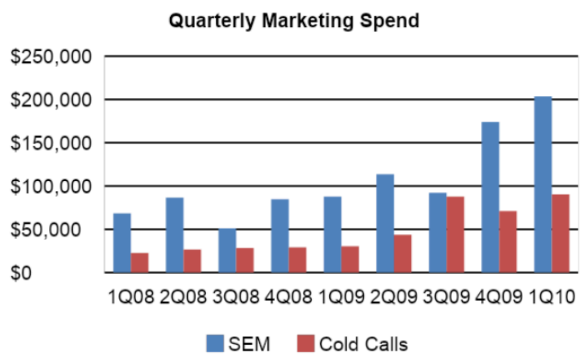
Mindbody's core software accounts for about 70% of total recurring revenues. About 30% of Mindbody subscribers and 70% of new subscribers process payments through Mindbody. This accounts for about 20% of recurring revenues and generates about $25/mth in additional MRR (bringing the total MRR per subscriber to about $100/mth). Mindbody recently became a registered ISO, which should further increase payment processing margins. In addition to software and payment processing, another 10% of recurring revenues come from sale of third-party products (e.g. ConstantContact) and premium support services.

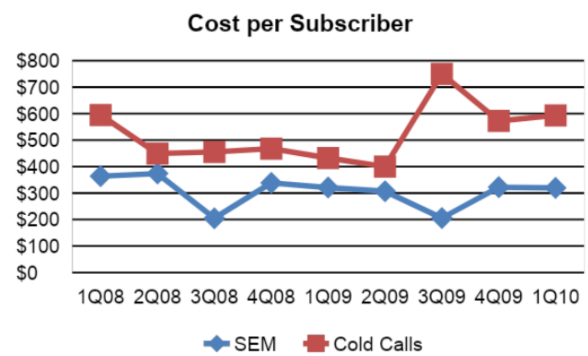
Mindbody's product roadmap is focused on three core initiatives. First, the company is enhancing the core SaaS product with features specifically geared for the salon market. Second, the company plans to introduce Mindbody Finder— an OpenTable-like booking tool that aggregates the available appointment inventory across all MindBody customers in a convenient interface for consumers. Third, the company plans to aggregate and publish benchmarking data for each of its verticals (Mindbody Research) to enhance the value of the product for business owners and drive press interest.

Unit Economics

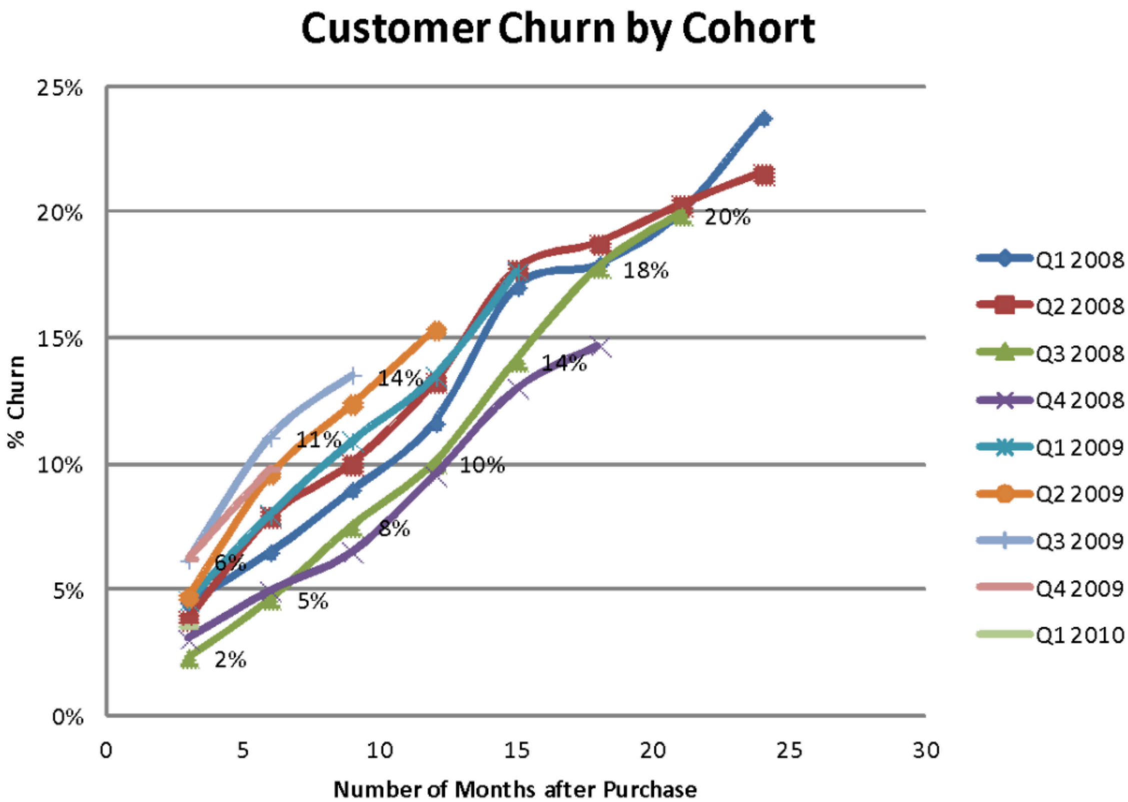
Customer Acquisition - Mindbody employs an efficient marketing-driven telesales model. The company relies heavily on SEM, outbound cold calling, and tradeshows to drive leads. It subsequently converts those leads by phone with an inside sales team. At a blended customer acquisition cost of ~$1,100, Mindbody typically has a 13-15 month gross profit customer payback period. Mindbody relies on a telesales team of 21 reps. As the company has grown its sales team from 14 to 21 in a span of a year, salesforce productivity has remained stable.

SEM and cold calling account for ~75% of total customers acquired, which we believe makes Mindbody's customer acquisition strategy highly scalable. The company's sales and marketing performance has been relatively stable as customer acquisition has grown. Between Q1 2008 and Q1 2010, its SEM and cold calling expenses more than tripled (from $90k to $294k). In this same period, cost per subscriber remained relatively constant at $400-600 per subscriber for cold calling and $200-$400 for SEM.





Churn – Over the past year, Mindbody has experienced 11% annualized churn and 2% net churn (net of upsells). With the exception of 3Q and 4Q 2009, churn by cohort has been relatively consistent. About half of churned customers leave due to problems associated with the product and the remaining half go out of business or have some sort of exogenous problem. In light of this ~5% annual natural attrition, we've been impressed with Mindbody's 11% annual gross churn.



CLTV – At a blended customer acquisition cost of ~$1,100, ARPU of ~$100, 80% gross margins, an estimated 7 year customer lifetime, and simple assumptions surrounding renewals and SG&A, Mindbody is able to generate about a 3.4x return on invested capital (45% IRR), and we expect that to improve as MindBody extracts more revenues from its customers through new services like payment processing.

Mindbody Lifetime Value Analysis

Inputs

Customer Acquisition Cost	$1,109	* Average customer acquisition cost in 2009 and 2010 (includes setup & training expense).
Revenue per Subscriber	$106	* Average revenue per subscriber in 2009 and 2010.
Lifetime	7	* Conservative assumption based on historic churn of ~11%.
Gross Margin	80%	* Average recurring revenue gross margin in 2009 and 2010.
Renewal Cost	$222	* 20% of customer acquisition cost.
R&D and G&A	$254	* 20% of revenue per subscriber.

Output

	1	2	3	4	5	6	7
Revenue	$1,272	$1,272	$1,272	$1,272	$1,272	$1,272	$1,272
Gross Profit	$1,018	$1,018	$1,018	$1,018	$1,018	$1,018	$1,018
Renewal Expense	$222	$222	$222	$222	$222	$222	$222
R&D and G&A	$254	$254	$254	$254	$254	$254	$254
Contribution Margin	$541	$541	$541	$541	$541	$541	$541

LTV of Customer	**$3,790**
Contribution Margin Multiple	**3.4x**
IRR	**45%**

Financial Performance

Since January 2008, Mindbody has grown recurring revenues at a 56% CAGR. Growth slowed in 2009 due to the economic environment and MindBody fought the tough economic environment by waiving new customer set up fees, which dropped total revenue growth to 35% while recurring revenues grew 55%. In the past quarter, the total revenue growth rate has accelerated to a 60% CAGR and the company is on plan to hit its 2010 target of $11.4m in recurring revenues.

	2006A	2007A	2008A	2009A	2010E	2011E
REVENUES						
Recurring Revenues						
Subscription	$758,352	$1,782,561	$3,250,288	$5,173,476	$8,682,590	$14,281,268
Payment Processing	$160,323	$626,644	$1,156,457	$1,652,322	$2,677,900	$4,428,815
Total Recurring	$918,675	$2,409,205	$4,406,745	$6,825,798	$11,360,490	$18,710,083
Non-Recurring Revenues	$792,005	$1,241,513	$1,640,065	$1,351,249	$1,708,622	$2,644,846
Total Revenues	**$1,710,680**	**$3,650,718**	**$6,046,811**	**$8,177,047**	**$13,069,112**	**$21,354,929**
Total Revenue Growth		113%	66%	35%	60%	63%
Recurring Revenue Growth		162%	83%	55%	66%	65%

We view non-recurring revenues as immaterial, consisting mainly of low-margin products like hardware sales (e.g. credit card/membership card reader) and training fees. The non-recurring revenues bring the company's blended gross margin down 69%, while recurring revenue gross margins are about 80%.

The company is currently burning $250k-$300k per month, driven primarily by investment in sales and marketing. Without sales and marketing expense, the company would be operating at 20% EBITDA margins. The company expects to reach CFBE in mid-2011 and we expect this $7.5m contribution to the balance sheet to provide plenty of cushion and allow for tuck-in acquisitions.

We think the company has put together a reasonable bottoms-up plan driven by growth in sales and marketing expense. The plan calls for ~50% annual growth over the next few years, reaching $100m in rev in 2015. Our financial projections call for a more conservative $70m in 2015, although both models are very much dependent on the company's ability to maintain its unit economics as it expands into new verticals.

Competitive Landscape

Mindbody faces a number of competitors in each of its verticals. We believe that there are more than 60 companies, but according to industry surveys, no company has more than 6% share of the market. Moreover, Mindbody is one of the only well-funded companies with a SaaS offering. Given the company's dominance in the fitness market, we've limited this section to the handful of competitors that we believe are best positioned to compete with Mindbody in the spa and salon verticals:

Harms Software (Millenium Software): __Harms Software was founded in 1987 and is estimated to have 12,000 installations. By all accounts, Harms Software is the company to beat in the salon vertical. The company claims to handle over $1B in annual revenue on behalf of its clients. They've won numerous awards including being voted "Favorite Software" by both the American Spa Magazine and American Salon Magazine. Customers include all Paul Mitchell Salons, Aveda salons, Macy's, Nordstrom, Sally Hershberger and others. Mindbody claims that the company is struggling and that executives from Harms have been speaking to Mindbody about executive positions at Mindbody. We're skeptical because despite our best efforts to get in touch with the company, the CEO responded that they were not in need of cash nor interested in an investment.

ShortCuts: ShortCuts is a desktop software suite for the salon and spa verticals. The company is headquartered in Brisbane, Australia and was founded in 1993 and claims to have over 10,000 installations. We hear they have 100 employees. The product has deep functionality that is custom tailored to each vertical.

SpaFinder / SpaBooker: The founder of Autobytel, Pete Ellis started SpaFinder as an online retail destination to buy salon and spa gift cards. The SpaFinder site hit a ceiling at ~$50m in revenue and the team has created a SaaS solution for spas and salons. Though quite early with ~$100k in MRR, the product is a slicker and more usable version of Mindbody's product suite.

Risks

Will MindBody be able to replicate its success in the salon vertical?
Mindbody has had significant success in the yoga and pilates verticals and has seen strong traction in other areas of fitness. However, much of the company's future growth is expected to come from its penetration of new markets— specifically salons. Although Mindbody's early traction in salons is promising, it's too early to tell whether Mindbody will be able to replicate its success in the salon vertical. If Mindbody is not able to penetrate the salon vertical, either organically or by acquiring smaller competitors in the space, its addressable market will be handicapped.

We focused our due diligence efforts on better understanding this key risk and came away with the following conclusions:

> The addressable market in the salon vertical represents a $30m+ ARR opportunity. We learned that the salon market is divided into salons where stylists operate on company payroll and take a percentage of their service fee, and salons where stylists rent a booth from the salon owner but act as a single proprietor. Because booth renters act independently, they have less need for the management capabilities in Mindbody's software solution and lack the budget for IT purchases. That said, Mindbody has a mobile product offering coming out soon that we believe will be a good fit for the scheduling needs of booth renters.
>
> Early data suggests that Mindbody's salon customers have higher than average CAC and churn. However, these metrics are consistent with the sales learning and brand recognition curve associated with Mindbody's historic entry into a new market. Moreover, these figures may be imprecise given the relatively small sample size of ~150 salon customers. Importantly, the metrics have been moving in the right direction.
>
> As discussed in the competition section, we've learned that no incumbent salon software company has a dominant position in the market. This leads us to believe that Mindbody is well positioned to enter with a disruptive SaaS offering.

Will the team be able to scale? We've been impressed by the Mindbody team's focus on SaaS metrics, their historic financial performance, and their level-headed approach to the business. With that in mind, they don't have any prior successes under their belt, so it is difficult to know how they will scale.

Will Mindbody be able to rise above the competitive noise? Mindbody dominates the yoga and pilates verticals, but is a relative newcomer in other verticals. Although Mindbody has one of the few SaaS applications, it does not enjoy the same brand recognition outside its core verticals. As previously noted, the competitive landscape across the other verticals is quite fragmented, though there are a couple notable competitors in salons that enjoy relative brand recognition. When Mindbody first launched in the yoga and pilates verticals, the competitive dynamics were similar, and Mindbody was able to rise above the noise to become the standard in the yoga and pilates space with 30%+ market share. Part of the bet we're making is that Mindbody will be able to repeat their previous success despite the competitive landscape.

Will we be able to exit? Given the specialized nature of this product, there are very few strategic buyers. If we are unable to achieve requisite scale for an IPO, we may be forced to sell to a financial buyer.

Will Mindbody Finder see consumer traction? Mindbody intends to partner with local review sites like Yelp to power a health and beauty bookings engine. Part of our upside case is predicated on consumer adoption of this type of service and Mindbody's ability to manage a consumer-facing business.

Team

We've grown increasingly impressed with Rick and Bob as we've gotten to know them. They've taken a highly analytical approach to managing their business— monitoring the core metrics of their SaaS business on an ongoing basis. They've also proven capable of building a scalable sales and marketing funnel— with SEM, outbound cold calling, and inside sales driving an efficient customer acquisition process.

Rick Stollmeyer (based in San Luis Obispo) – Rick strikes us as a competent CEO and a strong spokesperson for the business. He founded Mindbody as a consulting shop for the yoga industry in 1998 after serving as an officer in the Navy. He launched Mindbody as an independent SaaS solution in 2003 and has led the business in partnership with Bob Murphy since that time.

Bob Murphy (based in East Hampton, NY) – Bob is the current CFO and CSMO (Chief Sales and Marketing Office). He is a metrics-driven and detail oriented leader. He intends to step down from the CFO role to focus on sales and marketing once the current VP of Finance has been fully groomed to take over the role.

We have had limited interactions with other team members and do not believe there are other "VP level" executives in the company. We intend to spend more time with all of the senior managers as part of our final due diligence.

Deal

Mindbody has raised $8.4m to date from individuals and Catalyst Investors, a NY growth equity firm. The company's most recent financing was a $5.6m investment from Catalyst in March 2009. The company also has a $400k LOC from a regional bank and has signed a term sheet with SVB for $2m in venture debt.

The company has historically taken a cautious approach to fundraising and only raised capital on an as-needed basis. When we first approached Rick and Bob, the company was not actively seeking funding but recognized the opportunity to accelerate growth. The early largely friends and family investors have also expressed interest in selling part of their stake, representing 7.7% of the total shares outstanding.

We have an opportunity to lead an $11m round at a $42m valuation (4x current ARR, ~3.6x 2010E ARR and ~3.2x 2010E total revenues). We will invest $8m for 16.3% ownership (after redemption of some current shareholders and a small option refresh) and Catalyst would take the remaining $3m. We expect $3.5m of the round would be used to redeem existing shares at discounts ranging from 10% to 17.5%. The remaining $7.5m would be used to fund company growth, primarily through sales and marketing expansion and small tuck-in acquisitions. There will be a 4.5% unallocated option pool available at closing.

We believe the price and terms are quite reasonable.

Scenario Analysis

Investment	
Investment	$8.00
Pre Money	$42.00
Post Money	$48.95
Ownership	16.3%
Investment Date	Jul-2010

(USD in Millions)

Outcome	Exit Value	Exit Date	Prob.	BVP Proceeds: Gross Proceeds	Mult.	IRR %
Failure. New competitor enters the market with a free solution. Growth stagnates and churn picks up. Company cannot sustain burn and folds.	$0	Jul-2014	15%	$0.0	0.0x	-100%
Growth stagnates. Mindbody fails to achieve meaningful growth outside of its core fitness verticals and plateaus at $15m in revenue. Sold for 2x revenue to a competitor.	$30	Jul-2014	20%	$10.6	1.3x	7%
Market leader in fitness but limited success in salon/spa. The company dominates its core fitness vertical but is unable to capture a meaningful share of the salon or spa market. As it hits a ceiling in fitness, growth flattens at $30m in ARR and company cuts marketing expense to generate $10m in EBITDA. Sold for 6x EBITDA.	$60	Jul-2014	30%	$16.1	2.0x	19%
Market leader in fitness and modest success in salon/spa. The company dominates its core fitness vertical (~$30m in ARR) and becomes a major player in the salon/spa market (with market share comparable to current leaders). Growth slows at $50m in ARR and company cuts marketing expense to generate ~$20m in EBITDA. Sold for 7x EBITDA.	$160	Jul-2014	25%	$26.2	3.3x	34%
Market leader in fitness and salon/spa. The company replicates its success in the salon/spa market and displaces on-premise incumbents with a more functional SaaS solution. The company reaches ~$75m in ARR and reduces marketing expense to generate ~$30m in EBITDA. Sold for 10x EBITDA.	$300	Jul-2015	7%	$49.7	6.2x	43%
Home run. Mindbody dominates the fitness market and captures a meaningful share of the salon market, growing to ~$100m in ARR. Its consumer-facing business is a success and the company trades at OpenTable-like multiples (~10x revenue).	$1,000	Jul-2018	3%	$166.2	20.8x	46%
Weighted Average (to BVP)				$21.9	2.7x	23%

Conclusion

We have been impressed by Mindbody's execution and performance to date, and are excited by the opportunity to invest in a SaaS business that we believe could come to dominate the health and wellness space. The relative maturity of the business, when combined with the agreed deal terms, provides us with attractive mid-range returns, and if Mindbody can replicate its yoga/pilates success in new markets, we could reasonably realize a 5-10x gain.

Appendix: Company Financial Plan

MINDBODY 2007 - 2015 Income and Expense

	2008	2009	2010 Projected Totals	2011 Projected Totals	2012 Projected Totals	2013 Projected Totals	2014 Projected Totals	2015 Projected Totals
REVENUE								
NON-RECURRING	$1,640,065	$1,351,249	$1,708,622	$2,644,846	$3,192,014	$4,525,243	$6,554,939	$8,748,139
BASE RECURRING	$3,255,921	$5,173,476	$8,674,288	$14,281,268	$22,078,938	$31,523,972	$45,947,790	$66,239,253
MAP	$1,156,457	$1,652,322	$2,677,900	$4,428,815	$6,786,745	$9,717,773	$14,208,090	$20,294,401
MB FINDER/RESEARCH		$0	$129,672	$473,373	$870,570	$1,221,781	$1,759,626	$2,490,898
GROSS REVENUE	**$6,052,444**	**$8,177,047**	**$13,190,482**	**$21,828,302**	**$32,928,266**	**$46,988,768**	**$68,470,444**	**$97,772,692**
COGS	$1,500,556	$1,734,524	$2,510,902	$3,851,700	$5,112,770	$7,281,946	$10,575,648	$14,423,974
NET REVENUE	**$4,551,888**	**$6,442,523**	**$10,679,580**	**$17,976,603**	**$27,815,496**	**$39,706,822**	**$57,894,796**	**$83,348,718**
EXPENSES								
Advertising/Marketing (non-labor)	$1,306,716	$1,668,467	$2,853,647	$4,851,475	$6,277,416	$9,770,864	$14,744,537	$18,797,592
Automobile Expense	$26,191	$36,718	$49,909	$60,000	$72,000	$84,000	$96,000	$108,000
Bank and CC Service Charges	$6,759	$3,740	$4,700	$6,000	$6,600	$8,100	$9,000	$9,900
Computer Supplies	$63,866	$123,619	$109,027	$132,000	$171,000	$186,000	$198,000	$210,000
Employee Benefits	$244,953	$438,970	$646,966	$875,676	$1,172,066	$1,571,096	$2,095,959	$2,749,949
Interest & Misc (Income)/Expense	$36,537	$2,586	$37,340	$60,000	$60,000	$60,000	$60,000	$60,000
Insurance	$15,636	$17,770	$25,590	$42,000	$48,000	$51,000	$60,000	$66,000
Internet Service (offices)	$44,951	$62,860	$71,005	$90,000	$96,000	$105,000	$117,000	$126,000
Maintenance	$29,215	$58,501	$66,422	$84,000	$93,000	$105,000	$121,500	$147,000
Office Operating Expenses	$46,910	$192,267	$329,241	$480,497	$733,951	$1,175,494	$1,570,887	$2,164,715
MBO Payroll - Mgt & Admin	$349,712	$975,408	$1,159,892	$1,344,419	$1,530,740	$1,723,527	$2,015,480	$2,391,678
MBO Payroll - Customer Support	$924,778	$528,065	$1,090,076	$1,598,972	$2,376,511	$3,557,712	$5,232,678	$7,484,709
MBO Payroll - R&D	$566,042	$908,335	$1,215,326	$1,780,217	$2,609,661	$3,633,621	$4,653,773	$5,997,626
MBO Payroll - Sales & Marketing	$593,246	$2,079,847	$3,233,850	$4,278,335	$5,240,293	$6,988,499	$9,529,227	$12,226,846
MB MAP ISO Payroll	$242,466	$155,361	$0	$0	$0	$0	$0	$0
Professional Development	$1,680	$27,625	$46,943	$57,000	$72,000	$93,000	$132,000	$174,000
Legal & Professional	$104,255	$261,223	$140,893	$157,000	$258,000	$342,000	$498,000	$585,000
Bad Debt	$32,908	$35,889	-$8,562	$41,311	$44,876	$67,358	$101,032	$129,247
Rent	$256,484	$400,686	$529,762	$635,907	$792,837	$988,182	$1,246,112	$1,528,788
Server Co-Location	$122,535	$122,460	$122,996	$170,000	$260,000	$390,000	$560,000	$810,000
Telephone	$76,636	$122,390	$197,470	$255,000	$342,000	$465,000	$609,000	$810,000
Travel, Meals & Entertainment	$77,344	$106,408	$155,291	$212,000	$324,000	$429,000	$570,000	$753,000
Utilities	$17,677	$25,132	$31,652	$45,000	$59,463	$74,114	$93,458	$114,659
OPERATING EXPENSES	**$5,187,496**	**$8,354,329**	**$12,109,435**	**$17,256,810**	**$22,640,415**	**$31,868,567**	**$44,313,644**	**$57,444,711**
EBITDA	**($635,608)**	**($1,909,220)**	**($1,392,515)**	**$779,793**	**$5,235,081**	**$7,898,255**	**$13,641,152**	**$25,964,007**

Bessemer Venture Partners

The Memos

Shopify

To: BVP Group
From: Alex Ferrara, Trevor Oelschig
Date: October 12, 2010
Re: Shopify

We seek approval for BVP to invest up to $7mm in the Series A financing of Shopify, a provider of e-commerce software to SMBs. Shopify sells a simple SaaS solution that enables a business to quickly setup and run an online retail store. A typical customer signs up using their credit card and is up and running in a few hours with no long-term contract. Shopify targets SMBs and at-home capitalists (e.g., eBay and Etsy sellers) who pay an average of $45 per month, with the goal of servicing these customers as they scale to become larger customers with more sophisticated needs. Shopify has also managed to sign-up a number of large businesses like Pixar, Amnesty International and Tesla Motors (selling Tesla accessories, not the cars) at higher price points.

> Shopify was my first lead investment as a partner, so I was incredibly nervous. It took me three roundtrip flights to Ottawa before I finally decided to present Tobi a term sheet. Why? Very few VCs believed that software businesses targeting SMBs were good investments, let alone ones that could deliver venture returns.

Shopify has grown at an impressive rate. With limited marketing, customers have increased from 5,500 a year ago to nearly 10,000 today (+81% Y/Y). Over the same period, monthly recurring revenue has grown from $164K to $438K (+151% Y/Y). Across all Shopify-powered stores, the annualized gross merchandise value transacted is roughly $132mm. The business is profitable and largely bootstrapped, having raised just $1mm to date and having $1.3m of cash on its balance sheet with no debt.

> Shopify's target focus on SMBs and the potential market size of online retail were seen as key risks, but their organic growth and profitable business was hard to ignore. In 2010, $132mm in GMV would have put Shopify in the top 50 online retailers. That's how small the online retail market was at that time!

Shopify was founded in 2007 by two Ruby on Rails core developers. One of the co-founders left soon after starting the business. The other, Tobi Lütke, stayed on and is serving as CEO. We have been impressed by Tobi. He is a young, first-time CEO who is thoughtful, has good product and management instincts. Shopify's 24 employees are located in Ottawa, Canada. Based on Shopify's reputation in Ottawa as a local internet startup success story, and based upon Tobi's reputation among the developer community, the company has been able to recruit some of the best development and design talent in Ottawa at 60%-70% of the cost of similar talent in Silicon Valley or New York.

> When Tobi came out to Silicon Valley, many VCs told him they'd invest only if he moved to the Bay Area or merged his startup with one of their Bay Area investments. While I admittedly was not a big fan of Ottawa's bone-chilling winters, Shopify's office was located in an energetic area downtown and they didn't seem to have any issues recruiting great talent in the region or from the nearby schools. I was excited to back what was clearly the best cloud startup in Canada's capital.

We are excited by what we see as a great product that has struck a chord with customers. The product is simple enough so that anyone can set up a fully functioning online store in a matter of hours.

> There's so much to love about the simplicity of the Shopify and the way it enabled small merchants to easily sell online. One of our colleagues described it as "minutes to learn, a lifetime to master" because it was both so simple to set up but the app store made ecommerce powerful and robust.

Yet sophisticated features are also available without complicating the overall user experience. Shopify accomplishes this by making available an "App Store". A customer can click and install an "App" that extends the functionality of their online store beyond what Shopify provides. To make the "App Store" possible, Shopify exposes an open API that allows third party software developers to integrate into its platform. This approach is a big competitive differentiator for Shopify. The API's breadth and ease of use has resonated with the development community. For Shopify this is great—it can offer capabilities necessary to support larger customers without having to invest in building out these features itself. Roughly two-thirds of Shopify's customers utilize at least one app from their "App Store".

The round is priced at a $20mm pre-money valuation ($18.7mm EV). We plan to invest $5mm and thereby own 20% on a fully-diluted basis. Shopify is on a ~$5.5mm annualized run rate and has demonstrated strong organic growth. Further, we think that there is an enormous opportunity to accelerate growth by investing in: i) marketing, ii) international expansion and product localization and iii) business development to expand the applications available in the Shopify App Store. In particular, we see marketing as a huge opportunity as the company's growth to date has been largely organic and marketing thus far has been rudimentary. In fact, Shopify employs one paid search marketer and has no VP of Marketing.

Market Opportunity

Shopify plays into two themes:

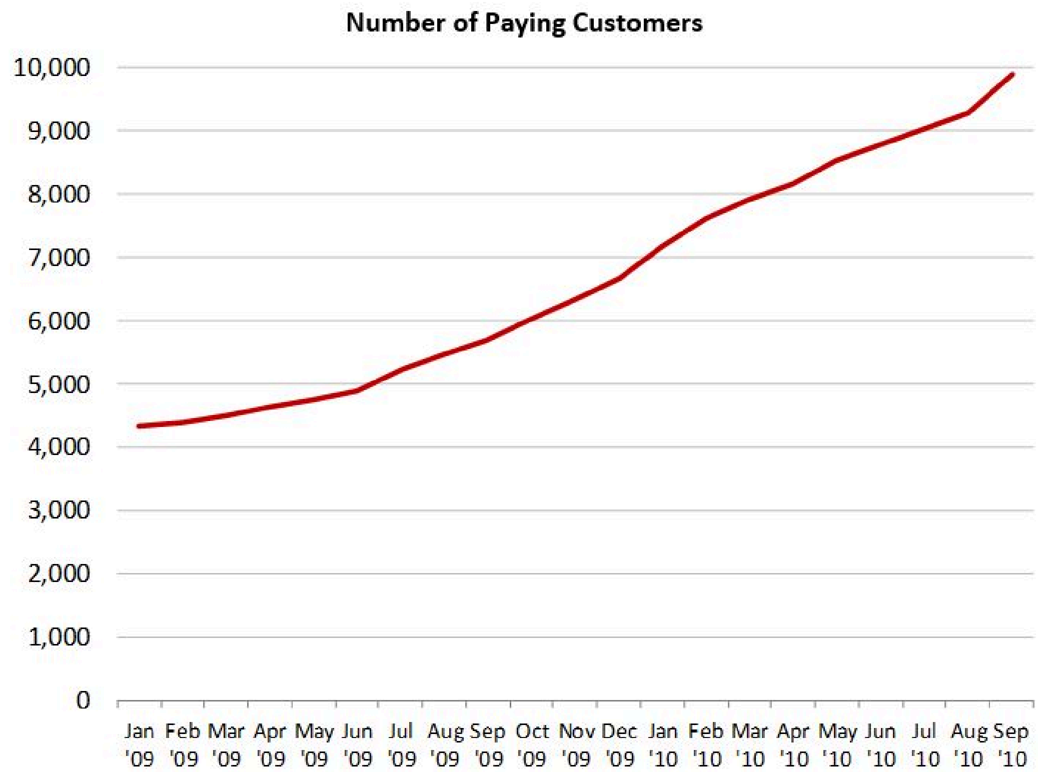
The consumerization of enterprise software. The ability to offer cheap, consumer-like software opens a whole new market of customers (SMBs), who otherwise would find traditional enterprise software too complex and certainly too expensive. This is a roadmap in which we have been actively pursuing for 18 months across a number of categories of enterprise software —from invoicing (Freshbooks) to remote support (TeamViewer) to help desk (Zendesk) to website creation (Wix).

> At Bessemer, Adam Fisher invested in Tel Aviv-based Wix in 2007 based on the platform and community they provided for creative self-expression, a novel idea during the Web 2.0 era. Bob Goodman and I invested in TeamViewer in 2009, a German provider of remote access software and desktop support software.

The continued growth of e-commerce and its reach into SMBs. Just as those smaller businesses have realized the power of the Internet as a channel for marketing (ala Yelp and Yodle), so too are they seeing it as a channel for selling their product. The widespread availability of product that can be drop shipped directly from manufacturers or via wholesale suppliers makes it even easier for the small guy to sell online.

Customers & Pricing

Shopify has grown its customers at an impressive clip.



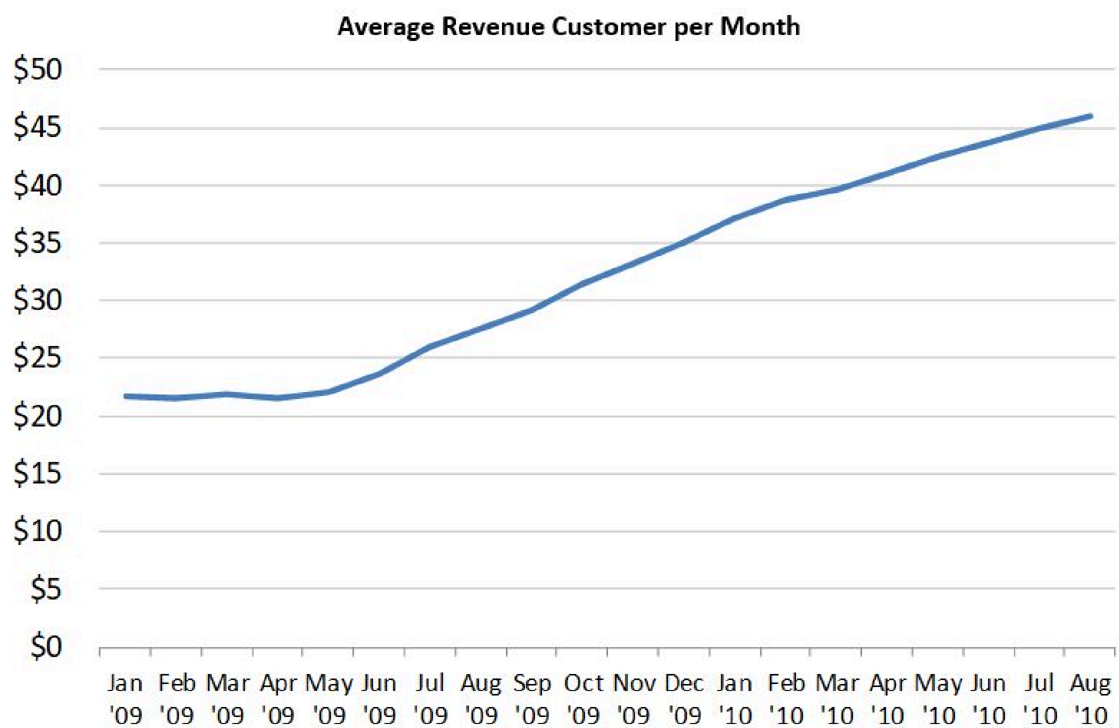
Typical customers are small online-only or brick-and-mortar retail businesses as well as "stay-at-home capitalists" who are looking to supplement the family income with a side business. On average, a Shopify customer is selling $13K of online merchandise a year. This average is very much skewed by customers who are selling just a handful of items a day. Shopify's largest customer is selling $10mm of merchandise annually.

> In 2019, the number of merchants on the Shopify platform achieving over $1 million in GMV grew by 44%. Shopify continues to add 10,000 paying customers a week, with over 1,000,000 total customers and growing.

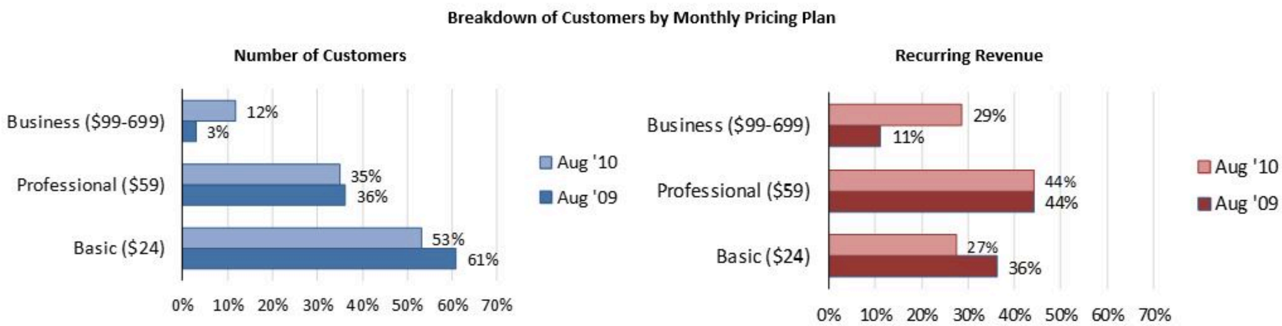
CUSTOMER EXAMPLES:

Customer	Products	URL
Melondipity	*Boutique baby products*	http://www.melondipity.com
Jojo	*Shoes*	http://www.jojoproject.com
DODOcase	*iPad cases*	http://www.dodocase.com
Ark°	*T-Shirts & underwear (U.K.)*	http://www.arkhq.com

Pricing plans are tiered, starting at $24 per month and goes as high as $700 per month with a transaction fee of 0.5–2% of sales. The distribution of customers is skewed towards to low-end. On average, customers are paying $45 per month. Over time, the average revenue per customer has increased.



The increase in ARPU has been driven by increasing transaction fee revenue as Shopify's customers grow their own businesses and the related increase in number of customers opting for higher-priced plans.



Product

Shopify is a SaaS application for setting up and running an online store. In many ways, its strength lies in its simplicity, which is ideally suited to small businesses. A non-techie can start taking orders from a professional-looking online store in a few hours after sign-up.

> Customize storefront's look & feel. Select a design template from their "Theme Store", which includes templates created by their community of 500 web designers. Those who want more flexibility can edit make direct edits to HTML or CSS. A customer can switch out a template and have their site dynamically updated.
>
> Organize and manage products. Add, list, edit and organize products using a streamlined interface. Drag-and-drop to order product images and descriptions.
>
> Perform basic inventory management.
>
> Accept credit card payments through payment gateways.
>
> Track and respond to orders. Track payment and shipping status on orders with detailed reports. Email customers from within Shopify.

The Shopify philosophy is to build only those features into that most customers need most of the time.

> They were one of the first cloud companies to successfully create a third party app ecosystem that enabled customers to get access to functionality without having to rely on Shopify to develop it. However in the early days they didn't have many customers so it was difficult to attract third party developers. They resorted to running contests for the best third party app, taking a page from our portfolio company Twilio which has also had success building an ecosystem of third party apps.

For capabilities that a high-volume retailer might need, Shopify has made available an open API that enables third party software to integrate into its platform. This means that Shopify can keep its product simple, while adding niche or sophisticated features to its platform without needing to build it themselves. From a customer's perspective, they can add a feature by accessing Shopify's "App Store". Customer take-up has been impressive, with roughly two-thirds (66%) of customers using at least one third-party app.

The App Store was launched a year ago and now has over 54 applications.

Apps range from those developed specifically for Shopify and those of vendors like PowerReviews that are integrated into a number of different platforms. Growth has been almost entirely organic. Until just two months ago Shopify had not talked to a single company in the app ecosystem. Some examples:

APP STORE EXAMPLES:

Functionality	Third-Party Provider	Cost
Recommendations	*DirectedEdge*	+$9 per mo.
Community Reviews	*PowerReviews*	+$29 per mo.
Accounting/Bookkeeping	*QuickBooks, Freshbooks, Xero*	+$10 per mo.
Facebook Store	*BeeShopy*	Free
Shipping Labels	*OrderCup*	+9 per mo.
Inventory Tracking	*Inventory Velocity*	+$20 per mo.
Fulfillment Services	*Fulfillment by Amazon*	Amazon per order
Email Marketing	*MailChimp*	Per volume
Live Chat	*Olark Chat*	+$15 per mo.

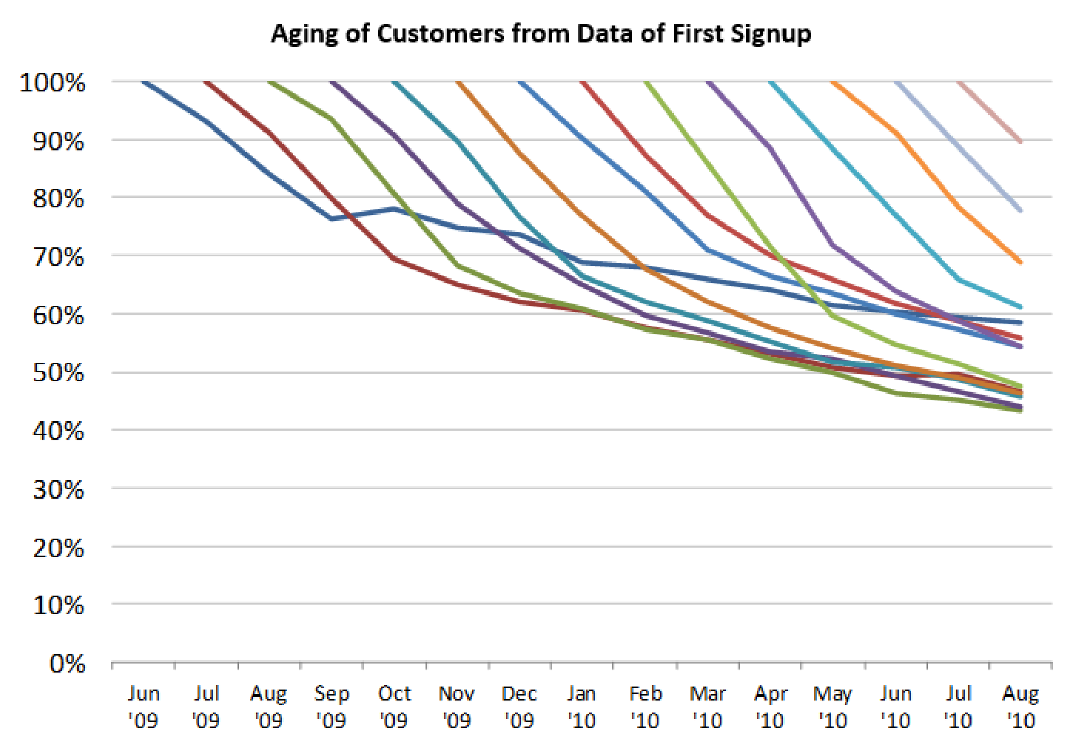
Competing vendors like Volusion, BigCommerce and Magento have also made available an API that enables third party software to integrate into its platform. These have seen limited uptake. Our diligence of customers has validated that the APIs made available by these vendors are extremely difficult to develop against.

Customer Acquisition & Retention

Roughly 65–70% of customers sign-up via word-of-mouth. Roughly 20% of customers sign-up via referrals from web design firms. Until Shopify had setup a data warehouse, they didn't know how crucial their web design firm channel could be for growth (as it has been for Wix and HubSpot). And just recently, the company hired a full-time person to cultivate this channel. Finally, roughly 10–15% of customers sign-up via paid channels, which is largely keyword marketing and the occasional contest program. It is spending $25–70K per month and, as they would admit, the team's marketing sophistication is rudimentary, at best. Despite this, they are able to acquire a customer for between $175–225 and can pay back that spend in 7–9 months on a churn-adjusted basis. We believe that Shopify has under-invested in marketing in a big way and that with a VP of Marketing and a few experienced people in place, the company can accelerate growth.

Like most businesses selling to SMBs, there is a sharp drop-off in the first few months following sign-up. For Shopify, this is no different. By month 3, Shopify retains roughly 75% of its customers. By month 12, 50–60% of customers remain. Once stabilized, monthly churn ranges from 3–5%. Overall, Shopify's retention curve looks quite similar to that of Wix.

> A 5% monthly logo churn likely scared off other investors. We got comfortable investing in SMB companies that have high logo churn so long as 1) the company doesn't have to pay a lot to acquire those customers, and 2) the customers that do stick around end up making up for the ones that churn. We look at cohort retention to figure out the latter. Shopify was strong in both cases.



Market Opportunity

Shopify targets small and mid-sized brick & mortar retailers as well as people looking to start an online-only store to sell physical goods. Estimating the size of this market is difficult. However, the size of similar, but much more legacy and US/Canada-only businesses provide a proxy: Homestead (~85K customers), Yahoo Stores (~55K) and eBay ProStores (~30K). At the lowest end, Shopify targets at-home capitalists—the same audience as Etsy, which has roughly 80,000 active sellers generating $300mm in annualized gross merchandise value.

We are also excited by the potential to expand more aggressively beyond online retail and into brick & mortar businesses which desire an integrated online presence. It is in this area that Shopify is dedicating a large portion of its resources. Based on a flood of requests from existing customers, Shopify is developing a simple retail point-of-sale and inventory management system for use with an iPad/iPhone/smartphone that ties into Shopify's online storefront platform. Shopify will enable its merchants to offer their brick and mortar customers a point-of-sale experience similar to that found in physical Apple Stores at a fraction of the cost of more traditional point-of-sale offerings.

Another capability on the company's product roadmap is support for recurring billing. Shopify is currently designed to meet the needs of customers seeking to sell physical goods online. However there is growing marketplace demand for shopping carts that enable the sale of digital goods and software on a recurring basis. Shopify plans to offer recurring billing capabilities at some point in the next year and the compounding nature of those customer accounts provides the potential for substantial economic upside to this investment.

Competition

The market for traditional ecommerce software is crowded, but the needs of SMBs are growing rapidly to include mobile commerce, web-based inventory management, and innovations around point of sale systems. We believe that Shopify's technology solution is better positioned than competitors to provide these solutions to the growing number of "Main Street" retailers who are coming online.

SMB Ecommerce Platforms & Shopping Cart Software (*eBay ProStores, WebStore by Amazon, BigCommerce & Volusion*)—Volusion is perhaps the most formidable competitor. In 2009, it generated $23mm in revenue. It is priced in the same range as Shopify and has a similar feature set, but is less drag-and-drop than Shopify (customization requires some programming).

Domain Name Registrars (*GoDaddy, Yahoo*)—The large registrars are marketing machines which have millions of customers that they can up-sell at the time of registration or at a later period. Most offer only basic shopping cart capabilities. However, it is certainly conceivable that they can expand with a more full-featured offering.

Mid-Tier Ecommerce Products (*Magento Commerce*)—Magento is the leading open source ecommerce product and is sold on a perpetual licenses basis. The product has a reputation for being powerful but complicated to implement and scale, typically requiring an engineering team for implementation, operation and performance optimization. Magento is growing nicely and plans to compete with Shopify by offering a SaaS version of its product.

While the large, full-feature e-commerce packages (*Escalate, IBM, ATG, Demandware*), offer a superset of Shopify's features, we do not see them as competition. As with players in other categories of enterprise software, we think it will be hard for these companies to compete on the low-end.

> A few months after we invested, Oracle acquired ATG for $500m. I remember emailing with Tobi about how great it would be to someday top that outcome because it seemed aspirational and far-reaching to say the least. At that time, none of the large acquirors and very few public market investors cared much about SMB-focused businesses. Few could have imagined an SMB-focused like Shopify ever going public. But the long-term trend of ecommerce growth ultimately dominated any concerns around selling to SMBs.

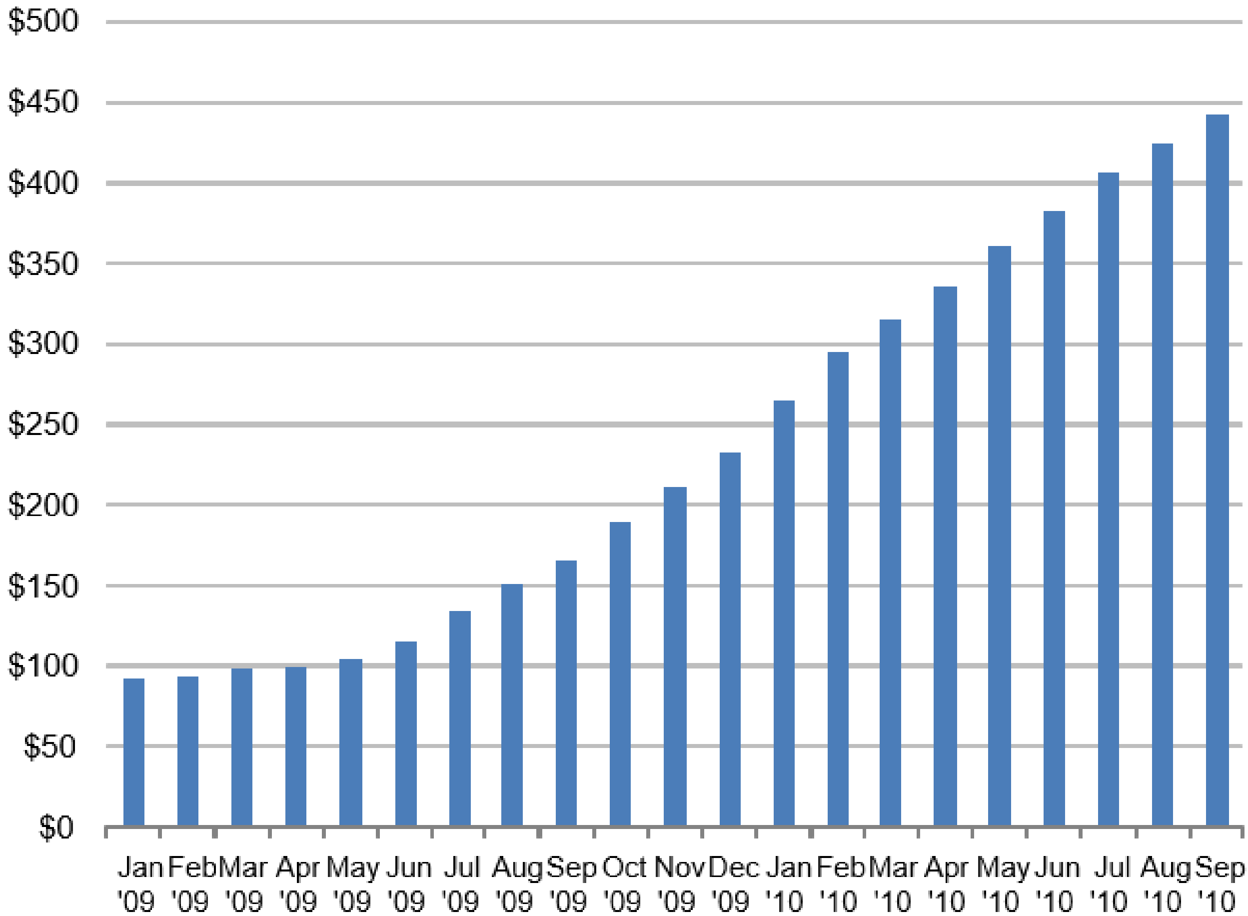
Team

Shopify was founded in 2007 by two young Ruby on Rails core developers. One co-founder is no-longer active. The other, Tobi Lütke, is their CEO. Tobi is a relatively young programmer who was part of the Ruby on Rails core development team. Tobi has largely bootstrapped the business and has done a good job at that. He has a clear vision for building the business and recognizes his own shortcomings. We don't feel like there is any immediate need to replace him as CEO, but will need to ensure that he has more senior talent around him. The business desperately needs a VP of Marketing and to more generally hire marketing talent. We will likely look beyond Ottawa to find marketing talent. Having met other members of the senior team in Ottawa, it is clear that their strength lies in product design and user experience.

> Is this first-time founder capable of recruiting top talent and growing a team that scales with the company? Carrying out their vision while running a business? Tobi has not only done a fantastic job as CEO, but he recruited and built an outstanding team who are still there today. Throughout our due diligence process, Harley Finklestein did all the heavy lifting to our requests and was incredibly responsive. He's still the Chief Operating Officer. And shortly after we invested, Tobi hired Craig Miller, who is now Chief Product Officer at Shopify but played the VPM role for many years.

Summary Financials

Shopify generates an overwhelming majority of its revenue from recurring monthly fees that it charges customers and a small percentage from a transaction fee of 0.5–2% on its customers' merchandise sales.



Unfortunately, the company has not forecasted 2011. Historically, there wasn't much need to do forecasting as a cash-in-the-bank based bootstrapped business. We don't think it unreasonable for Shopify to double revenue next year. At close, Shopify will have roughly $6.3mm in cash ($.3mm existing and $5mm additional).

Summary P&L

Canadian Dollars (1 Cad = 0.99 USD)	Total 2008	Q1 '09	Q2 '09	Q3 '09	Q4 '09	Total 2009	Q1 '10	Q2 '10	Q3E '10	Q4E '10	Total 2010E
Sales Revenue	$1,068,625	$509,827	$542,854	$623,186	$793,387	$2,469,255	$963,891	$1,136,218	$1,407,743	$1,759,679	$5,267,531
Cost of Revenue	$204,693	$91,020	$113,478	$141,100	$166,541	$512,138	$186,652	$212,272	$262,999	$328,749	$990,671
Gross Profit	$863,932	$418,806	$429,377	$482,087	$626,846	$1,957,116	$777,239	$923,946	$1,144,744	$1,430,930	$4,276,860
Gross Margin %	*81%*	*82%*	*79%*	*77%*	*79%*	*79%*	*81%*	*81%*	*81%*	*81%*	*81%*
Operating Expense:											
S&M	202,629	118,730	192,847	310,231	262,228	884,036	366,282	355,252	276,646	387,129	1,385,309
R&D	206,257	91,211	103,591	125,860	133,408	454,070	195,892	234,053	273,001	369,533	1,072,478
G&A	344,949	79,591	134,740	190,119	189,436	593,885	182,886	187,796	236,427	246,355	853,465
Total OpEx	$753,835	$289,532	$431,178	$626,210	$585,072	$1,931,992	$745,059	$777,101	$786,074	$1,003,017	$3,311,252
Operatng Income	$110,096	$129,275	($1,802)	($144,123)	$41,774	$25,124	$32,179	$146,845	$358,670	$427,913	$965,608
D&A	25,350	0	0	52,092	19,927	72,020	22,137	24,995	25,745	26,517	99,394
EBITDA	$135,446	$129,275	($1,802)	($92,031)	$61,702	$97,144	$54,316	$171,840	$384,415	$454,431	$1,065,002
EBITDA Margin %	*13%*	*25%*	*0%*	*-15%*	*8%*	*4%*	*6%*	*15%*	*27%*	*26%*	*20%*
Ending Cash Balance	$460,956	$536,577	$661,407	$545,214	$885,018	$885,018	$976,903	$1,108,955	$1,343,541	$6,695,387	$6,695,387

Deal

This is a deal for BVP to invest $5mm at $25mm pre-money, with a 13.5% option pool built into the pre-money valuation, 4% of which will be re-granted to existing employees. This Series A security is a 1x straight preferred. BVP will receive two of five board seats and will have the right to force a sale after 6 years.

In addition, we anticipate an opportunity to purchase $2mm worth of common shares at a 25% discount from a co-founder who left the company several years ago. The additional $2mm would increase our exposure to $7mm, but also increase our ownership to 31% at an attractive price. We would likely share a portion of the $2m investment with Felicis.

Outcomes Analysis

There weren't any big internet exits in Canada in 2010 and some of Shopify's existing shareholders and advisors thought the biggest possible outcome for the company was ~$50m. In our term sheet negotiations, I initially asked for some structure in the deal (remember, I was nervous as this was my first solo deal as a partner) so that if Tobi decided to sell for $50m we'd make money. Tobi, to his credit, resisted and instead held out for a "clean" deal. We agreed to keep it clean, but before we signed I asked for his word and a handshake agreement that he wouldn't sell Shopify if he got an offer for $50 or $75m. Lucky for us, we were completely wrong in our outcomes analysis; the upside case was off by more than two orders of magnitude!

(Dollars in Millions)	Exit Value	Timing (Years)	Prob.	Est. Future Dilution	Gross Proceeds	Mult.	IRR %
Company over-invests, burns through cash and can't return to profitability.	$0	2	12%	None	$0.0	0.0x	
Marketing is not effective. No organic growth.	$8	2	8%	None	$3.0	0.6x	-20%
Marketing is not effective. Organic growth slows to 20% CAGR. Exits at $10mm annual run rate.	$25	3	15%	None	$5.0	1.0x	0%
Growth slows, but still grows at 30% CAGR. No ARPU increase. Exits at $15 - 20mm annual run rate with 30% EBITDA margins.	$50	3	28%	None	$10.1	2.0x	34%
Growth rate of 45% CAGR. Monthly ARPU increases from $45 to $65. Exits at $30mm annual run rate and 30%+ EBITDA margins.	$100	4	28%	10%	$18.1	3.6x	42%
Marketing maintains organic growth rate of 50-60% CAGR. Exits at $65mm annual run rate. Moderate success attracting "Main Street" local merchant customers.	$250	5	7%	20%	$40.2	8.0x	49%
Becomes a leading commerce platform for both medium, and larger businesses. Market expands as offline, "Main Street" merchants adopt Shopfy for ecommerce, inventory management, and POS. Exits at $100mm+ annual run rate.	$400	6	3%	25%	$60.3	12.1x	49%
					Gross Proceeds	**Mult.**	**IRR %**
				Weighted Average (to BVP)	**$13.4**	**2.67x**	**30%**

Note: Assumes some level of dilution to this investment through subsequent financings.

Conclusion

We are enthusiastic about the potential for Shopify to disrupt existing solutions with a consumer-like product that has resonated with customers and enabled the company to demonstrate strong organic growth. Further, uptake of the App Store—by both third-party developers and customers—provides differentiation and a path to break away from the pack. We recommend this investment.

Appendix

Consumerization of Enterprise Software Roadmap

There are emerging SMB versions for almost all categories of enterprise software—from invoicing to accounting to CRM to IT management. The Internet as a medium for reaching and transacting with customers is also creating whole new software categories—from collaboration to online advertising. Historically installed software has been too complex for SMBs to setup and use. And more often than not, SMBs couldn't afford it anyway. In turn, vendors have struggled with making direct or even channel sales profitable. This is now possible; thanks to Web 2.0 and the SaaS delivery model and the ability to use online marketing to profitably acquire and provision SMB customers.

Incumbent enterprise software vendors have proven themselves unable to compete as they are fundamentally not oriented to sell to or serve SMBs. They would love to move down market. But doing so would disrupt their business models and cannibalize cash cows. Fundamentally, they know how to sell direct and by channel, but don't know how to market online. Just as important, the incumbents aren't strong at building consumer software or creating great Web experiences.

Because barriers-to-entry are low and customer churn can be high, we believe that breakout companies will have the following characteristics:

- Product categories with well-known and well-defined pain points and a natural stickiness
- Companies achieving strong growth with limited marketing spend
- Companies with good customer acquisition economics, even if still early
- Companies beginning to build a brand and scale relative to competitors
- Teams with a strong product design sense and consumer Internet DNA

We believe that Shopify meet these characteristics. And over time, like leaders in other categories, we feel that Shopify and its App Store strategy gives it a path to ultimately disrupt enterprise vendors with a "come from below" offering and move up market.

Medi Assist

To: BVP Group
From: Vishal Gupta and Chitresh Modi
Date: 22 November, 2010
Re: Medi Assist Healthcare Services

Overview

1 USD = 40 INR

We recommend a $16 million investment to finance the management buyout of Medi Assist, a Bangalore based third party administrator (TPA) of health insurance related claims. Medi Assist is the largest player in the growing health insurance administration space in India.

India is one of the most privatized healthcare markets. Total healthcare spending is estimated at $35 billion annually (versus $1 trillion in the US). The healthcare services sector is dominated by private players who contribute 82% of total services provided and the rest is between federal and the state governments. This is an extremely high proportion by international standards. The healthcare spend is predominantly met through out of pocket by the consumer (62%), government and employer spend is 35% and only 3% is met through some form of commercial health insurance cover.

The total private health insurance penetration in India is still very low and covers only 20 million lives (versus a 1.1 billion population). Since deregulation of the insurance sector in 2002, the health insurance premium has been growing at a CAGR of 35% and aggregated to $1.8 billion in premiums for FY10; the market expected to touch $5 - 6 billion by the year 2015. TPAs provide a variety of services such as pre-authorization, claim settlements, customer interfacing, reimbursements, hospital networks and specialized value-added services for corporate customers.

Medi Assist is India's largest TPA with a network of 4,750 hospitals across 20 states and provides services to all health insurers in India. It is a profitable and rapidly growing player with $9.7 million in revenues with 33% EBITDA margins. It has a ~10% share of India's health insurance premium under management in FY10. Over the last three years, revenues have grown at 72% CAGR. Medi Assist services 5 million lives with $176 million in insurance premiums in FY10 and is projected to grow by 42% in FY11. In the first six months of FY11, it has generated $6 million in revenue and $2.5 million in EBITDA. For the full year ending March 2011, Medi Assist should deliver $13.4 million of revenue, $4.7 million in EBITDA. However, due to an accounting deferment, the FY11 Revenue and EBITDA will be $11.8 million and $3.1 million respectively with net income of $1.9 million.

The health insurance industry in India

The insurance industry was opened to the private sector in 2001 and since then the health insurance premium has grown to $1.8 billion from $125 million, representing a CAGR of 35%. However, today, only 10-11% of the population is covered through health financing schemes with 3% covered through commercial health insurance offered by general (non-life) or health insurance companies and the balance covered through state and central government funded plans & corporate plans. The health insurance industry is projected to grow to $5.5 billion by 2015.

Health insurance products can be divided into two segments – corporate/group cover and retail/individuals. Both these segments are growing at 25%+ number of lives covered. Insurers are pushing the retail channel and with growing awareness and affluence retail customers are buying health insurance. Individuals are incentivized through income tax breaks for the insurance premium they pay for their parents, self and other dependents. For companies it's a function of providing incentives to the employees as well as growth in number of employees that is increasing aggregate health insurance cost. The Insurance Regulatory and Development Authority (IRDA) eliminated tariffs on general insurance in 2007; as a result, all the tariff products which were extremely profitable are now being sold at significant discounts. Health insurance rates were not guided by any tariff, hence was cross subsidizing the profitable products. Post de-tariffication, the insurers are focusing on product profitability and are raising the premium rates for health insurance to offset the cross subsidy.

There are currently 20 general (non-life) insurers who offer health insurance in India. About 60% of the health premium is underwritten by the four public sector insurers and another 33% is underwritten by the top five private sector insurers. The health insurance portfolio is causing huge losses for the general insurance industry, especially as it contributes about 23% of the total premium underwritten. The industry average claims to the premium underwritten ratio is about 106% and the public sector insurers are working in the 115-125% range. Last year, three largest private insurers – ICICI Lombard, Bajaj Allianz and Reliance have lost market share in a conscious effort to attain profitability. The health insurers need an efficient claims management system and to reduce the claims cost. The following are some of the items that require immediate attention for running the operations profitable and smoothly.

Fraud Control – Insurers claim that with effective fraud control the claims outgo could reduce by as much as 15-20% from current levels.

Standard rate card for treatment – It has become a standard practice of many hospitals to charge the insured based on the amount of health insurance cover they have. Pre-negotiated standard rate cards for treatments can prevent hospitals from overcharging.

Seamless operations – Claims is a strenuous process today as each segment of the claim settlement process work independently. A seamless operations network will not only remove the hassles of reconciliation but will help deliver services within the desired turnaround time. The Insurers will be able to manage the float for claims payment and the Hospitals will receive the payment more efficiently.

The health claims administration industry

There are currently 27 health insurance Third Party Administrators (TPAs) licensed by the regulator. Nine players command more than 80% of market share. The TPAs are responsible for administration of the policy on behalf of the insurer and currently administer the entire private insurance market of $1.8 billion in premiums. Recently the self, state and federal funded health schemes have also started moving towards third party administrators. These would add another $3-5 billion of potential insurance premium to be administered with more than 60 million new lives covered each year.

Medi Assist recently won a contract under such self-funded schemes, the Yashisvini scheme which covers 3.2 million farmers in Karnataka. There are two other contracts in the bidding stage where the policy covers 200 thousand families of police staff in the state of Maharashtra and another where 1.8 million families below poverty line are covered in a district in Karnataka. These three schemes can earn Medi Assist a guaranteed annual fee of $1 million for the next three years.

Currently the administrator provides claims administration and settlement, cashless hospitalization, reimbursement, identification cards, hospital networks, pre- authorization, pre policy medical checks and other services. The insurers pay the administrator a fee anywhere between 4.5% and 5.5% of the premium serviced. The fee is a negotiated rate between the TPA and the insurer.

As the premium per life is moving up, the TPAs are being asked to charge fee on per life serviced basis. It is expected that individual/retail policies will be given to the TPAs on a per life fee basis while the corporate/group policies on % of premium underwritten. The average fee per life today is $1.76 for the Medi Assist portfolio. Most TPAs will not be able to sustain at this revenue per life and hence we see this as the floor price in the industry. The Premium per life is expected to grow at 8-10% per annum and the TPA fee per life at 5-8% per annum.

Medi Assist history and business overview

Medi Assist was established in 2002 by N S Raghavan (ex-Infosys founder) and was subsequently acquired by Reliance in May 2006. Since then, it has gone on to become the largest player and most profitable player from the fifth largest. It currently manages $176 million of premiums and has 10% of India's Health Insurance premium under its management.

The insurance companies give out business to health administrators regionally based on their provider network capability in that region, past track record in claims administration (claims ratio), customer satisfaction with the TPA and the relationship. The fee for the TPA service is negotiated regionally and ranges from 4.5% to 5.5% of the premium serviced. The retail segment is awarded by regions; however, all corporate entities have the flexibility to pick their administrator and their decision is primarily driven by service levels and relationship. The insurance company at the start of every month based on the expected claims ratio provides a fortnightly float to the administrator for settling claims and then keeps topping it up every week or fortnight.

Medi Assist has traditionally been extremely strong in the corporate sector for administering of their health insurance schemes. It has serviced and managed the top IT service companies in India such as Infosys, TCS, Wipro, HCL and Mphasis and has all the major multinational IT companies such as HP, Intel and IBM as customers. It also services the large conglomerates such as Reliance, Tata, LIC and a whole host of other customers. Most of them have been with Medi Assist for the last three years or more.

Medi Assist today has one of the largest provider networks in India with more than 4,700 empaneled hospitals across 20 states. It also ranks the highest among customer satisfaction because of speedy settlement of claims and fastest turnaround times on pre-authorization.

Reliance Divesture

Reliance is divesting this business as it is no longer of strategic priority. Even in a best-case scenario, the business is likely to generate less than $15 million in revenues inside a multibillion-dollar conglomerate which is far more focused on power and infrastructure projects.

The health insurance eco-system

Along with Medi Assist MBO the consideration for the transaction includes two companies which run disease management and PBM.

Disease and wellness management

This Company will service insured with chronic diseases, ailments contributing significantly to claims for the insurer. This is at an evolving industry with very few players, the insurers are currently not offering cover for chronic diseases except in corporate plans. This company will offer Value Added Services (VAS) to the corporate clients and insurers provided cover for chronic diseases. Today the company has revenue of $1 million and is EBITDA positive.

Pharmacy benefits management (PBM)

Medybiz Pharma is a wholly owned subsidiary of Medi Assist. Medybiz is in the business of home delivery prescription refill, Mail order refill, Disease management, Formulary management. It is currently serving 5,000 customers in 11 cities.

Acquisitions under negotiation

Medi Assist is currently in conversations for two small tuck in acquisitions with a total cost of $2 million which will allow the company to offer seamless payer provider connectivity and have an analytics engine for claims analysis.

Claims Exchange

Healthsprint has built a platform which enables the TPAs to efficiently communicate with the Hospitals. The entire data that resides on the platform enables all users to do analytics on predictive medication and payment schedules. The TPA can offer superior services to both the claimant and the hospitals by streamlining right from the policy coverage verification to the payment process.

Claims Analytics

The biggest grievance of the health insurer is the rising claims cost, the most common request of the Insurer to the TPA is to analyze claims effectively and control fraud and instances of overcharging of treatment cost. Medi Assist has both financial and medical data for the claimants, which could be used for marketing analytics, predictive modeling and forecasting treatment outcomes and cost.

The founder – Dr. Vikram Chhatwal

Dr. Chhatwal comes with a rich 10 years of experience in the healthcare services industry. He is currently the Chief Executive Officer for Reliance Health and in on the board of Medi Assist. Prior to this he held top management positions at the Apollo Hospitals group during the period between 2000 and 2005. Dr. Chhatwal is a trained cancer surgeon and a PhD in Palliative care. He did his doctorate in Medicine form NUS Singapore and his MBA from ENPC – Paris. We have known Vikram for last seven years and he comes across as a scrappy and high integrity entrepreneur with deep domain knowledge. He is very well connected and respected within the healthcare ecosystem in India.

The deal

BVP will work with the management to buyout of Medi Assist and Net Logistics for a consideration of $16 million (INR 72 crore). The company has $4 million of cash as of July 2010, the cash is expected to move up to $5.7 million by March 2011. The company has no debt, and the cash will remain within the company post the transaction. Hence, the effective enterprise value of the company by the time we acquire will be closer to $14.3 million. The company is being valued at 4.6 times FY11 EV/EBITDA and 8 times FY11 PE.

P&L Statement (in US$ million) *

	FY 10A	FY11P
Total PUM	**176**	**250**
Average TPA Fee %	4.60%	4.60%
TPA Fee	**8.1**	**11.5**
TPA Fee Recognized	**8.8**	**9.8**
Other Revenue Streams	**0.9**	**1.9**
Total Revenue	**9.7**	**11.8**
Personnel Cost	3.0	4.3
Admin Expenses	3.5	4.4
EBITDA	**3.2**	**3.1**
EBITDA Margin	33%	26%
Depreciation	0.4	0.3
Interest	0.1	0.1
PBT	**2.7**	**2.7**
Taxes	0.0	0.9
Net Income	**2.7**	**1.8**
Net Income Margin	28%	15%

*As per the accounting rules a TPA can recognize revenues only for the period the policy has been serviced. Hence at the end of the financial year, the revenues for the unexpired period are deferred to next year's P&L statement. In FY 10, the revenue earned from FY09 deferment was higher than the revenue deferred to FY11, hence the Revenue and EBITDA reported was higher than the Cash Revenue and Cash EBITDA. On Cash Basis, the EBITDA has grown from $2.5 million in FY10 to $4.7 million in FY11.

<u>Cash Flow Statement (in US$ million)</u>

PAT	2.7	1.8
Depreciation	0.4	0.3
Change in Working Capital	-1.4	-0.4
Cash Flow from Operations	**1.7**	**1.7**
Cash Flow from Financing	**-**	**-**
Cash Flow from Investments	**-2.5**	**2.1**
Opening Cash	2.7	1.8
Total Cash	**-0.8**	**3.8**
Closing Cash	1.8	5.7

Balance Sheet Statement (in US$ million)

	FY10	FY11
Share Capital	0.9	0.9
Reserves & Surplus	5.4	7.2
Total Sources of Fund	**6.3**	**8.1**
Fixed Asset		
Gross Block	2.0	2.4
Less: Depreciation	1.4	1.8
Net Block	0.6	0.6
Investments	2.5	-
Deferred Tax Asset	0.1	0.1
Sundry Debtors	2.3	5.0
Unbilled Revenue	0.8	-
Cash and Bank Balances	1.8	5.7
Loans and Advances	2.2	1.4
Other Current Assets	0.1	-
Current Assets	7.1	12.1
Current Liabilities	3.7	4.7
Provisions	0.2	-
Net Current Asset	3.2	7.4
Total Uses of Fund	**6.3**	**8.1**

Scenario analysis

Probability	Scenario	PAT $ mn	PE (x)	Valuation $ Mn	Our Investment $ mn	Multiple (x)	IRR
5%	Everything that can go wrong goes wrong. MA does not get any PSU business; the new ventures fail. The large private sector insurers move all business in house, and we have to pay for the tax withholding liability. The company winds up with no assets.	-	-	-	16.0	-	-100.0%
30%	MA loses much of its business to the Common TPA, gets only 10% of the PSU Business. They do only 6% of Private insurance business, as most of them run in-house TPAs. The value-added business does not take off as well as planned.	3.7	8.0	29.8	16.0	1.5	10.4%
35%	MA retains most of the corporate customers as before, even though In-house administration and Common TPA are successfully run. MA retains its 10% market share of Insurance Premium.	9.7	10.0	97.2	16.0	4.9	48.5%
25%	MA retains most of the corporate customers as before; MA is the preferred TPA after the common TPA and does a large portion of the corporate business with private Insurers. MA garners a 15% Insurance Premium. The VAS and PBM Business get traction and run at an EBITDA of $5 million.	16.1	12.0	193.6	16.0	9.7	76.4%
5%	MA retains most of the corporate customers as before. The Common TPA does not take off well. MA is the preferred TPA after the common TPA and does a large portion of the corporate business with private Insurers. MA garners a 18% Insurance Premium. The VAS and PBM Business run at an EBITDA of $10 million.	19.6	15.0	294.0	16.0	14.7	95.8%
100%	Weighted Average	9.5		106.0	16.0	5.3	51.7%

Risks

1) Common TPA: The four public sector insurers are planning to set up a Joint Venture with a healthcare BPO/Indian TPA to migrate a bulk (~50%) of the claims to this JV. This will allow them to negotiate better rates with the provider network. Medi Assist is the only Indian TPA which has been short listed based on the technical criteria and other Indian healthcare BPO's. The timing and probability of this is uncertain given resistance from local TPA's and regulatory approval.

2) In-House Administration: Large private insurers such as ICICI Lombard, Star Health and Bajaj Allianz, which have 80% of the private sector health insurance premium, are servicing most of the policies in-house. In-house administration has a high cost structure especially if the premium under management is low. The insurers are moving the administration in-house for primarily two reasons. 1) Effective claims control through fraud management and standard price list with the hospitals, and 2) For quality service to its customers. Based on our interactions with Insurers, if the TPA can do manage these efficiently for them, they would rather get rid of the hassle of managing the in-house team and the process. Medi Assist has been able to do improvements in this direction and has been able to use claims analytics as an effective tool for claims control.

3) Financing growth: Given the relatively small BVP India fund size, our ability to finance tuck in acquisitions will be quite limited. We may have to concede majority control of the economic interests if there is an opportunity for material acquisitions.

Conclusion

We believe that this is a fast-growing industry with limited risk and have a shot at consolidating market share from smaller players. We are backing the leader in this space and Dr Vikram Chhatwal who we think has the right relationships and capability to build a team in this space. We have an opportunity to invest ~$16 million in Medi Assist and the allied companies. We enthusiastically recommend this investment.

Fiverr

To: BVP Group
From: Adam Fisher, Jeremy Levine, Ophir Reshef
Date: January 10, 2011
Re: Fiverr Investment Recommendation

Overview

We recommend BVP invest $3.5m in Fiverr, an Israel-based company that has created a new global marketplace for buying and selling five-dollar "micro-services." BVP will invest $2.9m in a $4m round alongside the existing angel investors at a pre-money valuation of $14m. Additionally, BVP will purchase $600k of shares directly from the two founders (such shares will have the same rights as those acquired in the primary purchase). Following both transactions, the resulting ownership for BVP will be 19.4%. The company does not yet have an ESOP, so we expect to end up at ~17.5% ownership after the creation of a 10 percent option pool. The shares in both transactions are ostensibly "common" shares but bear most of the preferred economic rights we typically seek, including a straight preferred liquidation preference along with first refusal, co-sale and pre-emptive rights.

Last Monday, the CEO and co-founder of Fiverr, Micha Kaufman, presented to the partnership from Herzliya. The group was generally enthusiastic about the potential to build a new marketplace for services and impressed with the traction the business has generated thus far. However, many in the group expressed reservations based on the impracticality and eccentricity of many of the micro-services currently offered in the marketplace. Some also expressed concern about the danger of being consigned to a "micro-revenue" model should the company fail to grow beyond $5 transactions. While we acknowledge and share these concerns, we believe the tremendous upside from circumventing these early stage risks justifies an investment.

In summary, we are recommending an investment because Fiverr exhibits most of the attributes we seek in early stage consumer Internet deals including strong momentum, organic growth, capital efficiency and impressive customer satisfaction. We are also attracted to the low burn rate, which will allow the company to experiment with a lot of new ideas without additional capital from BVP.

The Fiverr Service

Fiverr is a marketplace for a category that the company defines as micro-services. These services (referred to as "gigs") are smaller than the projects sourced through marketplaces such as eLance and ODesk, but require more skill and creativity than the tasks performed at Mechanical Turk/CrowdFlower. It is also akin to the myriad service offerings found on Craig's List (note Jeremy's "picking apart Craig's List" thesis), but unique in several respects which we will detail below. Since its launch in late February 2010 Fiverr has grown rapidly to 60K transactions / month (all for $5) in December without any marketing spend and an 8-person team. Fiverr appears to be in a unique position to go after a large untapped opportunity and has many of the favorable characteristics that marketplaces exhibit, including quasi recurring revenue, a strong community of users who promote the site, a scalable model and a natural barrier to entry that grows over time.

The idea for Fiverr started when one of the founders tried to set up a customized Wordpress blog, and had some minor technical issues he couldn't solve. It was obvious that there were many people who knew the solution to his problem, but there was no way he could find them easily and get them to help him for a reasonable fee. The founders realized that there is considerable demand for a wide variety of services, which require some knowledge, experience or skill to provide them, yet which still don't require a true professional or business engagement. Conversely, with a wide enough definition of "services" they realized that everyone knows something or has the talent to do something that is of benefit to someone else. Hence, the founders decided on the first of two key principles of Fiverr marketplace, namely, that any legitimate service can be offered by anyone regardless of their qualifications or background. The idea was to appeal to the supply side of the market place by asking with the question of "what would you do for $5." The aim was to populate the site with gigs, but more importantly to allow and encourage each individual to decide for themselves what they are able to offer, regardless of how silly, mundane, creative or esoteric it may initially seem.

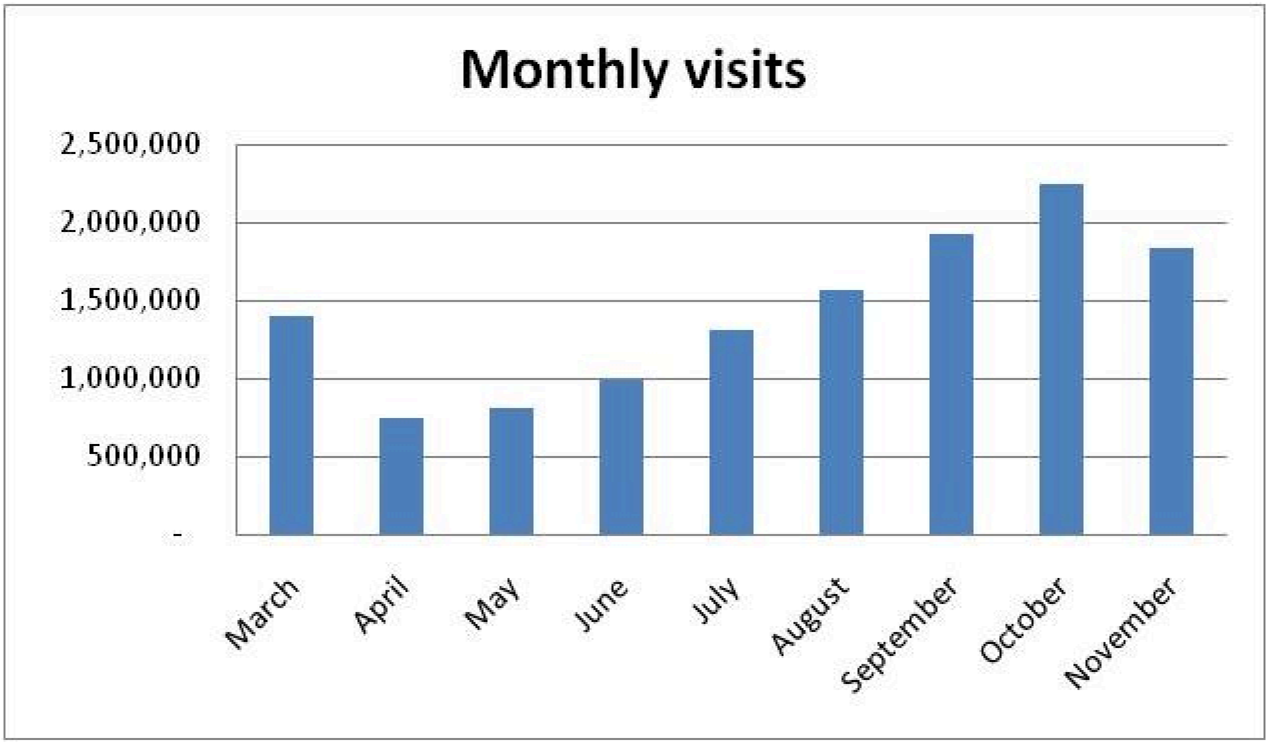
The second key principle of the marketplace is that every service is priced at $5. While this decision may seem odd and limiting, it has proven very clever. Removing pricing from the equation forces sellers to differentiate based on the quality of the service they want to provide and not based on price. Such rigidity also forces sellers to be creative and efficient if they are to make any profit at $5. More importantly, the fixed price component has been a major reason that buyers have been quick to purchase gigs and to do so repeatedly (which is essential for a service that should only take minutes to perform). A "one-price" offering eliminates the negotiation and removes any hesitation on the part of the buyer once there is interest in the gig. Furthermore, the low price point is a "no-brainer" for most buyers, which explains the relatively high conversion and satisfaction metrics. Finally, it is worth noting that $5 is not zero. Even a minor payment such as this facilitates a degree of seriousness from both sides to raise the transaction success rate.

The downside, of course, is that the market is limited to services that can be priced at $5, and Fivver's revenue is always a fraction of that. Surprisingly, this hasn't been as much of a deterrent for quality sellers as one would expect, as many sellers offer services that are clearly worth more than $5 (e.g., produce video or audio), presumably aiming to promote themselves and get fully-priced follow-on jobs outside of the Fiverr marketplace. Interestingly, there are many repeat buyers, including bulk buyers who distribute the same task to multiple sellers to take advantage of the low price. The average buyer made 5 purchases so far, with over 1% of buyers making 50 purchases or more. Also intriguing is the fact that 7% of sellers are also buyers, often using their income from selling to make purchases. From the sellers side, while they don't make a living off of Fiverr, 40% of those who post gigs to the system are able to sell, with an average of 14 gigs. A few sellers were even able to make thousands of Dollars, and the most successful one sold 3,300 gigs.

The variety of services offered and purchased in the system is impressive, and illustrates the size of the micro-services market potential. The most common popular categories are online marketing, graphics / creative ("I'll produce a logo / product video"), content ("I will write a search engine optimized 500 words assay"), tutoring of various kinds ("I will show you how to put new strings on a guitar"), and fun ("I'll make a funny caricature from your photo"). The company has a small moderation team that approves only the legitimate gigs (about 40% of gigs suggested).

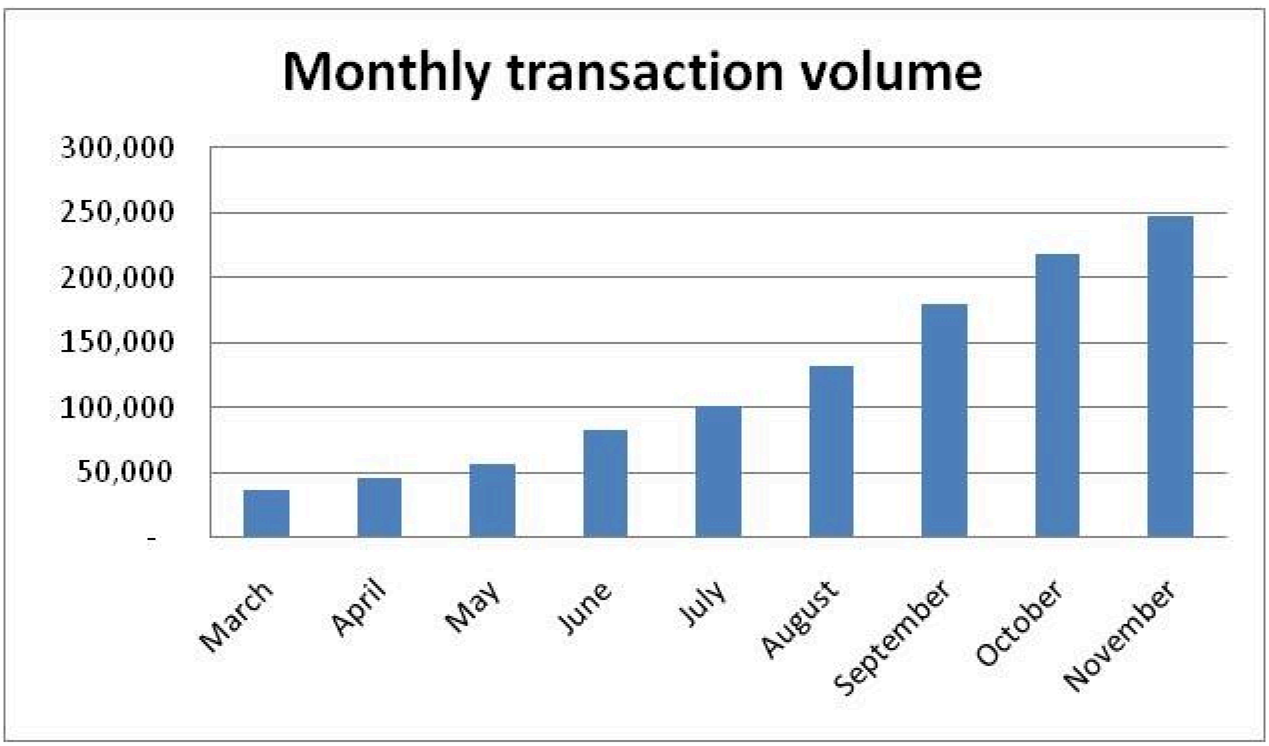
Traction

Shortly after launch, the company was featured on the front page of Yahoo, leading to a huge spike in traffic. Since then traffic has stabilized, and has grown consistently as shown in the chart below:



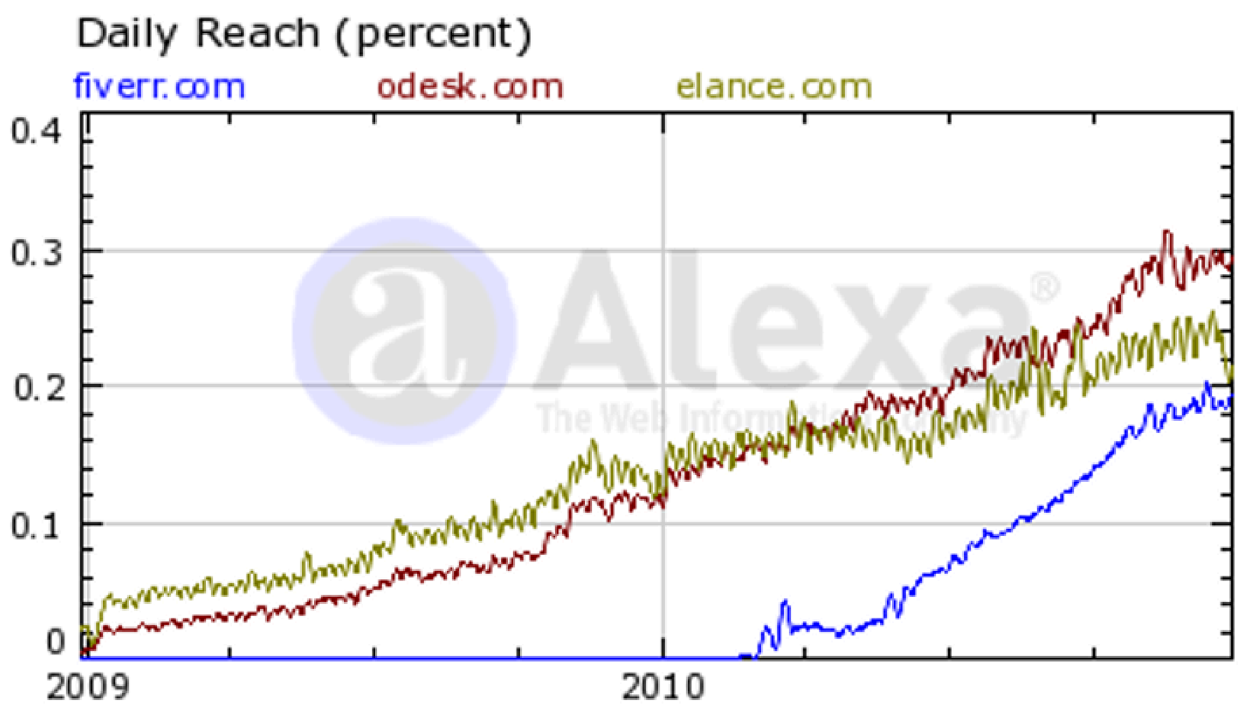
November and December traffic was said to be weaker than October due to seasonality, which seems a reasonable explanation.

Transaction volume has been growing faster than traffic, mostly due to repeat purchases.



Fiverr charges 20% of the transaction value, so net revenue is directly proportionate to the transactions. At $250K gross revenue / month, Fiverr gets $50K. All payments must be done through PayPal, which costs Fiverr 15% of its net revenue. With only 8 employees, Fiverr is a lean operation and unlikely to burn a lot of cash unless the company discovers a profitable way to acquire traffic.

As typically marketplaces take a long time to build, we think the growth rate is quite exceptional so far, especially since 100% of the traffic is organic. A small part (10-15%) is originated with search engines, but most of the growth is driven by strong word of mouth, social media, media coverage, and an ecosystem that has developed around the service. This eco-system includes how-to-sell-on-fiverr guides and videos, fiverr clones (none of which with real traction so far), and even software platforms to create fiverr clones.



We think that Fiverr's retention and satisfaction metrics are also encouraging, especially given the challenge of managing a wide variety of gigs with a short period of seller history to rely on. Out of the gigs ordered in November, 82% were successfully completed, 15% were replaced with another (successful) gig, only 2% were abandoned (not fulfilled or rejected by the buyer without replacing it), and 0.16% were refunded. The buyer cohorts are rather consistent, with about 50% repeat purchase on the month following the first month of purchase, 40% on the 3rd month, and 30% on the 5th. Both satisfaction and retention data are improving over time.

Where Do They Go From Here?

A key component in the company's plans going forward is to leverage the reputation and trust created in the system with the $5 gigs to support higher priced gigs within the system. Micha envisions multiple tiers of services, where each seller has to perform enough gigs in the lower priced tiers to earn the right to sell the higher priced gigs, which may be a way to establish seller reputation in the system with less friction than other marketplaces. This vision is not fully baked yet, but seems essential in order to realize the marketplace's potential. Another important dimension for the company is what they call "geo" services. On the one hand, their geo plans include the localization (language and currency) of the site for traffic from countries other than the US. This is meant to capture the universal interest in Fiverr, but also to stem off the Fiverr clones, which are multiplying by the day. They also plan to provide buyers with a local filtering option, which will encourage more off-line service offerings. Lastly, we think it will be very important to improve the buyer experience by improving discovery of relevant gigs and by expanding the buyer initiated section of the website.

Team

Micha Kaufman (co-founder, CEO): Micha is a serial entrepreneur, though none of his previous companies was a breakthrough success. His last venture, Spotback (content recommendation platform for websites), started when Micha was an EIR at Benchmark, but wound down when unable to raise financing. Prior to that Micha founded Keynesis, a security software company for portable storage devices, that became profitable though not at large scale. Micha is a lawyer with LLB from Haifa University.

Shai Wininger (co-founder, CTO): Shai is also a serial entrepreneur, who started off by founding a web development company in the early 90s. Shai founded 3 more companies: a 3D browser, mobile gaming infrastructure that replaces Flash on feature phones, and a workflow software for the aerospace industry. Two of these were VC backed, but none became a big success. Shai is a designer who graduated from the Neri Bloomfield Academy of Design and Education.

The company has currently 8 employees, who are largely junior hires. Micha acknowledges the need to accelerate hiring and build the management team of the company, but has been careful with hiring so far.

Deal

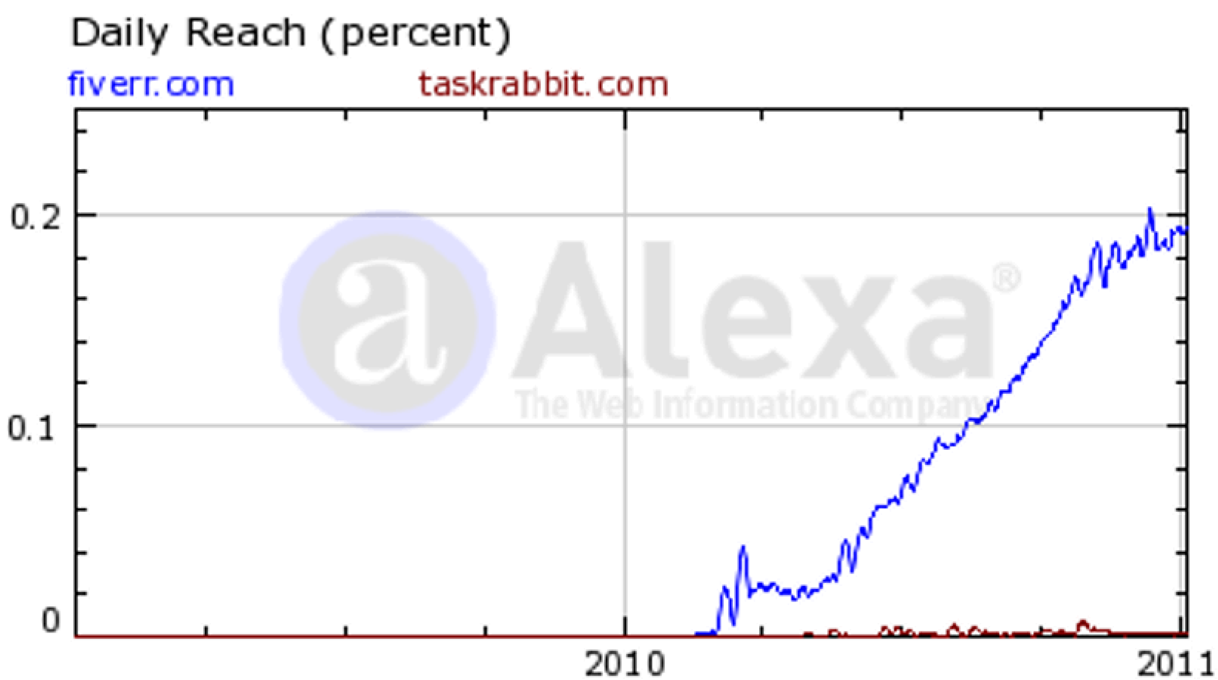
We have been tracking the company closely since we made the first contact in May. The company had raised $1MM from angels in March, and wasn't open to discuss financing (including a rejection of our seed investment top-off offer). We were intending to make a preemptive offer given the company's continued progress only to find out that the company had received exactly such an offer from another US-based fund at a $14m pre-money valuation. At this point, Micha and his angel group prefer to work with us, but the board has been only marginally flexible on the terms.

We believe we have reached an agreement to lead a $4MM round, with BVP investing $2.9MM and the angels investing the remainder. Additionally, BVP would purchase 4% of the company pre-investment directly from the founders to help BVP reach its target shareholding. Post the transaction, BVP will have invested a total of $3.5M for 19.4% (prior to any ESOP). The shares we would buy are technically "common", but carry most of the typical preferred economic rights, such as liquidation preference (straight preferred), right of first refusal, co-sale and pre-emptive. And though BVP will not have any of the approval rights typically secured in our deals, neither will any single party control the board or the shareholder base. Post investment, Adam will join the board, together with the two founders, an angel representative and a yet-to-be appointed independent, industry expert.

Risks

The site feels gimmicky, and may be just a fad: We characterize this as the biggest risk and acknowledge that a consumer-driven marketplace like Fiverr can devolve to become utterly absurd and inconsequential. This risk stems from a concern that some of the services offered on Fiverr do not provide genuine value to the buyers and are unlikely to be sustainable over the long-term (e.g. some of the social marketing offerings). A related concern is that by fixing the gig price to $5, Fiverr is able to pique buyer and seller curiosity, but that price may be insufficient to allow any seller to build a significant, legitimate business. While these concerns are real (though unsubstantiated), we find comfort in the available data, which suggests that buyers are largely happy with the service so far: completion rates are high, refund rates are very low, and the repeat purchase rate is significant, with the average user buying five times. We believe sellers will use Fiverr to generate supplemental income, to gain exposure and to generate leads, rather than to make a living – at least in the short term.

Nonetheless, it is likely that in order to succeed the marketplace will have to evolve from a novelty to a platform for mainstream offerings. The company and its founders are well aware of this challenge and have plans to realize a vision with more gravitas. It also weighs heavily on us that several highly successful Internet platforms such as eBay and YouTube stemmed from primitive beginnings based on pez dispensers and cheesy home videos. In addition, other service companies realized significant success without ever relinquishing their gimmicky nature; notable examples include Zynga and mobile ring-tone companies. With its early traction and buyer/seller community, we believe Fiverr is better positioned to evolve into a more mainstream offering relative to other marketplaces such as TaskRabbit, which have focused service offerings, but minimal traction (see Alexa chart below).



Can the traffic sustainably grow? Growth has been driven by PR and word of mouth, which are hard to control and predict. It is unclear whether the company will find effective traffic acquisition channels, especially due to the company's low revenue per transaction. When Fiverr starts allowing higher-priced services, there is a risk it loses its quirky character, which has driven its word-of-mouth growth. There was also concern that flat November and December traffic may suggest Fiverr has already begun to stagnate. While we can't credibly project the growth rate, there are several reasons why we believe traffic and order volume won't suddenly stagnate or fall. Almost 60 percent of traffic is direct, and it is rather consistent on a daily basis, which suggests it does not rely on any particular mention in the media, but rather mostly on word of mouth. Additionally, as in any marketplace, sellers have an incentive to promote their own profile and services, which, combined with strong recurring visits and high buyer-seller overlap, creates a virtuous growth cycle. Etsy, for example, relies primarily on such organic growth and has been showing strong growth for 5 years. Finally, we are encouraged by the growth of an ecosystem forming around the service (1,480,000 results for "fiverr" in Google, out of which 1,270,000 are *not* on fiverr.com). The plethora of guides on how to make money on Fiverr, the host of Fiverr clones, and the broad range of related user-generated content, will likely sustain interest around the marketplace for a while.

Team building: Micha and Shai have yet to demonstrate an ability to recruit strong people around them at Fiverr, and may not have what it takes to bring in relevant experience. At this stage we feel comfortable with the team's execution capabilities, its scrappiness and its vision. Micha and Shai are both experienced entrepreneurs, and our impression from several meetings with them is that they have a good feel for product and community, and that they are consistently and thoughtfully taking steps to improve the service.

Outcomes Table

Scenario	Description	Exit value	Probability	Future dilution	Value to BVP	Muiltiple
1	The buzz wears off and traffic declines	-	30%	0%	0.0	0.0x
2	Growth slows down, sell for user base	10	30%	0%	3.5	1.0x
3	Continues to grow but remains a niche marketplace for $5 gigs	50	24%	20%	7.0	2.0x
4	Expands beyond $5 gigs and becomes a large marketplace for micro-services	200	10%	25%	26.3	7.5x
5	Becomes the leader in multiple servies cateogories including local services	600	5%	25%	78.8	22.5x
6	Becomes the global leader marketplace for services	1,000	1%	25%	131.3	37.5x
			100%		**10.6**	**3.0x**
					Weighted average	10.6
					Multiple	3.0x
					IRR (4 years)	32%

Conclusion

Fiverr is peculiar, but fascinating. This is a high-risk, early stage investment, but we believe that the opportunity to build a global marketplace for services is compelling and that the company is in a uniquely strong position to succeed given its rapid organic growth with meaningful transaction volume. We think this deal offers a compelling risk-reward ratio driven by the small check size and the opportunity to invest more in the future should the company continue to perform well. We are excited to recommend this investment.

Pinterest

To: BVP Group
From: Jeremy Levine and Sarah Tavel
Date: April 3, 2011
Re: Pinterest IR

On Monday, Pinterest's co-founders, Paul Sciarra and Ben Silbermann, will be presenting to the Partnership from our Menlo Park office.

Pinterest is a very early-stage Palo Alto-based company with a social e-Commerce web site that lets users in its community curate catalogs of products and discover products by following tastemakers.

Sarah first met the company in late 2009. At the time, Pinterest's two founders were pursuing a strategy to build product catalog iPhone applications called "Totes" for high-end brands. They launched a limited alpha of the product to some friends and quickly noticed that users were heavily using a small social sharing feature included in the product catalogs. When they asked the users what they liked about the feature, they learned that there wasn't a good way for users to share and curate lists of products elsewhere. They put Tote, their original product, on hold and built Pinterest to take advantage of this insight, and they launched it in Q2 2010. Despite being accessible only through a closed beta, the site's traction has accelerated in the last few months and in February registered 1m unique visitors and 20m page views. The majority of Pinterest's traffic comes from social channels like Twitter, Facebook and Tumblr, and almost all of the 30% that comes from Google is based on search queries that include the Pinterest brand name.

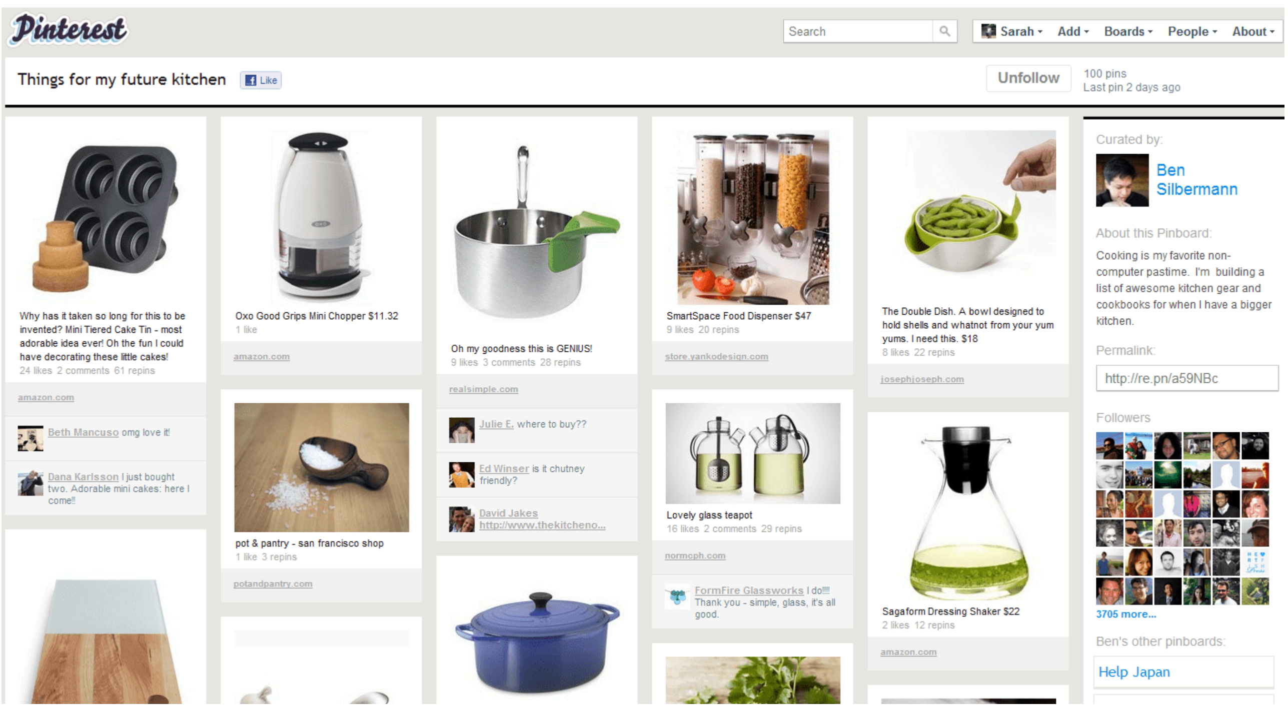
As a firm, we have thoroughly investigated theses relating to user-generated content (Yelp, Wikia, OLX), social (Playdom, Zoosk) and eCommerce (QuidSi, Onestop, Delivery Agent). We have also explored a number of different companies that play at the intersection of these three trends ("social commerce"). Pinterest is the first site we've found that shows demonstrable success in this area.

Thanks to Sarah's dogged tracking of the company, we managed to get into the mix on this opportunity. We leveraged our relationship with Jimmy Wales (one of the founder's "Internet heroes") to grab their attention, but we are unable to mitigate the fact that they have received several term sheets. As a result, this is a very expensive deal, but we think the magnitude of the opportunity justifies the price. We have signed a term sheet to lead a $10m Series A investment at a $40m pre-money valuation inclusive of a 13% unallocated option pool.

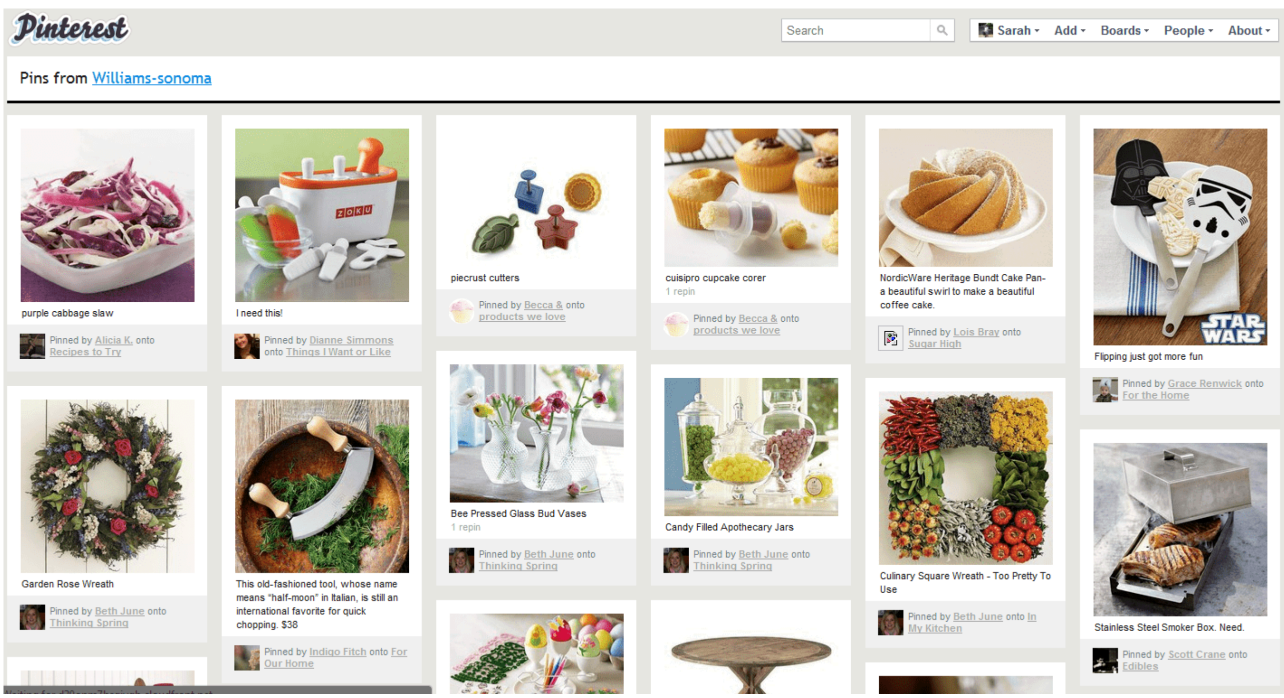
Product

The best way to get a feel for Pinterest's product is to try it or at least browse the site – www.pinterest.com. (If you're interested in an invitation, email either of us.)

The site lets users in the community "pin" products from around the web either by copying URLs or using a browser bookmark in a fashion pioneered by Del.icio.us several years ago. Shortly, consumers will be able to use an iPhone app as well. Once "pinned," products are then curated on "pin boards." Pin boards tend to be themed. For example, Ben Silbermann, one of Pinterest's two co-founders, created a board called "Things for my future kitchen" (http://pinterest.com/ben/things-for-my-future-kitchen), a curated catalog of different kitchen products Ben has found around the web:



If you click on a product, you're taken to a product page that aggregates all comments, "likes", or "repins" (similar to "retweets" on Twitter) that other people in the community have made on that product. Similar to the company's original social sharing functionality, the site also lets users share a product or pin board via Twitter, Facebook, email or with some embeddable javascript. Pinterest has acquired the majority of its traffic thus far from people using this functionality (check out http://twitter.com/#!/search/pinterest to see how people are sharing Pinterest on Twitter). The product page also has a link to the retailer from which the product was originally "pinned," so if a user wants to learn more about the product or buy it, he simply needs to click on the product picture to be directed to the relevant page on a merchant's site. There is also a side bar which features other products from the same merchant which have also been pinned by the Pinterest community. For example, this is the William Sonoma board (http://pinterest.com/source/williams-sonoma.com):



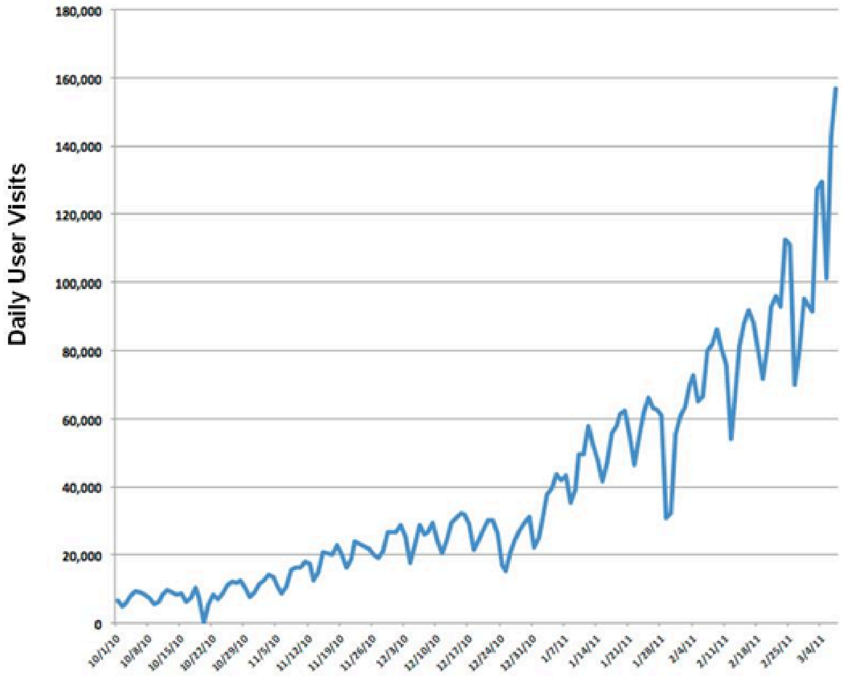
Users can follow each other, much like they do on Twitter. But you can also choose to follow a particular board instead of all the boards a user has created. For example, if a wine critic created a pin board for each of his favorite grape varietals, you could choose to unfollow the Chardonnay board if you're not a Chardonnay fan. Boards that you follow appear on your home screen feed as updates are made.

We are viewing Pinterest through the lens of our user-generated content investment roadmap. With user-generated content sites like Yelp, only about 1% of a site's visitors are "producers" (review writers in Yelp's case) and 99% are merely consumers. We expect a similar ratio to exist for Pinterest as the vast majority of web users, when offered the chance to curate pin boards of products, will simply wonder, "Why on earth would I spend my time doing that?" Those same users don't write many Yelp reviews either. Yelp had about 50 million unique visitors on its site last month, but fewer than 400,000 (0.8%) contributed any sort of content.

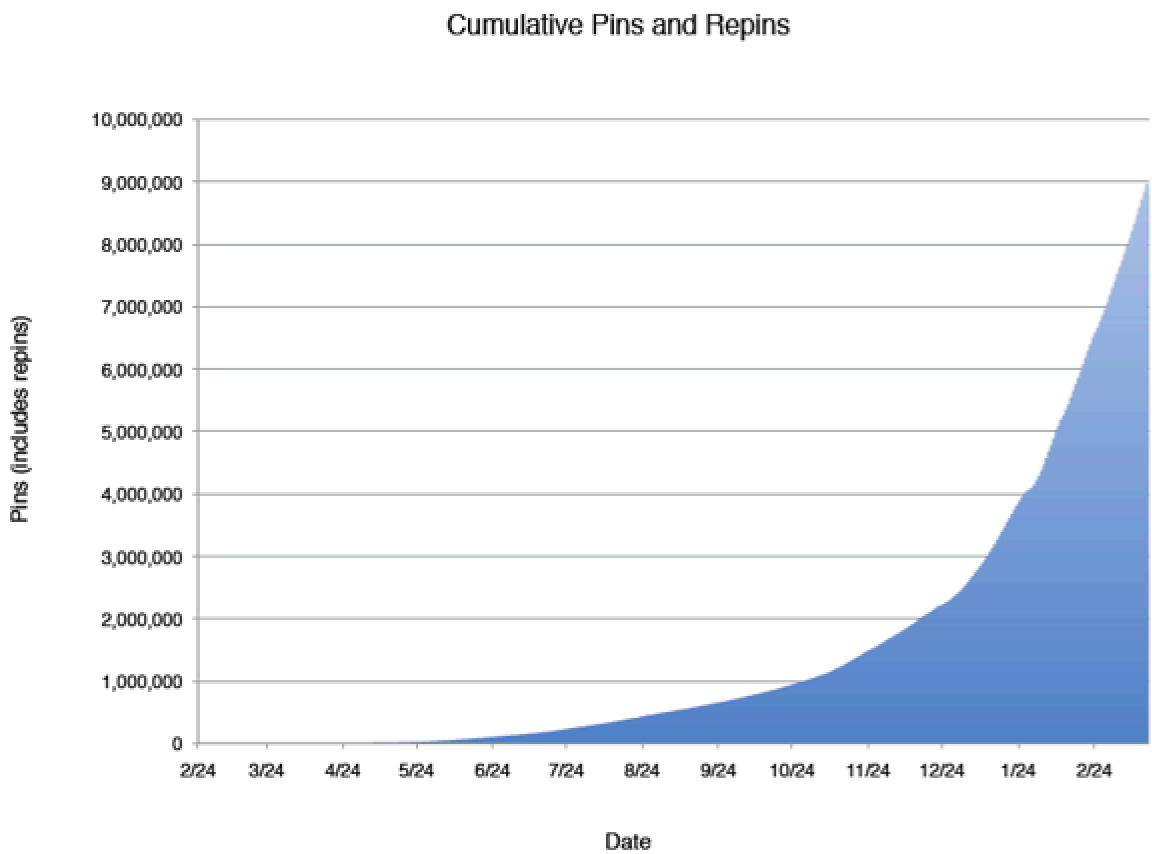
That said, the content "producers" are critical, and just as Yelp focused entirely on content producers in its early days, Pinterest is doing the same today. Over time, we expect the experience to improve for the content consumers, who are essentially just browsing/shopping/searching for something to buy. And eventually, Pinterest will begin to engage the merchant and manufacturer communities to monetize all of its commerce-oriented traffic.

Traction

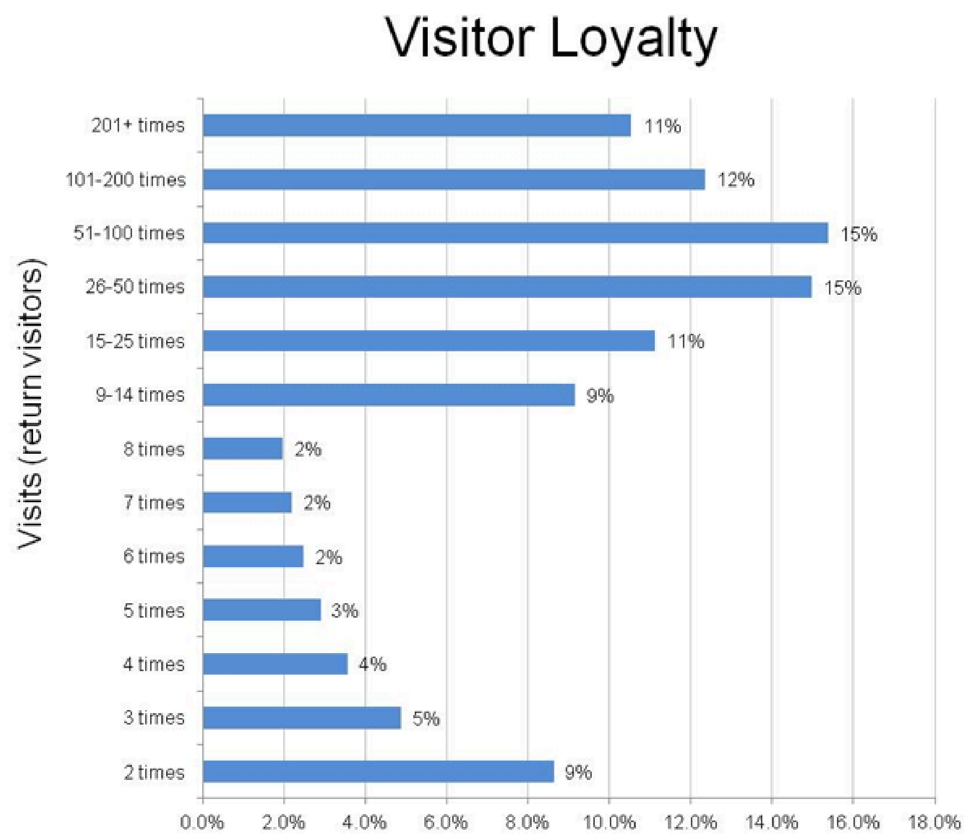
Pinterest already has promising signs of a burgeoning community. Notably, in the last few months, the company's traction has started to accelerate.



Source: Google Analytics 10/1/11 - present



As previously mentioned, this growth has come with no spend in marketing. In fact, the founders have held back the community's growth with a limited beta in order to ensure they create a core community on the site before they open the registration process. The efforts seem to be working. Thus far, 74% of Pinterest's visitors return to the site, and of those that return, visitor loyalty has been extremely impressive:

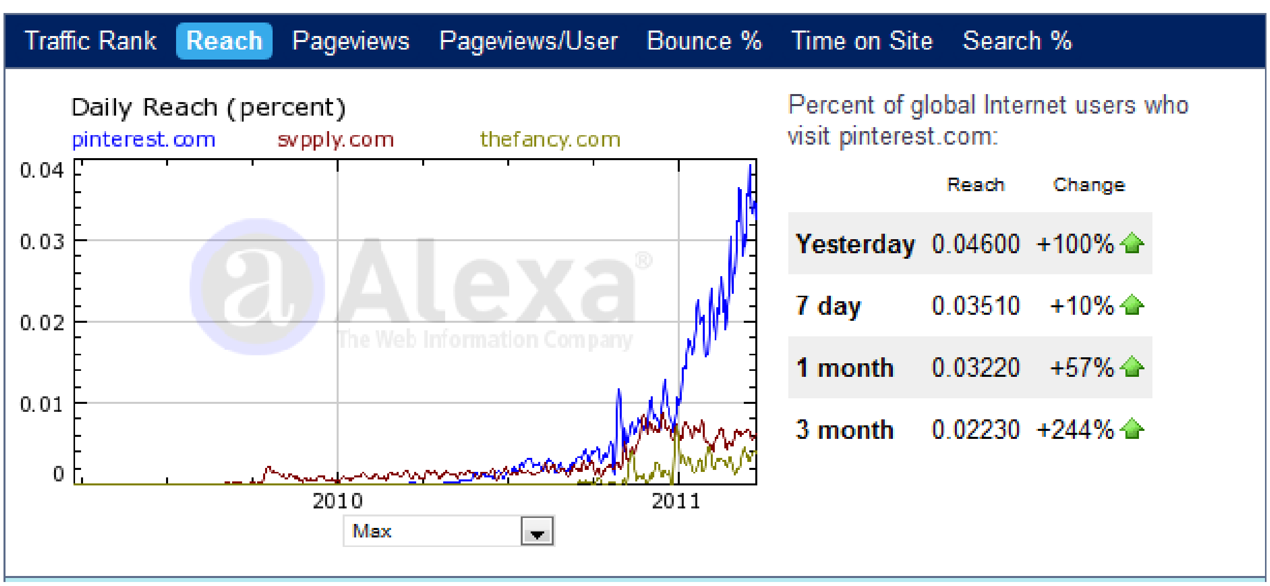


Business Model

Pinterest has not yet developed a business model and is not currently monetizing any of its traffic. Although this is one of the biggest risks for our investment, given Pinterest's focus on products, we believe there are a number of different ways in which Pinterest could monetize. The most obvious way is by becoming an affiliate for all merchants that have products pinned on Pinterest. But we think there's potential to create a marketplace which will let online retailers essentially bid on a CPC basis for clicks on the site, similar to how shopping comparison sites monetize. Unlike shopping comparison sites, however, Pinterest acquires all its traffic for free and because it wouldn't be forcing merchants to compete on end-user prices, the clicks it delivers will be a lot more valuable than comparison shopping clicks. As a point of reference, Shopping.com (owned by eBay) does approximately $200 million in annual revenues with about 72 million monthly page views worldwide.

Competition

Svpply / TheFancy: Svpply and TheFancy are the two closest competitors that we know. Both are New York City-based companies with similar functionality, talented founders but a different design aesthetic. Beginning in January 2011, Pinterest started to pull away from these players and emerged as a clear leader with more than 10x the pageview traffic and the reach differential shown here:



Facebook: Facebook has functionality that lets users "like" products on certain eCommerce sites via Facebook connect. Manufacturers set up fan pages on Facebook (e.g., http://www.facebook.com/huggies) where they aggregate comments and "Likes" from Facebook. We think Pinterest's functionality and product "social graph" is unique and not easily replicated in Facebook, but Facebook dominates social and already has strong relationships with manufacturers, so they remain a competitive threat.

BazaarVoice: BazaarVoice is a bit of a dark horse in social eCommerce. It powers the majority of product reviews on eCommerce sites and has millions of consumers registered in its system. Thus far, all of its efforts have been focused on building decentralized social eCommerce communities on eCommerce vendors' sites, but BV could choose to create more of a centralized community similar to Pinterest.

Amazon: Amazon dominates eCommerce in the US and also has one of the deepest and broadest collections of product reviews on the web. These product reviews come from a community of passionate reviewers. Many of Amazon's reviewers have written thousands of product reviews (http://www.amazon.com/review/top-reviewers) and engage in community features like an active forum on Amazon.com. Consumers can also create curated lists of products (Amazon Listmania). This feature is a bit hidden, and in fact, the top links in Google for Amazon Listmania are broken, suggesting Amazon isn't focused on lists. That said, Amazon has a huge audience of buyers and a great community of reviewers with which to seed a competitive community of curators.

Team

Pinterest was founded by Ben Silbermann and Paul Sciarra. The two met while at Yale from which they received undergraduate degrees in 2003.

Ben Silbermann (co-founder): After college, Ben joined the Corporate Executive Board, an infrastructure and IT consulting firm that works directly with CIOs of Fortune 1000 companies. After three years, he joined Google's AdSense team, where he was a product specialist and was responsible for analyzing product usage data and using that to inform AdSense's product roadmap (this training is probably what helped the company notice the social sharing data in Tote and pivot to Pinterest). Ben is the product visionary here.

Paul Sciarra (co-founder): After college, Paul spent three years at Radius Ventures, a VC firm specializing in medical devices. He left Radius in August 2008 to start Tote with Ben. Our sense is that Paul has also had a hand in the company's product design but is more focused on early business and administrative issues (e.g., fund raising).

Deal

We have signed a term sheet to lead a $10m Series A investment at a $40m pre-money valuation, inclusive of a 13% post-money option pool. Previously, the company raised just under $2m in seed capital from a handful of angels, Highline Ventures (a seed fund started by Shana Fischer of IAC), and FirstMark Capital. We would get a board seat along with one for each of the two founders.

Post-closing, the company may facilitate a buy-back of shares from early, non-employee investors. The buy-back will be at a ~25% discount to the Series A price; we may, in turn, have an option to purchase up to $2m of additional Series A shares to increase our ownership. We haven't yet tested the waters with the early investors, so we don't know the potential available here, but we'd like to request up to $10m of investment from BVP.

Risks

Monetization: As already noted, Pinterest does not have a developed business model. In order for Pinterest to build a valuable company long term, it will have to find a scalable business model that doesn't negatively impact the consumer experience.

Consumer Adoption: Pinterest's consumer traction thus far is promising, but it will need to grow substantially in order to build a significant company and cross the chasm from early adopters to mainstream users.

Competition: Pinterest already has two competitors in the space with very similar product offerings, and more are sure to follow (how many high profile mobile photo sharing startups are there now?). Pinterest must also navigate the constant potential threat from Facebook should it decide to compete.

Team: It's only five people at this point! Thus far, we've been really impressed by Ben and Paul, but they are both first-time entrepreneurs and relatively inexperienced managers. Moreover, neither of them is deeply technical, and the site is already having trouble scaling. They'll need a complement in the form of a strong CTO/VPE and broader bench of technical talent.

Scenario Analysis

This scenario assumes the $10m round described in the deal section ($8.6 from BVP, $1.4m from insiders) plus an extra $1m from BVP to facilitate a discounted buy-back from early angels. So, the net amount invested into the company will be $10m, but there would be $11m of new preferences (in addition to the $2m of preferences from capital already raised).

Exit Value	Scenario Description	to BVP	BVP Multiple	Probability
$0M	Disaster. Company implodes.	$0.0	0.0x	10.0%
$25M	Community hits 1m monthly uniques but growth tapers out and it becomes clear that Pinterest is a niche community and won't be able to cross the chasm. Company is acquired by a strategic for the talent and community.	$9.6	1.0x	17.5%
$65M	Community hits 1m monthly uniques but growth tapers out and it becomes clear that Pinterest is a niche community and won't be able to cross the chasm. Company is acquired by a strategic for the talent and community.	$12.6	1.3x	17.5%
$100M	Site reaches 3m monthly unique visitors and community continues to grow, but company struggles to monetize its userbase. Ultimately, Pinterest's visitors are just window shopping. Acquired by a strategic for value of community.	$16.5	1.7x	32.5%
$325M	Pinterest becomes one of the leading social commerce brands. Reaches 6m monthly unique visitors and 100m page views. Affiliate monetization strategy is successful but manufacturers are less interested in Pinterest's value proposition. Company is acquired by strategic.	$53.6	5.6x	17.5%
$500M	Company becomes leading social commerce brand and eCommerce affiliate. Accessing Pinterest's community become required strategy for all manufacturers. Company is acquired by strategic.	$82.4	8.6x	4.0%
$850M	Pinterest is firing on all cylinders. Goes public.	$140.1	14.6x	1.0%

Conclusion

Pinterest represents an opportunity to invest in a talented early stage team with noteworthy traction against what could be a very large and compelling business. Despite the expensive price and the inherent early stage risks, we are bullish on this opportunity and recommend this investment.

SendGrid

To: BVP Group
From: Byron Deeter, Ethan Kurzweil, Peter Lee, Rahul Jaswa, & Jeff Epstein
Date: December 16, 2011
Re: SendGrid Series B IR

We recommend a $13.2mm investment in the $21.2mm BVP-led Series B financing of SendGrid. SendGrid is an e-mail Platform-as-a-Service (PaaS) company that presented to the partnership from Menlo Park several weeks ago. After receiving very positive feedback from the partnership, we gained the support of the SendGrid team and board to allow an outsider into the round. After a long back-and-forth process, we ultimately signed a term sheet with the company to lead a plain vanilla round at a $60mm pre-money valuation, including $4.9mm of founder liquidity (we will receive preference protection on the full amount). Including the effect of this share buyback, the resulting post-money valuation is $76.3mm, and BVP will own 17.3% of the company.

Introduction

SendGrid is an email PaaS that allows web developers to reliably send their transactional emails at large volumes. The business has been experiencing tremendous growth; launched via the August 2009 TechStars class, they have signed up over 57,000 customers and are on track to exit 2011 at a $10.2mm ARR run rate. Current CMRR is ~$850k which is up from ~$200k in 2010 and maps to an impressive double-digit average MoM CMRR growth rate. There are many parallels to Twilio which have us excited, including their consumer-like growth rate, their PaaS disruption of a large established industry, and their huge popularity with the developer community and correspondingly efficient developer-oriented marketing efforts.

While it may seem that sending emails reliably is a solved problem, many challenges come with scale particularly for sending automated emails at large as navigating overeager spam detection systems is beyond the core competence of most web developers. SendGrid allows these developers to outsource email delivery for all automated, transactional messages (account updates, notifications, password resets, etc.) tied to their applications and is also building an application ecosystem for third party ISVs to build complete email applications (e.g., generating marketing newsletters).

Market

The SendGrid vision is to be the email platform of choice for the billions of automated, non-spam emails that are sent each month. With a multi-tenant cloud infrastructure, they can offer a lower TCO than the roll-your-own systems prevalent today, as well as deliverability assurances that would be out of reach or cost-prohibitive for most use cases.

A truly massive amount of email is sent around the world each month, with most estimates in the hundreds of billions for non-spam emails (e.g., one estimate pegs it at 188B messages/day to 2.9B email accounts. In the online gaming world, Zynga has an 8 person team managing the infrastructure that sends out 3B emails per month; they've told SendGrid they would have outsourced it to them if SendGrid had existed when they were starting. Forrester estimates that $1.5B will be spent on email marketing in 2011with a 10% CAGR through 2016. For comparison, SendGrid has sent over 20B emails to date and is rapidly approaching the 100M emails per day milestone.

As a firm and a cloud computing practice specifically, we have largely stayed away from the email marketing space due to fear of competition and commoditization, but in hindsight this appears to be a market that we over-thought. It's a huge and (amazingly, still) growing category, and has proven to support dozens of successful businesses including Constant Contact, ExactTarget, and MailChimp as well as producing multiple large acquisition outcomes. We are now excited at the opportunity to participate in this market through a disruptive entrant.

Product

Developers sign up for the service by applying for an account (only 10% of customers end up needing to contact the two-person inside sales team.) After a short verification process (to cull out the spammers) developers can be up and running that same day, choosing between several pricing tiers:

> Free – includes all features, but is capped at 200 emails / day
>
> Lite – includes only the sending of mail, priced at $0.10 per thousand emails sent
>
> Bronze – adds reporting to Lite, priced at $0.25 per thousand emails sent
>
> Silver/Gold/Platinum – adds dedicated IP addresses (needed to develop an email reputation), priced from $0.57-$0.80 per thousand emails sent
>
> High Volume Pricing – same features as Platinum but with steeper discounts

Developers can then send their email to be delivered by SendGrid via a variety of APIs, as well as monitor and report on key metrics like open rate, click rate, unsubscribe rate, report as spam rate, etc.

90% of provisioned customers are in the Free plans. Paying customers are split evenly between the Lite / Bronze tiers and the Silver / Gold / Platinum, with 95% of revenues coming from the Silver / Gold / Platinum / High Volume tiers.

Competition

Of the competitors, Amazon Web Services (AWS) is the one to watch most closely as their Simple Email Services (SES) offering most closely mirrors SendGrid functionality (specifically SendGrid's lite tier). They launched in January 2011 and make it especially easy by plugging directly into their EC2 infrastructure. Features and functionality-wise, it is a low-end offering lacking dedicated IP addresses and much of the administrative and reporting layer in particular. But Amazon clearly enjoys a large developer community who may go for the good-enough solution. Shortly after the AWS announcement, SendGrid announced the Lite tier to directly compete with SES on price, as well as Rackspace and Softlayer partnerships to tap into their cloud developer ecosystems. So far, SendGrid hasn't seen any material impact to their acquisition or attrition rates due to SES, but they are monitoring Amazon's offerings closely.

On the higher end of the stack, Constant Contact, ExactTarget, MailChimp and others will likely make further efforts to open up their platforms based on their existing infrastructure and lure developers to their platform. MailChimp is making one of the stronger plays in the space, having opened up an API last fall, and offering a private beta "Mandrill" service for high-volume customers to send transactional email. We need to do more research on Mandrill's current traction, but we believe it to be pretty nascent. ExactTarget is a very large and well-funded email marketing vendor that is also making moves into the PaaS market and should be taken seriously.

On the infrastructure side alongside SendGrid, there have been many new entrants, most notably Mailgun, Postmark, and Mailjet that we will need to watch as well although they haven't yet made a dent in SendGrid's trajectory.

Partnerships

SendGrid has developed partnerships with several players in the hosting (Rackspace, Softlayer) and platform-as-a-service (Heroku) ecosystem who contribute 10k+ free accounts but very few paid accounts. However, these partnerships could expand considerably and there have even been real discussions where SendGrid would, in the near-term, be the default transactional e-mail service provider for every Rackspace customer. Monthly, Heroku contributes $8.4k MRR (30% revenue share to Heroku), Rackspace contributes $2.9k MRR (no revenue share to Rackspace) and Softlayer contributes only $0.15k MRR (70% revenue share to Softlayer who handles all support requirements). They are also pursuing a formalized relationship with Amazon where they would be the default upgrade from Amazon's lite SES service, though they are walking a fine line between competition and cooperation there.

These partnerships have largely been opportunistic and, as you can see from the vastly different economic terms, do not constitute a coherent channel sales strategy. The company realizes this but doesn't have a resource dedicated to partnerships yet and has chosen instead to experiment with different arrangements and measure the results before adding business development resources here.

Financial Metrics

Sendgrid has ~60,000 "customers," ~ 6,000 of which are paying, for an aggregate CMRR of ~$850k, and an annual subscription revenue run rate (ARR) of ~$10.2m. They are on track to hit their 2011 budget of $6.7mm in subscription revenue, up from 1.4mm in 2010, and project $17mm and $34mm in 2012 and 2013. Because customers pay up-front for an e-mail allowance and pay the overages at the end of the month, SendGrid has strong predictability on the first day of a month. November's absolute floor, for instance, was $790k and the company ended with $810k due to ~$20k in overages. In 2011, the average MoM CMRR growth rate was and continues to be in the double digits: they grew 11.7% between September and October and 8.7% between October and November.

Their gross-margins are ~63% (and improving, November was just shy of 70%) which is good for PaaS at this stage, and may even go up further because:

~25% of that is in headcount for technical support agents who primarily help to close sales (and so on a non-GAAP basis could be considered an operating expense).

They only use 15-20% of the capacity they purchase from Rackspace so their hosting costs will hold flat for the foreseeable future (they agreed to a monthly floor as part of their partnership negotiations).

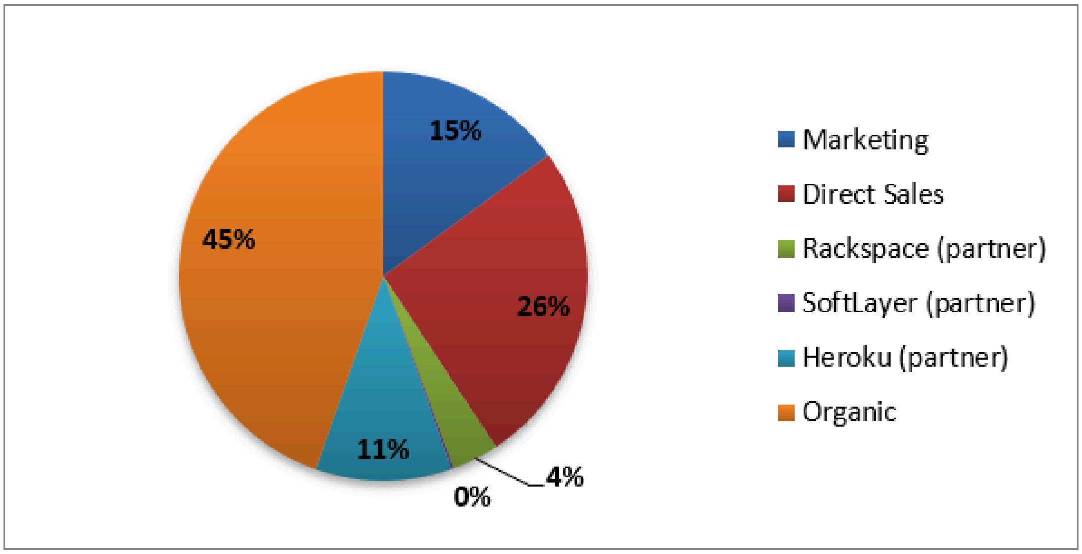
Longer term, it is possible that they need to build out more of a marketing services function in the company (as other ESP's have done) to accommodate a wider range of email inquiries, which could add to the cost structure. However, we have been encouraged thus far that their API-centric, developer sponsored sales cycle results in fewer services calls per customer and therefore like Twilio they will have lower S&M costs in their long term business model.

Summary Income Statement**

	10-Dec	11-Jan	11-Feb	11-Mar	11-Apr	11-May	11-Jun	11-Jul	11-Aug	11-Sep	11-Oct	11-Nov
MRR	236,455	291,508	306,839	388,134	432,245	456,681	524,192	563,006	615,921	667,099	745,185	810,137
Growth %	5.88%	23.28%	5.26%	26.49%	11.36%	5.65%	14.78%	7.40%	9.40%	8.31%	11.70%	8.70%
COGS	73,010	69,165	102,232	105,331	105,558	170,982	229,144	237,392	241,173	248,617	251,266	246,246
Gross Profit	163,445	222,343	204,607	282,803	326,687	285,699	295,048	325,614	374,748	418,482	493,920	563,891
Gross Margin	69%	76%	67%	73%	76%	63%	56%	58%	61%	63%	66%	70%
Sales Expense	34,490	29,849	28,818	27,674	30,783	47,285	55,050	52,122	62,598	85,481	80,115	80,042
Marketing Expense	40,316	41,058	83,724	70,934	91,424	105,409	87,236	98,902	145,130	156,810	176,571	180,422

Unit Economics

The company's SaaS metrics are extraordinary and the vast majority of their growth continues to originate from organic sources (word-of-mouth, direct search, etc.).



However, they have experimented with several marketing channels for the last few quarters and already have solid metrics around a material amount of marketing spend (10k+ in several different channels). For instance, Quantcast, Extole and AdWords all generate CACs below $100, but the average customer is contributing $117/month in recurring revenue. These are early experiments and we aren't sure to what extent they are scalable but they are actually ahead of where Twilio was at this point in that they are starting these experiments now. We've included a marketing spend analysis in Appendix A.

Their Customer Acquisition Cost (CAC) ratio (inclusive of all S&M expense and headcount) for Q1 was 5.24 (pre-marketing), for Q2 was 2.8 (start of marketing) and for Q3 was 2.02 mapping to fully loaded payback periods of under 6 months. Gross customer "logo" churn is 3% monthly (stabilizing in the mid-to-low-70's), however their cohort analyses point steeply upwards on a net dollar basis. Compared to the 1st month, cohort revenue contribution in months 12 and 18 are 136% and 186%! This theoretically maps to a massive Customer Lifetime Value (CLTV). The combination of low CAC and high CLTV has us quite excited and our additional diligence has only confirmed our excitement around these financial metrics.

Customer Diligence

The company sent us a list consisting of customers ranging in size and industry. We did many reference calls and received enthusiastic confirmation (often with colorfully positive language!) that customers have an unusually deep adoration for SendGrid's product. In summary, it allows them to forget about email and focus on core areas of the business, is significantly underpriced compared to other e-mail alternatives, is extraordinarily easy to implement and use, and comes with amazing and free customer support. Most customers did agree that competitive pricing would cause them to think twice, but barring extremely drastic underpricing, the cost savings alone would not overwhelm the features SendGrid provides and that they have come to love.

We have begun but haven't yet completed calling their top customers and customers who discontinued the service. However, they have never lost a customer from their highest spending tier except by kicking them out for bad e-mail practice (too much spam). Additionally, a cursory look through their list of customers who have spent more than $1,000 in aggregate and no longer use the service reveals almost entirely unrecognizable companies that are in most cases extremely small, unsophisticated, and in some cases, now defunct.

Team

The team is constituted by three founders and several professional management execs brought in by Foundry and Techstars. The founders all met at UC Riverside where they were administrators for the e-mail application and infrastructure provided by the school to students. Isaac Saldana was initially the CEO and is an extremely talented product visionary who has guided product development to building the best possible product for developers. His co-founder Tim Jenkins is responsible for the back-end infrastructure and they have beefed up the engineering team with the addition of VP Engineering Tom Albers.

There is solid outside leadership in the form of Jim Franklin (CEO) and Chad Varra (CFO). Jim and Chad have continuously engaged with us competently and we believe they are extremely trustworthy and receptive to our input. They have also brought in professional marketing and sales executives who strike us as solid for this stage of company.

Jim Franklin, CEO - Jim was brought in by Foundry Group and Techstars, where he has worked extensively with the Boulder tech community. He is a former VP/General Manager at Oracle, a VP/General Manager at Hyperion, a VP at Crystal Ball, a CEO at Decisioneering (an enterprise software company which he left and then rejoined as CEO 4 years later), CFO at Vericept (venture backed network monitoring company), and CFO at Webfamilies.com (a consumer facing image sharing website).

Chad Varra, CFO – Chad was also brought in by Foundry Group and Techstars from Rally Software, one of the largest private enterprise software companies in Boulder, where he was the VP of Finance and Accounting. He was previously an accountant at Arthur Andersen and a financial controller at ChannelPoint.

Joe Scharf, VP of Operations – Joe runs the support and operations team at SendGrid and serves as its postmaster. He was promoted from a director level position in the support and ops department of SendGrid, and was previously a consultant at a software development consultancy called Obility, a program director at Techstars, and a software engineer at Ball Aerospace and Carrier Access.

Robert Phillips, VP of Marketing – Robert has many years of experience in marketing including as director of Marketing at Memeo, Director of Marketing at Solatube International, Marketing Manager at Netflix, Senior Marketing Manager at PeoplePC, and 6 years of experience at advertising agencies, where he began his career.

Tom Albers, VP of Engineering – Tom is a really passionate agile software development leader. He was formerly a CTO at a consulting company called StoryLeaders, a Web Development Manager at MySpace, the director of engineering at an e-commerce software company called Direct EDI, and a VP at Health Management Systems.

Isaac Saldana, Head of Product – Isaac is the principal founder of SendGrid and like his other co-founders learned e-mail as the e-mail server administrator at UC Riverside. He graduated in 2003 with degrees in computer science and electrical engineering, and worked as a software engineer at Advatech Pacific (a mobile communications company), and then founded a series of startups where he was primarily responsible for infrastructure and backend software development.

Denise Hulce, VP of Sales and Business Development – Denise was formerly a Senior Director of Sales and Marketing at 3Dconnexion (a Logitech company), Director of International Operations at @Last Software (acq. Google) and held various manager and director level positions at DoubleClick and MessageMedia.

Key Risks

While the company has exhibited tremendous financial momentum and all of its metrics are trending in the right direction, there are still several remaining risks that we are sensitive to:

-Potential for slowing organic growth/customer acquisition – while the company's organic growth and amazing virality throughout the developer community is very encouraging and exciting, that market is not unlimited and eventually SendGrid's ability to rapidly acquire new customers who fit the savvy techie startup profile will diminish. The company needs to quickly identify scalable marketing channels to reach customers that don't fit the "Web 2.0" profile.

-Inability to reach established enterprises – SendGrid leaves a very significant chunk of market and high-value customers untouched with their current strategy of going after only newly formed companies and growing with them. If SendGrid is incapable of implementing a technology development strategy that eventually compels large existing organizations to switch their internal email infrastructure over to SendGrid, the company's growth may abruptly hit a brick wall and significantly diminish their maximum potential.

-Commoditization – there are some meaningful technical barriers to entry around delivering e-mail at scale, and delivering a high quality product that manages a complex transactional process on the back-end while appearing dead simple to the customer. However, hacking together a basic e-mail solution requires relatively little engineering sophistication, and so new market entrants, or incumbents (e-mail marketing companies moving downstream), could significantly undercut SendGrid, slashing their margins and stealing market share.

Deal

After receiving positive feedback from the partnership, we offered a term sheet for an investment of $13-15m at a $55m pre-money valuation and $5m in liquidity for the founders. We suggested below pro rata investments of $2-7m from the insiders Highway 12 and Foundry. This was enthusiastically received by the management team but wholly rejected by the insiders who were actually hoping to buy up ownership in this financing and offered their own term sheet for a $10m financing at a similar pre-money.

After a long courtship, the insiders finally expressed some willingness to step back from their original hopes but would not back far off pro-rata. We were finally able to get the insiders to sign off on a plain vanilla $21mm Series B led by BVP with a $13.2mm investment at a $60mm pre-money valuation. $4.9mm is allocated towards secondary (each of the 3 founders will redeem 30% of their equity through a company buyback). The resulting post-money valuation is $76.3mm, resulting in 17.3% BVP ownership.

Outcomes Analysis

Date	Outcome	Probability	Value ($M)	To BVP	Multiple
Sep-11	*(investment)*	100%		-$13.2	
Jan-14	Total wipeout. Competition takes pricing to zero and no customer or product salvage value.	10%	$0.0	$0.0	0.0
Jan-13	Competition from Amazon, Contant Contact, MailChimp undercuts market. Tech and customer base sold 1.5x rev in fire sale.	15%	$27.0	$13.2	1.0
Dec-14	Company grows decently in 2012 but reaches saturation point with startup developers and cannot move upstream. Growth stalls in 2013 and 2014. Sold for 2x revenue in late 2014.	20%	$50.0	$13.2	1.0
Jan-15	Company hits plan in 2012 but slows down in 2013 and 2014 and multiples compress. Company sells for 3x TTM rev of $60m	30%	$180.0	$31.1	2.4
Jan-15	Company reaches $20M in 2012, then 2.5x growth in 2013 and 2x growth in 2014. IPO or M&A in early 2015 off 3x TTM (2014) revenue of $100m	20%	$300.0	$51.9	3.9
Jun-16	Home run. Platform becomes global standard for email PaaS. Exits 2015 at rev of $175m and IPOs at ~5x TTM / 3x FTM revenue.	5%	$900.0	$155.7	11.8
		Avg Value to BVP		$32.1	
		Multiple		2.4	
		IRR		30.1%	

Conclusion

We are quite excited by the company's extraordinary early momentum and progress, and like the similarities to Twilio in low sales and marketing overhead given their developer focus. We also feel that this is the right stage for an investment like this – as they've mitigated product, team and distribution risks but we can still buy 17%+ ownership at a sane valuation. While we have some concerns around commoditization potential and market size, we feel those risks are priced into the deal. We've been positively encouraged by the team and metrics each step of the way, and have almost fully completed our diligence without any red or yellow flags. We strongly recommend this investment and look forward to the group's feedback. Barring any objections from the partnership, we'll plan to swiftly complete our final legal and business diligence and complete the investment in very early January.

Appendix A

Marketing Spend Analysis

Advertising Program	Time Period	Spend	Impressions	Clicks	CTR	Conversions	Cost Per Acct	Revenue 1 Mo.	Revenue 24 mo.
Retargeter Free	October	$1,500	944,476	456	0.05%	N/A	N/A	$2,716	$65,192
Retargeter Paid	October	$1,500	224,721	102	0.045%	N/A	N/A	$2,300	$55,190
Quantcast	October	$13,021	3,255,370	1,302	0.04%	178	$73	$3,498	$83,952
Launchbit	November 1st half	$1,090	37,072	527	1.4%	N/A	N/A	N/A	N/A
Facebook	Past 30 Days	$4,848	57,422,544	4,985	0.009%	N/A	N/A	N/A	N/A
Linkedin	Past 30 Days	$3,750	4,630,967	993	0.021%	N/A	N/A	N/A	N/A
Extole (Refer-A-Friend)	October	$2,672	N/A	N/A	N/A	29	$92	$1,379	$33,092
Adwords	August	$22,663	565,972	11,580	2.05%	229	$99	N/A	N/A
Affiliate	October	$3,250	119,593	2,484	2.07%	6	$542	$420	$10,076
SEO	October	$1,450	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Content Syndication Test (GigaOm)	November (1 week)	$5,000	N/A	N/A	N/A	4	$1,250	$1,335	$32,036
Content Syndication (Tech Target)	In test queue								
Corporate Referral Pgm	Just launched no data								

CRM Programs	Messages Delivered	Won	Revenue 1 Mo.	Notes
Sales Lead Nurture Pgm (#8)	1098	12	$1,229	In initial testing phase. Not optimized.
Lite / Bronze Upgrade Pgm (#5)	4541	20	$1,939	In initial testing phase. Not optimized.
Free Trial Upgrade (#4)	1308	24	$1,149	In initial testing phase. Not optimized.

Twitch

To: BVP Group
From: David Cowan, Ethan Kurzweil, Sunil Nagaraj, and Mackey Craven
Date: July 7, 2012
Re: Twitch Series B IR

Recommendation

We recommend that BVP invest $13 million in Twitch.tv (fka Justin.TV) at $53 million pre-money to own 18.3% of the Company.

Mackey's data-driven sourcing efforts gave us an early indicator of the company's growth, positioning us to lead the Series B ahead of any peer firms. The inside venture firm Alsop Louie is scrambling to get capital from LP's to make a follow on investment, but they can likely not invest more than $1 or $2 million more in the business. Still, we are competing against another firm which has agreed to a $90 million pre-money valuation (although fortunately the Company sees no other value from that investor).

Since Twitch.tv presented to BVP three weeks ago, we have been selling hard against the other proposal, pitching BVP's value, and we think we have a deal, but it's still shaky. During that time, we have nearly completed our due diligence on the opportunity, while the Company has made impressive progress with strategic partners like Tencent, EA, Activision, and Take Two.

It is important to note that we would be investing in the Justin.tv corporate entity which includes both Twitch.tv and Justin.tv. The company plans to immediately sell the Justin.tv asset, so any proceeds from that sale would accrue to our investment. Justin.tv generates $4m per year in cash flow but is declining – both in viewership and revenue. Management is confident that they can sell the asset for $10m-$20m with some but not all of the cash up-front and are in late stage negotiations with one buyer about such a transaction.

Summary

Twitch began in January 2011 as a "skunkworks" project within Justin.tv, a user-generated live streaming video platform, and by the end of 2011 was the sole focus of the company. Since then, Twitch has grown viewership at an average of 9.6% month over month to 18m monthly uniques watching nearly 4B minutes of live gaming. Earlier this year, Twitch began to monetize these viewers through advertising (primarily mid-roll video), subscriptions to specific streams, PPV, and paid HD.

Twitch enables gamers to stream live sessions over the internet and monetize their viewers through revenue sharing agreements. Over 150k gamers stream content on Twitch each month despite the need to install complicated software, and in the case of console gamers, hack together ~$200 of 3rd party hardware. Approximately 1,700 streamers consistently have 300 or more viewers, and 15 of the top gamers often draw tens of thousands of viewers. However, even the largest streamer represents less than 1% of the total viewership in any given month. As a result, Twitch's revenue is highly distributed across the streaming community.

We agree with the Twitch team that the path to long-term sustainable growth is by making it as easy as possible to engage new streamers. To that end, they are focused on integrating with games for direct content and data feeds. Gamers can see how others have navigated the level, or how they used a virtual good on sale, thereby driving usage and sales. Gamers can also easily share their experience to e-sports viewers, or to their twitter and Facebook friends, driving viral awareness of the game. Integration with games would also enable virtual goods marketing and monetizing VOD content on Youtube (or directly through the twitch.tv site).

The company will need to scale its infrastructure given several large publisher integrations already in the pipeline. We are excited by the fact that Twitch is creating a fundamental shift in how games are consumed by turning gameplay into media experiences. That said, creating a new market comes with many inherent risks including the fact that the market size has yet to be defined. In addition, Twitch faces potential competition from other streaming video platforms and game publishers if they decide to build Twitch functionality into their games. We have become increasingly comfortable with these risks after focusing our diligence efforts on vetting proxies for market size and growth, and after receiving positive endorsements from game publishers and other ecosystem players (e.g., YouTube – a competitor!) of the company's team and strategy.

Company History

The company was originally founded as Justin.tv in 2006 by Emmett Shear, Justin Kan, Michael Seibel, and Kyle Vogt. An early participant in the YCombinator program, Justin.tv allowed consumers to stream live video from their webcams to the Justin.tv destination site. The resulting user-generated live video content proved to be very difficult to monetize due to the poor production quality and inherently low-brow UGC, unpredictable content. In January 2011, the company started two "skunkworks" projects in an attempt to pivot to a better business. CEO Michael Siebel launched Justin.tv mobile and CTO Emmett Shear launched Justin.tv gaming. Surprisingly, both showed early signs of success and the respective teams wanted to continue to pursue the opportunities they each were working on. As a result, the company spun out Justin.tv mobile as Socialcam earlier this year (a strong competitor to our BVP seed investment Viddy, led by former justin.tv CEO Michael Siebel) and Justin.tv gaming was renamed Twitch.tv and became the sole focus of the remaining company. At the same time, founder Justin Kan left the company to launch a new startup in the TaskRabbit/Zaarly local marketplace space called Exec. The fourth co-founder Kyle Vogt continues to run Justin.tv as a division of Twitch.

Re-branding the company Twitch, Emmett began to re-orchestrate the company to focus exclusively on streaming live gaming content, replacing 2/3rd of the team. Today, 48 of the 50 employees at the company work directly on Twitch or the underlying streaming video platform built for the original business, while Kyle Vogt and one other employee maintain the Justin.tv destination site. As it turns out, Twitch was already in the process of selling the Justin.tv asset when we first approached them, but that transaction will not close before our proposed investment. After selling Justin.tv, both sites will continue to operate on shared infrastructure and Twitch will likely be compensated slightly above cost for providing the infrastructure to support Justin.tv. While we originally believed that the Justin.tv sale would not generate much cash, the company is now redlining a final agreement that would bring in $10m-20m with at least some of the payment upfront. This is one of the key reasons for management's increased negotiating leverage and interest in the company – as they could theoretically forgo fundraising altogether and run the company off of the proceeds from selling Justin.tv.

Value Proposition

It is helpful to think of Twitch as a marketplace where gamers use the IP of publishers as "raw materials" to make content that viewers want to consume, and charge those viewers through advertising, subscriptions, PPV, and paid HD. Like many marketplace businesses, Twitch creates value for all constituents by allowing them to transact in a low friction environment and handles all monetization on their behalf. As a result, the company is able to capture the majority of the transaction value. CBS Interactive sells advertising on Twitch's behalf with 60% of the inventory sold as premium "e-sports content" generating $35-$40 CPMs and the remaining 40% on private exchanges with $8-$9 CPMs. It shares half of this revenue with Twitch. Eventually Twitch may build a direct advertising sales team but for now they are happy with CBS' representation as they package it with GameSpot and other premium gaming content and are in the process of further segmenting the private exchange content so portions of it can be sold as premium. CBS' involvement is extremely helpful to Twitch in that they are able to ensure that the inventory stays solidly in the "premium" bucket – enabling them to generate 4-5x the CPMs of remnant. Of course this is also a key risk as it's unclear what the value of the inventory would be on a standalone basis. We have become increasingly comfortable with this risk as they grow their audience size to become a top 5 gaming destination and one of the top two sites for gaming video – of increasing interest to brand advertisers.

The key reason that Twitch is able to capture so much of the value created on the site is that gamers see the revenue they generate by streaming as purely incremental. A streamer's primary purpose for purchasing and playing a game is enjoyment. Twitch allows a portion of that purchase, and in some cases orders of magnitude more, to be recouped by simply sharing the experience online. Even beyond compensation, there are very strong social motivations to share content and experiences, especially when competition is involved. This is actually more important than the revenue share for hardcore gamers who seek recognition from their peers.

While our intuition from the worlds of music, film, television, and most other traditional media would suggest that publishers try to curtail consumers streaming content, game publishers have actually embraced Twitch and the live streaming community. The key reason for this is that games can be consumed both as a participant and a viewer, whereas traditional media generally has only one modality. This means that unlike traditional media, most games can be shared without cannibalizing the revenue the publisher derives from direct use. In fact, because indirect consumption in gaming also exposes individuals to the product, it's essentially free social marketing for game developers and publishers.

Since this effect strengthens the community around a game and therefore the lifetime value of the title, especially now that virtual goods are becoming a standard monetization technique, we believe publishers value streaming communities quite highly. Our initial diligence calls validated this claim and after speaking with the top brass at EA, Ubisoft, Riot Games, Activision (call pending) and other publishers, we are now even more convinced as publishers are shifting an increasing portion of their advertising and marketing dollars online. Furthermore, they view Twitch's product as an authentic and effective way to draw in new users and re-engage existing users, which is important given the free-to-play nature of most new games since the industry has shifted in this direction over the past five years. Many developers have now built spectator and theater modes into their games so users can view the environment from a different user's perspective or from a controllable "free floating" camera during the game. While this often allows gamers to view sessions from inside the game directly rather than on Twitch, the net result is higher impact Twitch streams for that game because of the added production capabilities (different camera angles, 3rd party commentary, etc.). A related concern was that the game developers may create their own Twitch-like site to view gameplay for their own game, but over the course of our diligence conversations we have become comfortable that this will not happen in any meaningful way given game developers' inability to build engaging web presences or communities, a fact they readily admit. (Check out Blizzard's World of Warcraft site: http://us.battle.net/wow/en/ - built on circa 1998 web technology.)

Twitch is in discussions with all of the largest hardcore gaming publishers including Activision/Blizzard, EA, Ubisoft, and even mobile publishers like ng:moco to integrate the ability to stream to Twitch directly into their games without third-party software or hardware as is required today. The first of these integrations with a small Swedish game developer Paradox was announced two weeks ago at E3 and that game should be live later this year. They have also informed us that an integration with one of the largest game franchises in history on Xbox is already underway. The Twitch technology (a "broadcast to Twitch" in-game button and corresponding SDK) can be fully integrated into a title in a day – assuming the publisher has built some sort of spectator or theatre mode into the game. Many of these publishers have never integrated third-party software into their games previously, so this level of traction is particularly noteworthy, and has only accelerated in the past several months. Several large publishers we have spoken with have confirmed their current integrations of the Twitch SDK and their eagerness to incorporate it into more of their game portfolios. They view Twitch as complimentary to their own efforts to engage with their audiences – not competitive – and want to make it as easy as possible to push their content out into the Twitch community.

In addition to simplifying broadcasting, this level of integration allows gamers to automatically share additional metadata such as their virtual goods inventory, weapons used, level achieved, location, etc along with the stream. This metadata could be used to index the video streams more intelligently, so that viewers can learn what the best players are using and in what fashion. The team believes that there are potential revenue opportunities around driving additional virtual goods sales and improving gamer education, however these additional business models are purely speculative at this stage. The company also allows publishers to integrate a "view mode" SDK into their games so that players can watch and learn from other players directly in the game without going to twitch.tv on the web. One such integration is live today – with Tribes Ascend, a first-person shooter gamer from Hi-Rez Studios.

Market

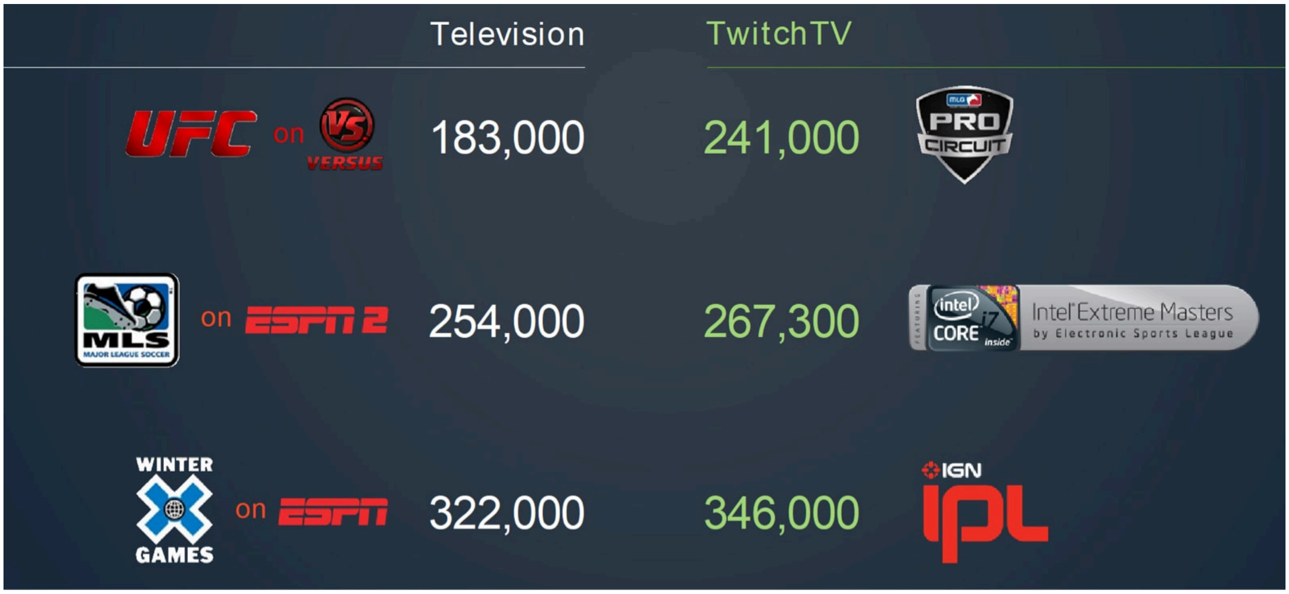
Twitch's value proposition for streamers and publishers, and therefore its business model, are predicated on the idea that there is demand for viewing live digital gaming content. It's obvious from global human interest in sporting events that there can be a large audience for watching games, especially when a portion of that audience has played and/or enjoyed the game. The relevant question for Twitch is whether there is a large enough audience for viewing live digital game content to support a valuable media business around what is being termed "eSports." Since this is an emerging category in the US, there are no incumbents to directly measure the size of the opportunity or how monetizable that viewership will be at scale. We are encouraged by the explosion of live eSports events in Asia, such as:

The image above is the equivalent of half-time at a StarCraft II tournament in South Korea. South Korea has been an early adopter of eSports with dedicated cable channels devoted to it. Events like this at a smaller scale are being held around the world with increasing frequency. In fact, eSports leagues on Twitch are beginning to see television audience sizes. This is not surprising when one considers that the 30m players in the Call of Duty community outnumber US residents who played football, basketball, baseball, tennis or golf in the past year. The fact that a single hardcore gaming franchise outnumbers some of the most popular and commercialized US sports in terms of direct engagement is a hopeful sign that latent demand may exist for viewing live game content (just as real demand exists for viewing live sports).

Another encouraging sign is that video on demand (VOD) viewership for streaming game content is 7x the size of the live market at 250m monthly uniques. This space also has a clear leader, YouTube, where gaming is the largest category after music. The majority of YouTube's gaming content comes from its second largest network after VEVO, Machinima, which grew 3x last year and has reached 175m monthly uniques. The scale and growth rate of Machinima's VOD viewership through YouTube suggests a large latent demand for gaming content. Machinima does not have its own video platform and has to syndicate its video through Youtube and other partners. While they would like to compete in live, YouTube does not currently have the platform capabilities to enable this in gaming, and their own gaming business development team indicated to us that they are unlikely to catch up quickly enough.

While the biggest risk to this investment remains market size, we have talked to several experts in the space who confirmed our belief that there exists a large, latent audience for this type of content. One Paramount executive with a gaming background compared Twitch to a regional sports network like NESN or YES and felt that Twitch could grow to equivalent audience and revenue size.

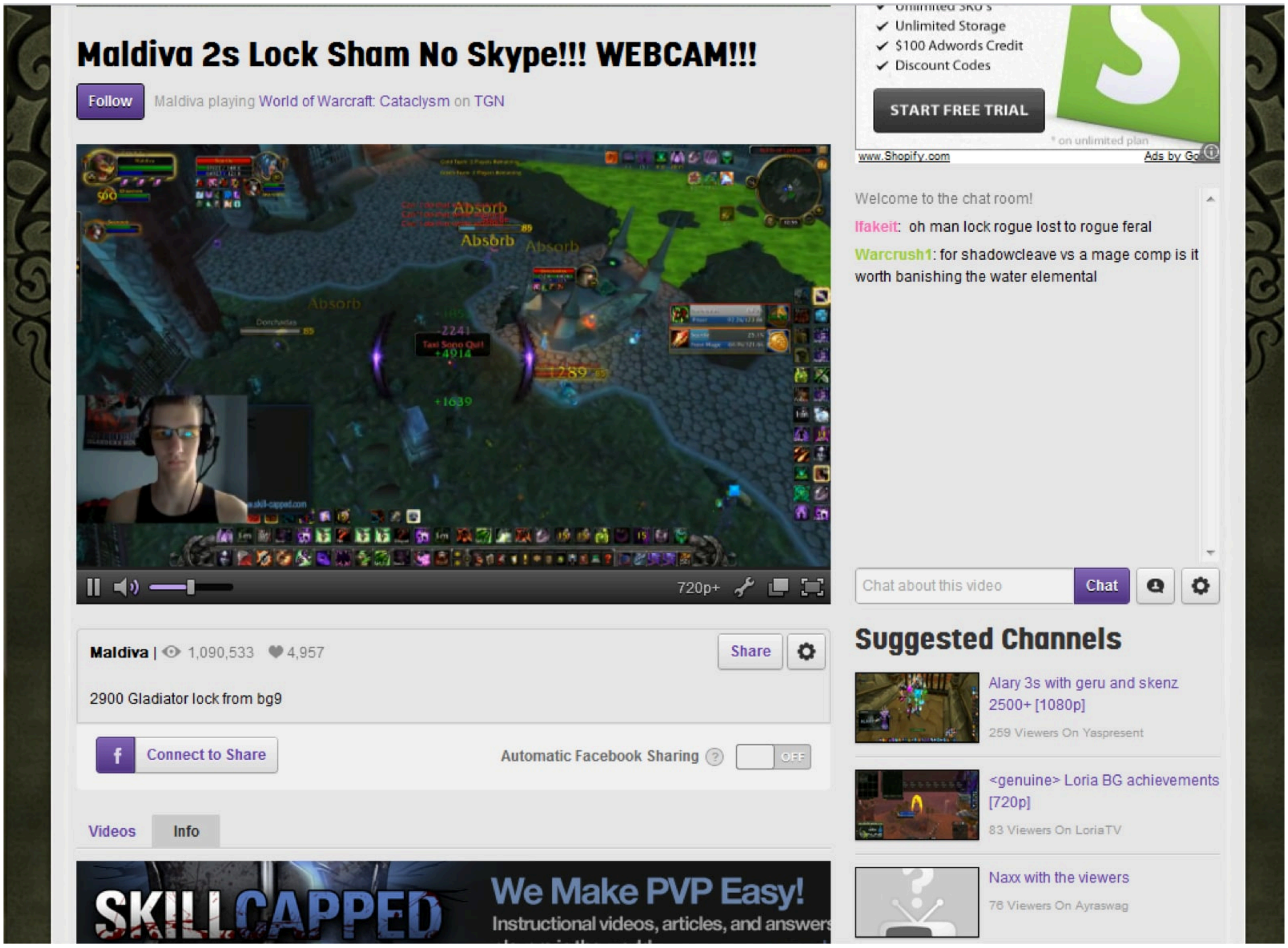
Concurrent Viewers



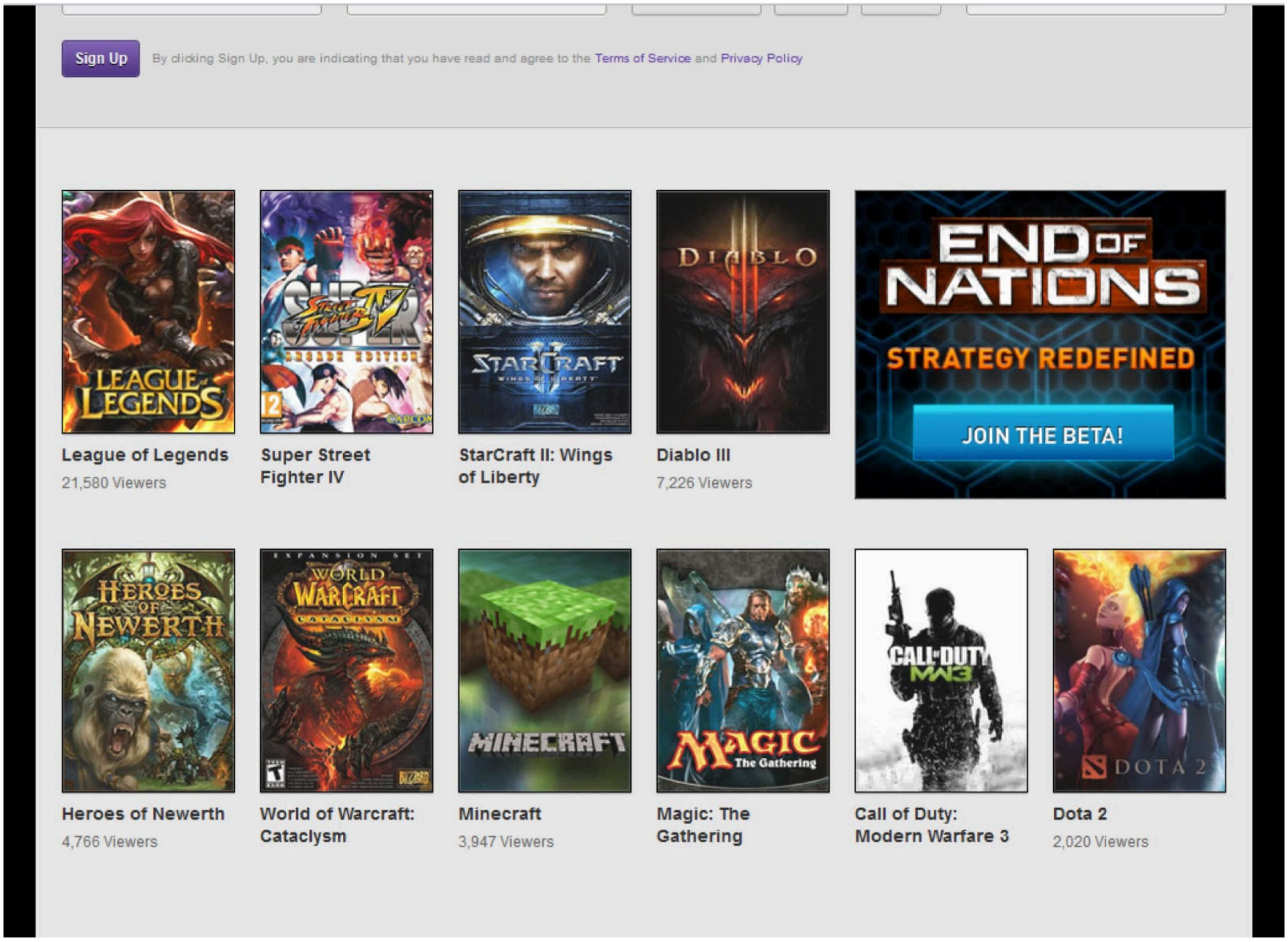
Product

Twitch is based on the non-intuitive idea that watching other people play videogames is entertaining. The company likes to compare this to watching poker on television which is now a massive franchise. Over the last 10 years, there has been a set of innovations that have brought audience, technology, and distribution to poker to make watching it on television entertaining. Two specific innovations were the "pocket cam" which allows you to see a player's cards, and the statistics engine that computes the likelihood of winning.

Twitch is following a similar playbook of bringing audience, technology, and distribution to videogame watching. On audience, there is clearly a large and growing user-base playing these games, as discussed in the "Market" section above. By amassing a large number of streams, Twitch presents a new broadcaster with an ecosystem where almost 20 million monthly uniques can tune in. On technology, the two key innovations are the Justin.tv infrastructure and theater/spectator modes that allow for commentary. The upcoming integration into more games will enable even more gamers to broadcast their gaming seamlessly. Finally, the ubiquity of broadband provides distribution, completing the televised poker analogy. The Twitch.tv site allows a viewer to browse by game title, begin watching a live, high-quality (720p) video stream (a "channel"), and chat with fellow viewers. The typical video stream includes a webcam view of the player (who often has a headset on to communicate with his competition) as well as the fast-paced gameplay.



Broadly, there are two types of channels on the site: * The major channels have 10-20K viewers watching a famous gamer and his/her narration or a highly-produced gaming program in the style of ESPN's SportsCenter. Viewers tune in to catch the action as it happens but are only able to passively observe given the size of the viewership. * Smaller channels have 100-300 viewers following a gamer. In this environment, viewers have more interaction with the live gamer via an integrated IRC chat. Viewers can ask questions and enjoy more social interaction, though the game play may be less impressive and the gamer less famous. They claim to be already running the largest IRC cluster in the world. Viewers can tune in to watch many of the most popular console and desktop games today. In addition to ongoing game-play, these games have 20-30 minute player-vs-player competitive modes, and gamers often play a "best of 5" tournament mode. Below are several of the most active game titles on Twitch:



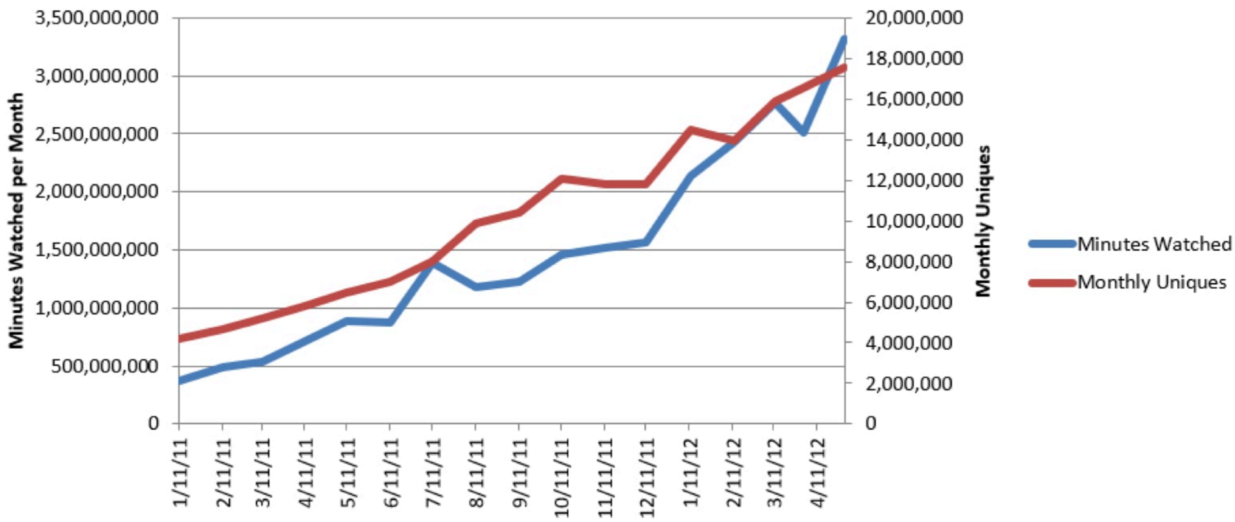
While no individual broadcaster represents more than 1% of views, the consolidation among the game titles being streamed is in line with their overall popularity in the market:

Game	% of broadcasts
Diablo III	16%
Minecraft	12%
League of Legends	12%
StarCraft II: Wings of Liberty	10%
Call of Duty: Modern Warfare 3	8%
World of Warcraft: Cataclysm	7%
Others	35%

On the other side of Twitch, broadcasters can currently stream content from desktops and videogame consoles. These broadcasters go through significant hurdles to share this content, ranging from jerry-rigging open-source desktop software to capturing and encoding their local desktop gameplay, to inserting a video-splitter into their television gaming consoles. We believe the fact that broadcasters are doing so despite this friction to be a good sign for the future of Twitch as they enable in-game broadcasting without additional setup.

Metrics

Twitch has experienced phenomenal month-over-month growth since January 2011. The company is growing monthly uniques at an average of 9.6% and minutes watched per month by 16.0%. In addition, average daily unique visitors now watch over 75 minutes of content while on the site. Of the 18M monthly uniques, ~40% are in the US, ~40% are in Western Europe, and ~20% are in Asia.



However, revenue has not tracked as we would expect given this growth, ostensibly due to CBS Interactive needing time to ramp up their sales efforts. Twitch did between $635k and $670k in net revenue in each of February, March, and April 2012. They claim to be on a run-rate of $1m in June now that CBSi is more fully ramped up. We plan to validate this prior to closing.

Having spoken with CBSi, we now have a firm understanding of how advertising on Twitch is sold, and anticipated to be sold in the near future. Currently CBSi sells 60% of Twitch inventory as premium "e-sports content" at $35-$40 CPMs and the remaining 40% on private exchanges with $8-$9 CPMs. Twitch receives half of this and, in turn, shares a $3.50 CPM with broadcasters, leaving Twitch with a net of ~$9.00 CPM. CBS segments the Twitch inventory into 3 categories:

E-sports – this is live gaming content between high-profile players or in a high-profile tournament. This drives the highest CPMs and is typically highly curated video content with announcers and on-screen overlay scores, etc. CBSi routinely gets CPMs above $50 for this content.

PG-13 – streamers can identify themselves as "PG-13"-friendly content which means that they will ensure that the gameplay and their audio/webcam does not contain R-rated violence, profanity, etc. CBSi asked for this category and Twitch is aggressively pushing its broadcasters into this bucket.

General – this is the catch-all category for the content that remains. CBSi is able to monetize this on private exchanges at $8-$9 CPMs, above remnant inventory rates

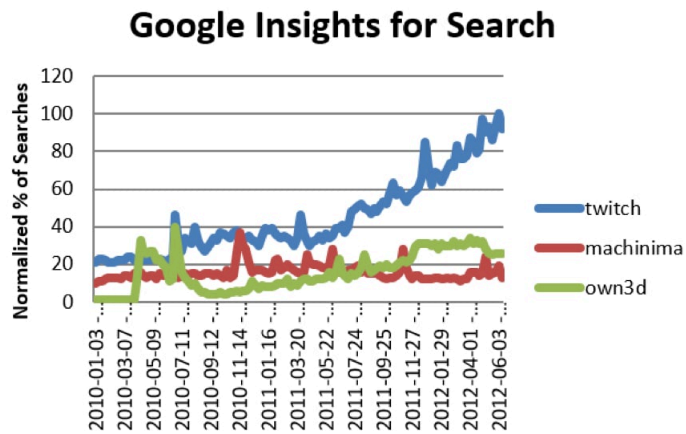
We don't have a firm view as to the long-run potential of subscriptions and PPV revenue but we are encouraged that even at small scale, the revenue from these categories is meaningful.

Risks

Market Size – As Twitch pioneers the market for streaming live game content, there is a risk that we are overestimating the latent demand for generating and viewing this novel content type. We are encouraged by the success of eSports in Asia and Machinima's gaming VOD content on Youtube but can't say for sure that live gaming will attract an audience of similar size. We continue to view this as the single largest existential risk around the investment, but have become increasingly comfortable after YouTube, CBSi, and game publishers uniformly viewed a large percentage of the Machinima audience as overlapping with potential Twitch viewers.

Monetization – We've generally shied away from media business models because monetization is difficult. This is a risk for Twitch – especially given that the content is on the borderline between premium and UGC. Adap.tv classifies it as UGC and therefore is unable to monetize the inventory as premium in their marketplace. Thus far, CBSi has been able to position it as high-quality premium content and sells it alongside their other gaming properties at CPMs upwards of $25-30. CBSi is continuing to segment the Twitch inventory and the long-term average eCPM is still not certain but is likely to remain well above remnant rates given the highly-targeted, highly-monetizable audience. The Twitch demographic is a lucrative one and they should be able to continue to monetize such a highly engaged, targeted demo watching online video effectively. Future business models predicated on subscriptions or virtual good sales are purely speculative at this stage.

Competition – Despite trailblazing the market for streaming live game content and growing significantly faster than its direct competitor, own3d.tv (no longer a meaningful threat to Twitch), Twitch faces potential competition on many fronts. YouTube is the dominant VOD platform in gaming and recently solidified its relationship with Machinima, the largest gaming VOD content source, through a $35m equity investment sponsored by YouTube (not Google Ventures) in May 2012. After YouTube noticed that 23 of their top 100 gaming contributors were streaming on Twitch, they made a push to popularize gaming on the YouTubeLive platform. Despite initially attracting 12 of the 23 to YouTube Live, all 12 streamers and 27 more from the top 100 have since rejoined Twitch because of the company's focus on gaming features in their platform. Even though YouTubeLive's initial push into gaming failed to break Twitch's momentum, this is a key risk as the Youtube product managers and business development folks we spoke with were keenly aware of Twitch's success and admitted that it was enabled by deficiencies in their Live platform. They are focused on catching up, however at the same time predicted that they wouldn't prioritize building the necessary live gaming features to do so effectively because of conflicting corporate priorities (e.g., YouTube is primarily focused on getting high quality entertainment content onto their platform).



Game publisher dynamics – While not their core business, game publishers are realizing the power of live video to drive engagement in their communities and could attempt to build competitive streaming destination sites. While the majority of publishers have expressed an interest in partnering with Twitch by integrating their SDK and/or supporting the existing streaming ecosystem through the construction of in-game spectator and theater modes, game publishers are notoriously difficult to work with and could be fickle on these points. Our continued conversations with publishers, as well as their growing strategic interest in investing in Twitch, have led us to believe they view Twitch as a strategic partner and are focused on these integrations. The most likely candidate for building directly competitive capabilities is Steam, an online gaming platform operated by Valve, with over 1,100 titles including several of Twitch's top games such as Call of Duty: Modern Warfare 3 and Dota 2. With an average of 3.5m active gamers at any one time, Steam could be a threatening fast follower if they overcame the challenge of building internal online video expertise. They don't have any such capabilities today and to our knowledge are not working on it.

Team

Emmett Shear – CEO. Despite being a first time CEO (he was CTO of Justin.tv before spearheading the Twitch initiative) Emmett has impressed us with his open leadership style, calm and effective negotiating approach, and his passion for the Twitch product and community. The one thing we hope to see out of Emmett going forward is a deeper focus on implementing process and standards (specifically around partner support) as the team scales. We believe he can be the long term CEO of the business.

Kevin Lin – COO. More than any other executive, Kevin is Emmett's partner in building Twitch. He is a detail-oriented executive whose primary focus is on the day-to-day operations of the business. He is a grounded, solid counterpoint to Emmett's focus on high-level strategic thinking. He handles the financial aspects of the business today but the business will need a CFO pretty quickly.

Jonathan Simpson-Bint – CRO. Jonathan joined Twitch in October 2011 after a career in game content having founded IGN in 1996 and subsequently developing products for publishers including Microsoft, Sony, and Nintendo. He is the prototypical industry insider and is the reason Twitch has had the ear of top brass at Activision, EA, Ubisoft and other tier one publishers. Beyond having a world class rolodex, Jonathan has proved himself to be an excellent salesman and core asset to the Twitch team.

While the remainder of the executive team is strong, specifically in infrastructure and video technology, we believe Twitch will need to augment the group with an experienced ad sales leader and more business development talent as they continue to scale.

Deal

We recommend a $13 million investment by BVP in an $18 million round including insider Alsop-Louie Partners and additional strategic co-investors at $53 million pre-money. We would own 18.3% of the Company, and similar to the prior rounds, our security includes participation with a 3X cap.

Scenario Analysis

Justin.tv Series B Outcomes Table

Investment

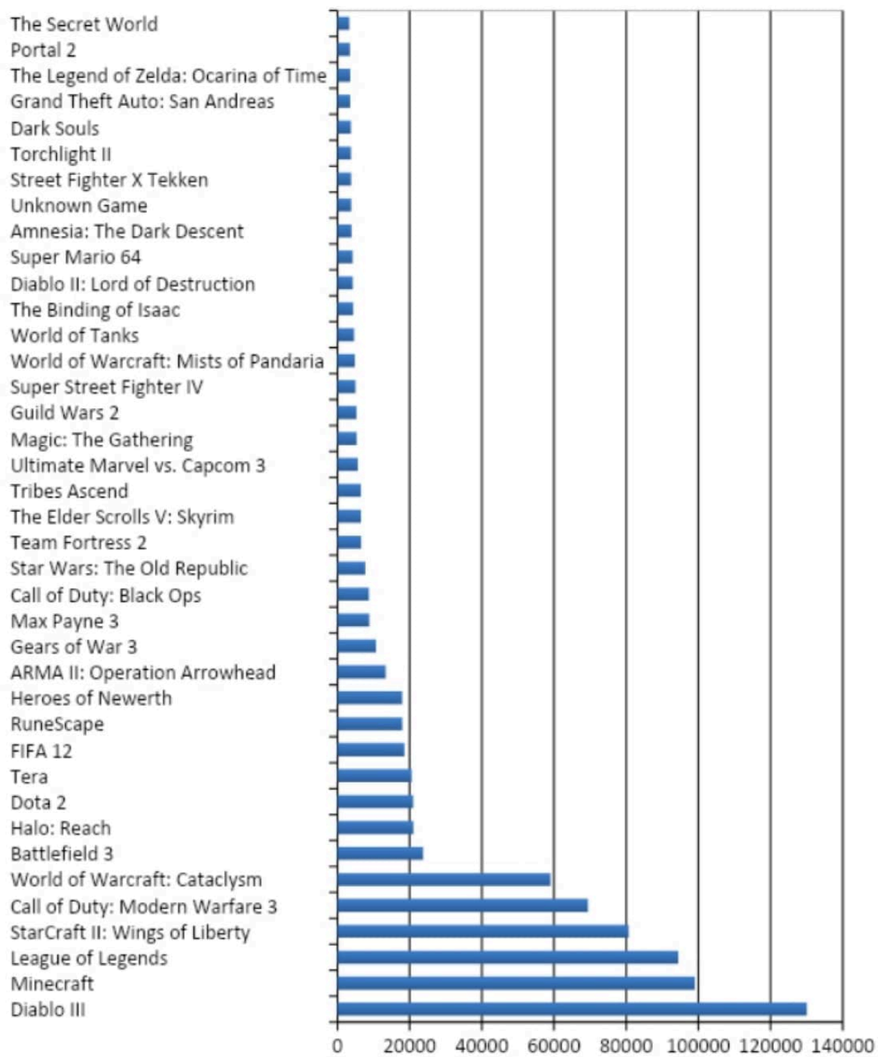
Series B Investment	$18.0	Pre-Series B Preference	$6.9
Pre Money	$53.0	BVP Series B	$13.0
Post Money	$71.00	BVP Fully Diluted Ownership	18.3%
Cap on Series B Participation	3x	Investment Date	Sep-12

				BVP		
Outcome	**Exit Value**	**Exit Date**	**Prob.**	**Gross Proceeds**	**Mult.**	**IRR %**
Wipeout. Twitch is sued by game publishers for copyright infringement or game veiwing is a passing fad in the hardcore gaming community. Shut down.	$0	Mar-14	15%	$0.0	0.00x	-100.0%
No Growth. Twitch has fully penetrated the market for game viewership and is unable to further monetize their current inventory. Sold for 3x revenue to a gaming content site.	$30	Sep-14	20%	$13.9	1.07x	3.5%
Slow Growth. The company continues to acquire viewers, but at a decreasing rate. Levels off at 1/5 the size of Machinima and CPMs compress due to the commoditazation of video advertising. Sold for 3x revenue to a gaming content site.	$75	Mar-15	30%	$22.5	1.73x	24.1%
Strong Growth. Twitch continues to grow at a steady pace, reaching 1/2 Machinima's current size, but engagement falls as casual gamers flood the platform. Sold for 4x revenue to a large media conglomerate.	$240	Sep-15	20%	$43.9	3.38x	49.3%
Market Leader. Twitch maintains its lead as the #1 place to watch live gaming content and grows to 100m MUs. CPMs hold and egnagement hold with scale and the company goes public at 4x revenue.	$550	Mar-16	12%	$100.7	7.75x	79.9%
Home Run. Twitch outpaces Machinima as the #1 place to watch game related content on the internet growing to 200m monthly uniques. Goes public at 5x revenue.	$1,250	Sep-17	3%	$228.9	17.61x	78.1%
Weighted Average (to BVP)					**2.87x**	**38.2%**

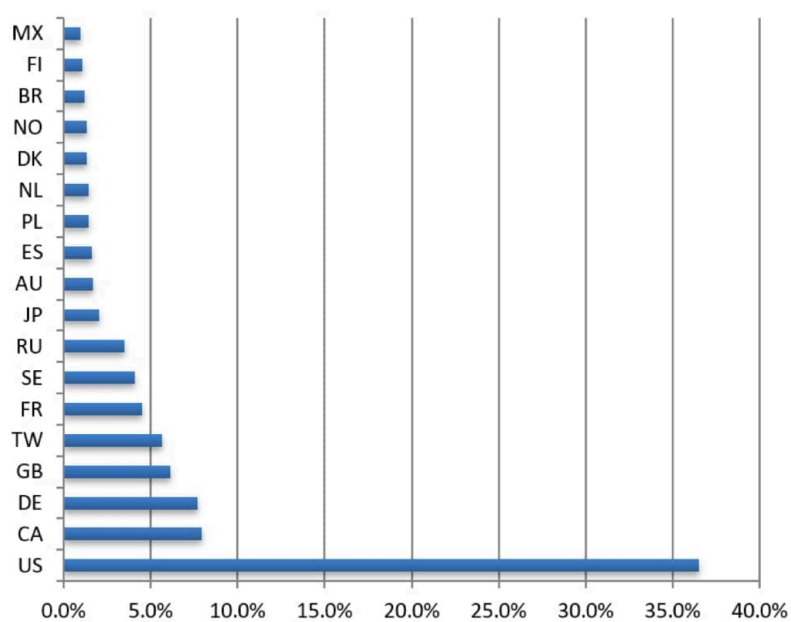
Conclusion

We are excited by the opportunity to make a meaningful investment in a very strong, scrappy team pioneering a fast-growing video community site with a very passionate and engaged audience. The company has strong momentum in viewership and is on the cusp of some very large partnerships which should further accelerate their growth and yield additional monetization and engagement opportunities. We are also encouraged by the tailwinds behind eSports, as well as the size and growth rates of other ecosystem players like Machinima. Having validated the company's strong partnerships with game developers and media and become comfortable with ecosystem players as a proxy for market size, we are excited to recommend that BVP invest $13m to lead the Series B financing of Twitch.

Appendix I - Traffic Distribution



Video View Distribution by Country



Why I Am Leaving Goldman Sachs

By Greg Smith
New York Times Article

Wednesday March 14th, 2012

TODAY is my last day at Goldman Sachs. After almost 12 years at the firm — first as a summer intern while at Stanford, then in New York for 10 years, and now in London — I believe I have worked here long enough to understand the trajectory of its culture, its people and its identity. And I can honestly say that the environment now is as toxic and destructive as I have ever seen it.

To put the problem in the simplest terms, the interests of the client continue to be sidelined in the way the firm operates and thinks about making money. Goldman Sachs is one of the world's largest and most important investment banks and it is too integral to global finance to continue to act this way. The firm has veered so far from the place I joined right out of college that I can no longer in good conscience say that I identify with what it stands for.

It might sound surprising to a skeptical public, but culture was always a vital part of Goldman Sachs's success. It revolved around teamwork, integrity, a spirit of humility, and always doing right by our clients. The culture was the secret sauce that made this place great and allowed us to earn our clients' trust for 143 years. It wasn't just about making money; this alone will not sustain a firm for so long. It had something to do with pride and belief in the organization. I am sad to say that I look around today and see virtually no trace of the culture that made me love working for this firm for many years. I no longer have the pride, or the belief.

But this was not always the case. For more than a decade I recruited and mentored candidates through our grueling interview process. I was selected as one of 10 people (out of a firm of more than 30,000) to appear on our recruiting video, which is played on every college campus we visit around the world. In 2006 I managed the summer intern program in sales and trading in New York for the 80 college students who made the cut, out of the thousands who applied.

I knew it was time to leave when I realized I could no longer look students in the eye and tell them what a great place this was to work.

When the history books are written about Goldman Sachs, they may reflect that the current chief executive officer, Lloyd C. Blankfein, and the president, Gary D. Cohn, lost hold of the firm's culture on their watch. I truly believe that this decline in the firm's moral fiber represents the single most serious threat to its long-run survival.

Over the course of my career I have had the privilege of advising two of the largest hedge funds on the planet, five of the largest asset managers in the United States, and three of the most prominent sovereign wealth funds in the Middle East and Asia. My clients have a total asset base of more than a trillion dollars. I have always taken a lot of pride in advising my clients to do what I believe is right for them, even if it means less money for the firm. This view is becoming increasingly unpopular at Goldman Sachs. Another sign that it was time to leave.

How did we get here? The firm changed the way it thought about leadership. Leadership used to be about ideas, setting an example and doing the right thing. Today, if you make enough money for the firm (and are not currently an ax murderer) you will be promoted into a position of influence.

What are three quick ways to become a leader? a) Execute on the firm's "axes," which is Goldman-speak for persuading your clients to invest in the stocks or other products that we are trying to get rid of because they are not seen as having a lot of potential profit. b) "Hunt Elephants." In English: get your clients — some of whom are sophisticated, and some of whom aren't — to trade whatever will bring the biggest profit to Goldman. Call me old-fashioned, but I don't like selling my clients a product that is wrong for them. c) Find yourself sitting in a seat where your job is to trade any illiquid, opaque product with a three-letter acronym.

Today, many of these leaders display a Goldman Sachs culture quotient of exactly zero percent. I attend derivatives sales meetings where not one single minute is spent asking questions about how we can help clients. It's purely about how we can make the most possible money off of them. If you were an alien from Mars and sat in on one of these meetings, you would believe that a client's success or progress was not part of the thought process at all.

It makes me ill how callously people talk about ripping their clients off. Over the last 12 months I have seen five different managing directors refer to their own clients as "muppets," sometimes over internal e-mail. Even after the S.E.C., Fabulous Fab, Abacus, God's work, Carl Levin, Vampire Squids? No humility? I mean, come on. Integrity? It is eroding. I don't know of any illegal behavior, but will people push the envelope and pitch lucrative and complicated products to clients even if they are not the simplest investments or the ones most directly aligned with the client's goals? Absolutely. Every day, in fact.

It astounds me how little senior management gets a basic truth: If clients don't trust you they will eventually stop doing business with you. It doesn't matter how smart you are.

These days, the most common question I get from junior analysts about derivatives is, "How much money did we make off the client?" It bothers me every time I hear it, because it is a clear reflection of what they are observing from their leaders about the way they should behave. Now project 10 years into the future: You don't have to be a rocket scientist to figure out that the junior analyst sitting quietly in the corner of the room hearing about "muppets," "ripping eyeballs out" and "getting paid" doesn't exactly turn into a model citizen.

When I was a first-year analyst I didn't know where the bathroom was, or how to tie my shoelaces. I was taught to be concerned with learning the ropes, finding out what a derivative was, understanding finance, getting to know our clients and what motivated them, learning how they defined success and what we could do to help them get there.

My proudest moments in life — getting a full scholarship to go from South Africa to Stanford University, being selected as a Rhodes Scholar national finalist, winning a bronze medal for table tennis at the Maccabiah Games in Israel, known as the Jewish Olympics — have all come through hard work, with no shortcuts. Goldman Sachs today has become too much about shortcuts and not enough about achievement. It just doesn't feel right to me anymore.

I hope this can be a wake-up call to the board of directors. Make the client the focal point of your business again. Without clients you will not make money. In fact, you will not exist. Weed out the morally bankrupt people, no matter how much money they make for the firm. And get the culture right again, so people want to work here for the right reasons. People who care only about making money will not sustain this firm — or the trust of its clients — for very much longer.

Greg Smith is resigning today as a Goldman Sachs executive director and head of the firm's United States equity derivatives business in Europe, the Middle East and Africa.

Bessemer Venture Partners

The Memos

Auth0

To: BVP Group
From: David Cowan, Sunil Nagaraj, and Peter Lee
Date: June 28, 2014
Re: Auth0 Seed IR

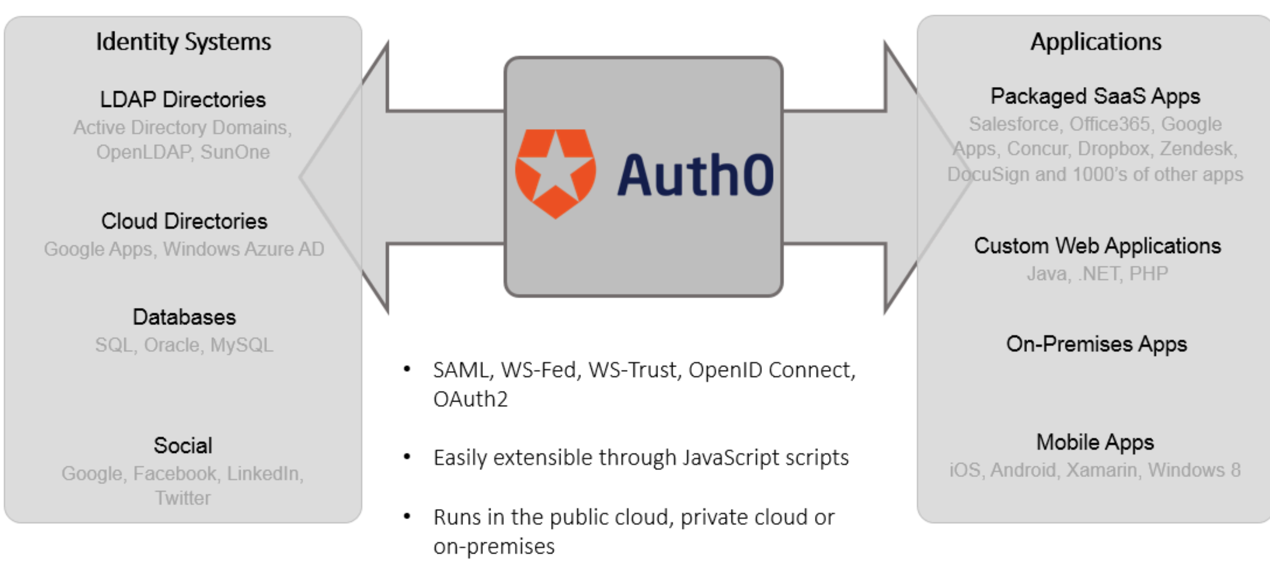
Auth0

On Monday, Auth0 co-founders Jon Gelsey, Eugenio Pace, and Matias Woloski will present from Menlo Park. The Seattle-based company bills itself as the "Twilio of identity" because it enables developers to outsource their identity and access management for their web and mobile apps. With just a few lines of code, Saas vendors and enterprise developers can use Auth0's identity-as-a-service functionality to connect their apps to a variety of identity sources making it easier for end users to sign in. The team of 12 has raised $850K to date and is generating $10K of MRR from 75 paying customers. Though we met the company just two weeks ago, we accelerated our diligence because this investment fits well with our developer roadmap. Auth0 appeals to developers first and foremost with superior ease of use, technical documentation, and metered pricing. We moved quickly and were able to convince the company to let us invest $1M of additional capital in their prior $850K seed round which is effectively a convertible note with an $8M pre-money cap. We have also negotiated a super pro rata right to take up to 1/3 of their Series A.

Product

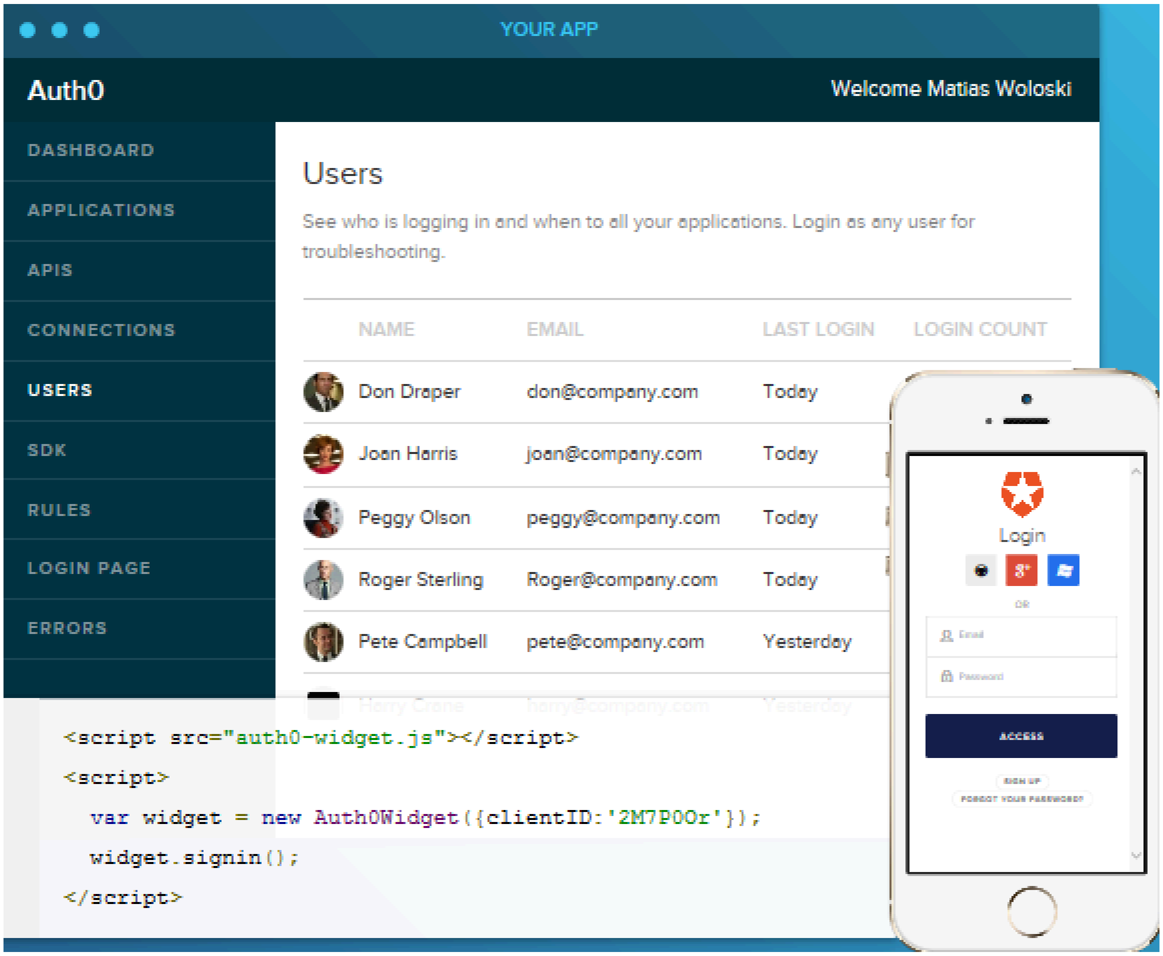
Auth0 allows developers and enterprises to authenticate and authorize any application or resource with any identity store with just a few lines of code. As a result, they refer to themselves as the "Twilio for identity." Whereas Twilio makes it easy for developers to enable voice and SMS, Auth0 does the same for identity and access management (IAM). They provide an IAM system that runs in the cloud or on a managed VM behind the firewall. This allows developers to offload the creation and ongoing management of their apps' login/authentication modules while retaining best-in-class functionality and security. Auth0 sits between a developer's application and the systems that know about users. These systems, often called identity providers, include any of the following:

> Microsoft Active Directory domain controllers that hold all information about an organization's users, passwords, and permissions
>
> LDAP (lightweight directory access protocol) or SAML-based identity systems (SAML = Security Assertion Markup Language, an XML standard based originally on VeriSign's X-TASS protocol)
>
> Social networks like LinkedIn, Google, Facebook, GitHub and others that allow "Connect with Facebook" functionality
>
> A simple username/password table for credentials unique to a particular app



There are two categories of developers who would use Auth0. First, Saas vendors, such as Adaptive Insight, can use Auth0 to allow end users to login with their company-internal credentials, a social login, or a unique username and password. This speeds their time to market and streamlines the user experience by eliminating another username and password to remember. Furthermore, the 30+ social logins available through Auth0 provide a 1-click experience and enable a rich user profile. The other category of developers that Auth0 targets are enterprise app developers who build a company's internal apps and want to quickly enable authentication in a complex identity environment. This also means that an app can authenticate partners, vendors, consultants without having to manage their usernames and passwords. In this way, Auth0 provides automated tools for quickly setting up identity federation.

To get started, developers sign up at Auth0.com, select their programming language and identity store, and receive a few lines of code. Once they add this to their app, they get a login widget that includes whichever identity providers they have selected. The example below shows a mobile app that has selected github, Google+, Windows Live, and an app-specific login option. Auth0 serves up the entire login widget including "signup" and "forgot your password" functionality. With a few clicks, this developer could add the ability to authenticate against a company's Active Directory server as well. Despite the variety of authentication options, developers get a single, unified list of all users, regardless of how those end users chose to authenticate. Auth0 normalizes this user data so that developers can depend on standardized user fields deeper in their app.



Developers love this level of abstraction so they can focus on building the internals of their app. We have also heard from developers that there are a lot of obstacles and risks to building their own authentication functionality. First, it is difficult to find developers who are knowledgeable about this topic. Several developers have told us that they see authentication as absolutely critical to get right as a single mistake or vulnerability could be highly detrimental. While some have tried to build it internally, they are never sure they are doing it the right way and incorporating the latest best practices. Furthermore, the landscape of identity providers is constantly evolving, be it Facebook changing their API, Microsoft patching an Active Directory vulnerability by changing its interface, or a new enterprise identity source coming online.

We spoke with one customer (Concurix) who estimated that building a basic version of this functionality could take 2 engineers a month or two to build initially and then require an engineer plus support staff on an ongoing basis for password resets and other issues. However, this customer (a small Saas vendor) said that if their Auth0 bill exceeds $50K/year, they might consider doing it themselves but noted that their real concern is a mistake or vulnerability in their authentication code (such as Heartbleed). This makes the true cost of DIY authentication much higher.

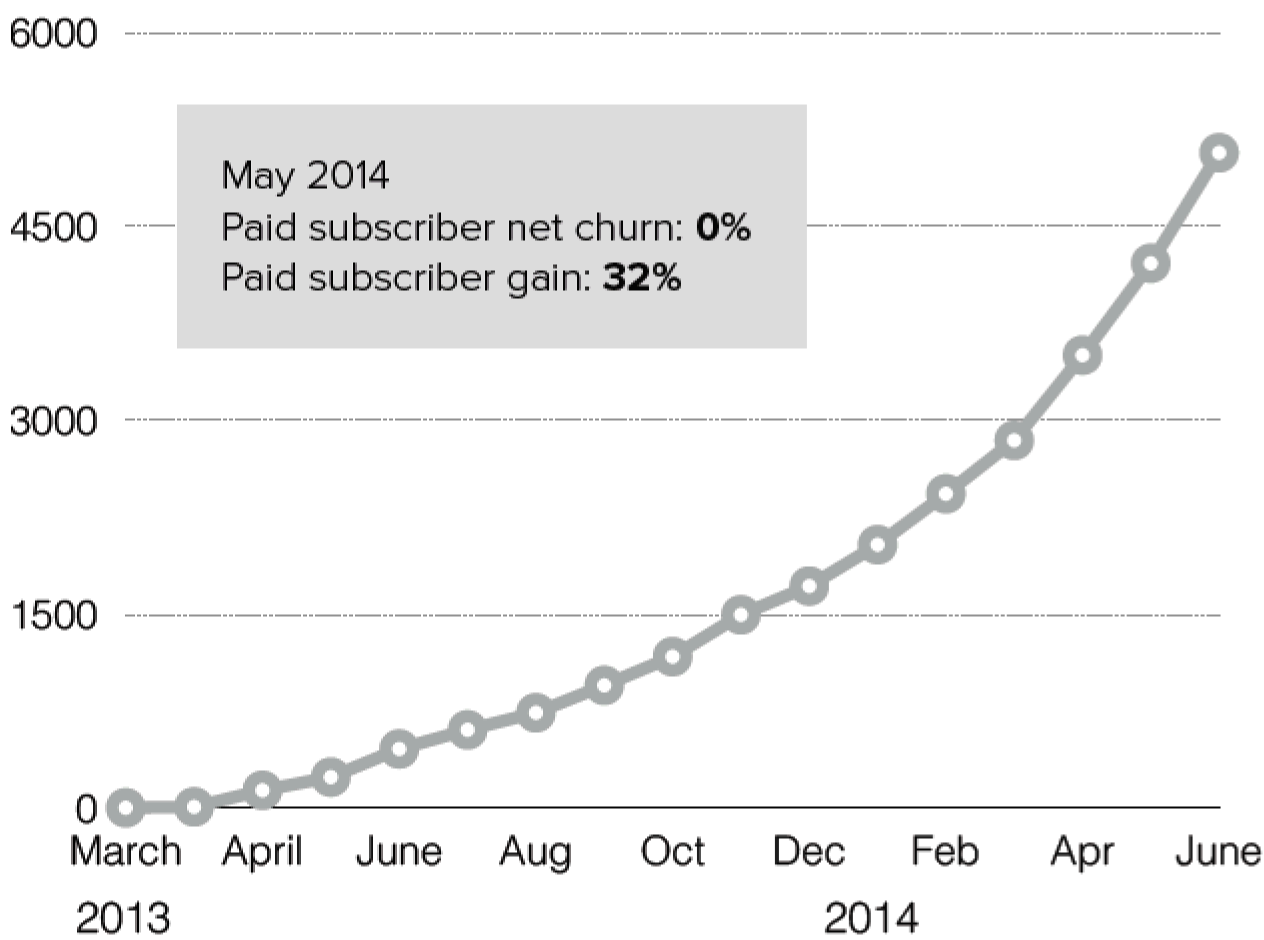
Beyond authentication, Auth0 provides several features that developers love including audit logs, analytics, outbound SSO (like Okta), and extensible rules. This last feature means that developers can use rules to extend the authentication pipeline to perform arbitrary operations: log activity to an external system; add extra validations on user access based on context such as date, time, device, network, application; etc. This gives the developer full control to execute additional authentication steps such as two-factor authentication. The Auth0 community has already created over 40 rules which are posted on their GitHub. One rule that has been popular is to create a new lead in Salesforce on first login. This rule calls Salesforce API to record the contact as a new Lead in the background when a new user signs up. Another popular rule performs "profile enrichment" by calling FullContact's API to fill in additional details on users based on their email addresses.

Auth0's current pricing is based on the number of applications and the number and type of users to be authenticated. The company is continuing to iterate on their pricing model.

	MOST SELECTED			
	DEV	TEAM	PRO	BIG
	$ 0 per month	$ 19 per month	$ 99 per month	$ 499 per month
	BASIC FEATURES	YOUR BRANDING	ENTERPRISE FEATURES	ENTERPRISE FEATURES
# of Applications / APIs	1	1	4	8
Active* Social Users	100	200	2,000	20,000
Active* Users w/ Password	50	100	1,000	10,000
Active* Enterprise Users	10	20	200	2,000

Traction/Financials

The company has generated an impressive amount of traction despite their early stage and small team. They currently have over 75 paying customers that generate $10K of MRR at 90%+ gross margins. Though it is early, the company has had basically no churn in recent months as the v1 product has matured. Since launching, they have grown to almost 5,000 registered developers of which 350 are live and using Auth0 to authenticate users daily.



The company has not spent any money on advertising though they do regularly speak at conferences and events as thought leaders in the field. Since Jon Gelsey joined as CEO 6 months ago, we believe the company's growth has been inflecting with both self-service and enterprise customers. Currently the enterprise customers are Sancor Seguros (Argentina's largest insurance company with 4,000 users authenticating their insurance policy management and loss management apps with Auth0), FMI (a research arm of Novartis), TMZ (the media site), and The Journey (a national church). The customer pipeline is strong as well with a diverse set of large accounts in redlines right now.

Auth0 is currently doing $5K in self-serve MRR and $5K in enterprise/direct MRR, each growing at 15-20% a month. They currently have 71 self-serve customers and 4 enterprise customers. Based on accounts currently in the pipeline, they have visibility to a 2014 exit MRR of $100K though we have not spent a significant amount of time vetting their pipeline. Their current plan is to exit 2015 at $500K MRR based on 75 enterprise customers and 1,200 self-serve accounts.

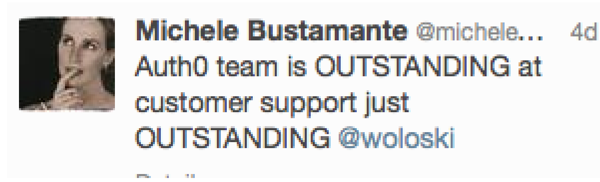
We have spoken to several of their customers and they highlight a few common themes:

> Auth0 has one of the sharpest teams in the identity space. Co-founders Eugenio and Matias are well known in the identity space and engender a tremendous amount of trust with their customers.
>
> Customer support is off the charts. Every single customer (as well as many self-service customers on Twitter) rave about how fast and helpful customer support is.


@ Krzysztof Kozmic mentioned you
Krzysztof Kozmic @kkozmic 3d
I'm deeply impressed by @authzero support.

Yesterday I noticed a feature was missing. Spoke to support.

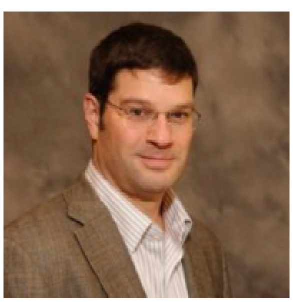
Today the feature is live.


Michele Bustamante @michele... 4d
Auth0 team is OUTSTANDING at customer support just OUTSTANDING @woloski

Their documentation is consistently cited as the best out there and a key reason developers chose to use Auth0. It is incredibly thorough and has deep code samples that automatically integrate your user keys so you can copy and paste snippets directly into your app. Their comprehensive and developer-centric documentation is a key reason that integration with Auth0 can take minutes to get up and running.

Team

Auth0 was co-founded by Eugenio Pace and Matias Woloski in February 2013. In January 2014, Jon Gelsey joined as CEO. The team is now up to 12, with Jon and Eugenio in Seattle and the rest of the team in Buenos Aires, Argentina. All but 3 are engineers.



Jon Gelsey, CEO – We have been impressed with Jon and the impact he has made in 6 months since he joined the team. He brings a diverse business background including 7 years at Microsoft in corporate development and 6 years at Intel Capital. We have found him to be very thorough and detail-oriented. Eugenio and Matias brought in Jon to serve as CEO and we believe he is the right fit at this stage.

Eugenio Pace, VP of Customer Success and Co-Founder – Eugenio may be the most impressive of the group as he is adept at the business and technology sides of Auth0. He can seamlessly transition from deep technical architecture to high-level business strategy. He brings 13 years of product experience at Microsoft, mostly leading the patterns and practices group of Microsoft which creates technical guidance for all Microsoft developers. Along with Matias, he wrote Microsoft's book on identity and federation and it is from this work that he came up with the idea for Auth0.

Matias Woloski, CTO and Co-Founder – We have spent the least amount of time with Matias but from what we know, he is the technical expert behind Auth0 and leader of the engineering team in Buenos Aires. He worked with Matias on his identity work as a Microsoft contractor. Prior to Auth0, he spent 8 years at a technology consulting company that created developer evangelism materials. It is here that he honed his technical skills and this is reflected in Auth0's ease of use and phenomenal technical documentation.

Competition

The core issue that Auth0 addresses is the tension between a heterogeneous IT landscape of legacy behind-the-firewall Identity and Access Management (IAM) systems (Active Directory, LDAP, etc. from vendors like Microsoft, CA, IBM, Oracle, NetIQ and others) and the rapid adoption of best-of-breed SaaS applications (Salesforce, Box, etc.) each with their own username and password schemes.

The rapid move to SaaS creates tension for both IT and SaaS vendors. IT struggles to maintain a consistent IAM policy across legacy and new applications (Which users have access to which applications, how do we enforce the right level of access, how do we retract access when an employee is terminated, etc.). Vendors struggle to support all the various flavors of enterprise IAM that IT needs, particularly when IAM is not a core competency, as described in the Product section.

The first wave of startups attacking this problem addressed IT needs first with a single sign-on (SSO) solution, Essentially an abstraction layer across SaaS applications, these companies raced to build app catalogs or portals, to allow IT to maintain a single set of credentials, and then federate those to as many SaaS applications as IT wished to support. On the vendor side, they urged the adoption of the authentication standard SAML, as a way of leveling out the field. In practice, SAML is implemented by only a fraction of SaaS vendors, and so Cloud SSO vendors often bundle sizable professional services contracts to build custom connectors for the long tail of apps.

Of this set, Okta is the largest, and primarily targets the enterprise segment. They just raised a $75M Series E, with an estimated $30M ARR at the end of 2013. (BVP uses Okta as our own internal SSO solution.) OneLogin is also doing quite well, aiming more at the mid-market, with an estimated $10M ARR at the end of 2013. While there are several businesses rapidly gaining traction with this model, we've stayed away from making an investment here, as our ultimate view is that SSO will commoditize, and all vendors will ultimately support the full catalog of apps. (In our interviews with customers, while they confirmed the strong need for an SSO solution, they are already beginning to view SSO as a commodity, and expect to evaluate their next contracts primarily on price.)

On the SaaS developer side, while the more nascent space, there are several emerging players:

ForgeRock is one of the best-funded, having just raised a $30M Series C. Led by former Sun employees, ForgeRock is focused on supporting the Sun Identity Stack, now open source, with a variety of services and training to help support the ecosystem. While a powerful IAM solution, the model is very different from Auth0, and less accessible to developers looking for a Twilio-like service to get them up and running quickly.

Stormpath is the closest in terms of model, with a similar developer-centric approach. However, after 18 months in market, they seem primarily web-focused at the time (Facebook, Google+, etc.) with limited traction of ~100 developers. They have just begun to add support for enterprise identity providers, so this is a competitor we continue to watch closely.

Gigya is an Israeli company that also delivers an IAM solution focused on social login; however, their target customer is the Chief Marketing Officer, with login support primarily used as a way to gather marketing and targeting data. This application is best suited for large consumer sites, with customers like ABC, CBS, CNN, etc.

For the SaaS developer market, we actually believe DIY will be the strongest competition. Particularly with no marginal COGS (unlike Twilio which bundles communications services) at some price point a SaaS vendor might be tempted to roll their own solution. Moreover, if only a few, high-value customers have a single identity system to implement, perhaps a DIY solution is not too difficult, or at least worth the cost savings. In the case where an enterprise has multiple identity stores however, the problem becomes much more difficult. The Auth0 team contends this latter scenario is much more common. Moreover, they contend that while the adoption of SSO solutions like Okta and OneLogin will help rationalize some of this heterogeneity, like many "standards" not all SAML implementations are the same, leaving developers to implement multiple versions anyway. Given our customer conversations to date, we're inclined to agree, but plan to confirm further with diligence.

Lastly, it is possible that as SaaS vendors mature in their needs, they ultimately "graduate" to an enterprise solution like ForgeRock, or need to extend the feature set beyond what Auth0 offers, but this has not yet happened. As detailed in the Product section, customers we've spoken to are quite happy with the solution, even in its V1 state, and the early cohorts are promising. We believe that Auth0 will grow with these smaller customers and continue to add functionality rapidly so these customers never consider more cumbersome enterprise solutions.

Risks

Competition – the IAM space is a crowded one with several legacy competitors going after lucrative enterprise contracts. We believe Auth0's focus on developers and rich documentation make it stand out among the audience of developers. This combined with the fact that our developer roadmap hinges on the increasing ability of developers to select critical technology components for an organization means that Auth0 should win in this space.

Market size – The company has enjoyed strong early traction with 75 paying customers, but we may find that the product only resonates with early adopters. The majority of customers may want a heavier weight solution and Auth0's message may get lost in the noise for them.

Technology – Is the current product, which has found traction with so many developers, complex enough to justify its existence? Will developers prefer to build authentication themselves? We have had this question with several of our developer roadmap companies, and the answer is almost always that developers want to focus on their core problem and outsource/abstract away everything else.

Deal

We have verbally agreed to invest $1M in Auth0's prior seed round, along with a super pro rata right for 33% of the Series A. We are aiming to close by this Thursday 7/3. Last quarter, the team closed an $855K seed round as a SAFE with an $8M pre-money valuation cap. A SAFE, or "Simple Agreement for Future Equity", is a YCombinator-devised financial instrument that behaves much like a convertible note but the investment earns no interest and has no maturity date. This $1M of capital, combined with the $780K currently on the balance sheet, should take the company through the end of 2015 on a conservative plan. However, if the company achieves its top-line growth goals, we can expect the company to spend more aggressively and raise a Series A in early- to mid-2015. Just for historical context, Twilio raised its Series A with only about $20K of MRR, though I believe that Sendgrid's MRR was much higher at the time of its Series A (it was already $800k when we led the Series B).

Scenario Analysis

				Seed		
Outcome	Exit Value	Exit Date	Prob.	Gross Proceeds	Mult.	IRR %
Wipeout. Auth0 has team issues and falls apart.	$0	Jun-15	30%	$0.0	0.00x	-100.0%
Team sale. Auth0 is not able to attract more customers but the team's strong reputation drives a fairly attractive team sale to competitor	$10	Jun-15	30%	$1.0	1.00x	0.0%
Slow Growth. Auth0 grows from $10K to $150K of MRR (75 to 1,000 customers) but slower than planned. 25% add'l dilution from Series A.	$30	Jun-16	20%	$2.3	2.28x	52.2%
Strong Growth. The company becomes a leader in identity-as-a-service with 150 enterprise customers and 2,000 self-serve customers. 35% add'l dilution.	$150	Jul-17	19%	$9.9	9.90x	112.1%
Home Run. Auth0 powers identity for most Saas vendors and enterprise app developers. Goes public at 8x 2019 revenues of $125M (1,000 enterprise and 5,000 self serve customers). 50% add'l dilution.	$1,000	Jul-19	1%	$50.8	50.76x	117.0%
Weighted Average (to BVP)					**3.15x**	**51.2%**

Summary

Autho0 sits at the intersection of our cyber security and developer API roadmaps: with its strong vision, compelling team, and promising early traction, Auth0 could be the Twilio of identity. Our diligence has made us more confident that Auth0 is the ideal identity-as-a-service provider for a growing number of developers. We believe this $1M seed investment represents an attractive opportunity to get in early and maintain ball control for the eventual Series A. We recommend BVP make this investment.

PagerDuty

To: BVP Group
From: Trevor Oelschig, Ethan Kurzweil
Date: July 21, 2014
Re: PagerDuty Series B IR

Following PagerDuty CEO Alex Solomon's presentation to the partnership on June 16th, we signed a term sheet to lead the company's Series B with an investment of $19.6m out of a $27.2m round at a $180m pre-money valuation (14x June ARR) with a 5% unallocated option pool. In addition, we will purchase $6m of Series FF shares directly from the founders; these shares convert into Series B once we purchase them.

As a refresher, PagerDuty is the leading incident management system / command center for IT operations. Since its launch in 2009, PagerDuty has rocketed to the #1 position in the space on account of a well-designed, easy-to-use product and a lack of any strong competition until recently. SaaS metrics are off the charts. Most metrics are in the right column of our framework—136% YoY growth, 0.5% gross MRR churn, 103-104% monthly net negative churn with upsells, and gross margin in the high 80s%. The company ended June on a $12.6m ARR.

After the company presented to the partnership, we've spoken to a large number of customers and companies using competing products and spent more time with the founders and broader exec team—CFO, VP Sales and VP Marketing. We continue to be very excited about an investment here, as it is clear that the company has hit a sweet spot and very quickly cemented itself as the de facto solution for managing, routing and measuring alerts—not just among early adopter tech companies but mainstream enterprises. The big bet is that PagerDuty can expand from being an alerting tool to a full platform for IT operations that provides cross-platform and app-specific intelligence and analytics. If the company is successful here, we see a path to them establishing a new category of IT operations performance software and comprising a dominant position within it. Even without achieving this bigger vision, there are a large number of potential acquirers from old-school software vendors like IBM, HP and BMC to newer players like ServiceNow (which just completed its second ~$100m acquisition), Splunk and SolarWinds that help mitigate the downside risk.

We've been very positive about the quality of the broader executive team that Alex has assembled - and the company's finance, marketing and sales processes are further along than we anticipated. While there is still work to do on all fronts, the company is just beginning to reap the rewards from these investments and we're confident that their current trajectory isn't a fluke and there is a great deal more opportunity even without expanding the product too much beyond the current core alerting capabilities. At the same time, our diligence has highlighted the risk that competition from startups like VictorOps and incumbents has finally begun to wake up to the magnitude of this opportunity and the company will have to turn its attention back to product innovation to stay ahead of the pack.

Original Summary

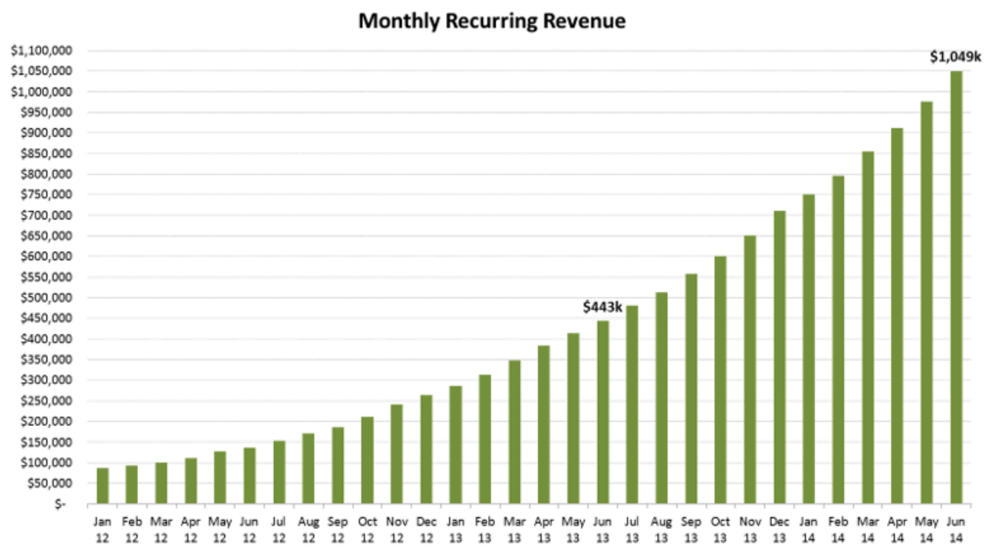
Think of the product as a 9-1-1 dispatch system for IT operations teams in that it connects to all systems and routes alerts to whichever employees are on call for that particular type of alert – according to pre-defined rules that companies set up in PagerDuty. While the general problem of alerting ops teams to system failures sounds relatively basic, there is a great deal of complexity to it in that most enterprises and startups have dozens of systems that each can fail or exhibit performance issues in dozens of ways. Some issues are irrelevant, some are worthy of batched alerts that should be reviewed in bulk at the end of a shift, some require immediate notification, and some require immediate attention and action by a SWAT team of engineers and the attention of the CEO. Configuring and routing alerts according to the severity and type of problem to the right person based on their shift is hard to do at scale without a SaaS product in the middle to manage it. PagerDuty goes beyond this basic level of functionality to also provide analytics and reporting on past incidents so that companies can evaluate which systems are causing the most issues and how strong their operations teams are at resolving issues. Most companies hold their ops team (and even specific people within it) to an SLA which is made easy to measure in PagerDuty.

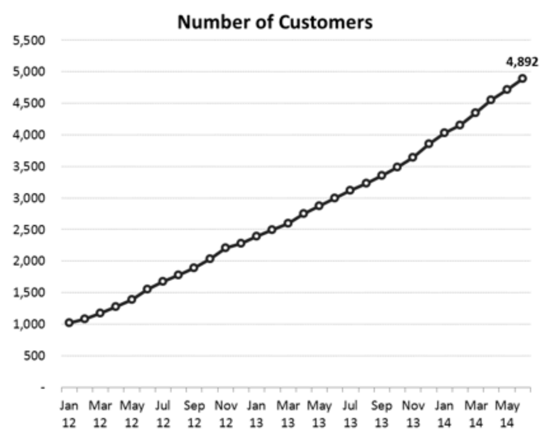
After the usual YC process of selling to other YC startups, PagerDuty has now had success selling to startups and enterprises alike – and lately has penetrated non-tech enterprises. Their customer list is too long to list here but it spans the gamut, including consumer tech, financial services, educational institutions, retailers, media companies, and even government sites.

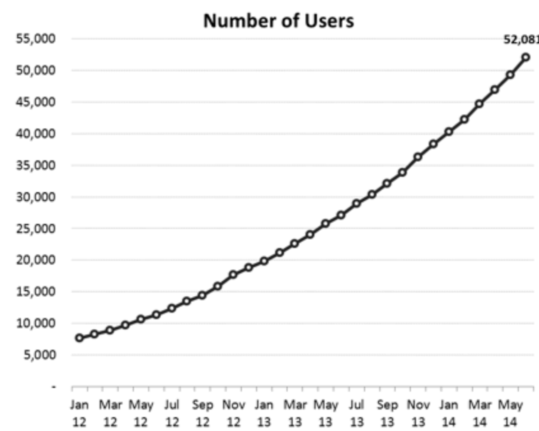
Founder Alex Solomon graduated from University of Waterloo in 2006 after which he worked on the Amazon operations team for two years – handling incidents with the core Amazon.com e-commerce site, which apparently has a number of well-designed internal tools for handling this type of alerting. If we have any concern, it's that despite a vision well beyond an IT ops command center, the company has made little progress at attacking it beyond adding support for more sophisticated rules and routing – and a lot of support for mobile which for obvious reasons is the main medium for receiving alerts. It's hard to argue with that prioritization though as they clearly are in the sweet spot of having found product/market fit and being in the fortunate position of scaling up sales and marketing to capitalize on it.

Topline Metrics

For the month of June, both new MRR and net new MRR came in strong at $39k and $73k, respectively. PagerDuty is now at $1.05m in MRR and continues to grow at 6-7% per month. (See APPENDIX for a detailed look into the metrics.)







Customers & Users

PagerDuty's core customers are small and medium-sized businesses. However, over time, they have found themselves moving upstream into large enterprises such as MasterCard, Capital One, IBM and Apple. Customers are relatively sticky, especially in the context of SMBs. The average customer churn is 1.0% per month. Gross MRR churn is 0.5% per month, while net MRR churn is negative and is running between -3% and -4%, thanks to tremendous account expansion.

Core users are IT Ops and DevOps teams. However, broader parts of an enterprise's organization are also users and include SysAdmins, DBAs, network engineers, IT support, developers, and QA as well as various managers up to the VP of Operations and VP of Engineering. In some cases, users also include the VP of Support, VP of Sales and the CEO.

Go-to-market: Land and Expand

The model is a combination of self-serve and inside sales. Leads come in through a combination of word-of-mouth and AdWords. Most then convert to paid customers via credit card without ever speaking with a person, although PagerDuty is now ramping its inside sales team, which now stands at 9 quota-carrying reps.

The fully-loaded CAC payback on new initial MRR has averaged roughly 19 months over the last six months, although it's spiked as they've ramped marketing spend on lead volume ahead of the rate of hiring new sales reps. Once signed up, accounts expand consistently. By month twelve, initial MRR across customer cohorts has grown by 75%. And by month 24, revenue has grown by 260% (see APPENDIX). Based on our analysis, the effect of this is that the CAC payback for the April'14 customer cohort is more like 9-10 months.

As accounts have expanded, PagerDuty is starting to see meaningfully-sized deals. A retail customer started with 2 users paying $40 per month with a credit card and now pays $10,000 per month (they are still paying with a credit card). One tech media company moved from 300 users at $40,000 per year to 900 users at $150,000 per year. These are not one-offs. PagerDuty is seeing this type of expansion across the board.

Sales Execution

The sales team appears to be productive. By and large, they are hitting their quotas and are bringing in MRR that's above what we've seen for inside sales reps at similar companies. On average, PagerDuty's reps are closing $6.4k in new and expansion MRR ($77k in new ARR) per month. By comparison, typical targets for reps are in the range of $4-5k per (or $50-60k) per month. We've included the expansion MRR in this analysis given their focus on landing new accounts with a small toehold and then focusing aggressively on the upsell.

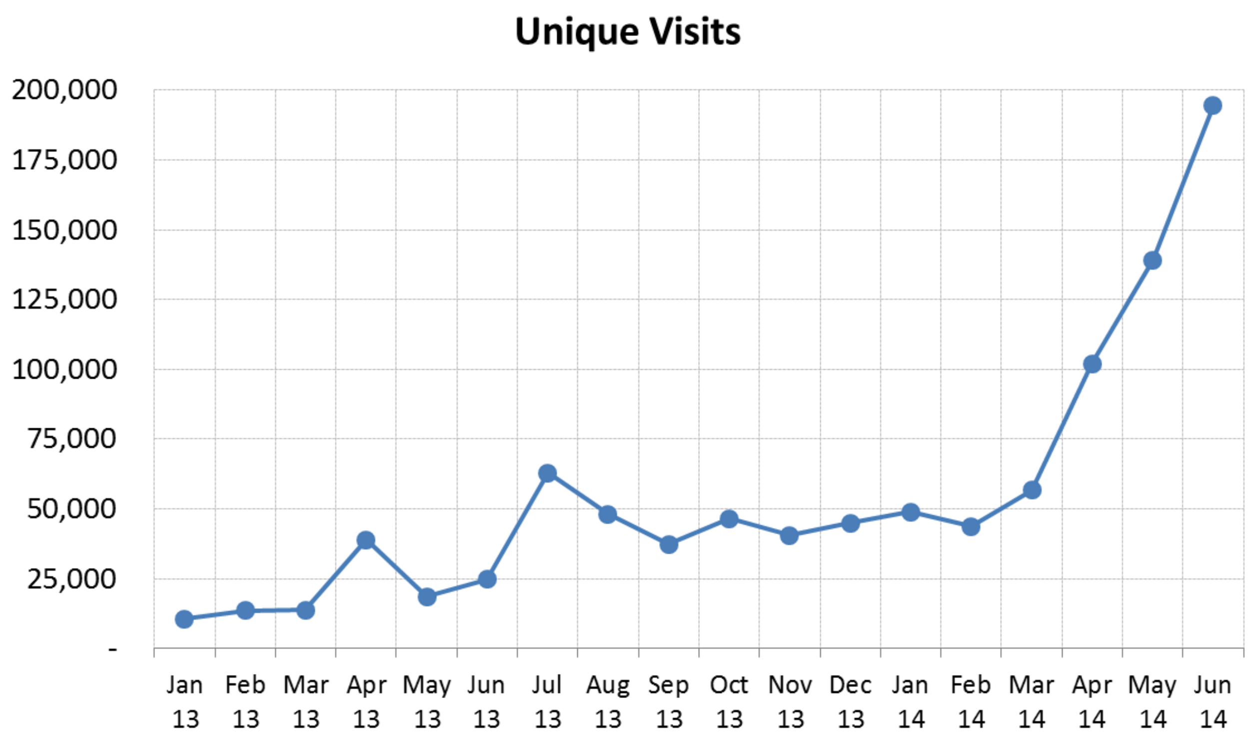
New and expansion MRR bookings:

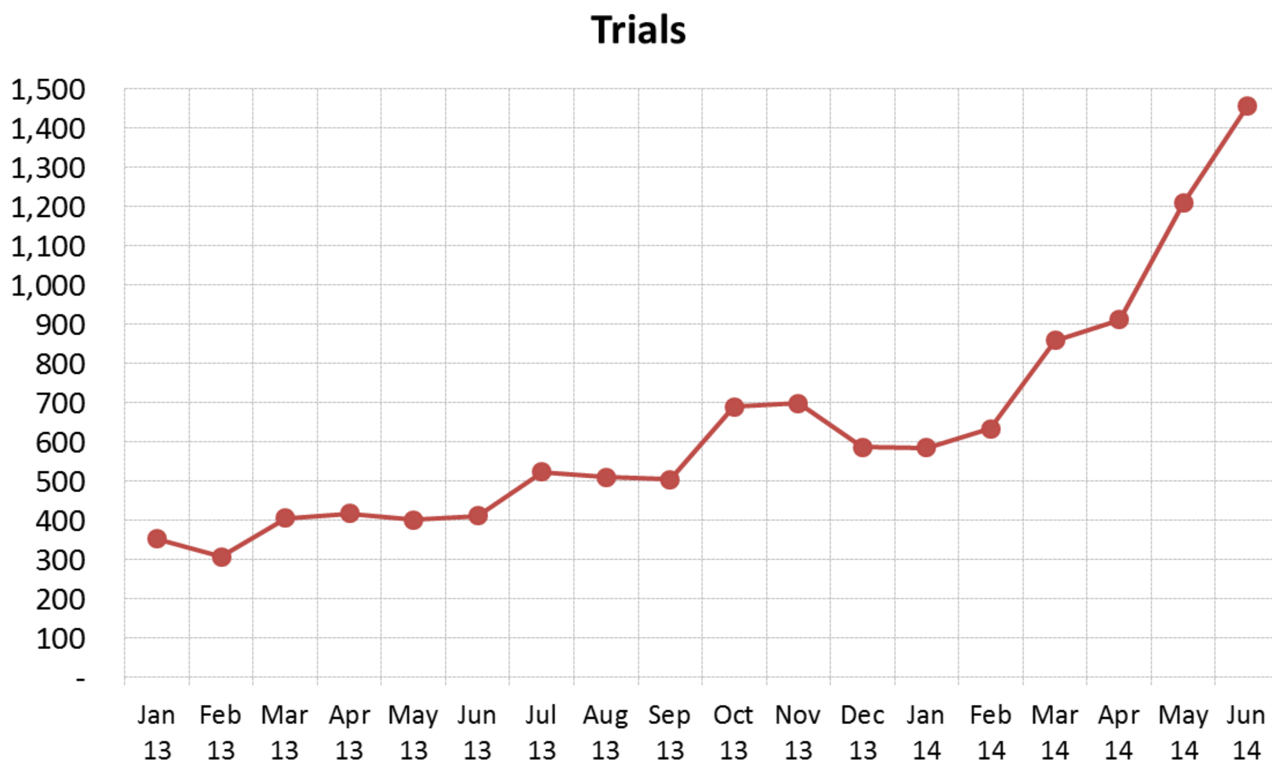
	Oct'13	Nov'13	Dec'13	Jan'14	Feb'14	Mar'14	Apr'14	May'14	Average (30 days after hire)	
sales rep 1	-	-	-	$245	$2,292	$3,923	$2,721	$9,154	$4,523	
sales rep 2	$15,218	$8,516	$10,537	$6,850	$3,139	$4,465	$6,196	$7,466	$7,798	
sales rep 3	-	-	-	-	-	-	$2,105	$7,360	$7,360	
sales rep 4	$1,779	$4,896	$6,547	$6,891	$4,265	$4,086	$7,816	$7,853	$6,050	
sales rep 5	-	$719	$1,710	$3,245	$3,863	$4,286	$4,127	$9,213	$4,407	<--Moved to Mid-Market Acct Mgmt *(Farmer)* in May
sales rep 6	-	$905	$3,595	$2,553	$2,893	$5,419	$3,639	$8,862	$4,493	<--Moved to Mid-Market Acct Mgmt *(Farmer)* in May
sales rep 7	-	$2,691	$3,616	$2,065	$1,634	$2,743	$3,656	$22,193	$5,985	<--Moved to Mid-Market Acct Mgmt *(Farmer)* in May
sales rep 8	$10,515	$12,740	$18,616	$5,289	$17,029	$12,623	$9,028	$14,234	$12,509	
sales rep 9	-	-	-	-	$1,487	$4,060	$5,228	$4,634	$4,640	
sales rep 10	-	$2,029	$2,407	$4,191	$3,083	$5,117	-	-	-	<--Let go in April
Avg New MRR per Month	$6,147	$3,996	$6,082	$4,039	$4,893	$5,476	$5,582	$11,165	$6,419	
								Avg New ARR per Month	$77,022	

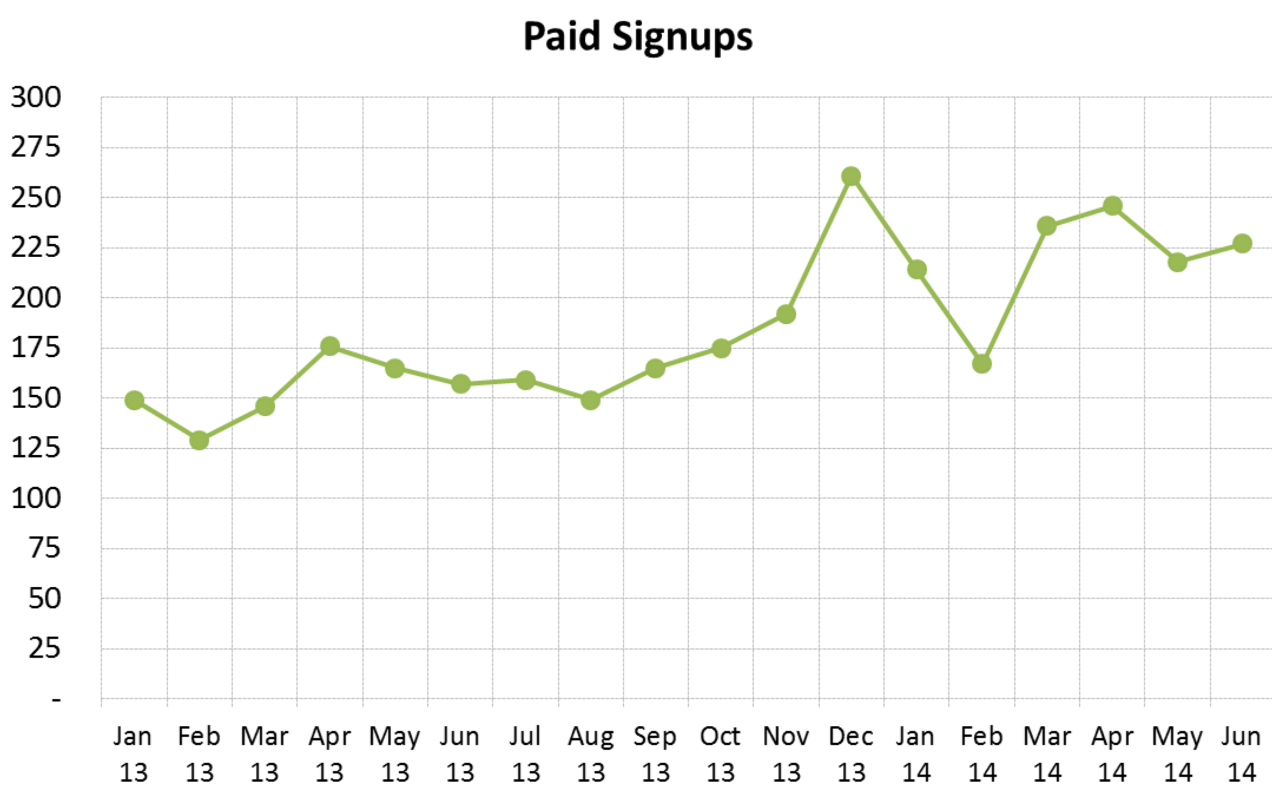
New customer signups have been growing at an annualized rate that's in the range of 35-50% over the last 18 months. These signups haven't kept up with lead volume which is growing at a much faster rate (see below). As we've talked through this with the team and analyzed the sales team's productivity, we believe that there are two reasons for this. First, signups tend to lag site visits and trials by 30-60 days. This has meant that the ramp in trials in the last two months, in particular, has yet to be borne out in new customers, although we think that the impact of the lag is modest. Second and most importantly, we think that the sales team has been understaffed – especially in the area of farming leads. On average, it frequently takes the team 24 hours to respond to a warm lead. While this latency has been improving over time, a response time in hours and not minutes is far from world class. To address this, the VP of Sales is in the midst of a farming test and has shifted 3 of his 9 reps away from hunting and into farming roles. You'll see above the impact from this in the jump in new and expansion MRR generated by Reps 5, 6 and 7.

Generally, it's harder to scale lead volume than to grow a sales organization. The good news is that PagerDuty is consistently growing leads at a rate greater than new customers. One of the uses of this fundraise will be to ramp the sales team to handle the increased lead flow.

Sales funnel:




Trials
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
-
Jan 13
Feb 13
Mar 13
Apr 13
May 13
Jun 13
Jul 13
Aug 13
Sep 13
Oct 13
Nov 13
Dec 13
Jan 14
Feb 14
Mar 14
Apr 14
May 14
Jun 14


Paid Signups
300
275
250
225
200
175
150
125
100
75
50
25
-
Jan 13
Feb 13
Mar 13
Apr 13
May 13
Jun 13
Jul 13
Aug 13
Sep 13
Oct 13
Nov 13
Dec 13
Jan 14
Feb 14
Mar 14
Apr 14
May 14
Jun 14

Product

To monitor and manage their systems, companies use a variety of tools—like Nagios for server monitoring, Pingdom for website monitoring, and New Relic for Application performance. It's not uncommon for a large enterprise to have 100s of monitoring tools. The average PagerDuty customer uses 7 different tools. Each tool sends its own alerts. Typically, alerts are blasted to one person or a whole IT Ops team, with no prioritization or filtering or mechanism to escalate and route alerts to the right person. Not only do the critical alerts get lost in the noise but alert fatigue itself becomes an issue with the noise of continual false positives constantly hitting the inbox or SMS account of the dev-ops person.

PagerDuty ingests incoming alerts from virtually every monitoring tool. It's a 'Switzerland' strategy and in total, it has 75 different integrations. As alerts are ingested, PagerDuty de-duplicates and normalizes them to cut down on noise. More sophisticated correlation and clustering is on the roadmap.

From an end-user perspective, the product has several components:

Incident Management and Alerting

PagerDuty automatically routes incident calls to the right person based on schedule and the underlying system that's in trouble. Ops people receive alerts via email, SMS, automated phone calls, and push notifications via PagerDuty's mobile app. The product isn't mobile-first, but is mobile-centric, since much of the workflow occurs while a person is away from the office.

Escalation policies re-route alerts to the standby on-call engineer if the primary person doesn't answer or respond quickly enough. There is simple prioritization in place today. PagerDuty is building more sophisticated rules and routing as well as technology to correlate and cluster alerts to reduce alert noise.

When IT Ops teams are working to triage an incident, PagerDuty doesn't have much in the way of collaboration capabilities, but it's on the roadmap. Today, teams typically use generic chat tools like Atlassian's HipChat, Slack or Google Hangouts. PagerDuty's roadmap calls for a purpose-built Ops collaboration tool, which will do things like visualize similar incidents from the past, how they were resolved, and any other relevant data.

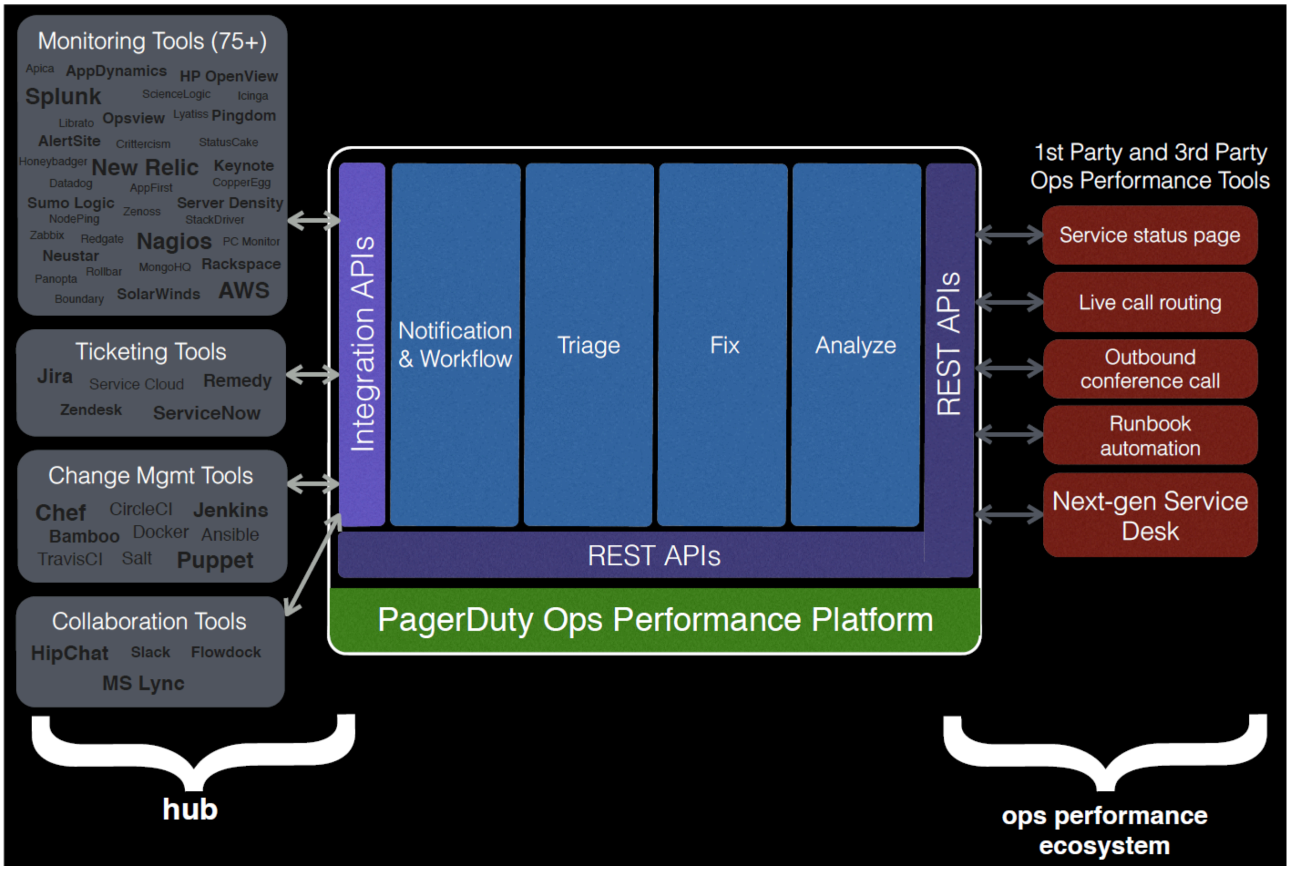
In speaking with customers (and companies using competing products), we've heard that IT Ops teams are often reinventing the wheel and providing a central knowledge base is a big missing capability. Teams today are largely using Atlassian's Confluence product or maintaining a Google Doc that captures and organizes information about prior incidents and how they were resolved.

Analytics Dashboard

Today, the product provides basic reporting. Slated for release next month is more sophisticated analytics that will answer questions like "How is my IT Ops team performing?" and "How are my systems performing?" Also added will be a post-mortem analysis on what went wrong and if it's a recurring problem.

The company started by building a straightforward incident alerting tool. In doing so, it's now found itself sitting at the center of both the flow of information and day-to-day activities of an IT operations team. We think that this is a very strategic position and puts PagerDuty in a good position to create an entirely new product category—IT Operations Performance Software. Essentially, it wants to be the platform that teams use across the entire lifecycle of an incident. This is something that none of the incumbent vendors own today.

PagerDuty's vision—IT operations performance platform:



The longer-term idea is to then extend PagerDuty to business users such as marketing and customer support. For example, when a system goes down, marketing is alerted and can immediately get on Twitter to communicate with customers – or even provide basic status communications automatically. While there's risk that the market won't latch onto this, we think that this vision is pretty compelling and our only concern is that the company's rapid growth will prevent them from ever getting to it.

Team

PagerDuty was founded in 2009 by Alex Solomon (CEO), Andrew Miklas (CTO), and Baskar Puvanathasan (senior engineer), three Waterloo-grads who worked together after college as infrastructure engineers at Amazon. All are typical software developer founders. They've lived the problem and are product-oriented. We've spent quite a bit of time with Alex and Andrew. Alex is self-aware and while we're not yet sure it's necessary, he has asked how we would think about bringing on-board a coach to help him grow.

Historically, there hasn't been much of a management team. However, in just the last year, the company has filled out all of the major roles:

VP of Sales (joined Aug'13): Trenton Truitt, former VP Sales at Appcelerator.

VP of Marketing (joined Nov'13): Nisha Ahluwalia, former VP Product Marketing at RingCentral and previous marketing experience at WebEx.

CFO (joined 8 weeks ago): Charles Frerer, former CFO at Rafter.

VP of Product (joined 6 weeks ago): Jonathan Wilkinson, former Director of Product Mgmt at Websense.

There are 89 employees today.

We've spent time with most of the execs. The VP of Marketing is impressive. She is the brainchild behind PagerDuty's expanded product positioning. We like the VP of Sales as well and based on the productivity of the team, he appears to be doing a great job. We've also interacted with the new CFO through the course of diligence and he seems very strong as well and likely able to handle an IPO. We've yet to meet the VP of Product; this will be an especially important role towards realizing the expanded product vision.

Competition

There isn't much in the way of meaningful direct competition besides a handful of smaller startups. Ops teams at most companies simply put up with a flurry of alerts from the various monitoring tools that they've deployed without any central command center to organize them. A few large companies like Google, Facebook and Amazon have built their own systems. There is one direct competitor, xMatters, and another new upstart, VictorOps. xMatters is a 10-year old company whose product is generalized and spans emergency mass notifications and IT operations; it's largely deployed on-premise. Boulder-based VictorOps, which has raised $6.5m from Foundry, is much smaller but has a slick looking product and strong team. VictorOps has not been able to get out from under PagerDuty's shadow to date and has been much less aggressive about ramping but will definitely be credible competition in the future. We've heard through the grapevine that several companies have tried to acquire VictorOps but the team hasn't been interested in selling.

The competitor that we worry most about is ServiceNow. The product suite is broad. In general, it's used by IT departments within large companies to do such things as: (1) manage trouble tickets created by employees or customers (e.g., when an application is slow or when a password needs to be reset), (2) track all of the software and hardware assets and vendors within a company, or (3) manage the change process around internal IT projects. ServiceNow has ~2,200 customers, which are almost all enterprises. With an ASP of ~$230k and a number of $1m+ deals, ServiceNow is very much big enterprise-focused.

While it's very rare for PagerDuty to compete head-to-head, ServiceNow does have an alerting product called "Notify" that's sold as part of a suite of ServiceNow products. This product is generally more difficult to setup and can't be used on a standalone basis. And as ServiceNow is an older company – the product architecture is single-tenant not multi-tenant which presents a challenge in the mid- and lower-end of the market. However, ServiceNow is a formidable competitor and so we don't want to discount it too much. SerivceNow is on a tear. It did $425m in revenue last year and is growing at 50%+ per year and has an $8bn market cap.

We're much less worried about the "big four" incumbents—HP OpenView, CA, BMC and IBM. Their products have been cobbled together over years of M&A. There is a good history of startups taking on these players and winning. PagerDuty almost never sees them come up as competition.

Financials

PagerDuty is projecting $13m in revenue for 2014. Based on the month of June, the current ARR is $12.6m (+137% YoY) and the company is forecasting to end 2014 with $19m in ARR. Given the predictability of PagerDuty's growth, we believe these numbers.

PagerDuty is burning about $800k per month on a P&L basis, but because about 35% of customers are paying annually upfront, the actual cash burn has been more modest. In June, its operating cash flow was actually positive at $250k. At closing, PagerDuty will have about $34m in cash.

The preliminary plan for 2015 is to do $27mm in revenue with an aggressive ramp in expenses, particularly around engineering. Admittedly, there isn't much precision around the 2015 plan since the new CFO has only been in place for about 2 months. There may be additional upside on the topline if marketing continues to perform well at demand generation but it's too early to say for sure.

Summary P&L:

	Actual	Actual	Actual	Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Preliminary
	Q1'13	Q2'13	Q3'13	Q4'13	2013	Q1'14	Q2'14	Q3'14	Q4'14	2014	2015
Revenue	$974,173	$1,270,450	$1,586,514	$1,967,750	$5,798,887	$2,401,556	$2,923,641	$3,527,442	$4,408,599	$13,261,238	$27,285,422
YoY Growth %	*226%*	*213%*	*190%*	*161%*	*189%*	*147%*	*130%*	*122%*	*124%*	*129%*	*106%*
COGS	$168,763	$183,322	$220,948	$328,369	$901,403	$277,173	$391,478	$493,842	$617,204	$1,779,697	$3,819,959
Gross Profit	$805,410	$1,087,128	$1,365,566	$1,639,381	$4,897,484	$2,124,383	$2,532,163	$3,033,600	$3,791,395	$11,481,541	$23,465,463
GM %	83%	86%	86%	83%	84%	88%	87%	86%	86%	87%	86%
Sales	$146,010	$150,774	$273,853	$560,951	$1,131,587	$710,247	$699,047	$874,721	$891,906	$3,175,922	$4,262,916
Marketing	$95,171	$149,009	$322,689	$422,308	$989,177	$446,201	$917,757	$1,342,517	$1,617,126	$4,323,602	$8,456,277
Engineering	$493,170	$720,634	$939,268	$1,237,864	$3,390,937	$1,389,474	$1,708,206	$2,449,696	$3,162,699	$8,710,075	$17,300,947
G&A	$177,711	$302,475	$379,738	$862,885	$1,722,810	$803,127	$1,518,451	$1,767,592	$1,946,274	$6,035,444	$10,952,153
Total Oper. Exp.	$912,063	$1,322,892	$1,915,548	$3,084,008	$7,234,511	$3,349,049	$4,843,461	$6,434,526	$7,618,005	$22,245,042	$40,972,294
Operating Profit	($106,653)	($235,764)	($549,982)	($1,444,628)	($2,337,027)	($1,224,667)	($2,311,298)	($3,400,926)	($3,826,610)	($10,763,501)	($17,506,831)
Cash Balance*	$11,405,082	$11,440,472	$9,969,767	$8,502,618	$8,502,618	$7,858,407	$7,106,361				

**Note the change in Cash Balance differs from the Operating Profit because many customers pay upfront for one year subscriptions.*

The company ended the first half of 2014 3% behind plan on the topline but way underspent (18%) and so had an operating loss of $3.5m vs. a plan of $5.2m:

2014 YTD: Actual vs. Budget

	Actual (YTD)	Budget (Original)	
	Q1-Q2'14	Q1-Q2'14	Diff. %
Revenue	$5,325,197	$5,485,784	-3%
YoY Growth %	*137%*	*144%*	
COGS	$668,651	$695,075	-4%
Gross Profit	$4,656,546	$4,790,709	-3%
GM %			
Sales	$1,409,294	$1,827,277	-23%
Marketing	$1,363,958	$1,824,598	-25%
Engineering	$3,097,680	$3,985,844	-22%
G&A	$2,321,578	$2,328,211	0%
Total Oper. Exp.	$8,192,511	$9,965,930	-18%
Operating Profit	($3,535,965)	($5,175,221)	-32%

Deal

There are two parts to the deal. The first is a Series B investment of $27.2m. BVP will invest $19.6m. Existing investor Andreessen Horowitz will invest $5.5m (or 77% of their pro rata). The Series B security is straight preferred and pari passu with the Series A and Series Seed. The available option pool will be topped up to 5% and included in the pre-money valuation. The pre-money is $180m and post-closing of the primary piece of our investment, BVP will own 9.5%.

Soon after the close of the Series B, we anticipate a $6m secondary purchase of Series FF stock at the same price as the Series B share price. After the purchase, these shares will convert immediately into Series B Preferred Stock with all of the Series B rights. We have pushed for the entire amount and so we are seeking approval for this purchase in addition to the primary Series B. Assuming that the secondary goes forward, BVP will have invested $25.6m and own 12.4%.

In total, PagerDuty will have raised $39.8m. However, its total preferences are $45.8m. The delta represents the $6m worth of Series FF shares purchased that will convert into Series B shares.

Outcomes Analysis

	Series B Investment		Anticipated Secondary Purchase*		Overall
Estimated Close Date:	25-Jul-14		25-Aug-14		
Price per Share	$7.4162		$7.4162		
BVP Investment Amt ($m):	$19.6	+	$6.0	=	$25.6
Fully-Diluted %;	9.5%	+	2.9%	=	12.4%

$ million	Exit Value	Prob.	Timing (Years)	Est. Future Dilution	Series B Investment Gross Proceed	Mult.	IRR%	Anticipated Secondary Purchase* Gross Proceed	Mult.	IRR%	Overall Gross Proceed	Mult.	IRR%
Cash & burn. Woefully overspends. Product is a feature with no economic value to customers.	$0	5%	3.0	0%	$0	0.0x	0%	$0	0.0x	0%	$0	0.0x	0%
Fails to innovate and expand into a platform. Gross slows dramaticlly to 35% CAGR (the vast majority is through acct expansion). Acquired for 1.5x ARR.	$50	15%	3.0	0%	$20	1.0x	0%	$6	1.0x	0%	$26	1.0x	0%
Grows to $45m in ARR (50% CAGR). Acquired for 5.6x ARR by the likes of a BMC, IBM, HP, Compuware, or ServiceNow or by a newer vendor like a New Relic.	$250	20%	3.0	0%	$24	1.2x	6%	$7	1.2x	6%	$31	1.2x	6%
Grows to $70m in ARR (75% CAGR). Acquired for 7x ARR by the likes of BMC, IBM, HP or by Cisco or VMware who have made moves into IT Ops software.	$500	40%	3.0	10%	$43	2.2x	29%	$13	2.2x	29%	$56	2.2x	29%
Defines a whole new product category. Grows to $120m in ARR (50% CAGR). Acquired for 8x ARR by one of the companies mentioned above.	$1,000	15%	5.0	15%	$80	4.1x	33%	$25	4.1x	33%	$105	4.1x	33%
Breakout. Sustained growth through IPO--$225m in ARR (50% CAGR). Exits at nearly 9x ARR.	$2,000	5%	7.0	20%	$151	7.7x	34%	$46	7.7x	34%	$198	7.7x	34%
				Weighted Average:	$44	2.3x	23%	$14	2.3x	23%	$58	2.3x	23%

Conclusion

Over the past 2-3 years, PagerDuty has grown quickly to become the leading infrastructure alerting platform with a reputation for high reliability and easy integration with third-party services. We're excited by the company's roadmap for the next phase to become the leading IT ops performance platform benefitting from the strong rise of the DevOps movement impacting startups and big companies alike. We find the valuation compelling given the size of the market opportunity and the company's strong performance on all meaningful SaaS metrics. We highly recommend this investment.

Appendix: MRR Expansion by Cohorts

MONTHS SINCE ACTIVATION:

COHORT		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2012, Jan	$ 5,858	100%	106%	107%	111%	119%	117%	119%	122%	120%	121%	124%	129%	139%	139%	143%
2012, Feb	$ 4,508	100%	117%	120%	133%	135%	142%	149%	151%	160%	165%	180%	186%	189%	188%	196%
2012, Mar	$ 5,021	100%	103%	116%	121%	133%	137%	146%	151%	157%	160%	162%	167%	175%	164%	167%
2012, Apr	$ 7,930	100%	110%	113%	118%	118%	116%	124%	126%	124%	127%	132%	138%	147%	152%	152%
2012, May	$ 11,987	100%	92%	98%	111%	130%	167%	179%	182%	187%	193%	202%	211%	220%	232%	241%
2012, Jun	$ 7,673	100%	106%	113%	117%	123%	154%	156%	159%	157%	165%	171%	175%	179%	184%	184%
2012, Jul	$ 11,691	100%	110%	113%	116%	118%	117%	121%	127%	132%	142%	143%	145%	152%	158%	168%
2012, Aug	$ 11,334	100%	109%	130%	158%	179%	194%	204%	213%	217%	220%	229%	272%	284%	283%	295%
2012, Sep	$ 9,311	100%	104%	117%	115%	117%	119%	121%	122%	123%	127%	130%	131%	131%	130%	134%
2012, Oct	$ 11,964	100%	108%	119%	125%	155%	173%	185%	187%	200%	207%	211%	218%	231%	235%	245%
2012, Nov	$ 16,989	100%	104%	102%	109%	111%	112%	119%	122%	127%	131%	174%	178%	187%	202%	202%
2012, Dec	$ 13,112	100%	101%	102%	105%	107%	109%	111%	114%	115%	117%	116%	118%	123%	124%	129%
2013, Jan	$ 14,965	100%	114%	162%	167%	172%	173%	185%	193%	196%	202%	174%	185%	191%	196%	194%
2013, Feb	$ 12,266	100%	103%	113%	114%	118%	121%	126%	132%	136%	136%	159%	162%	162%	163%	163%
2013, Mar	$ 18,467	100%	110%	113%	118%	123%	126%	128%	131%	134%	136%	137%	143%	164%	167%	173%
2013, Apr	$ 22,639	100%	105%	112%	113%	116%	120%	127%	136%	139%	140%	147%	151%	161%	174%	
2013, May	$ 17,612	100%	105%	111%	113%	116%	118%	118%	122%	136%	135%	135%	137%	143%		
2013, Jun	$ 17,543	100%	107%	108%	112%	114%	119%	123%	125%	125%	126%	128%	132%			
2013, Jul	$ 17,031	100%	103%	103%	113%	115%	116%	116%	118%	121%	127%	132%				
2013, Aug	$ 20,860	100%	103%	102%	106%	114%	116%	117%	125%	131%	136%					
2013, Sep	$ 16,939	100%	108%	116%	121%	125%	126%	131%	130%	131%						
2013, Oct	$ 24,016	100%	104%	109%	112%	113%	118%	121%	123%							
2013, Nov	$ 36,100	100%	102%	102%	103%	108%	109%	111%								
2013, Dec	$ 37,137	100%	102%	105%	111%	115%	117%									
2014, Jan	$ 23,361	100%	103%	108%	116%	120%										
2014, Feb	$ 23,380	100%	105%	108%	114%											
2014, Mar	$ 30,669	100%	106%	107%												
2014, Apr	$ 35,956	100%	103%													
2014, May	$ 26,327	100%														
AVERAGE		**100%**	**105%**	**112%**	**118%**	**124%**	**131%**	**137%**	**141%**	**146%**	**151%**	**157%**	**165%**	**175%**	**181%**	**186%**

COHORT	15	16	17	18	19	20	21	22	23	24	25	26	27	28
2012, Jan	144%	149%	152%	156%	159%	160%	174%	189%	198%	210%	215%	220%	231%	244%
2012, Feb	196%	194%	200%	203%	216%	231%	243%	254%	255%	262%	271%	281%	294%	
2012, Mar	176%	184%	191%	195%	197%	204%	213%	219%	222%	228%	227%	238%		
2012, Apr	174%	168%	169%	173%	177%	178%	182%	184%	186%	191%	198%			
2012, May	261%	312%	332%	340%	348%	358%	369%	383%	391%	411%				
2012, Jun	212%	219%	236%	246%	251%	274%	303%	301%	299%					
2012, Jul	173%	178%	180%	180%	181%	185%	188%	191%						
2012, Aug	310%	310%	314%	329%	341%	343%	351%							
2012, Sep	138%	142%	142%	143%	141%	146%								
2012, Oct	256%	285%	294%	299%	318%									
2012, Nov	208%	218%	239%	244%										
2012, Dec	130%	129%	128%											
2013, Jan	165%	171%												
2013, Feb	167%													
AVERAGE	**194%**	**204%**	**215%**	**228%**	**233%**	**231%**	**253%**	**246%**	**259%**	**260%**	**228%**	**246%**	**262%**	**244%**

Bessemer Venture Partners

Rocket Lab

To: BVP Group
From: David Cowan and Sunil Nagaraj
Date: October 18, 2014
Re: Rocket Lab Series B Flash

ROCKET·LAB

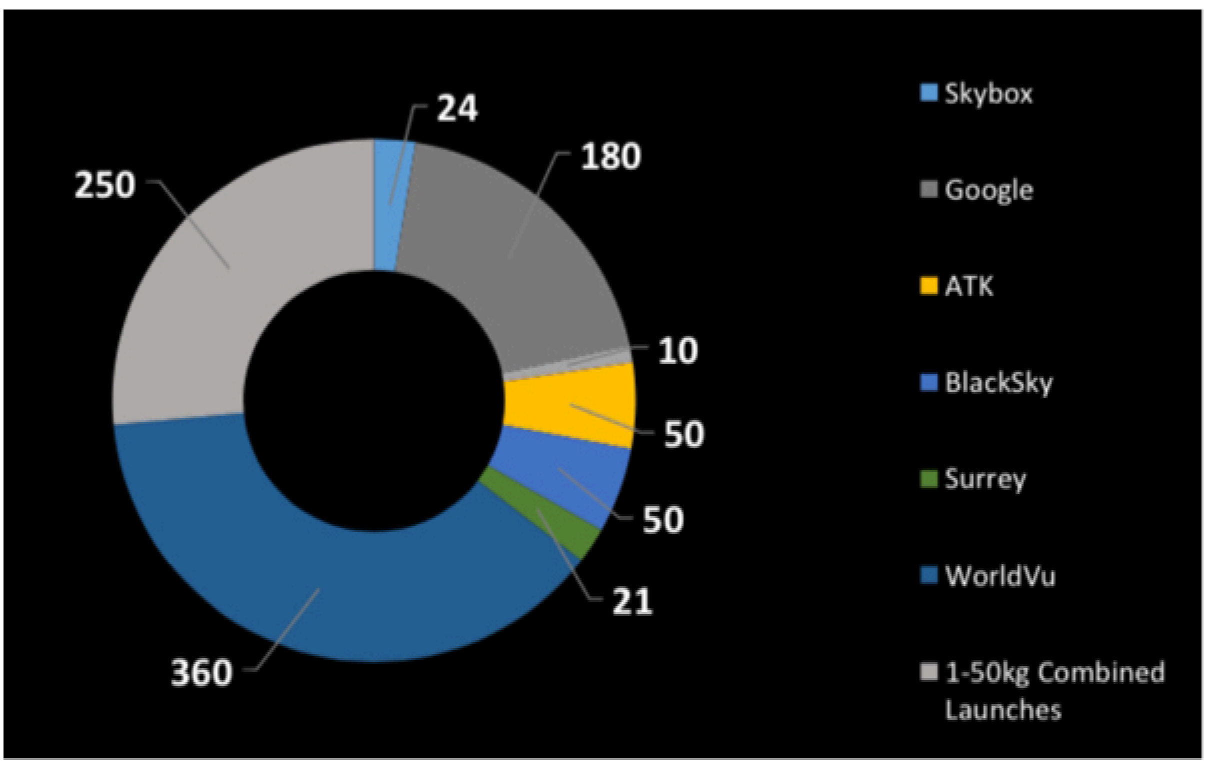
On Monday, Rocket Lab CEO Peter Beck will be presenting from Menlo Park in slot 1. New Zealand-based Rocket Lab is building rockets capable of sending 100kg payloads, the size of Skybox Imaging's satellites and smaller, to low-earth orbit and doing so on a weekly schedule at a price of $5M per rocket. Over the last 7 years, the company has successfully launched 89 sounding rockets, which carry scientific instruments to suborbital altitudes before they descend. They did this as part of development programs with Lockheed Martin and DARPA but in the last year have taken venture capital and broadened their ambitions. Now they are using their considerable expertise to provide much needed launch capability to the burgeoning nanosatellite and microsatellite market (945 launches needed in the next 5 years). As we know all too well from Skybox Imaging, launch options for small and medium-sized payloads are hard to find and suffer from unreliable schedules. SpaceX has gone up-market, where their Falcon-9 rocket lifts payloads of 6,000kg, while Ukrainian Dnepr rockets have unreliable launch schedules and are slowly being exhausted as the supply of old ICBMs runs low. For Rocket Lab's new rocket, "Electron", they have made several technical innovations, including an all carbon composite rocket, electric turbopumps, and customer-side payload integrations to make launches frequent and an attractive price point. Peter touts that you will be able to launch a payload to orbit with the same amount of fuel it takes for a commercial airliner to fly from San Francisco to Los Angeles. We recommend watching their 2-minute introduction video.

The company is right on schedule with their plan and is now raising a $20M Series B to execute 3 test flights and their first commercial flight. Peter's current plan is to make this the last capital he raises, and though he has hit all timelines to date, we are encouraging him to plan for inevitable delays. In terms of legal structure, Peter has already set up Rocket Lab to have a Delaware-based US parent company which is what we will be investing in. While the entire team is in New Zealand today, he plans to eventually grow a small team in the US as well. Of the many benefits of being in New Zealand, most notable to the financing is that the New Zealand government refunds, in cash, 20% of company's expenses up to $25M so this $20M of capital will actually enable $24M of spending. At the Series A, Peter added a New Zealand strategic, K One W One, to that last round and would like to do the same this time. Lockheed Martin and In-Q-Tel are both in diligence to join this Series B.

Market

Rocket launches to-date have been an expensive and unpredictable affair. Last year, there were 19 launches from American soil at an average cost of $132M. Over half of these were government-related, but even SpaceX only had 3 launches of their Falcon-9 rocket which costs $65M and launches 6,000kg to orbit. Smaller payloads are forced to "rideshare" as secondary payloads on a rocket from SpaceX, Falcon-9, or Ukrainian Dnepr. As a secondary payload, you go when the primary payload goes, where the primary payload goes (orbital altitude and inclination), and can easily get bumped for a variety of issues. It is exactly for these issues that our launches at Skybox were delayed several times.

By Peter's calculations, there are 945 100kg satellites that require launch by 2020 but have no launch options today beyond ridesharing and even that is in short supply. These payloads have increasingly commercial purposes so they demand predictability in timeline. In addition, they want to select non-standard orbits (altitude and inclination) so they would deeply value being a primary payload.



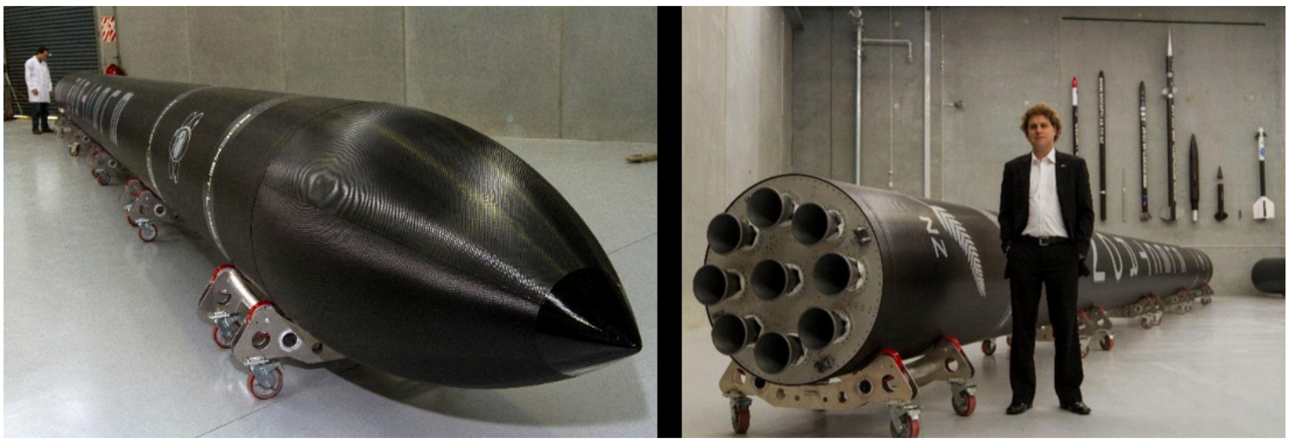
As a result, there is a major shortage of launch options for small and medium-sized payloads. We've spoken to several of Rocket Lab's early customers, and they have verified this. Space Flight Services, the leading secondary payload aggregator that brokers deals and integrates payloads on to launch providers, brokered 87 payloads in September which were all between 5kg and 50kg. Close to half of these are from smaller upstarts (such as Planet Labs) so that demand is growing but may be less certain in the long term. They also see sub 100kg demand coming from universities and the government sector because there is a shortage of launch supply. Below is a snapshot of emerging satellite companies that market research firm Spaceworks has seen as of 2013:

Commercial Company	Satellite Class	Satellite Application
Dauria Aerospace	Nano	
Deep Space Industries	Nano	
GeoOptics, Inc.	Micro	
ISIS	Nano/Micro	
Outernet (MDIF)	Nano	
NanoSatisfi	Nano	
Planet Labs	Nano	
Planetary Resources, Inc.	Nano/Micro	
SpaceQuest, Ltd.	Micro	

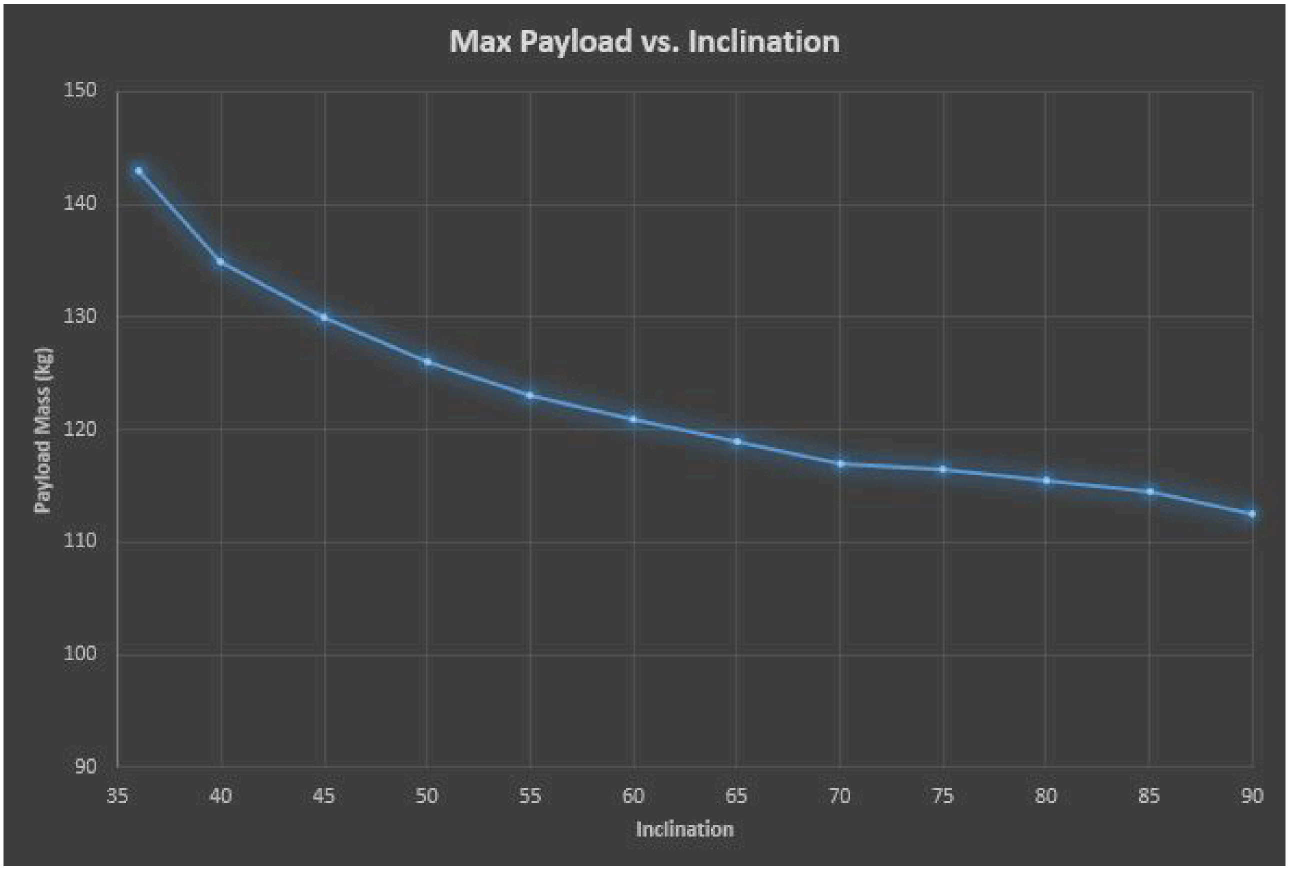
Earth Obs./ Remote Sensing · Data Collection · Asteroid Exploration · Ship Tracking

Product

Rocket Lab has designed a rocket for high volume build and launch of 100-150kg payloads to low-earth orbit. Their rocket, "Electron" is 18 meters long and utilizes their learnings from the last 7 years they've spent on rocket development. Electrons will cost $1M to build and will sell for $4.9M. This price point of $49K/kg of payload has been purposely set at what launch customers pay today for rideshare, but with Electron there will finally be capacity available. In addition, the majority of payload customers can buy their own rocket and serve as the primary payload.



Electrons can launch 100kg to a 500-km sun synchronous orbit, which is an orbital inclination that is particularly good for earth observation because it allows you to image the same part of earth at the same time of day all year long. Their launch capacity varies with inclination because you are either using Earth's rotation to help you gain launch speed or you are fighting it as you do with a sun-synchronous orbit which is 98 degrees (8 degrees retrograde). For reference, the international space station is at a 52-degree inclination.



To-date, Rocket Lab has launched all of their sounding rockets from a privately owned island, 30-minute flight from Auckland. Given Electron's targeted launch frequency of once/week, this island location is not ideal because the rocket and propellants would constantly need to be shipped over across uncertain waters. Rocket Labs has commenced a launch site search now to identify, purchase, and build a launch site from the ground up. The leading candidate is in Eastland, near the Eastern tip of the North Island of New Zealand. Launches in New Zealand only have a $400 government fee vs. the $700K fee in the US. In addition, they will launch under an FAA license so they will be indemnified from any ground damage they create provided they comply with the FAA rules.

The Electron rocket itself is a 2-stage liquid oxygen kerosene rocket. The rocket has been designed to simplify manufacturing, assembly and integration with payloads in order to enable volume production – it's the T Model Ford of space. For example, parts are standardized as much as possible in the design so that there is only type of bolt for the entire craft, and even one type of computer module with upgradeable firmware for navigation, telemetry, etc.

One of the main innovations is that they use an electric turbo pump to feed the engines which demand high pressure fuel at a tremendous rate. Typically turbo pumps are powered by a secondary gas-fed engine, but Rocket Lab is reducing cost and complexity by using battery-powered high-powered turbo pumps. No one has made electric turbo pumps work before but this has been a focus of their Series A runway and they tell us they have working turbopumps. This will be a key area of diligence for our technical consultant. Given that the rocket has powerful batteries on board for the turbopumps, Rocket Lab has also chosen to use electromechanical actuators (in blue in the photo below) to control the direction/vector of thrust (TVC). They can gimbal each of the 9 engines 2 dimensions to steer. While this element is uncommon, Rocket Lab is not the first to do electric TVC. Hydraulic TVC is more common because you don't have a supply of power.

Another innovation is the heavy use of 3D printing for the creation of most of the Electron's engines. This is very sophisticated laser-based 3D-printing, unlike the plastics-based 3d printing you may have seen from MakerBot and others. 3D printing is not only a cost savings, but it means Never Having to Say You're Sorry, You're Waiting For a Part. The engine is shown in the above photo and includes the 3D-printed thrust chamber, injector, and elements of the turbo pumps. Rocket Lab has provisional patents on the 3d-printed thrust chamber, injector, and electric turbo pumps. Electron will also feature all carbon-composite tanks which are 40% lighter than aluminum.

One of Rocket Lab's final innovations is the ability to have customers integrate their payloads on their own site before sending anything to the launch site. Customers are sent faring halves where the payload can be inserted and hermetically sealed in advance. This faring system suspends the payload and dampens vibrations during launch and releases the payload upon reaching orbit. This Plug and Play approach to payload integration is a key process innovation: by shifting the job to the customer's site, the customers feel more control of the process, and Rocket Labs can improve their frequency of launch because many ready-to-fly sealed farings will be at the launch site. If a customer pulls their launch on a given week, they can pull another payload off the shelf and send that one instead.

Customer Traction/Feedback

To-date, Rocket Lab has secured commitments for over 40 launches. This includes signed MOUs from Planet Labs, Surrey Satellites, Weathernews, Outernet, and Space Flight Services. Planet Labs is interested in 20 launches. Space Flight Services, the secondary payload aggregator, would like to do 6 launches in the first year. Weathernews is interested in launching 2 45-kg satellites. Rocket Lab is currently in discussions with Skybox to help launch the remainder of their constellation. We have had conversations with 3 of these customers to date and heard the following:

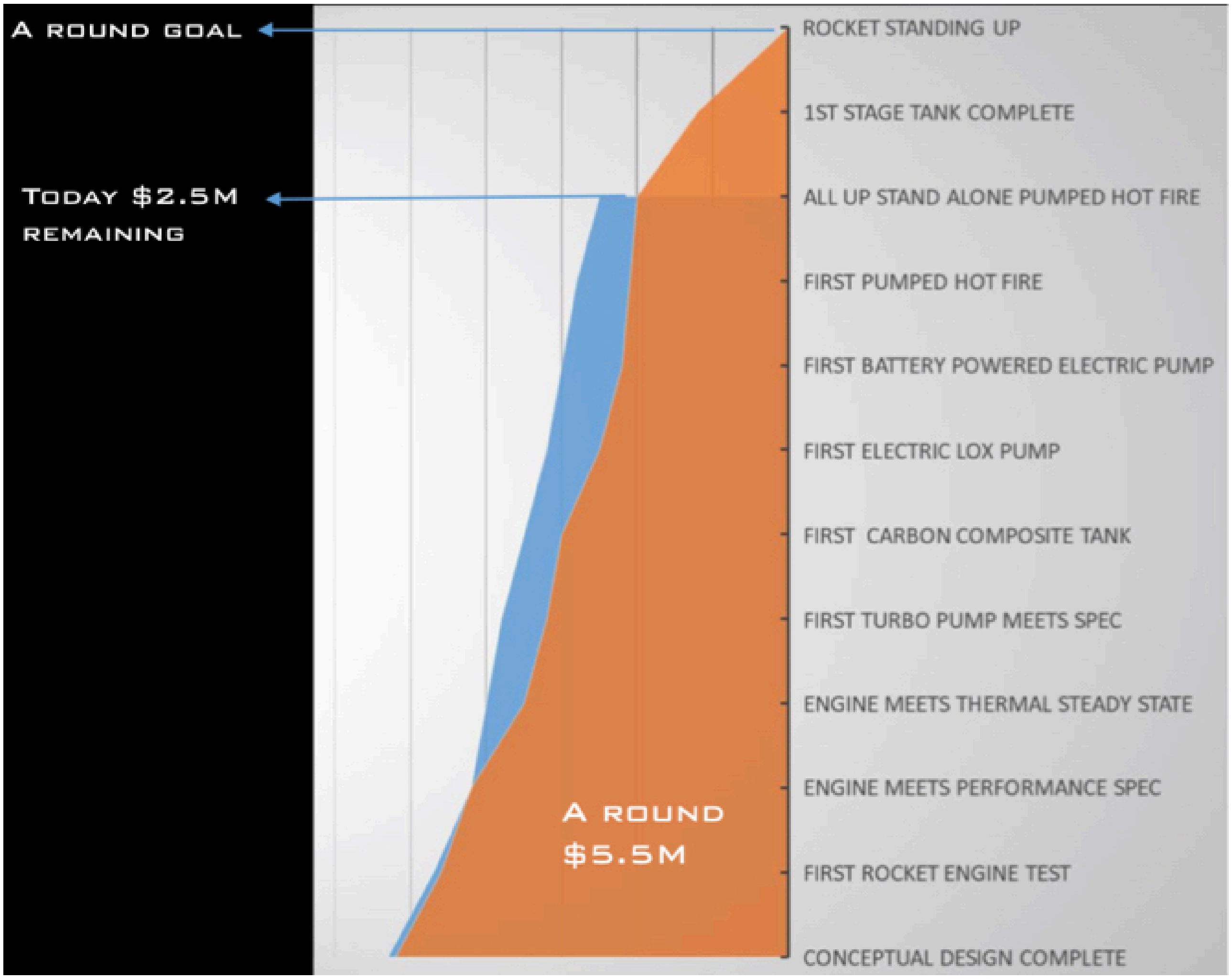
Curt Blake at Space Flight Services, the leading secondary payload aggregator that brokers deals and integrates payloads on to launch providers, believes they could fill up an Electron with 100kg of payload every 2 weeks given the demand they see directly. Space Flight Services has had experts diligence Rocket Lab and thinks that they are the new launch provider most likely to be successful. In the end, they don't really care how the tech works as long as the payloads get into orbit reliably.

Peter Wenger at Blacksky, a new imaging satellite company, believes that Rocket Lab's new launch capacity is much needed.

Robbie Schlinger at Planet Labs hopes to do 20 launches. He believes that they need to be a primary payload going forward given the importance of predictable launch schedules to their business. Robbie has been out to New Zealand to vet the technology and believes that Rocket Lab is "an order of magnitude ahead of any other new launch vehicles."

Timeline/Financials/Fundraising

Within their Series A funding, Rocket Lab believes they have addressed all high risk elements of their launch vehicle. They have designed and built electric turbopumps, tested high-capacity batteries, designed and built carbon composite tanks, and written their initial flight navigation code for their flight computer.



Their next step is to begin vehicle construction in 3-4 months and launch their first test vehicle in late 2015. This will be followed by 2 more test flights and then their first commercial launch in mid-2016. They aim to get to 13 launches before the end of Fiscal Year 2016 (which ends March 2017).

A key next step in our diligence is to have our space consultant, Strategic Space Design, review their rollout timing and financial plan. The plan seems aggressive overall, driven entirely by the number of launches, but Peter has designed this vehicle to be a weekly launcher from the beginning.

The company is now raising a $20M Series B to finish building their first rocket, conduct 3 test flights as well as their first commercial flight. By this point, the company expects to be generating cash and will not need to raise additional capital.

In his presentation, Peter will bring up that once Rocket Lab is successful, they plan to take another disruptive step (but it is likely beyond the period of BVP's investment so we are not really planning for it). Right now used rockets burn up, along with all their radios, navigations systems, etc. so Peter would like to design an integrated launch vehicle/satellite that repurposes the rocket components in a satellite.

Team

Though we have only met CEO Peter Beck to-date, the 25-person Rocket Lab team seems to be seasoned in all aspects of rocket design and manufacturing. 25% of the team has a PhD.

Peter Beck, CEO

Peter Beck founded Rocket Lab in 2007 following almost a decade and a half of propulsion research and market development in the international space community. Peter is an acclaimed scientist and engineer, having been awarded a Meritorious Medal from the Royal Aeronautical Society for service of an exceptional nature in New Zealand aviation, and the Cooper Medal, presented by the Royal Society bi-annually to those deemed to have published the best single account of research in physics and engineering. In our interactions with Peter so far, we have found him to have an inspiring combination of vision and no-nonsense execution. We will conduct reference checks as part of our continuing diligence.

Shaun O'Donnell, GNC Lead

As head of the Guidance Navigation and Control (GNC) division, Shaun O'Donnell has broad responsibility over all electronic and software systems on board Electron. Shaun has been involved with Rocket Lab since 2007, where he was solely responsible for all electronics and software systems. Prior to Rocket Lab, Shaun worked with a small start-up designing electronics for GPS-based systems, following which he started the specialist electronics company Novitas Technology Development, which creates turn-key electronics solutions using the latest technology available.

Dr Sandy Tirtey, Vehicle Lead

Dr Sandy Tirtey has 12 years of experience with hypersonic technologies and planetary re-entry vehicles. He started his career in 2002, working on the Mars Sample-Return Orbiter vehicle and more particularly investigating the impact of a Mars planetary aero-capture manoeuvre on the vehicle thermal protection system. He has then developed three in-flight experimental payload on-board of the European EXPERT (European eXPErimental Re- entry Testbed) vehicle. By the end of his PhD thesis, he was recognized for his expertise in planetary re-entry critical. He has also served as the Technical Lead and Project Manager of the Scramspace I Scramjet Propulsion free-flight experiment which, along with 12 others international partners, successfully built and flew the Scramspace I vehicle in September 2013.

Solomon Westerman GNC Engineer

Solomon is a highly-skilled GNC (guidance and navigation control) engineer having worked at Space X, NASA Marshall Space Flight Centre & Boeing Space Exploration. At SpaceX, he was part of the GNC team on the Falcon 1, Falcon 9 v1.1 and Falcon Heavy launch vehicles. He then led GNC for the Crewed Dragon capsule, moving the design through conceptual design to PDR for the abort engines. His specialties are Dynamics & Control and Rocket Propulsion. He also has extensive mission operation experience including, but not limited to Dragon C1, (primary operator Cape Canaveral), GNC operator for Dragon C2, Falcon 9 and Dragon C2.

Competition

Rocket Lab faces competition from heavy payload launchers like SpaceX's Falcon 9, Orbital Sciences, and Russian/Ukrainian launch vehicles. Both customers and Skybox have told us that launch capacity is rare and undependable but this rideshare offering will remain an alternative for Rocket Lab's customers.

Rocket Lab also has yet-to-launch rocket companies:

Virgin Galactic, the same company that offers consumers sub-orbital flights to space for $200K, is also working on Launcher One. This will replace the "white knight" passenger vehicle you may have seen with a payload launcher. The design is still to have a plane lift Launcher One to high-altitude flight and then release Launcher One and trigger its rocket power. We have heard they have a 12-person team working on Launcher One, but its economics depend on the consumer business thriving.

Firefly is an Austin-based team hoping to build a 400-kg payload launch vehicle. They are 24 months or more behind Rocket Lab, and though their CEO was a top propulsion lead from SpaceX, we find the rest of the team to lack space and rocket experience. They have never built a complete rocket and are just now beginning to design their rocket, so there is significant risk. They will offer more capacity given their 400-kg – and eventually 1,000-kg payloads – at a much more attractive price point, but this means that Rocket Lab's target customers are probably not the likely primary payloads on these rockets.

We expect generally that competition will heat up, and that different players will have different strengths. Rocket Labs will be weak in payload capacity and cost, but we see no one on the horizon who plan to compete with Rocket Lab on volume and schedule reliability. From our Skybox experience, these are the key factors for smaller Low Earth Orbit Satellites.

Summary

We believe Rocket Lab will bring online much needed small satellite launch capability. The team has years of experience with this problem and is at an attractive stage for investment, if our expert consultants confirm that the key technical milestones are behind them, and that we have properly sized the demand landscape. We look forward to your feedback on this investment.

ServiceTitan

To: BVP Group
From: Byron Deeter, Kristina Shen, and Talia Goldberg
Date: March 15, 2015
Re: ServiceTitan Series A Flash

Based in LA, ServiceTitan is a vertical SaaS company for home services businesses. ServiceTitan sits at the core of a home services business' daily operations and provides everything from inbound call management to mobile dispatching/invoicing to back office management. Ara Mahdessian (CEO) and Vahe Kuzoyan (co-founder, Head of Product), presented to the partnership from Menlo Park a few weeks ago.

We first met the ServiceTitan team at the Muckerslab Demo Day in LA 1 year ago when they were ~$1M in ARR. We've tracked them closely over the course of the year and since then they grew their SMB business to >$3M ARR ($5M CARR) and landed a massive $4M ACV deal with a large plumbing franchise. They were able to hit these achievements with a team of 20 employees (8 at the beginning of the year), no sales and marketing, while being cash flow positive. Ara was not planning on fundraising until the summer, but we convinced him to take a pre-emptive deal with us and, thus, the price is seemingly rich on recognized revenue but more reasonable on booked revenue.

ServiceTitan is attacking a billion-dollar market that is ripe with opportunity. The market has historically been dominated by manual processes and clunky on-premise vendors. We are pleased that ServiceTitan is the gold standard among newer SaaS vendors that are rapidly replacing their legacy counterparts and enabling desk-less workers to take advantage of mobile technology. We think that Ara and Vahe are hungry entrepreneurs who will work tirelessly to provide this industry with easy to use, state of the art software, and we recommend partnering with them for the journey ahead.

Why are we so excited?

Traction / Financials: The momentum speaks for itself.

$3.5M ARR and ~$9.4M CARR, representing 6x growth on ARR and 10x on CARR YoY

236 paying SMB customers paying on average $15k ACV

Just landed a $4M ACV franchise deal with the CUSTOMER

Net negative churn and limited logo churn

No sales and marketing spend and cash flow positive

Market: The field services market is expected to more than double from $1.58B to $3.52B in the next 5 years due to the proliferation of SaaS and mobile in the space. The home services market is experiencing the highest growth.

Product/Competitive Differentiation: ServiceTitan's key differentiation is that in addition to offering back office service management like all their competitors, ServiceTitan also offers sales & marketing performance tracking (powered by Twilio), enabling businesses to capture more potential revenue.

Team: Ara and Vahe both seem strong with domain knowledge and horsepower. They grew up with families in the plumbing and residential contracting space. They started ServiceTitan right out of undergrad (Stanford and USC) because they couldn't find good plumbing software to run Vahe's dad's business and spent the next 3-4 years building the product. The founders are strong positives for us in making this investment.

We recommend that BVP invest $17M in the $18M series A financing of ServiceTitan at a $75M pre money valuation. This represents a ~15x ARR multiple of March ending run rate, but 8x CARR multiple which feels reasonable given their growth and opportunity. Over the past month, we wrapped up our diligence, spent a day with the team in their LA office, and completed 8 customer calls and 5 industry expert calls. We remain confident that ServiceTitan has the best product and the most momentum (6x growth in MRR and 13x in CMRR over 13 months) in the home services software market.

After the partnership presentation, we identified two key areas of apprehension. First, there was concern over ServiceTitan's ability to sell to smaller businesses comprised of less than 10 technicians. We analyzed their existing customer base and found that ~50% of their current customers fall into this category and likely have between 3 and 7 technicians and pay less than $XXXX per month. We also spoke to a few of these customers and found that the product was just as valuable to them as it is to larger businesses. This is encouraging given that over half of the market is dominated by small independent business. Nonetheless, this is still a vertical SaaS company and while the TAM is over $1 billion, they will likely need to enter adjacent verticals in order to achieve a billion dollar value outcome.

Second, with $4.1M of February run rate ARR but over $9M of CARR, ServiceTitan has a sizeable revenue backlog. We diligenced that nearly all of the committed revenue will be recognized this year (and the majority by Q3).

However, our diligence has uncovered a new risk. Given that sales and the team have grown so rapidly in the last year, and this is both the co-founders' first job out of undergrad, they have not been laser focused on execution but neglected close tracking of KPIs. Out of all problems to have, growing too fast is one we'd rather have. The team is aware of their weakness in this area and we're pleased with the hire they have just made for VP Finance who joins shortly.

MARKET

Over the past decades, field service management software solutions have emerged to automate and facilitate everything from worker activity, to scheduling and dispatch, to appointment routing, to billing. The field service management market has been dominated by legacy, on-prem vendors primarily selling into service-oriented industries such as telecom, energy, manufacturing and utilities. These solutions were expensive and clunky, primarily sold into the midmarket and enterprise, and initially solved the pain point of schedule optimization across hundreds of customer service reps (CSRs) mapping into hundreds of field technicians schedules. In the last few years, mobile and cloud transformed the market, and a new generation of SaaS vendors began rapidly replacing their legacy counterparts. The home services market saw the most disruption as mobile enabled invoicing at client site, which improved time value of cash (time to payment) and the cheaper SaaS delivery model enabled SMBs to purchase software solutions for the first time.

MarketsandMarkets expects the global Field Service Management market to grow from $1.58 billion in 2014 to $3.52 billion by 2019, at a 17.3% CAGR during 2014–2019 due in part to mobile and cloud's ability to bring cheaper, simpler, and more accessible software to market. Gartner claims the enterprise space is only 25% penetrated and our diligence has concluded the SMB space and the home services market are poised to experience the strongest growth.

There are 600k home services businesses in the United States. ServiceTitan is initially targeting three of the largest and most sophisticated verticals within home services: electrical, plumbing, and HVAC, which together account for roughly half of the broader home services market. The majority of these businesses are SMBs. Our diligence calls suggest the following distribution of businesses by technician count:

1. ~40% - One to two person sole proprietor businesses (however, less than 20% of revenue).
2. ~45% - Three to 20 service technician businesses
3. ~10% - 20 to 60 person businesses
4. ~5% - Franchises and businesses with over one hundred service technicians

ServiceTitan successfully sells to all of these categories except for the one to two person businesses who are less sophisticated, don't have back office managers, and therefore can't gain as much value from the sales and marketing capabilities. Today, ServiceTitan is best suited for businesses in the residential segment with at least three technicians and three back office managers or customer service reps. They estimate that there are 42k businesses in the United States that exactly match that profile. With a $X.Xk average MRR per customer, this represents a $600M+ market in their core business. We feel this is a conservative number and believe ServiceTitan has many levers to pull to increase revenue per customer and to expand to adjacent verticals with product enhancements. For example, they are already increasing revenue per customer by offering credit cards processing, they are considering offering a lighter weight SMB product to capture market share in the one to two person businesses, and are thinking about adding functionality that would enable them to sell to other verticals like roofing, windows/glass, and pest control.

In general, businesses with three to twenty field technicians have a CSR to technician ratio of 1:5 or 2:5 and the larger businesses have CSR to technician ratios of 1:15. ServiceTitan charges $XXX for CSRs and back office managers and $XX for mobile field technician users. The histogram below shows a breakdown of MRR by customer. As the histogram demonstrates, about half of the customer base pays less than $X.Xk, which confirms that ServiceTitan successfully captures market share from the long tail.

PRODUCT

The ServiceTitan product sits at the core of an organization's daily operations and provides everything from inbound call management to mobile dispatching and invoicing to back office management. ServiceTitan's key differentiation is that in addition to offering back office service management (dispatching, billing, payroll, and inventory) like all their competitors, ServiceTitan also offers sales & marketing performance tracking capabilities. This S&M performance tracking is possible because the company is built on top of Twilio and they are the only solution in the market that fully integrates the telephony and workflow components of the business. By integrating telephony directly into the product and attributing a phone line to each prospect, ServiceTitan is able to track each prospect as it moves from lead, to appointment, to sale in their fully integrated CRM. ServiceTitan can give visibility into S&M metrics that have never been well tracking in the industry – for example (1) a customer service rep's (CSR) ability to convert inbound calls into appointments, (2) a field technicians ability to sell services and (3) marketing attribution through dedicated numbers to track individual campaigns.

More detailed view of the core features below:

CRM and Back Office Management – Tracks all transaction history, email, call logs, and communication related to every opportunity.

Dispatching and Scheduling Dashboard - GPS system tracks and routes field technicians via text to upcoming jobs. Sends customers a picture and bio of their field technician and estimated arrival time.

Call Tracking (Twilio integration) - Track all incoming and outgoing calls to measure efficiency of CSR's and determine whether CSRs convert a call into an appointment. Additionally, it ties calls to a lead in the CRM and based on area codes can help tie leads to specific marketing campaigns to attribute spend and determine ROI .

Mobile App (HTML5) – currently 25% adoption - Enables field technicians to create and review estimates in the field, sign contracts and invoices on the go (eliminates paper invoices), and to log and document activity.

Generates a product menu which technicians can display to customers on-site to create upsell opportunities.

ServiceTitan charges an average of $XXX per employee per month for each CSR or back office manager and $XX per employee per month for each field technician. They are able to charge premium pricing compared to their SaaS startup competitors (typically priced $XX - $XX per technician per month) because of their sales and marketing capabilities. We estimate that for most small businesses, there is a ratio of one CSR to three or four field service technicians in the SMB segment, and one CSR to ten or twenty technicians for businesses with more than a few hundred employees.

COMPETITION

We've talked to the vast majority of new startups in the space and have completed 7 GLG expert calls to form our opinion on the competitive landscape. The field services space is both extremely competitive and fragmented. The space is split into 2 main segments: home services (plumbing, HVAC, electrical) where ServiceTitan is initially focused, and support-oriented services (telecom, energy, manufacturing).

ServiceTitan is emerging as an early leader in the home services market for the following reasons:

Only vendor focused on the sales and marketing workflow in home services

By offering S&M performance tracking in addition to back office management, ServiceTitan enables businesses to capture their full potential revenue (many home service businesses only capture 1/4th their revenue potential).

Focused on time to cash value

Especially for SMB businesses, the paper invoicing process can delay payment to a business for weeks. By enabling mobile invoicing onsite, ServiceTitan decreases payment cycles from weeks to days.

Success selling to both SMBs and enterprises / franchises

ServiceTitan is the only SaaS vendor that has successfully sold up market to large franchises ($4M ACV deal with Mr Rooters Plumbing franchise).

Home Services Competitors – ServiceTitan's Initial Market

- The home services market is the fastest growing category in field services.
- The legacy, on-prem players are all very dated products built 20+ years ago and many do not have smartphone capabilities.
- Dozens of new SaaS vendors have emerged
  - **COMPETITOR 1 (~$2M ARR)** and **COMPETITOR 2 ($2M ARR)** and recently acquired by COMPANY - primarily sell to SMBs and are light workflow and mobile invoicing tools that are focused on improving the time value of cash.
  - **COMPETITOR 3 (~$4M ARR)** - primarily an all-purpose-use mobile forms provider that gained some traction in home services.
  - None of the new SaaS vendors have telephony integration so they are unable to move upmarket to sell into the enterprises.
- By both revenue scale and customer breadth, ServiceTitan is the clear SaaS leader in the market.

Support Oriented Services Competitors

ServiceTitan does not currently focus on this market.

Legacy vendors have historically focused in this space.

Unlike the home services market where businesses focus on improving sales, industries like telecom are focused on optimizing time to service and thus focus on schedule optimization.

This requires telephony integration to do smart routing/disbatching to handle hundreds of CSRs mapping into hundreds of technicians that do dozens of appointments a day.

Emerging SaaS vendor have seen success replacing their legacy counterparts in this space.

COMPETITOR 4 (~$30-40M ARR) - differentiates itself by having tight integration with Salesforce (built on force.com) and has raised $120M to date

COMPETITOR 5 ($8-10M ARR) - founded by the Fleetmatics team and has raised $20M to date.

COMPETITOR 6 – leading SaaS provider and was acquired by Oracle for an undisclosed amount. They had ~500 employees at time of acquisition (Sept. 2014)

GO-TO-MARKET

Until the last few months, the company had effectively spent zero dollars on sales and marketing and acquired the vast majority of new customers via referrals and other forms of word of mouth.

Referral channels

ServiceTitan's success to date has primarily been driven by referral channels, in particular with influential affinity groups and associations. Home services businesses heavily rely on associations for advice on vendors. ServiceTitan has started to form strategic partnerships with associations which provides them with direct access to members through email lists, tradeshows, and webinars in return for a ~4% rebate off list price. ServiceTitan estimates that there are over 10k businesses across a dozen of the most prominent industry associations, of which 5-6k of businesses fit ServiceTitan's target customer profile exactly.

Nexstar

ServiceTitan has had the most initial traction with Nexstar Network, a well-known association comprised of 550 businesses. ServiceTitan took a bottom up approach and grew organically in the Nexstar member base, acquiring 20 customers before forming a formal strategic partnership with Nexstars one year ago. Now they are one of only two software partners (they have ~100 services strategic partners), benefit from direct exposure to members, and have closed 78 customers in the Nexstar member base. The other software vendor, Serveman, only has 48 customers after 5 years as a partner and is very dated software. We spoke to the Nexstar Head of Strategic Partnerships and she believes ServiceTitan will win over one-third if not over half of Nexstar's membership base within the next 12-24 months.

ServiceTitan also has strategic partnerships with two other associations (Service Roundtable, QSC) and across the top associations, has acquired another 70 customers. Through these relationships, ServiceTitan has email lists of 2k+ prospects and growing. In total association referred customers represent 50% of their customer base and generally result in larger deals ($2.5k MRR).

The company is also exploring a number of other referral strategies including:

Manufacturers – Especially in the HVAC space where 90% of businesses work with 5 manufacturers, the manufacturer is the main vendor for most businesses and could evangelize ServiceTitan because we help track performance.

Tech affiliate partners – Already in discussions with Yelp to allow consumers to book home services directly in Yelp to ServiceTitan customers. Other potential opportunities include Yellow Pages, Yodle, Anglelist, Yahoo, Nextdoor, etc.

Independent consultants – Follow the Xero model and leverage consultants to recommend to ServiceTitan their customers. One consultant has already brought in 20 customers.

Sales and Marketing

Given the company has more inbound leads then they can handle, they have been most focused on referral channels and closing inbound leads rather than building a demand generation funnel or sales processes. Half of leads come from referral and half from direct channels through a web form lead capture. The sales process is low touch for the majority of their customers; SMB customers with <20 technicians can be sold in 1-2 calls and a demo. Larger prospects (>25+ techs) require 3-4 calls and often require an on-site visit or do site visits with existing customers to see how they use the product. Up until January 2015, all sales were closed by Ara (CEO) and one sales rep. In the last few months, they've brought on 3 more sales reps with an initial quota of $15k MRR a month, or $2.2mm ACV (which we don't expect reps to hit given how high this is!) and ~$200k OTE.

Overall the organization is still working to form basic S&M protocols. They loosely use Close.io for their CRM (just track 3 stages, lead, qualified, onboarding) and have no formulized forecasting or pipeline management in place. The team is aware of these shortcomings and is currently recruiting a VP of Sales.

CUSTOMER FEEDBACK

We completed 8 customer calls and 5 calls with industry experts. We also spoke CUSTOMER, their largest customer (covered in section below) and to Nexstar, a prominent industry association.

Reconfirmed that ServiceTitan is the strongest SaaS product in the space and is differentiated by providing strong sales and marketing ROI

> On top of being easy to use and just better software then the dated legacy vendors, customers raved about how ServiceTitan figured out the "one right way to do something" rather than providing 10 options.
>
> Majority of customers have reported increased sales from better marketing spend decisions and measuring performance at each step in the sale cycle. In particular, technicians gain the greatest ROI because
>
> ServiceTitan gives them a more professional offering, improves upsell, and decreases time to payment.
>
> None of their competitors offer robust (if any) sales and marketing functionality.

Core software can easily cross over from plumbing, electrical, and HVAC

> ServiceTitan is best matched for the plumbing industry, but there is over 85% product match for the HVAC and electrical industries. Experts confirmed there are a handful of add-on modules ServiceTitan could build to expand into adjacent verticals.

Product gaps

> The most mentioned product gaps are inventory management (in particular for the HVAC industry that has expensive parts to manage) and commercial product capabilities (such as relationship tracking and WIP tracking). Some plumbers manage both residential and commercial businesses and we believe building commercial capabilities would expand our TAM estimates by 30%, but residential has been their focus to date.

Overall, customers have very positive implementation and support experiences.

> Most customers migrate their entire business to ServiceTitan within 3-6 weeks. Ara and Vahe are extremely responsive and committed to customer success since it's such a referral based business.

Mobile Web App Issues

The main "area of improvement" related to issues with the mobile web app. Last year, 15-20% of the time, technicians had connectivity / refresh issues and had to do manual paper invoices.

ServiceTitan has since fixed these network issues (primarily driven by very content heavy pricing books), and is also testing a native mobile app primarily to access a credit card swipper to generate more revenue for the credit card processing business. The new and greatly improved native mobile apps will roll out in the next month or two.

FINANCIAL PERFORMANCE

We continue to be impressed by ServiceTitan's financial performance.

Financial summary:

The company grew from $54k MRR in January 2014 to a $344k MRR run rate today with $70K in CMRR.

This represents 6x MRR growth and 13x CMRR growth in thirteen months.

We believe they will end the year at $13.1M in ARR.

They have ~300 paying customers and $50M of monthly transaction volume flowing through ServiceTitan.

The average customer pays $X.Xk MRR while their largest customer pays $XX.XK MRR.

They have been slightly cash flow positive for the past year.

Gross dollar churn averages under 1% each month. Net churn is slightly negative as customers are upsold on additional mobile licenses.

Currently, 61% of MRR is attributed to back office or CSR users, 18% of MRR is attributed to mobile licenses, and 21% to phone tracking. They are launching a new native mobile product (previously web app) in a few months and expect that mobile will increase to 35% to 40% of MRR in the next year. Many customers are currently on a wait list to roll out mobile once their much improved product is ready.

Other non-recurring revenue:

ServiceTitan generates $X.Xk in one time implementation revenue from each new customer. They are also in the process of rolling out credit card transactions from which they will collect XX basis points per transaction. This represents $XXk of potential additional monthly revenue (we estimate they will be able to achieve XX.X% penetration by end of 2015).

Onboarding / Support and Gross Margins

ServiceTitan currently has a team of 5 on-boarders who can accommodate 50 customers per month. The average onboarding time is one month, but the team recently built automated data migration systems which could decrease onboarding time to 2 weeks. The company had healthy 65% gross margins in Q4, and expects them to increase significantly in the next year or two.

2015 Forecast

We built a simple 2015 forecast below that gets us to $13.1M ARR by the end of 2015, representing 240% growth YoY. If any bigger deals hit (ARS could be a $3-$4M ACV deal) they could dramatically increase the forecast. This model assumes they bring sales reps from 3 to 8 by end of 2015 and add an average of $120k CMRR a quarter.

TEAM

Ara Mahdessian (CEO) and Vahe Kuzoyan (Head of Product) grew up with a keen understanding of the frustrations and challenges in the industry. Both of their parents are immigrants; Ara's father is a residential contractor and Vahe's is a plumber. The two began thinking about ServiceTitan seven years ago while they were in college when Vahe's father asked for help evaluating software to manage his business. Ara graduated from Stanford and Vahe from USC, where they both studied computer science. After graduating, they spent three years developing the product at Mr Rooters, part of Dwyer Group, (now their largest customer) to fit the needs and specific use cases for the industry. Their empathy and mission to empower these blue collar workers has resonated extremely well in the industry and helped to fuel organic growth. Ara spends most of this time selling to the larger customers and franchises. Vahe focuses on product and is incredibly customer service oriented, often spending weeks at a time on-site with customers to figure out their needs and how they can better improve the product. We see them as strong positives. The product launched in early 2013.

We did our third site visit and spent a day with the full exec team at their offices last week. The team is 40 FTE mostly based in LA. They are incredibly hard working and scrappy, but high horsepower (Stanford & USC grads along w many of their key execs) and have been quite receptive to our feedback and guidance. They are first time entrepreneurs and this is their first real job, which was reflected in their elementary methods of tracking KPI's. They are very aware that they need to implement better processes to measure their business as they scale. The good news is that they are very coachable and we are working with them to improve internal processes and to recruit a VP of Finance.

RISKS

Can they build a sales engine when referrals slow down?

The market is heavily driven by WOM and referrals from associations and we believe there are still 5-6k target customers across a dozen large associations we currently have a presence with.

The sales organization is very early (currently 4 sales reps, 2 of which are very new) and remains a risk. They still need to hire a VP of Sales and prove an outbound model.

No precedent for large software companies in this space. Can ServiceTitan build a big business?

The core market is over $600M and there are several market expansion opportunities into the commercial side of the business, tangential home services verticals, and add on revenues such as credit card processing. This easily could be a multi-billion dollar market opportunity. We believe a major reason why no big company has formed in this space is because up until recently, there were no cost efficient ways to acquire customers in this very fragmented market. With the recent formation of associations to drive better business practices, we believe ServiceTitan has cracked the nut on how to virally capture market share.

CONCLUSION

We are excited to back a hungry team with a strong product that is making waves in an industry that has been largely left behind by modern software.

OUTCOMES ANALYSIS

Scenario	Exit value	Prob	Years	Est future dilution	Gross Proceeds	Mult.	IRR
Wipe-out	$0	15%	2	0%	$0.00	0.00x	-100%
Major failure w key account(s) and growth slows dramatically at ~$15m ARR	$80	18%	2	0%	$15.20	0.89x	-6%
Competition increases, organic growth stops, sales force performs so/so ~$30M ARR	$200	22%	3	10%	$34.20	1.99x	26%
Leader in the space, but the space cools down	$350	20%	3	15%	$56.53	3.30x	49%
The market continues to be hot, ST is the leader, hits $75M ARR. Sold to a strategic or IPO.	$750	20%	5	20%	$114.00	6.65x	46%
Home Run: is able to expand into commercial market or other verticals. IPO at 8x 2021 revenue of $150M	$1,200	5%	6	30%	$159.60	9.31x	45%
		100%		Weighted average	$52.35	3.05	26%

Bessemer Venture Partners

Velo3D

To: BVP Group
From: David Cowan and Sunil Nagaraj
Date: May 23, 2015
Re: Velo3D Series A IR

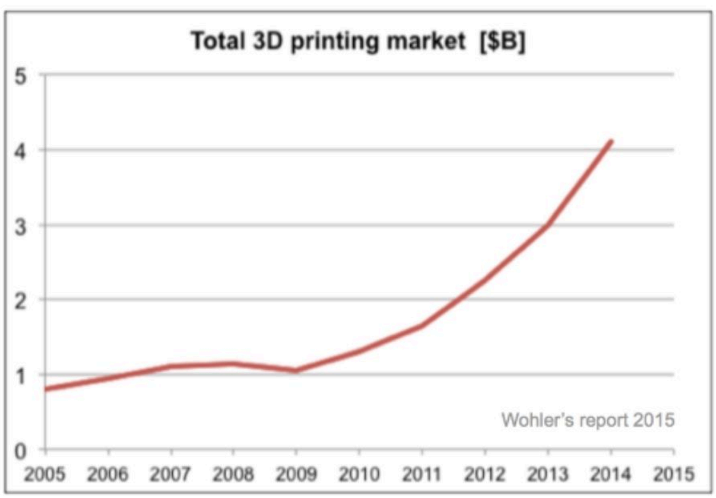
On Monday morning, Velo3D co-founder and CEO Benny Buller will present from Menlo Park. His one year old Santa Clara-based startup promises to transform metallic manufacturing by developing the first 3D metal printer that does not require support structures to hold up the material, overcoming what is arguably the single largest hurdle to printing metal parts at scale.

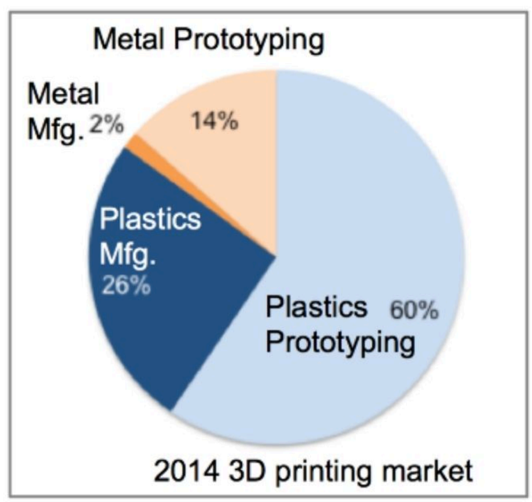
"Supports" are necessary but time-consuming structures added to 3D models to enable the printing of certain geometries and to help with heat transfer. Supports make metal 3D printing significantly more time consuming, complex, and expensive. We were introduced to Velo3D by Rocket Lab CEO Peter Beck, who covets support-free printing for his rocket engine parts. Velo3D initially raised a $4m loan convertible at $12M pre, and his seed investors Lightspeed, Khosla, and Formation8 have all independently offered to lead the company's Series A round; but Peter Beck, Dan Berkenstock and even Velo3D seed investor Pierre Lamond (formerly with Khosla) have convinced the founders that they should get BVP as their lead.

We are considering a deal where we invest about $8M of a $15M round at a fully diluted $40.4M post-money valuation with a 10% option pool. Formation8 would invest $5M (though they have not yet agreed to be cut back this much) and strategic investor Autodesk would take the remaining $2M. We are still completing our diligence but are positive given the strong team and how disruptive this technology can be in the already rapidly growing metal-printing market.

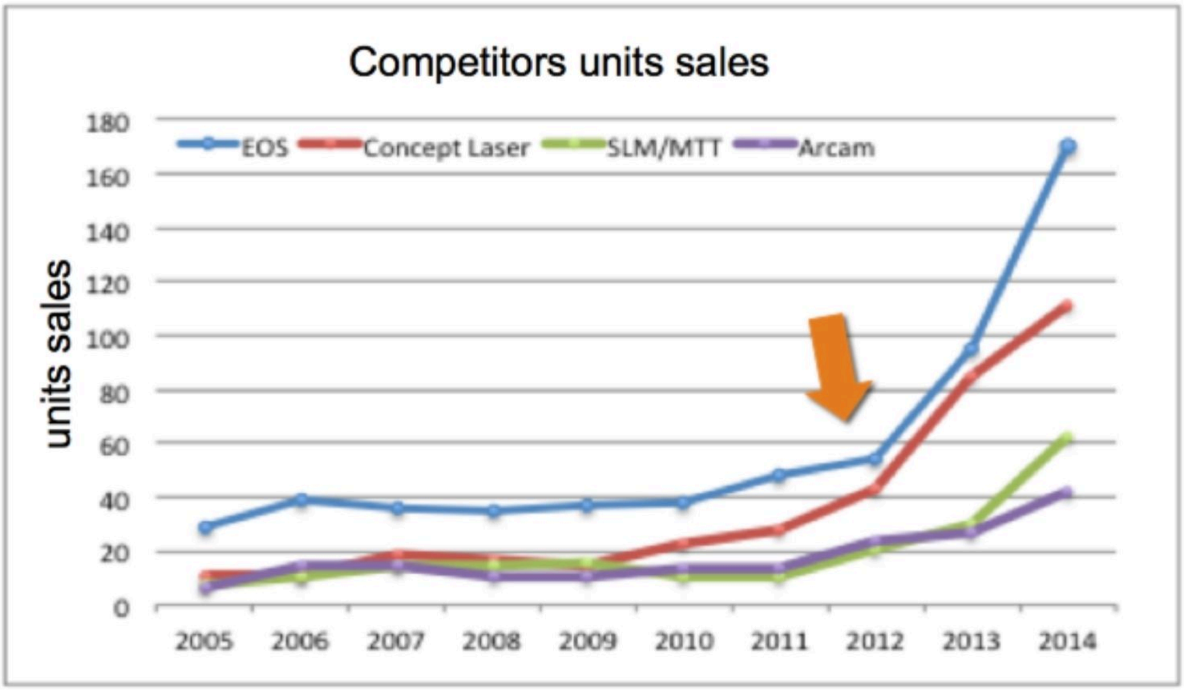
Additive Manufacturing ("3D printing") Market Size and Growth

3D printing is a $4B market, with a 6-to-1 ratio of plastics-to-metal, and a 5-to-2 ratio of prototyping to manufacturing. The manufacturing segment is growing fast – now a third of the plastic printing market – but it still represents only an eighth of the metal printing market.





Last year, about 500 metal 3D printers were sold at an average of $700K each, totaling $350M of revenue. Growth has started to inflect in recent years as this market grew by over 60% in 2013 and again in 2014. This is in contrast to the overall additive manufacturing market which grew 25%. The primary industries purchasing metal 3D printers are Industrial machining, Aerospace, Dental/Medical, Academic, and Automotive. The market for metal 3D printers is dominated by 4 European companies: EOS Systems, Concept Laser, SLM, and Arcam.

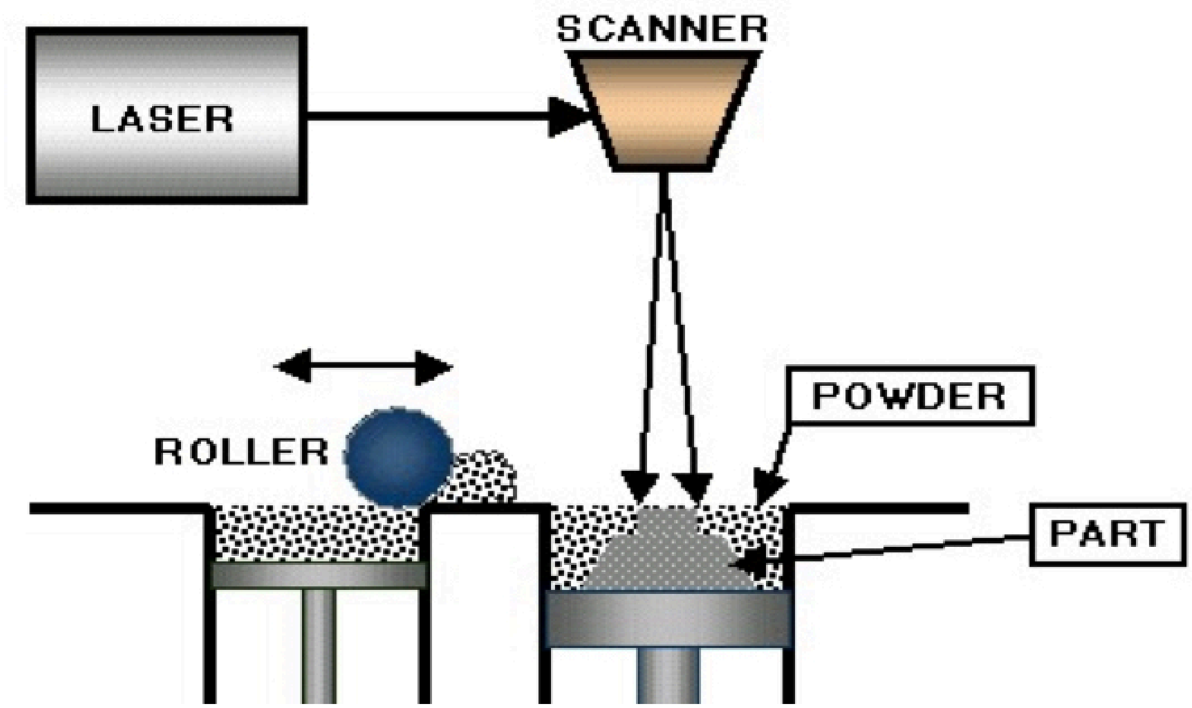


Benny's singular goal is to expand metal 3D printing from a $350M market printing mostly metal prototypes into a larger piece of the broader $500B metal machining market by enabling the printing of production metal parts.

How 3D Metal Printing Works

The most common method is called Direct Metal Laser Sintering (DMLS). A layer of metal powder is deposited on a build platform by a recoating blade. A very powerful laser then very precisely melts certain areas of the powder to fuse the metal powder to the metallic build platform. The build platform is then lowered 75 microns and the recoating blade pushes another layer of fresh powder onto the build platform. The laser then fuses this second layer to the first in a very specific pattern. These steps of recoating, lowering the build platform, and lasering continues until the part is complete (1,000 passes or more). At the end, the part is removed from the deep chamber of powder surrounding it. The most common metal powders are aluminum, cobalt chrome alloy, nickel alloy, stainless steel, and titanium. These each have different melting points and other mechanical properties so they are used for various reasons and in different industries.

By virtue of the additive nature of this process where parts are built layer by layer from the bottom up, metal 3D printed parts need "supports". Supports generally provide temporary support for a geometry that will be strong when complete but is weak during the build process. These geometries generally have horizontal overhanging surfaces, so they would collapse or be impossible to build through bottoms-up layering. Supports also serve an important role in dissipating heat from the newly-formed geometry. This prevents warping during the rapid melting and cooling process. Here is an example of a metal 3D printed part for the dental industry and all the supports necessary to enable its printing (left is before support removal, right is after):



This example underscores the complexity that supports add to a metal 3D build. Supports must be painstakingly added to the CAD model manually based on judgements of where the geometry requires it. This is a bit of an art because the supports also serve a thermal role. As a result, parts requiring supports must be printed and studied several times with small iterations on the number and location of supports, consuming a significant amount of time on a very expensive machine. In fact, most metal 3D printed parts are actually designed with the constraints of the printing process in mind from the beginning, compromising some combination of material cost, weight, and strength. Once a suitable design with the appropriate supports has been reached and the part is completely printed, supports must be manually removed through wire cutting or machined off with CNC equipment. In sum, supports are a very painful but required feature of metal 3D printing today. We have spoken with several metal 3D printing experts and customers and there is very clear consensus that supports are a major issue holding back this market.

Product: Supportless 3D metal printing

Velo3D is building a metal 3D printer as well as a cloud-based service to process CAD models into machine instructions. These 2 offerings work closely in concert to enable support-free 3D printing. There are four major problems with support-free printing:

> Any horizontal (or close to horizontal) overhangs will not be printable or will collapse under their own weight without a support.
>
> Without supports, the heat differential in the chamber causes the part to crack while printing.
>
> If the object isn't firmly supported during printing, then as the top most layer of metal cools and therefore contracts, it pulls in the edges, causing an upward curl, or warp, of the object.
>
> The re-coating mechanism, which pushes powder over the build after each layer is created, jostles the unsupported powder particles underneath so that they are too uneven to reliably fuse.

Velo3D's magic is that one by one it solves each of these problems. To protect the company's intellectual property, the solutions to these problems are not included here. Rather, they will be presented orally on Monday morning.

Velo3D Product Benefits

Less pre-processing/preparation before printing: Designers will be able to print any part imaginable, free from the constraints of the underlying printing process. This allows for the creation of parts that would be previously unprintable and eliminates the need to compromise weight and strength.

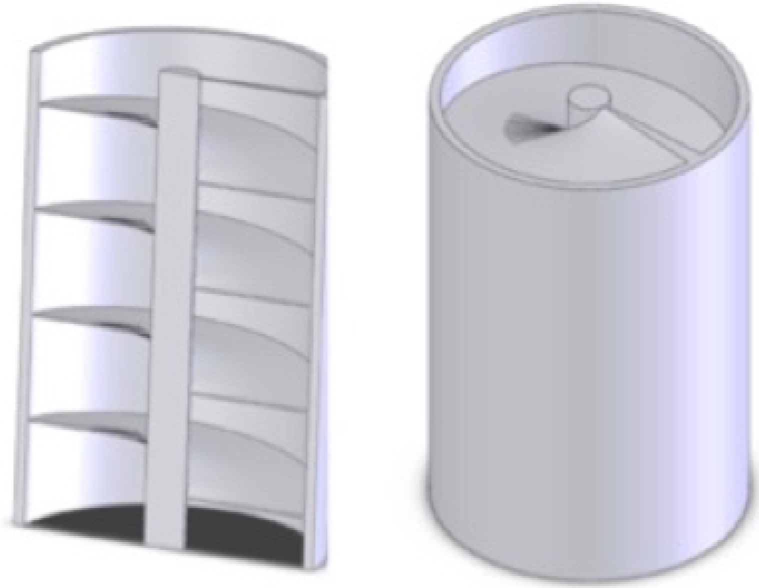
No need to determine where to place supports: Support placement is usually determined with an iterative process that requires a lot of designer time and several full builds before the supports are appropriately placed.

Faster builds with less material: The build takes 50% less time because the laser does not have to continually re-position to random XY locations to build up a support. Skipping the support build will also save powder, reducing material costs by 15%.

Less post-processing and yield loss: Supports no longer need to be painstakingly sawed off from the part. Parts are often ruined during the support removal process.

This innovation will be particularly valuable for low-volume, high-value parts; as additive manufacturing becomes sufficiently viable, fast and cheap, Velo3D expects Aerospace, Medical, Energy/Oil, Automotive and Machinery businesses to adopt it in their production lines. Today, this is rare because of the time and complexity involved with a process fraught with supports. We have heard from customers in a few of these industries that the weight reduction, quicker turnaround, and lower cost are very attractive.

For example, this turbine (from the SpaceX Falcon 9) is incredibly difficult to make with any printer other than Velo3D:



Eventually, Velo3D believes that more standard metal parts, even those that might have been machined, will be redesigned to take advantage of 3D printing. For example, part weights can be reduced while strength and stiffness are increased through the use of internal structures (such as lattices) rather than a completely solid part. Below is an example of an airline seat buckle before and after this process:

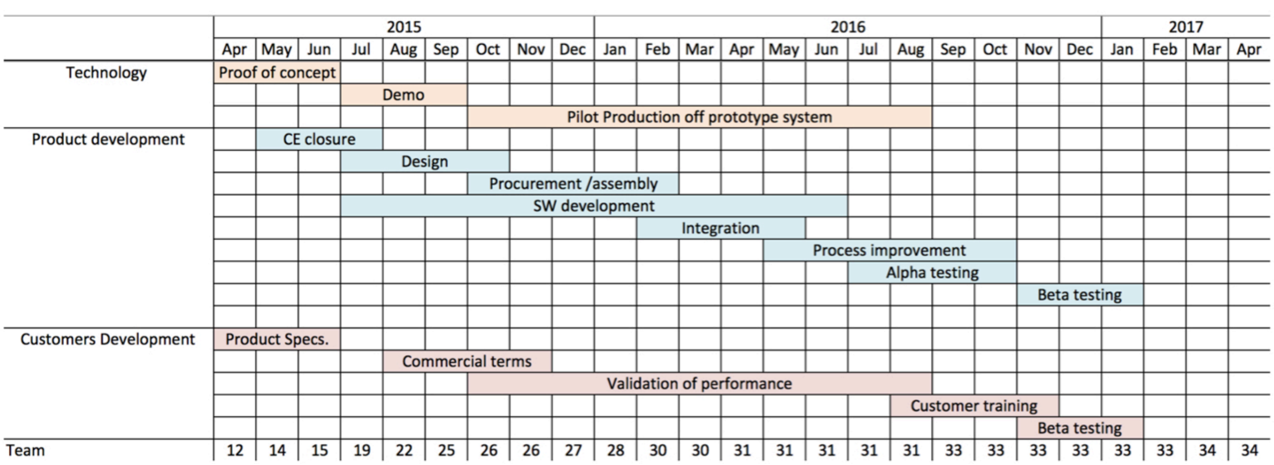
This redesign changed the weight of this airline seat buckle from 140 grams to 68 grams without compromising any strength. For an Airbus A380 with 853 seats, this totals 74 kg of weight savings. This leads to almost 1 million gallons of fuel savings over the lifetime of the aircraft.

Intellectual Property

Velo3D is pursuing a novel strategy for legally protecting their IP. Rather than patent all the mechanical details of their approach, they are patenting the signature that is left in parts made using their process. In this way, if a competitor infringes on their invention, they can sue anyone in the customer's supply chain rather than just the printer manufacturer (who may be in China). It also limits how much of the secret sauce needs to be disclosed in the patent filings. As of today, they have filed 5 provisional patents that they expect to split into many more full patent filings.

Financials/Traction

From here, the company hopes to use $15M of new funding to grow the team from 12 to 34 and start alpha testing on their first machine by mid-2016. They hope to ship beta units to customers in November of 2016 and have general availability by January 2017. This round takes them through April 2017 with an average gross monthly burn of $700K. It's an aggressive schedule that we expect to slip, requiring another round in early 2017.



Velo3D is still iterating on their pricing strategy. They believe they can build a machine for $350K (based mostly on COGS of existing printers) and sell it for $700K as their competitors do. To extract a premium for the support-less feature, they hope to add a $200K annual recurring SaaS fee for use of their processing cloud to turn CAD models into instructions for their machine (it's a computationally expensive operation). Using these assumptions, they plan to sell $10M, $24M, and $79M in 2017, 2018, and 2019 at close to a 60% gross margin, achieving 5% market share in metal 3D printers:

		2017				2018				2019			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Bookings units		3	5	5	5	7	8	10	15	22	29	34	40
Deliveries units		0	2	4	4	5	7	8	10	15	22	29	34
Installed base units		3	5	9	13	18	25	33	43	58	80	109	143
Revenue													
Total Revenue		2,730,000	1,750,000	2,730,000	3,010,000	3,952,500	5,117,500	6,397,500	8,517,500	12,305,000	17,327,500	22,267,500	26,832,500
Revenue - systems		2,730,000	1,750,000	2,730,000	3,010,000	3,780,000	4,830,000	5,880,000	7,770,000	11,270,000	15,890,000	20,370,000	24,360,000
Revenue service		0	0	0	0	22,500	37,500	67,500	97,500	135,000	187,500	247,500	322,500
SaaS revenue		0	0	0	0	150,000	250,000	450,000	650,000	900,000	1,250,000	1,650,000	2,150,000

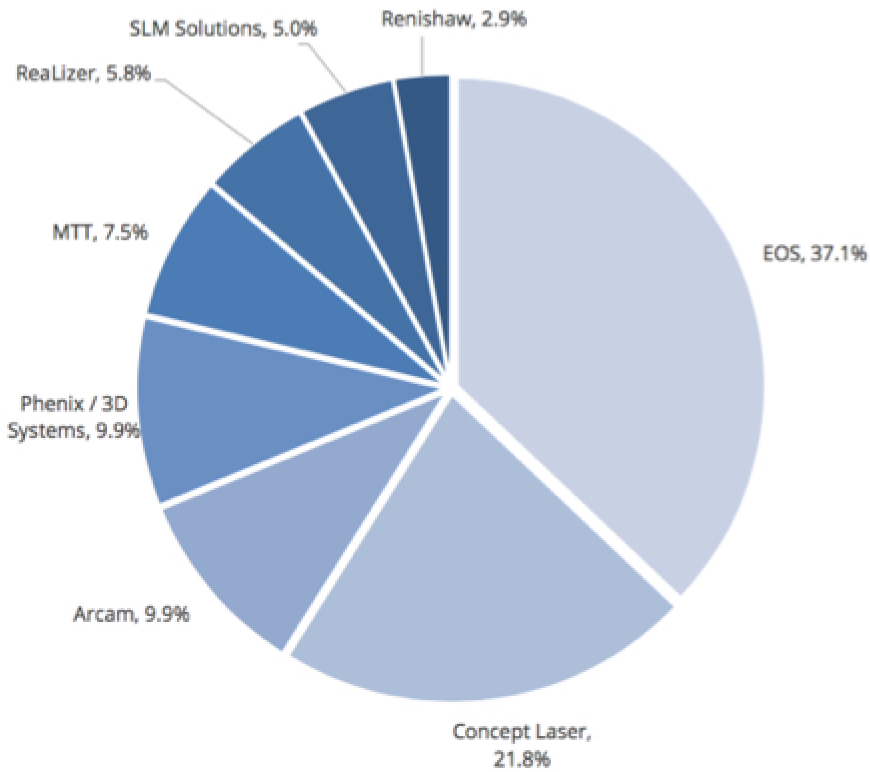
Since raising their $4M seed round in July 2014, Velo3D has demonstrated support-less printing for basic shapes by printing several parts that were previously impossible to print. They have also recruited a talented team of 12. The team has also built early relationships with 4 prospective customers but this is very nascent. One of them, Proto-labs is one of the biggest players in this space (traded on Nasdaq).

Competition

The metal 3D printing market has several competitors that we are still working to understand better. From what we can tell, Velo3D will be the world's only support-free printing with laser sintering. The only competition that claims to offer support-free printing is Arcam, a Swedish company that targets the aerospace and medical industries. Arcam has a $1M machine based on electron beam welding technology, rather than lasers. As a result, their machine heats up the entire powder reserve to 1,100C and must complete the build in a vaccuum. They use the build powder as a kind of support, but this powder turns into a substance like sandstone that must later be picked away. Then, by heating everything, they remove the thermal concerns that also drives the need for supports. In certain instances, the build speed can be faster but the "resolution" of the part is lower so the acurracy and surface finish is lower. In addition, they cannot work with aluminum as a material. They sold roughly 40 units last year.

There are several other competitors:

> EOS Systems is based in Germany and has 400 employees, half of whom work on their metal printers.
>
> Concept Laser is based in Germany and has 500 employees, 20% of whom work on their metal printers.
>
> 3D Systems is based in Valencia, California and has over 1,000 employees, 5% of whom work on their metal printers.
>
> SLM is based in Germany and has 65 employees.
>
> Renishaw is based in England and has over 3,000 employees, 2% of whom work on metal printers.



Team

Velo3D has a team of 12 talented engineers, technicians, and material scientists.

Benny Buller is co-founder and CEO of Velo3D. He is a graduate of Technion in Israel after which he spent 10 years in the Intelligence Technology Unit of the Israeli Defense Force (Unit 8100). He then spent 4 years at Applied Materials as Director of Electron Beam Pattern Generation Systems and 1.5 years at Solyndra as VP of Product Development where he invented the company's core technology. Most recently he was VP of Module Technology Integration at First Solar for 4 years and spent 2 years at Khosla as a Principal. He is a named inventor on 120 US patents. In the short time we've known Benny, he has impressed us with his intelligence and transparency. We find him to be an ideal combination of hungry entrepreneur and talented engineer.

Erel Milshtein is co-founder and VP of R&D for Velo3D. He spent 8 years at Applied Materials in technical roles ranging from Physicist to Technology Team Leader. He then spent 2 years at Solyndra where he met Benny. Benny then pulled him over to First Solar where he was Director of Engineering for 6 years.

It is also worth noting that Ofer Shochet, formerly VP of Products of leading 3D printing company Stratasys, is on the board of Velo3D.

Risks

We see several major risks for Velo3D:

> **Technology:** As you'll hear on Monday morning, Velo3D has been able to print several previously unprintable geometries with their prototype machine. However, they still have many technical problems to overcome before they have a working machine that can reliably deliver a metal 3D printed part. The company has allocated the next 10-12 months to working through these challenges but it could take longer.
>
> **Market:** While the metal 3D printing market is $350M today and growing 50-60% annually, this investment will only be attractive if Velo3D can attract new business from customers who appreciate the support-free printing solution. We believe that Velo3D has a chance at massively increasing the addressable market by making it viable to print production parts for a number of industries but the company has not focused on customer sales to date.
>
> **Competition:** There are roughly 10 companies who offer metal 3D printing technology, but with the exception of Arcam, none of them offer support-free printing. We believe that the number and size of changes they would have to make to their machines will keep them out of Velo3D's crosshairs for several years. In addition, Velo3D will have a strong IP position. With regard to Arcam, we are still digging into this further but believe the low accuracy and vacuum requirement of their machine limits their applicability, and their customers still have to extract the fused powder, limiting the printable geometries.

Outcomes Table **

Outcome	Exit Value	Exit Date	Prob.	Gross Proceeds	Mult.	IRR %
Wipeout. Velo3D has team or major IP issues and falls apart.	$0	Dec-16	20%	$0.0	0.00x	-100.0%
Team/IP sale. Velo3D is not able to complete a working machine but the team and IP is sold to a metal 3D printing competitor	$15	Dec-16	15%	$6.5	1.00x	0.0%
Slow Growth. Velo3D sells 20 machines for $700K each in 2017 but softening pipeline causes us to sell for 7x revenues	$100	Jun-17	32%	$10.9	1.67x	26.2%
Strong Growth. The company unlocks metal 3D printing for production parts. Sells 100 machines annually (20% of 2015 metal printer market) along with Saas revenue before exiting. 20% add'l dilution from Series B.	$500	Dec-18	30%	$43.5	6.67x	67.1%
Home Run. Velo3D is used throughout industry for production metal 3D printed parts, taking significant share of the $500B metal machining market to achieve $300M revenue (250 machines annually). IPO for 9x revenues.	$2,000	Jul-20	3%	$108.8	16.67x	70.4%
Weighted Average (to BVP)					**3.18x**	**40.1%**

Summary

We are excited to invest in an early-stage company that is revolutionizing the fast-growing market for metal 3D printing by removing the need for supports. In doing so, Velo3D has the potential to print production parts in a variety of industries, disrupting the $500B annual market for metal manufacturing. We recommend this investment.

Bessemer Venture Partners

Toast

To: BVP Group
From: Kent Bennett, Eric Ahlgren
Date: 12/14/15
Re: Toast Series B IR

We recommend a $17.5M investment in the $24M first institutional round of Toast, a Boston based company selling restaurant point of sale (POS) software. Our $17.5M will purchase 14.3% FD ownership and will see a 2X return at a $150M exit and a 2.5X return at a $210M exit. Our hope, of course, is that Toast will use what we believe is a meaningful product advantage to grab a large share of the 1M restaurants who will transition to cloud based POS in the coming decade. The benefit of a massive market is that with a little more than 1% market penetration Toast could be a $100M revenue company. The company momentum since signing our term sheet has us eager to close ASAP and we hope that an impressive product, a huge market, and potential for continued capital efficient hyper-growth will make up for an admittedly premium price on entry.

By the Numbers

At the effective pre-money we're paying 12x CARR / 17x ARR (the company has a ~3 month backlog of booked sites) – this is 3.8X YE2016 forecasted CARR although the company is ahead of that plan at the moment.

November was a record month with $800K of new ARR, a 7% increase in ASP, 0.3% gross churn, and most ramped reps above quota. Across the board things appear to be humming.

$24MM CARR / $17MM ARR forecast exiting 2016 - ~300% YOY growth.

75% blended Gross Margins on ARR (subscription + payment processing)

8-month CAC payback on live ARR (although inefficient implementation has stretched the cash on cash payback closer to a year – this is already headed back down in November)

<1% gross quarterly churn

>150% net retention, including upsell and account expansion

$5300 ARR / location (November bookings averaging $6200)

Market size: ~1M restaurants and bars (US only) = $6B for Toast at current monetization level with potential for expansion (product modules, international)

$14.5MM capital invested to date

$3.4MM cash remaining

$1MM monthly burn

Product:

Toast offers a cloud-based system to quick serve (QSRs) and full service restaurants (FSRs), with a modular all-in-one restaurant management platform encompassing POS, payments, operations management, online ordering, self-serve kiosk ordering and checkout, inventory management, loyalty program management, gifting and myriad other restaurant needs (much of this is live today, although there may be a >5 year roadmap with endless product features ahead). Toast's Android tablet-based cloud solution is beating out other new systems head to head and more impressively attacking on prem proprietary hardware incumbents Micros and NCR, who together make up 50% of the market.

While there are a handful of "next gen" players attacking this market, we believe that Toast has a significant early advantage. First off, the sheer amount of software the team has built in a short span is impressive – feature for feature they are already much more in the class of the >20 year old enterprise systems than the next gen "Bistro" players, and so for restaurants with any level of sophisticated feature requirements they win easily. But beyond just being very good at building good product quickly, the company also made two smart choices that sets them apart from the other players.

First, while competitors have almost all built on iPads/iOS, Toast's Android-based architecture allows restaurants to be much more flexible in their hardware choices (iPads are simply not enterprise grade and come in far fewer form factors than Android), has fewer software versioning issues than iOS and the upfront hardware costs are cheaper.

Second, Toast also did real work to build out transaction processing capability, which lets them subsidize their fees by operating as a transaction processor (they simply match current restaurant rates and almost always win the transaction business without objection.) This allows Toast to price competitively and earn a much higher margin than competitors head-to-head.Despite what we think is an early lead, Toast's product is still very immature, and every day they roll out new features like online ordering and inventory management (a $75 / mo upsell they introduced in October to 10% immediate adoption.)

There are countless ways they can expand the product offering over time, and with a modern software stack and open API they will continue to improve their product and integrate with partners who can offer great functionality on top of Toast.

We attended a company hackathon, where in two days employees had built applications to do among other things kiosk ordering, rapid backroom inventory, order ahead on mobile, vendor purchasing management – basically several other startups we've seen in the restaurant space are simply modules on Toast. We think an app store model over time (a la Shopify) is possible and could contribute to Toast's defensibility along with integration into several ecosystem players.

We spent significant time with Toast customers, prospects, and industry experts and continue to feel confident that Toast has a best in class product. Despite a VERY noisy space we think they've emerged as a product leader fueled by the quality of the team and great decisions, namely Android as an OS and the decision to do the hard work of building out processor capability which supports a differentiated value proposition.

We've collected some data to back up this product assessment, namely:

Toast beats every major competitor head-to-head in sales scenarios by a significant margin and has never lost head to head on product criticism (other than for a feature that they have not built yet). Combing through all of their loss explanations it seems to us they only lose based on either an owner who has already selected another system, or on price, and there just at the low-end of the market (where they have a plan to simplify their pricing as most losses are to snake oil competitors who manipulate their pricing with sleazy hardware leases)

Toast churn is driven almost entirely by restaurants going out of business, and they have never lost a customer to another cloud-based POS, whereas they have stolen several customers from their competitors. Occasionally they will lose a customer in a complex location where wifi issues make handheld tablets (part of the Toast value prop for some buyers) difficult and in those cases the owners tend to revert to legacy systems but remain big fans of the Toast product.

Toast net retention and upsell across multi-unit locations has been a big growth driver – many times a one unit pilot has turned into a multi-unit adoption

Beyond combing through their salesforce data, we have also spoken to 30 Toast customers – in addition to the 12 references provided by the company we did another ~20 "secret shopper" in-person visits – representing about 7% of Toast's booked restaurant locations, and the feedback has been overwhelmingly positive, producing an informal NPS of over 80 with only one mild detractor (we think a WiFi issue). Encouragingly, when we ask users for their favorite features of Toast, the range of answers has common themes but is also impressively long including:

It's intuitive and really easy to use.

- Much more efficient than legacy systems on key workflow activities. Occasionally an owner will mention something that could be improved and are always amazed when the software improves the next week…
- Really easy for a new employee which means reduced time training

Cloud solution – multiple users cited benefits of the cloud including

- Make updates or review analytics from anywhere. An owner can set alerts giving them visibility throughout the day on performance at any location, or in a particular server area
- Feature improvements – impressed at the rapid deployment of new features to make the product even better
- No more server crashes. If anything stalls it's only just for a minute and the devices can operate in offline mode so no outages
- Integration with third party software – several users favor another third-party restaurant solution (like a loyalty program or inventory tool) and Toast has been able to easily integrate into these solutions.

Table-side hardware drives throughput efficiency:

- Allows servers to send orders immediately to the kitchen
- Guests can run credit cards at the table – and give dynamic feedback on service
- Many customers have seen significant increase in table turns and service speed

CRM:

- Guests receive receipts by email (this also speeds up line throughput in QSRs/cafes), and restaurant has entire order history easily accessible which allows for analysis on best guests, quick retrieval of a past receipt, etc. We think the potential to improve CRM functionality over time is one of the most exciting aspects of the Toast roadmap.

Other advanced features such as online ordering, website menu integration, integration with other third-party software, etc.

Only points of criticism are around non-Toast specific issues like wifi connectivity and hardware sensitivity and some mild critique that their service has degraded (which the team admits has been true at times in this period of hyper-growth.)

The bottom line is that we think this is a stand-out product which is driving the company's early success, and there is a ton of potential for the product to improve with modules for mobile checkout, scheduling, inventory management, CRM, and others just getting started.

As for the tech under the hood we spoke to both Adam Ferrari as well as Keith Johnson who were the former CTO and VPE at Endeca and have been working with the Toast team. Both are convinced that the company currently has a solid engineering team with a code base ready to support the product roadmap although one that will require continued investment to support the growth in 2016/17.

Market:

There are approximately 1 million addressable restaurants in the US, and with current ARR / location around $5,000 and upside with additional product features potentially approaching $10,000, we estimate the market size at $5 – 10 billion. This is large, but maybe not surprising relative to the $600B Americans spend at restaurants every year. Approximately seven in ten of these million restaurants are "independent" often single location operations, as opposed to chain stores, although a significant fraction of these "independents" have shared ownership or multiple locations. Toast's core demographic today is independent operators but they have begun to move into "mid-market" 10-200 location chains as well. The likely sweet spot for Toast in 2016/17 is the combination of larger independent restaurants and "mid-market" chains – approximately 300-400K of the 1M restaurants fall into this sweet spot. Over time we think any restaurant that uses meaningful software should be a Toast customer. As an example Toast is engaged with the CIO of Chipotle (1400 locations), and inspired by positive market buzz the CIO of Burger King (14K locations) called Toast two weeks ago and has already scheduled a second meeting. While we don't expect any national chain to move quickly we do believe Toast could be in position to take down national chains in the next 24-36 months which could drive a step-function of growth.

Competition:

In addition to being massive, the POS market is extremely fragmented, with two large incumbents, Micros and NCR, each accounting for roughly 25% market share. Beyond these two big players there is a growing list of cloud challengers, including:

Revel: Early leader in the iOS tablet market and has raised >$100MM. iPad based.

Breadcrumb: Feature-light POS acquired by Groupon.

POS Lavu: iOS.

Clover: extensive distribution, low upfront cost and proprietary hardware.

Square: For basic single countertop and cash register restaurants only - no true restaurant operating system.

TouchBistro: targeting smaller restaurants.

HarborTouch: Catering to the 1-2 terminal restaurant.

Aldelo: built around an on prem solution.

Positouch

The market is incredibly noisy, but we have reviewed Toast's win/loss rates against all of the above competitors and Toast consistently wins based on the quality of product and reasonable pricing relative to such a full-suite product.

Go-to-market/sales strategy:

Toast is primarily selling direct to SMBs today via an inside sales force, but the company is also in the early stages of building out a channel strategy. The company claims that the Micros acquisition has been painful for their VAR channel and is freeing up many VARs in search of new solutions to sell. Toast's most notable channel partner to date is Gordon Food Service, a distributor to >100K locations who are pushing Toast and an integration to their food costing/ordering service – GFS accounted for about 25% of Toast bookings this year.

The sales effort to date has been effective, but we believe highly under-optimized. Both SMB and enterprise sales are being run by co-founder Aman Narang, an ex-star product leader at Endeca who had previously never sold anything in his life. Room for improvement is also clearly evident on the marketing side; a search for "best restaurant POS" will show Toast only several pages deep. Despite this "bootstrapped" approach, Toast is seeing >4x YoY growth and 6-8 month payback on sales efforts.

Most exciting for us is Toast's ability now that the product has matured to push into the mid-market chains which have much more volume per location and thus monetize at a much higher rate, and have sophisticated needs that drop away all of the competitive noise as no cloud POS other than Revel (which we think is an inferior product with a bit of a head start) can compete at this level.

Over the course of 2016 Toast plans to hire 3 enterprise reps to tackle this end of the market and are already engaged with senior sales leaders from Aloha and Micros who tellingly have been approaching Toast.

Marketing for Toast has been largely organic with trade shows driving some leads, but many leads coming in from restaurants researching solutions or hearing about or seeing Toast out in the market. This year we think Toast has an opportunity to build out their SEO and lead gen capability although leads are not the problem at the moment as Toast reps are able to cold generate many of their own leads.

A quote from a sales rep we introduced to Toast (from Intigua) who after a month is already ramped: "It's remarkable to me. Typical days here include 2+ demos per rep (I did 4 today)! You were definitely right about Toast. They are onto something big here."

Financials:

Toast makes money in five ways: subscriptions, a rake on payment processing, hardware sales, services and consulting fees. When we talk about CARR and ARR here, we are talking about only subscription revenue and Toast's margin on payment processing. Together, subscription fees and payment processing margin have blended gross margins of ~75% due to Toast's US-based support services (another differentiator from competitors like Revel, who rely on cheaper offshore support that many customers hate).

Note also that installations are struggling to keep up with rapid sales growth so there exists a backlog, which accounts for most of the difference between October's $7.1MM "CARR" and $4.25MM of live "ARR." Since the last Flash, we also received news of an outstanding November, which saw a 10% increase in CARR to $7.8MM and a 20% increase in live ARR to $5.1MM, putting the business ahead of the forecast laid out below.

The way to think about the business is about a core recurring engine of high margin subscription software and payment processing, served by an implementation arm working to get these customers live. Today Toast makes a slight margin on hardware, breaks even on consulting (which ends up being a way for Toast to subsidize some product development) and loses money on implementation services which is a big area for improvement in 2016 with pricing and process upgrades.

Toast has built a highly performing SaaS sales engine, achieving >3x YoY growth, 75% gross margins, <3% annual gross churn, >150% net retention including upsell and account expansion and a 14-month CAC payback that should be <8 months if Toast's implementation teams were able to keep go-lives on pace with bookings. Overall, we are comfortable that the machine is working, but believe there is room for significant improvement. For example, the company has been undercharging for implementation and is currently losing ~$2000 per install, but has been steadily increasing pricing and projects to break even on installs by YE2016. The company makes a slight margin on hardware today that offsets part of this install cost, and we also expect those margins to improve as Toast scales. We also expect an increase in sales efficiency as 2/3 of ISRs are already achieving quotas of 4.5 locations / month with several significantly overachieving. We expect that quota will increase to 6 locations / month by YE2016. And this is not to mention mid-market sales which we think have a chance to significantly increase sales efficiency as those reps come online.

Below is a snapshot of 2015 revenue growth:

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Locations												
Live	383	414	452	487	542	585	652	715	771	830	899	981
Booked	489	572	657	721	808	923	1,005	1,100	1,254	1,346	1,446	1,550
New Bookings	52	86	90	71	90	121	94	101	183	100	109	115
% of total bookings	11%	15%	14%	10%	11%	13%	9%	9%	15%	7%	8%	7%
New Go Lives	33	33	43	43	56	46	71	68	61	64	74	87
% of total go lives	9%	8%	10%	9%	10%	8%	11%	10%	8%	8%	8%	9%
Revenue												
Services Revenue	14	11	23	22	32	40	63	65	47	72	90	113
Hardware Revenue	120	98	256	295	213	226	353	293	307	235	269	313
Subscription Revenue	53	56	63	71	79	90	101	112	118	127	138	151
Payments Revenue	393	414	542	599	736	798	856	968	941	933	998	1084
Consulting Revenue	31	35	29	30	25	56	47	70	60	35	55	35
Total Revenue	611	614	912	1018	1085	1210	1420	1508	1474	1402	1549	1697
ARR*												
ARR + Bookings	1866	2235	2969	3234	4034	4624	5063	5564	6213	6522	6970	7475
ARR (Live)	1462	1616	2042	2188	2703	2929	3287	3615	3818	4021	4335	4729
ARR Margin	69%	74%	73%	71%	77%	81%	77%	75%	72%	76%	72%	73%
ARR / Location	$ 3,813	$ 3,906	$ 4,522	$ 4,488	$ 4,991	$ 5,009	$ 5,040	$ 5,057	$ 4,955	$ 4,844	$ 4,821	$ 4,822

*Subscription Revenue + Payments Margin run rate

This is the plan they handed us mid-October, but they are already $830K ARR ahead on bookings as of November month end, and are $765K ARR ahead on go-lives.

CAC payback is somewhat lumpy month to month, in particular as larger restaurant groups come online, but the overall picture shows a payback of 8 months assuming no backlog. While there will always be some delay in getting sites online, we believe this will significantly improve after this round of financing, and look at CAC payback from booking as an accurate indicator of the efficiency of the sales model. Below is an analysis of CAC payback in 2015.

CAC Payback Analysis	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	
New ARR (ARR +Bookings)		368,661	734,110	265,024	800,155	589,854	439,374	501,142	648,848	
New Annual GM (ARR + Bookings)		271,761	535,521	187,471	612,507	476,902	339,814	376,441	468,429	
New ARR (Live)		153,858	426,166	145,848	515,600	225,381	358,498	328,120	202,602	
New Annual GM (Live)		113,417	310,881	103,170	394,684	182,222	277,265	246,473	146,266	
Sales & Marketing	150,566	154,105	218,455	190,356	205,412	313,776	361,065	348,693	396,531	
CAC Payback - Monthly Basis										Avg
CAC Payback (ARR + Bookings)		6.6 mo	3.5 mo	14.0 mo	3.7 mo	5.2 mo	11.1 mo	11.5 mo	8.9 mo	**8.3 mo**
CAC Payback (Live)		15.9 mo	5.9 mo	25.4 mo	5.8 mo	13.5 mo	13.6 mo	17.6 mo	28.6 mo	**15.3 mo**
CAC Payback - Quarterly Basis										
CAC Payback (ARR + Bookings)						4.9 mo			7.2 mo	**6.1 mo**
CAC Payback (Live)						9.2 mo			12.7 mo	**11.0 mo**

Deal:

We are investing $16M in an up to $22.5M fresh primary round at a post money valuation (inclusive of an outstanding $8M convertible note) of $125M. Google Ventures will be investing $5MM of the round which we see as a positive given their Android association and the halo of their brand. The board will be BVP, Steve Papa, CEO, founder, and one independent seat.

Toast Series B Outcomes NOTES

Cost basis:	$17.5

Exit multiple (standard)	Expected dilution	Implied EV (diluted)	Estimated Probability	Time to exit	Returns: $ to BVP	Returns: IRR	Return contribution	Notes
0.0x	0%	$0	5%	2	$0	-100%	0%	Wipeout
0.5x	0%	$17	10%	2	$9	-29%	2%	Acqui-hire / product IP sale
1.0x	0%	$34	18%	3	$18	0%	7%	Growth plateaus, PE backed roll-up
2.0x	15%	$170	35%	3	$35	26%	27%	Low end strategic or PE sale @$25MM ARR
3.0x	15%	$441	17%	3	$53	44%	19%	M&A - mid case to legacy player (7x ARR in 2017)
5.0x	20%	$781	10%	4	$88	50%	19%	M&A - high case to legacy player (10x ARR in 2017)
10.0x	20%	$1,563	4%	5	$175	58%	15%	Successful IPO at >$100MM ARR and >100% growth
30.0x	25%	$5,000	1%	7	$525	63%	11%	The next Micros or NCR - reaches 25% market share or greater
			100%		Duration	3.1yrs.		
					EV to BVP	$46		
					Multiple	2.6x		
					IRR	30%		
					SD	38%		
					Sharpe	0.67		

"just goes nuts"

Exit multiple	Expected dilution	Implied EV (diluted)
40x	40%	$8,333
Notes:	Leading POS company	
$ to BVP	$700	

Team:

We believe this is the best product team in the POS space. CEO Chris Comparato and co-founders Steve Fredette, Aman Narang, and Jon Grimm were A players at Endeca, and the team is extremely hungry working all hours obsessed with building out the best product the restaurant industry has ever seen.

Chris Comparato, CEO: Chris joined Toast in 2015 from Acquia, where he was SVP of Customer Success. Prior to Acquia Chris was SVP Worldwide Solutions at Endeca and was Steve Papa's best operator. We have been impressed so far with Chris although this is his first full CEO role.

Steve Fredette, Co-Founder: Steve is a world-class product/engineering unicorn, and previously led pre-sales and product at Endeca. He focuses more on product and engineering at Toast.

Aman Narang, Co-Founder: Aman currently helps run Product as well as Toast's inside and field sales efforts, and has performed impressively in the role given a background otherwise totally devoid of sales experience. Previously, Aman was a member of the product leadership team at Endeca. We're not sure where Aman's focus will settle in the long run, but he's extremely talented and has a ton of upside potential.

Jon Grimm, Co-Founder: Jon is currently focused on technology—making sure the product works at all times including payments. Tech is a massive challenge here as restaurant customers don't tolerate a minute of product downtime and Jon has performed admirably although has a big challenge on his hands to keep the tech performing as the company scales.

The team will hire other senior engineering leadership, a VP of customer success, and in 2016 the company will likely need to add a head of HR as headcount is expected to double from 150 to 300.

Key Risks/Ways This Can Fail:

Competition is noisy and Toast fails to emerge as one of the few next gen winners

Toast's growth overwhelms them – backlog swells, financing market gets more challenging, and the team is forced to adjust the growth path.

Financing markets seize up and companies are forced to halt growth and run off of cash flow.

Summary:

We're very excited about this investment – for the past 18 months we've stood by anxiously as the team hit obvious product market fit but punted on raising more equity. Finally they've seen an opportunity to step on the gas, and frankly have seen the capital markets "rationalize" (okay, slightly) which has given us an opportunity to invest in a deal we can stomach.

Our deep look over the past two months has validated this is a best in class product, that the commercial engine, while still under optimized, is impressively efficient, and we believe they're only getting started and have significant opportunity to build a real moat in this market and be one of a few, and perhaps the dominant next gen restaurant POS player. We strongly recommend this investment.