

Bill Gurley Blogs Compilation

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Article 1: Money Out of Nowhere: How Internet Marketplaces Unlock Economic Wealth

February 27, 2019:

(*) Benchmark is/was an investor in companies labeled with the asterisk.

In 1776, Adam Smith released his magnum opus,

An Inquiry into the Nature and Causes of the Wealth of Nations, in which he outlined his fundamental economic theories. Front and center in the book — in fact in Book 1, Chapter 1 — is his realization of the productivity improvements made possible through the “Division of Labour”:

It is the great multiplication of the production of all the different arts, in consequence of the division of labour, which occasions, in a well-governed society, that universal opulence which extends itself to the lowest ranks of the people. Every workman has a great quantity of his own work to dispose of beyond what he himself has occasion for; and every other workman being exactly in the same situation, he is enabled to exchange a great quantity of his own goods for a great quantity, or, what comes to the same thing, for the price of a great quantity of theirs. He supplies them abundantly with what they have occasion for, and they accommodate him as amply with what he has occasion for, and a general plenty diffuses itself through all the different ranks of society.

Smith identified that when men and women specialize their skills, and also importantly “trade” with one another, the end result is a rise in productivity and standard of living for everyone. In 1817, David Ricardo published

On the Principles of Political Economy and Taxation where he expanded upon Smith's work in developing the theory of

Comparative Advantage. What Ricardo proved mathematically, is that if one country has simply a comparative advantage (not even an absolute one), it still is in everyone's best interest to embrace specialization and free trade. In the end, everyone ends up in a better place.

There are two key requirements for these mechanisms to take force. First and foremost, you need free and open trade. It is quite bizarre to see modern day politicians throw caution to the wind and ignore these fundamental tenants of economic science. Time and time again, the fact patterns show that when countries open borders and freely trade, the end result is increased economic prosperity. The second, and less discussed, requirement is for the two parties that should trade to be aware of one another's goods or services. Unfortunately, either information asymmetry or physical distances and the resulting distribution costs can both cut against the economic advantages that would otherwise arise for all.

Fortunately, the rise of the Internet, and specifically Internet marketplace models, act as accelerants to the productivity benefits of the division of labour AND comparative advantage by reducing information asymmetry and increasing the likelihood of a perfect match with regard to the exchange of goods or services. In his 2005 book, *The World Is Flat*, Thomas Friedman recognizes that the Internet has the ability to create a "level playing field" for all participants, and one where geographic distances become less relevant. The core reason that Internet marketplaces are so powerful is because in connecting economic traders that would otherwise not be connected, they unlock economic wealth that otherwise would not exist. In other words, they literally create "money out of nowhere."

Exchange of Goods Marketplaces

Any discussion of Internet marketplaces begins with the first quintessential marketplace, ebay(*).

Pierre Omidyar founded AuctionWeb in September of 1995, and its rise to fame is legendary. What started as a web site to trade laser pointers and Beanie Babies (the Pez dispenser start is quite literally a legend), today enables transactions of approximately \$100B per year. Over its twenty-plus year lifetime, just over one trillion dollars in goods have traded hands across eBay's

servers. These transactions, and the profits realized by the sellers, were truly “unlocked” by eBay’s matching and auction services.

In 1999, Jack Ma created Alibaba, a Chinese-based B2B marketplace for connecting small and medium enterprise with potential export opportunities. Four years later, in May of 2003, they launched Taobao Marketplace, Alibaba’s answer to eBay. By aggressively launching a free to use service, Alibaba’s Taobao quickly became the leading person-to-person trading site in China. In 2018, Taobao GMV (Gross Merchandise Value) was a staggering RMB2,689 billion, which equates to \$428 billion in US dollars.

There have been many other successful goods marketplaces that have launched post eBay & Taobao — all providing a similar service of matching those who own or produce goods with a distributed set of buyers who are particularly interested in what they have to offer. In many cases, a deeper focus on a particular category or vertical allows these marketplaces to distinguish themselves from broader marketplaces like eBay.

- In 2000, Eric Baker and Jeff Fluhr founded StubHub, a secondary ticket exchange marketplace. The company was acquired by eBay in January 2007. In its most recent quarter, StubHub’s GMV reached \$1.4B, and for the entire year 2018, StubHub had GMV of \$4.8B.
- Launched in 2005, Etsy is a leading marketplaces for the exchange of vintage and handmade items. In its most recent quarter, the company processed the exchange of \$923 million of sales, which equates to a \$3.6B annual GMV.
- Founded by Michael Bruno in Paris in 2001, 1stdibs(*) is the world’s largest online marketplace for luxury one-of-a-kind antiques, high-end modern furniture, vintage fashion, jewelry, and fine art. In November 2011, David Rosenblatt took over as CEO and has been scaling the company ever since. Over the past few years dealers, galleries, and makers have matched billions of dollars in merchandise to trade buyers and consumer buyers on the platform.
- Poshmark was founded by Manish Chandra in 2011. The website, which is an exchange for new and used clothing, has been remarkably successful. Over 4 million sellers have earned over \$1 billion transacting on the site.
- Julie Wainwright founded The Real Real in 2011. The company is an online marketplace for authenticated luxury consignment. In 2017, the company reported sales of over \$500 million.
- In 2015, Eddy Lu and Daishin Sugano launched GOAT, a marketplace for the exchange of sneakers. Despite this narrow focus, the company has been remarkably successful. The

estimated annual GMV of GOAT and its leading competitor Stock X is already over \$1B per year (on a combined basis).

SHARING ECONOMY MARKETPLACES

With the launch of

Airbnb in 2008 and

Uber (*) in 2009, these two companies established a new category of marketplaces known as the “sharing economy.” Homes and automobiles are the two most expensive items that people own, and in many cases the ability to own the asset is made possible through debt — mortgages on houses and car loans or leases for automobiles. Despite this financial exposure, for many people these assets are materially underutilized. Many extra rooms and second homes are vacant most of the year, and the average car is used less than 5% of the time. Sharing economy marketplaces allow owners to “unlock” earning opportunities from these underutilized assets.

Airbnb was founded by Joe Gebbia and Brian Chesky in 2008. Today there are over 5 million Airbnb listings in 81,000 cities. Over two million people stay in an Airbnb each night. In November of this year, the company announced that it had achieved “substantially” more than \$1B in revenue in the third quarter. Assuming a marketplace rake of something like 11%, this would imply gross room revenue of over \$9B for the quarter — which would be \$36B annualized. As the company is still growing, we can easily guess that in 2019-2020 time frame, Airbnb will be delivering around \$50B per year to home-owners who were previously sitting on highly underutilized assets. This is a major “unlocking.”

When Garrett Camp and Travis Kalanick founded Uber in 2009, they hatched the industry now known as ride-sharing. Today over 3 million people around the world use their time and their underutilized automobiles to generate extra income. Without the proper technology to match people who wanted a ride with people who could provide that service, taxi and chauffeur companies were drastically underserving the potential market. As an example, we estimate that ride-sharing revenues in San Francisco are well north of 10X what taxis and black cars were providing prior to the launch of ride-sharing. These numbers will go even higher as people increasingly forgo the notion of car ownership altogether. We estimate that the global GMV for

ride sharing was over \$100B in 2018 (including Uber, Didi, Grab, Lyft, Yandex, etc) and still growing handsomely. Assuming a 20% rake, this equates to over \$80B that went into the hands of ride-sharing drivers in a single year — and this is an industry that did not exist 10 years ago. The matching made possible with today's GPS and Internet-enabled smart phones is a massive unlocking of wealth and value.

While it is a lesser known category, using your own backyard and home to host dog guests as an alternative to a kennel is a large and growing business. Once again, this is an asset against which the marginal cost to host a dog is near zero. By combining their time with this otherwise unused asset, dog sitters are able to offer a service that is quite compelling for consumers. Rover.com (*) in Seattle, which was founded by Greg Gottesman and Aaron Easterly in 2011, is the leading player in this market. (Benchmark is an investor in Rover through a merger with DogVacay in 2017). You may be surprised to learn that this is already a massive industry. In less than a decade since the company started, Rover has already paid out of half a billion dollars to hosts that participate on the platform.

Exchange of LABOR Marketplaces

While not as well known as the goods exchanges or sharing economy marketplaces, there is a growing and exciting increase in the number of marketplaces that help match specifically skilled labor with key opportunities to monetize their skills. The most noteworthy of these is likely

Upwork(*), a company that formed from the merger of Elance and Odesk. Upwork is a global freelancing platform where businesses and independent professionals can connect and collaborate remotely. Popular categories include web developers, mobile developers, designers, writers, and accountants. In the 12 months ended June 30, 2018, the Upwork platform enabled \$1.56 billion of GSV (gross services revenue) across 2.0 million projects between approximately 375,000 freelancers and 475,000 clients in over 180 countries. These labor matches represent the exact “world is flat” reality outlined in Friedman’s book.

Other noteworthy and emerging labor marketplaces:

- HackerOne(*) is the leading global marketplace that coordinates the world’s largest corporate “bug bounty” programs with a network of the world’s leading hackers. The company was

founded in 2012 by Michiel Prins, Jobert Abma, Alex Rice and Merijn Terheggen, and today serves the needs of over 1,000 corporate bug bounty programs. On top of that, the HackerOne network of over 300,000 hackers (adding 600 more each day) has resolved over 100K confirmed vulnerabilities which resulted in over \$46 million in awards to these individuals. There is an obvious network effect at work when you bring together the world's leading programs and the world's leading hackers on a single platform. The Fortune 500 is quickly learning that having a bug bounty program is an essential step in fighting cyber crime, and that HackerOne is the best place to host their program.

- Wyzant is a leading Chicago-based marketplace that connects tutors with students around the country. The company was founded by Andrew Geant and Mike Weishuhn in 2005. The company has over 80,000 tutors on its platform and has paid out over \$300 million to these professionals. The company started matching students with tutors for in-person sessions, but increasingly these are done “virtually” over the Internet.
- Stitch Fix (*) is a leading provider of personalized clothing services that was founded by Katrina Lake in 2011. While the company is not primarily a marketplace, each order is hand-curated by a work-at-home “stylist” who works part-time on their own schedule from the comfort of their own home. Stitch Fix's algorithms match the perfect stylist with each and every customer to help ensure the optimal outcome for each client. As of the end of 2018, Stitch Fix has paid out well over \$100 million to their stylists.
- Swing Education was founded in 2015 with the objective of creating a marketplace for substitute teachers. While it is still early in the company's journey, they have already established themselves as the leader in the U.S. market. Swing is now at over 1,200 school partners and has filled over 115,000 teacher absence days. They have helped 2,000 substitute teachers get in the classroom in 2018, including 400 educators who earned permits, which Swing willingly financed. While it seems obvious in retrospect, having all substitutes on a single platform creates massive efficiency in a market where previously every single school had to keep their own list and make last minute calls when they had vacancies. And their subs just have to deal with one Swing setup process to get access to subbing opportunities at dozens of local schools and districts.
- RigUp was founded by Xuan Yong and Mike Witte in Austin, Texas in March of 2014. RigUp is a leading labor marketplace focused on the oilfield services industry. “The company's platform offers a large network of qualified, insured and compliant contractors and service providers across all upstream, midstream and downstream operations in every oil and gas basin, enabling companies to hire quickly, track contractor compliance, and minimize administrative work.” According to the company, GMV for 2017 was an impressive \$150 million, followed by an astounding \$600 million in 2018. Often, investors miss out on vertically focused companies like RigUp as they find themselves overly anxious about TAM (total available market). As you can see, that can be a big mistake.

- VIPKid, which was founded in 2013 by Cindy Mi, is a truly amazing story. The idea is simple and simultaneously brilliant. VIPKid links students in China who want to learn English with native English speaking tutors in the United States and Canada. All sessions are done over the Internet, once again epitomizing Friedman's very flat world. In November of 2018, the company reported having 60,000 teachers contracted to teach over 500,000 students. Many people believe the company is now well north of a US\$1B run rate, which implies that around \$1B will pass hands from Chinese parents to western teachers in 2019. That is quite a bit of supplemental income for U.S.-based teachers.

These vertical labor marketplaces are to LinkedIn what companies like Zillow, Expedia, and GrubHub are to Google search. Through a deeper understanding of a particular vertical, a much richer perspective on the quality and differentiation of the participants, and the enablement of transactions — you create an evolved service that has much more value to both sides of the transaction. And for those professionals participating in these markets, your reputation on the vertical service matters way more than your profile on LinkedIn.

NEW EMERGING MARKETPLACES

Having been a fortunate investor in many of the previously mentioned companies (*), Benchmark remains extremely excited about future marketplace opportunities that will unlock wealth on the Internet. Here are an example of two such companies that we have funded in the past few years.

The New York Times describes Hipcamp as “

The Sharing Economy Visits the Backcountry.”

Hipcamp(*) was founded in 2013 by

Alyssa Ravasio as an engine to search across the dozens and dozens of State and National park websites for campsite availability. As Hipcamp gained traction with campers, landowners with land near many of the National and State parks started to reach out to Hipcamp asking if they could list their land on Hipcamp too. Hipcamp now offers access to more than 350k campsites across public and private land, and their most active private land hosts make over \$100,000 per year hosting campers. This is a pretty amazing value proposition for both land owners and

campers. If you are a rural landowner, here is a way to create “money out of nowhere” with very little capital expenditures. And if you are a camper, what could be better than to camp at a unique, bespoke campsite in your favorite location.

Instawork(*) is an

on-demand staffing app for gig workers (professionals) and hospitality businesses (partners). These working professionals seek economic freedom and a better life, and Instawork gives them both — an opportunity to work as much as they like, but on their own terms with regard to when and where. On the business partner side, small business owners/managers/chefs do not have access to reliable sources to help them with talent sourcing and high turnover, and products like LinkedIn are more focused on white-collar workers. Instawork was cofounded by

Sumir Meghani in San Francisco and was a member of the 2015 Y-Combinator class. 2018 was a break-out year for Instawork with 10X revenue growth and 12X growth in Professionals on the platform. The average Instawork Professional is highly engaged on the platform, and typically opens the Instawork app ten times a day. This results in 97% of gigs being matched in less than 24 hours — which is powerfully important to both sides of the network. Also noteworthy, the Professionals on Instawork average 150% of minimum wage, significantly higher than many other labor marketplaces. This higher income

allows Instawork Professionals like Jose, to begin to accomplish their dreams.

The Power of These Platforms

As you can see, these numerous marketplaces are a direct extension of the productivity enhancers first uncovered by Adam Smith and David Ricardo. Free trade, specialization, and comparative advantage are all enhanced when we can increase the matching of supply and demand of goods and services as well as eliminate inefficiency and waste caused by misinformation or distance. As a result, productivity naturally improves.

Specific benefits of global internet marketplaces:

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Increase wealth distribution (all examples)

Unlock wasted potential of assets (Uber, AirBNB, Rover, and Hipcamp)

Better match of specific workers with specific opportunities (Upwork, WyzAnt, RigUp, VIPKid, Instawork)

Make specific assets reachable and findable (Ebay, Etsy, 1stDibs, Poshmark, GOAT)

Allow for increased specialization (Etsy, Upwork, RigUp)

Enhance supplemental labor opportunities (Uber, Stitch Fix, SwingEducation, Instawork, VIPKid), where the worker is in control of when and where they work

Reduces forfeiture by enhancing utilization (mortgages, car loans, etc) (Uber, AirBnb, Rover, Hipcamp)

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If you are a founder who is excited about starting a new marketplace, there are two caveats that are important to remember. First, you will need to find industries where the opportunity to improve the efficiency in the ways noted above is evident. If the network does not create true economic leverage, you will find it hard to be successful. Second, for any marketplace to be successful, the conditions in that given market must be optimal for a new marketplace entrant. Please check out our previous post, [All Markets Are Not Created Equal: 10 Factors To Consider When Evaluating Digital Marketplaces](#), for a list of factors that help distinguish a great

opportunity. If after taking in these considerations you think you have found such an opportunity, we would love to talk to you about potentially partnering together. Please send us an email to .

(*) Benchmark either is or was an investor in companies labeled with the asterisk.

Interested in “Unlocking Wealth” Yourself?

- Sell an item on eBay
- Sell tickets on StubHub
- Sell an item on Etsy
- Sell antiques on 1stdibs
- Sell your clothing on Poshmark
- Sell your designer goods on The Real Real
- Sell your sneakers on GOATEXCE
- Become a driver on Uber
- Earn money as an Airbnb host
- Become a pet sitter or host on Rover
- Become a researcher on HackerOne
- Become a tutor on Wyzant
- Become a stylist on Stitch Fix
- Be a substitute teacher with Swing Education
- Rig Up (opportunities for oil field service professionals)
- Become an online English teacher with VIP Kids
- Turn your land into money, become a host on HipCamp
- Find flexible work at Instawork

Article 2: Benchmark's Newest General Partner Chetan Puttagunta

July 9, 2018:

The partners at Benchmark are pleased to announce Chetan Puttagunta has joined the firm as our newest General Partner.

As early-stage investors, we are acutely aware of the work of other venture capitalists on the boards of the companies we serve. Nearly 15 years ago one of Benchmark's founding partners, Kevin Harvey, saw the skills of a young Peter Fenton on a board they shared. Peter's work so impressed Kevin that he recruited Peter to join Benchmark.

More recently, Peter encountered a once-in-a-generation venture capitalist on the board of Elastic, Chetan Puttagunta. In every way, from how Chetan discovered the Elastic opportunity by downloading the product and using it, to how he built a deep trusting relationship with the team, he demonstrated the qualities that define Benchmark and our aspirations to serve entrepreneurs. Chetan's energy and devotion, his capacity to listen and to provide crisp, well reasoned advice set him apart in that elusive way that leads him to be a CEO's first phone call.

In addition to Elastic, Chetan, at just 32 years of age, has developed a foundation of successful investments and relationships in the software ecosystem. He led the investment in Mulesoft (acquired by Salesforce for \$6.5B) and MongoDB (NASDAQ: MDB). Those founders and CEOs called Chetan "the MVP of our board" and said that, "despite being nearly 20 years younger than everyone else, Chetan managed to deliver insights no one else had." As the Benchmark partners got to know Chetan better, it became clear that his infectious curiosity, analytical rigor, and boundless energy to serve entrepreneurs fit perfectly with our culture. And Benchmark's structure – now seven equal partners – means Chetan joins with the same authority, responsibility and ownership as the current partners. We believe Chetan will invest in many of

the best enterprise companies of the next decade. And perhaps, he, like Kevin and Peter before him, will spot a future Benchmark partner on one of those company boards.

Our job, as early-stage venture capitalists, does not scale. It is defined by service to entrepreneurs and the teams they build, helping them to realize their vision and the potential of their companies. Whether it is recruiting a key executive, making a strategic decision, or taking a company public, productive and honest dialog between a CEO and a board member can contribute considerably to outcomes. While many venture firms have adopted a stage-agnostic approach, or have hired junior or role-defined staff to help source and support their investments, Benchmark continues to focus on and take pride in the craft of early-stage venture investing. To us, there is no substitute for an active and informed general partner on the board, working side by side with the ambitious, insightful, and often strong-willed entrepreneurs we aspire to serve. We have found a kindred spirit in Chetan as we continue on this mission.

Bill, Eric, Matt, Mitch, Peter, and Sarah

Article 3: The Thing I Love Most About Uber

April 19, 2018:

In spite of all the ink that journalists, analysts, and pundits have spilled on Uber over the years, no mainstream article has focused on what I consider to be the most elegant feature of this now ubiquitous, high growth global service — no driver-partner is ever told where or when to work. This is quite remarkable — an entire global network miraculously “level loads” on its own. Driver-partners unilaterally decide when they want to work and where they want to work. The flip side is also true — they have unlimited freedom to choose when they do NOT want to work. Despite the complete lack of a “driver-partner schedule” this system delivers pick-up times that are less than 5 minutes (in most US cities (with populations over 25K) and in 412 cities in 55 other

countries. The Uber network, along with Mr. Smith's invisible hand, is able to elegantly match supply and demand, without the "schedules" and "shifts" that are the norm in most every other industry.

Some have raised questions and concerns about the "gig" economy and the rise of these new independent and autonomous work types. Detractors frequently highlight that these work types lack some of the structured benefits that are frequently attached to traditional full time job offerings. However, what they fail to consider is that there is one critical and fundamental feature of the "gig" economy that is completely absent from traditional job types. That feature — worker autonomy of both time and place — simply does not exist in other industries. One cannot show up for work at Starbucks on a Monday and then decide not to work at all on Tuesday, and for only 2 hours on Wednesday. Oh yeah, and then on Thursday let's just "play it by ear." One cannot get a job at Walmart or McDonalds or ironically even as a taxi cab driver without agreeing to some sort of shift or schedule. It is unheard of for an employee to say "I want to work 3 hours this week, 45 the next, and then take 2 weeks off." This autonomy and freedom of the "gig" work type, which is highly valued by millions and millions of people, would be

impossible to implement for the overwhelming majority of companies.

In November of 2014, the Morgan Stanley sell-side research team that focuses on the auto industry, headed by Adam Jonas, made a trip to Detroit to visit the big three automakers. In their own words, "the highlight of the trip, however, was three Uber trips we took between meetings." They chronicled these three trips in a report they published titled,

Confessions of an Uber Driver: Rollin in the 'D. Interestingly, they encountered three different driver-partners that epitomize why the "where you want, when you want" autonomy of Uber is so fundamentally important. Each of these individuals has a life situation that is supplemented and improved as a result of this super unique flexibility. Included herein is a summary of each driver-partner profile. You will notice that a traditional 9-5 job would have been completely unhelpful to any of the three.

- The Veteran — She's a retired US Army Veteran (recently stationed in Germany) and a mother of 3 daughters, the youngest of which is still in middle school. Our driver wanted a job that offered flexibility so she could take her daughter to and from school without relying on the area's bus system. All of the other jobs she considered made it impossible to be there for her

daughter when she needed to be. Uber provides enough flexibility so that she can take jobs when and where she wants while providing substantial income to help make ends meet while her husband, an active member of the US Military, is on tour.

- The Student — Our driver was a 30-something Jordanian-born student at Henry Ford College studying computer science with an emphasis on internet security and encryption. He's supporting a family and wanted a job with flexible hours that could accommodate his class schedule and his familial responsibilities.
- The Dean — Here was a dean of students at a charter school in the area who ran into a cash flow deficit for many months while undertaking extensive construction/renovations to his residence. He began 'Ubering' last June to make extra cash and has since developed a steady level of business, making around \$600 to \$700 per week with flexible hours that worked around his time at the school.

In January of 2015, Uber partnered with Alan Krueger, a professor at Princeton University, to conduct the first comprehensive analysis of Uber's driver-partners, based on both survey data and anonymized, aggregated administrative data. The results from this survey mirrored many of the points that Jonas uncovered and that McKinsey would later uncover. Here are a few key highlights:

- 85% say they partner with Uber "to have more flexibility in my schedule and balance my work with my life and family"
- 55% of drivers work less than 15 hours a week, highlighting that a majority of drivers use the service for supplemental income
- Driver-partners do not turn to Uber out of desperation, only eight percent were unemployed just before they started working with the Uber
- Two-thirds of these individuals reported that they had a full-time job
- Reasons for partnering with Uber:

"to earn more income to better support myself or my family" (91%)

"to be my own boss and set my own schedule" (87%)

"to have more flexibility in my schedule and balance my work with my life and family" (85%)

"to help maintain a steady income because other sources of income are unstable/unpredictable" (74%)

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- “to have more flexibility in my schedule and balance my work with my life and family” (85%)
- “to help maintain a steady income because other sources of income are unstable/unpredictable” (74%)
- When asked directly, “If both were available to you, at this point in your life, would you rather have a steady 9 to 5 job with some benefits and a set salary or a job where you choose your own schedule and be your own boss?” 73 percent chose the latter.

In October of 2016, McKinsey and Company (working with Uber) published a detailed research report titled,

Independent Work: Choice, Necessity and the Gig Economy. The complete work, which is quite detailed and interesting, is publicly available. As the main report is quite lengthy at 138 pages, some readers may prefer the 18-page

executive summary. Unsurprisingly, their findings were quite consistent with points already raised above — people value freedom and autonomy. Here is a subset of the relevant findings:

- The size of the independent workforce is quite large — “up to 162mm individuals, engage in independent work.”
- McKinsey identified the key feature mentioned above — “A high degree of autonomy: Independent workers have a high degree of control and flexibility in determining their workload and work portfolio.”
- Supplemental income is a key driver — “More than half of them use independent work to supplement their income rather than earning the primary living from it.”
- Independent by choice — “Most independent workers have actively chosen their working style and report high levels of satisfaction with it,” “Approximately 70 to 75 percent of independent earners are independent as a matter of preference.”
- High levels of satisfaction — “Free agents report higher satisfaction than those who choose traditional jobs on 12 of the 14 dimensions we measured, and they are just as satisfied on the

remaining two dimensions. Free agents cite higher satisfaction than traditional workers across issues ranging from the creativity they can express to opportunities for learning and recognition. They are happier with their overall level of income and are just as satisfied as traditional workers on income security and benefits. These observations hold regardless of gender, age, education level, or household income.”

Last year, on a trip to New Orleans, I met another driver in a similar situation to those profiled in the Morgan Stanley report. She was a single mother who worked during the week as a nurse. On Friday and Saturday nights, she would drive with Uber until she acquired \$100 in earnings, then she would head home. This effort earned her over \$800 a month in extra income that helped her support her family. There are no other supplemental job types that are as simple and consistent as Uber is for this single mother. And the impact to her life is real and meaningful.

Another reason Uber is such a great supplemental work type is that peaks in usage elegantly overlap with time windows that are convenient for traditional 9-5pm, Monday-Friday full-time workers. Friday and Saturday nights are simultaneously the consistent weekly peaks of (a) demand on the Uber system, and (b) spare time that is available for people with standard full-time jobs that want to pick up some incremental income (the chart to the right highlights this). The same thing happens with holidays and festivals. The need for rides (and therefore drivers) at music festivals or seasonal events or in a vacation town like Tahoe are bursty. That said, these same holiday weekends are when people searching for supplemental income are free from the primary occupation and can make the voluntary decision to earn more money. I have met drivers in Tahoe that came to town with their family (on vacation) and are earning while others are hiking or skiing. The matching of this excess supply with excess demand is both elegant and fortunate.

There is another incredible driver-partner benefit of the Uber system that is radically different from traditional work types.

Uber pays the driver their money immediately when earned. While other employers have experimented with ways to do this from time to time, or once a month — Uber allows this up to 5 times a day. Normal employers are nowhere close on this dimension (most pay 2-3 weeks in arrears). Imagine how this can be helpful to someone who is living paycheck to paycheck in their primary occupation. Not only are the extra earnings in and of themselves useful, but the speed of delivery of the actual cash could mean avoiding nasty traps like usurious payday loans. In fact,

based on an analysis of Federal Reserve data, 47 percent of Americans “can’t pay for an unexpected \$400 expense through savings or credit cards, without selling something or borrowing money.” Now they have a much better option.

There are many difficult situations in modern life where having a simple, flexible, and consistent form of supplemental income is quite beneficial:

- A bridge while looking for a full-time job — In the above survey 32 percent of driver-partners indicated a major reason they partner with Uber is “to earn money while looking for a steady, full-time job.”
- Extra income for a stay at home parent — Many parents are in positions where having a full-time 40-hour week job is incompatible with their duties and responsibilities to their children. Driving with Uber means they are able to have extra income without missing their children’s pick-ups, drop-offs, baseball games or theatre performances. And they can be home in the afternoons to help with homework.
- Using it to fund their way through college — I have met many driver-partners who are attending college. College is expensive and student debt is extremely high. Students cannot work two days at McDonalds and then skip three days to study for your final — this is “not a thing” with a traditional scheduled job type. Moreover, studying and test schedules can be sporadic and unpredictable. Interestingly — the “elegant balance” characteristic applies here as well. Guess where there are lots of people that should be riding in Ubers instead of driving? College towns. Guess where there are lots of people with extra time that would love to have extra money?
- Aiding in skills transition/retraining — The notion of skills displacement and digital disruption of certain jobs due to automation or robotics is a hot-button issue. It even comes up with regards to ride sharing as a result of the excitement generated around autonomous vehicles. If people are in need of learning new skills, they would be materially aided by the presence of a flexible and autonomous supplemental income opportunity as they retrain. Nursing school or a vocational training school have all the same issues as going to college. They cost money and demand time — which is super hard to do while maintaining a traditional 40-hour/week full time job.
- Work your way out of debt — Many Americans are unfortunately saddled with debt — credit card debt and student loan debt. If you are simultaneously living paycheck to paycheck you have no way to “catch up,” and as a result the interest payments chew up the marginal income you would use to pay down the debt. It’s a real trap. Supplemental income — working extra hours while you need to in order to get past a problem like this can be very powerful.

- Cover an unexpected expense — Sometimes life gives you lemons. You wreck your car. Your refrigerator or washing machine dies. You have an unforeseen medical expense. These are the exact moments where being an Uber driver-partner can get you over the hump. Not forever — just for a few weeks to cover the extra expense.
- Do what you love — Many of life's most interesting career pursuits can be the hardest from an earnings perspective. We all know the notions of a "struggling actor" or "struggling artist" or "struggling musician." Over the years I have met many of Uber's driver-partners who use the extra earnings power so that they can pursue their dreams. One musician I met would even drive while he was touring on the road — in every city along the way.

The McKinsey study also uncovered these broader societal benefits that come from scalable "independent work" earnings structures:

"Independent work could have benefits for the economy, cushioning unemployment, improving labor force participation, stimulating demand, and raising productivity. Consumers and organizations could benefit from the greater availability of services and improved matching that better fulfills their needs. Workers who choose to be independent value the autonomy and flexibility."

One thing to note about most of the scenarios above is that they are "temporary." There is not a desire or intention on the part of the driver-partner to do this as a lifelong career pursuit. Rather, they recognize that it is an amazingly convenient way to solve a temporary need or to help bridge through to another station in life. Some labor lobbyists argue we should turn ride-sharing driving into a scheduled, full-time affair, but in doing so, you would eliminate the key reasons that most people take to the road in the first place. You would also potentially eliminate the world's premier supplemental work offering.

In just a few short years, over 3 million driver-partners have joined the Uber platform. To put that in perspective, Walmart has grown to 2.3 million employees over 55 years. I think it's safe to say that over the past five years, no industry has created more new jobs and new income opportunities than ride-sharing. And keep in mind that approximately three-fourths of the

industry revenue goes straight to the labor provider — which is higher than almost any other industry on the planet. As a result, in just a few short years, global ride-sharing driver-entrepreneurs have taken in approximately \$75+ billion dollars (with industry lifetime revenues north of \$100 billion dollars). And keep in mind that ride-sharing

only represents around 1% of the miles driven in the United States. As more and more people reduce car usage and abandon car ownership — this number will most certainly go higher and higher.

One interesting thing to note about Uber's 3 million driver-partners — they all “volunteered” to start driving with Uber. This articulation may sound unusual, but some detractors want you to believe that driving with Uber is equivalent to working in the steel mill in a small mid-western town, where it is the only opportunity for the individual. That is not the case — people are “choosing” to be driver-partners, and they are doing so in record numbers. You have to ignore over 200 years of microeconomic research to be able to contort your brain into believing that all of these people are voluntarily making poor life decisions for themselves.

In all the discussion about why independent work is different than a traditional full time occupation, all of the focus has been on the features and benefits that are absent relative to the historic and perhaps idyllic notion of “work type.” What is missing from the conversation is why this job type is so special and unique to so many millions of people. There is simply no way for the vast majority of employers in the world to offer a completely independent and autonomous work-schedule. They are unlikely to enable “instant payment” either. Yet these are the EXACT same features that show up over and over again in the research as to why people chose independent work in the first place. Independent work is undisputedly “different” from a traditional job type — which is exactly why it is so valuable to so many people.

Driving with Uber reverses the way we have been trained to think about labor. Instead of making labor conform to management's notion of a ‘job,’ Uber hands control to the worker. You do not have to make your life fit the needs of your job; you can make the job fit the needs of your life. Just how revolutionary this notion is has not, in my opinion, been adequately understood.

Article 4: “Customer First” Healthcare

December 18, 2017:

The subject of the “consumerization of healthcare” has been around for many years. Most frequently people use this phrase in association with personal technology devices (heart-monitors, exercise accessories, sleep monitors, etc) that allow consumers to take direct control of their health information. There is however, a more important trend that relates alternatively to the consumerization of the “business” of healthcare. While other industries often speak of being “customer centric” or “putting the customer first,” the U.S. healthcare system rarely thinks of the patient as a customer. One could go even farther, and suggest that the U.S. healthcare market is the least customer centric of any customer service industry.

David Goldhill, in his enlightening book *Catastrophic Care*, declared:

“...a guiding principle of any reform should be to put the consumer, not the insurer or the government, at the center of the system. I believe if the government took on the goal of better supporting consumers-by bringing greater transparency and competition to the health-care industry, and by directly subsidizing those who can’t afford care-we’d find that consumers could buy much more of their care directly than we might initially think, and that over time we’d see better care and better service, at lower cost, as a result.”

David makes a powerful assertion — allowing the patient to rise to the forefront and to be truly be seen as a customer — will lead to not only more satisfied patients, but patients with better medical results and much lower costs. This would be a remarkable three-way victory. The good news is we are already headed down this path. The combination of new technologies, data availability, information transparency, shifts in insurance coverage, regulatory reform, and consumer frustration has set the stage for a new era of healthcare service in the U.S. where the patient truly comes first. This powerful trend will gain momentum as it builds, will reshape the current landscape, and will result in the launch of many new and exciting companies.

One overt sign of a lack of traditional market forces is any industry where basic customer service is not a requirement to stay in business. If you asked 100 people to name a place where you frequently wait, even when you are on time for your appointment, how many would say the doctor's office? The consumer has come to accept waiting at the doctor. We are so numb to the pain, that we rarely object or complain, and the doctor's indifference to the consumer's time is so common and widespread, that it is a frequent meme in jokes and cartoons.

Other U.S. industries, once subject to far less competition, have been forced by the market to learn a new reality. The phrase "banker's hours" is a historic metaphor for "short working day." One website qualifies "banker's hours" as 10am-3 pm, which actually were the open hours at most banks decades ago. This is clearly no longer the norm as competition eventually forced a new reality. My local bank is now open 9am-5pm (including Saturdays), and of course, the adoption of ATMs gives us access to cash 24 x 7. All banks have been forced to respond to the new customer expectation, driven by competitive forces. That same shift is now coming to healthcare.

In their marvelous book, *Lean Solutions*, James Womack and Daniel Jones unpack what it means to apply the discipline of lean manufacturing to service industries. One of their key principles of modern service excellence is "Don't Waste My Time." They raise the hypothetical question "Would there be a queue if the providers had to pay customers for waiting time?" If you are in the healthcare industry and find such a question absurd, are you not confirming that you naturally assume your time is much more valuable than your patient's?

Of course, the healthcare industry's lack of customer centricity is not limited to time alone. Consider the many business attributes that fall short of other industries, and ask how well your own healthcare service providers deliver against these questions:

- Hours/Appointments — For your provider, what hours are they open? Are they available when its most convenient for you? Do they expect you to miss work or school to come see them? How far in advance do you have to book an appointment (the average is 24 days)? Can you simply “walk in” for appointments?
- Interactive Booking — Can you book appointments online? Can you cancel or reschedule online?
- Information Collection — Does your doctor make it easy to provide information about your visit? Can you do this online before your visit, or are you handed a clip-board full of forms where you enter information you have already provided on previous visits?
- Electronic Communication — Can you send your healthcare provider email? Do they respond? Do they even make an email address available? Can you even leave a voicemail?
- Response Time — How quickly do they follow up to a request? Do they have a consistent guarantee on time to appointment? What about in response to a question via email or phone?
- Pricing Transparency — Have you ever seen a menu of pricing for any healthcare services? Why not? In many other countries, price lists of common procedures are publicly available in every clinic and office. If you are on a high-deductible plan or a Flexible Spending Account this is important information to you.
- Information Sharing — Does your doctor send you a detailed “receipt” of the procedures they performed, their discoveries, their analysis, and their conclusions so that you have an archive? Do you even get a list of the charges they are submitting to your insurance company? Are the charges ever discussed or explained?
- Empathy — Do you find that your healthcare provider makes a concerted effort to treat you as a customer with enthusiasm and empathy? A recent study of online physician reviews found that 96% of complaints relate to customer service, and only 4% to quality of care.
- Service Level – Do your doctors ask you for feedback? Do they conduct surveys? Do they measure waiting time? Do they measure NPS scores?

Technology to the Rescue?

One obvious solution to this list of issues and opportunities is to leverage technology to better serve the needs of the customer. Unfortunately, a deep dive into the large and complex market for healthcare IT systems will uncover an unfortunate reality. You will not find a large Salesforce or Zendesk of healthcare. Customer-facing, also known as “front office,” systems have

not been the focus of healthcare service providers historical spend. Most large healthcare IT systems are chosen based on one primary objective: revenue management. Billing and collection in the U.S. healthcare system is complex and difficult, and most of these large EHR systems' number one purpose is to deliver revenue. Unfortunately, as these systems better perform their inherent duty, they actually drive healthcare spending as a % of GDP up, not down. They contribute to the overall problem.

Revenue-management obsession even has a negative impact on how quickly healthcare organizations embrace technology – technology that could radically improve the customer experience. Do you want to know the real reason doctors do not answer email? Want to know the real reason telemedicine is not widely pervasive? Clearly, many doctor visits could be replaced by a 10 minute FaceTime call, saving the patient and the practice a great deal of time (not just the time in the office, but the commute time in both directions). You may be surprised, but the primary reason these technologies go unadopted is because doctors simply do not know how to charge for them. The problem is primarily an absence of easy reimbursement.

Who Is the Actual Customer?

Despite widespread belief to the contrary, the U.S. healthcare system does not operate as a free marketplace with the type of open-competition that we often associate with capitalism. It is certainly not a single-payer system, but that fact alone does not make it a capitalistic system. There is no price evaluation during the purchase. The person paying is not the person consuming the service, and the majority of choices are made without comparative options. In many ways, we have the worst of both worlds. Our system, which is the highest in the world as a % of GDP, has the illusion of a free market and the illusion of regulated market with the apparent benefit of neither.

The fact that the employer plays a central role in our healthcare system is both a coincidence and a likely impediment to forward progress. In 1942, President Roosevelt worked with Congress to pass the Stabilization Act of 1942. Hoping to provide incentives for full employment and to ward off inflation, the government froze wages while simultaneously leaving open a back-door for increases in benefits. This seemingly innocuous legislation had a far-reaching consequence — it launched the widespread U.S. practice of employer sponsored health care coverage. And today, for most employers, this benefit is explicitly required by law. While it seems normal to us,

the use of the employer as a key constituent in providing consumer healthcare coverage is quite rare and not used in any other industrialized nation.

Obviously, having a reluctant and unnecessary third-party involved is not likely to deliver peak efficiency. Most employers would opt out of providing health insurance if they could. They have no specific expertise in the matter, and being a provider of these services puts the company in the awkward position of having a point of view on private personal matters as well as what defines basic well being. Additionally, the large employer motivations are likely contributing to rising costs. A large employer benefits plan needs to be “competitive.” If there happens to be a large, renowned hospital group in the area, the employer feels compelled to offer coverage that includes this institution, even if that system is highly over-priced (the largest hospital systems typically have the highest procedural prices).

In the U.S. healthcare system there is complete obfuscation and confusion regarding who the real customer is. The employee picks a provider from a plan picked by the employer from the insurance carrier. The consumer sees no prices as it makes choices and decisions. The payment and reimbursement process involves all four parties. Quite often, the carrier “rejects” the reimbursement request sent in by the doctor. This is then sent through the employer to the employee. Now the employee is exposed to the price for the very first time, and told the price was too high, but guess what — this is after the work is already done. Now the employee has the joy of negotiating after the fact.

If you were a U.S. healthcare provider, who would you view as the customer? The employer bears the eventual costs. The insurance carriers process the payment. The employee uses the service, but they did not choose you based on the prices of your services, and you never discussed or disclosed price to them. Those prices were negotiated between you and the different carriers that placed you on the various plans chosen by the employer. As you can see, it's not unreasonable that, as a provider, you would not actually view the employee that utilizes your services as the customer. They are far from your only constituent in the system, and they are absolutely NOT the party that is paying the bill or negotiating price.

Winds of Change

As mentioned in the introduction, we have a strong belief that change is afoot in the U.S. healthcare market. Specifically, we believe a number of factors are coming together simultaneously that will drive healthcare providers to respond to market forces and adopt a

“customer-first” mindset. Recognizing patients as “true customers,” service providers will provide unprecedented responsiveness, conveniences, service levels, and information transparency. Those that adopt this mentality will find new levels of productivity, and as a result, will deliver higher quality care at lower and lower prices. Those that choose not to align with this new reality will fall behind, eventually losing customers to these more nimble and responsive providers.

Here are a list of the new forces pushing the U.S. healthcare system to be customer-first:

- **High-Deductible Plans** — In order to reduce insurance premiums and make catastrophic healthcare available to more individuals, high-deductible plans have been growing as a percentage of all plans. In 2015, 46 percent of workers were enrolled in a plan with an annual deductible of \$1,000 or more, up from 38 percent in 2013 and 22 percent in 2009. The Affordable Care Act’s (ACA) most affordable plans are all high-deductible (even though many citizens did not realize this when it was passed). As such, the ACA has been a key driver for the continued rise of high-deductible plans. The interesting (and perhaps unintended) consequence of high-deductible plans is that patients become real “consumers” for the very first time — at least up until their deductible. Having never been trained to be price aware, and with most providers loathe to publish price lists, this is an interesting evolution for the industry. But certain providers are stepping into the void, and they are growing market share as a result (more below).
- **Growing Coinsurance** — Like high-deductible plans, coinsurance is another way of offloading, or sharing, healthcare costs with the patient. Coinsurance plans require the patient to pay a percentage (usually 10-30%) of the healthcare costs up to the deductible limit. Also like high deductibles, coinsurance usage is on the rise. From 2004 to 2014, the average payments for coinsurance rose 107% from \$117 to \$242. Increasing coinsurance costs also have the effect of turning patients into shoppers/consumers. When you absorb a percentage of the costs, you will pay more attention to price.
- **FSAs/HSAs** — Flexible Spending Accounts, also referred to as Health Savings Accounts, are pools of money set aside by an employee and their employer to be used for healthcare spending. The employee is typically allowed to allocate money to these accounts pre-tax (up to a limit), and as specified in the ACA, \$500 in unused funds can now be rolled over into the next year. While these plans have historically been targeted as “non-covered” expenses, they are increasingly being used for deductibles, copayments, and coinsurance, which as we stated are already growing as a percentage of contribution. As like the previous two points, the rise of these spending vehicles once again pushes the healthcare patient to think more and more like a shopper. Spending wisely allows them to get more and more products and services under their given plan or program.

- **Narrow Networks** — Narrow networks are an interesting response to the above market prices that the large hospitals and groups are pushing on the broader market. With a narrow network plan, the consumer or employee is allowed to “opt-in” to a plan that has lower premiums, with the explicit tradeoff that this plan has fewer choices for service providers. Specifically, the “narrow network” typically aggregates those providers that are willing to accept lower prices for their services (theoretically you could have a “premium” narrow network, but they are typically used to create more affordable plans). Some employers even offer the employee a benefit to choose these plans, in essence sharing the savings with the employee. Obviously, if narrow networks increase in popularity, more and more market share shifts to providers that are willing to respond to competitive market-based price demands. These are highly likely to be the same exact providers that are embracing these other market forces.
- **Rise of Urgent Care** — Urgent Care facilities, originally created for the purpose of providing a less intimidating alternative to the Emergency Room for off-hour care, are increasingly serving the basic healthcare needs of an ever growing percentage of healthcare consumers. This reality might not sit well with those that embrace the idyllic notion of the “family doctor,” but just remember that same idyllic doctor used to do house calls. On several dimensions, these urgent care providers are creating an offering that is not simply on-par with your traditional GP, but often materially better. Consumers come to an urgent care facility during an emergency, but the experience is so great, they come back for everyday healthcare needs. Some members of the “urgent care” community are intelligently rebranding their services as “convenient care.” This progressive market entrant puts positive pressure on the overall health care system.

These providers are often located in more convenient locations with better parking options for the consumer.

They are more likely to disclose, or perhaps even advertise their prices.

Following their legacy of after hours care, they often have broader hours than a traditional GP. As an example consider Pediatrics After Hours which operates in Dallas as a pediatric urgent care facility. They are open from 4:30-10:30pm, Monday through Friday, Saturday from noon-10pm and Sunday from 10am-9pm. Now if you are a working parent who prefers to not take their kids from school for medical visits (or simply can’t take them due to work), how do these hours sound?

Most urgent care facilities allow non-appointment walk in visits (does your GP?). They also allow online booking.

An increasing number of urgent care facilities measure wait time, ask for consumer feedback surveys, and even calculate NPS (net promoter score) in an effort to deliver a superior customer experience.

Both CVS and Walmart have entered the urgent care race with their retail clinics. CVS operates MinuteClinic at over 1,100 locations in 33 states, and they have seen over 20 million patients. They are open 7 days a week, including evenings and weekends. No appointment necessary. Likewise Walmart operates Care Clinic in many of its stores. Both offer pricing online.

Integrated managed care providers like Kaiser Permanente, HealthPartners (MN), UPMC (PA), and Baylor Scott & White (TX) have all added “Urgent Care” locations as part of their broad mix of offerings. Clearly the market is speaking.

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- Growing Use of CRM Type Tools — While not historically a key priority, leading healthcare providers are beginning to adopt “front office” technologies that are used to provide better customer service. These tools might enable online booking, provide the ability for more frequent customer-provider communication, facilitate surveys and feedback, automate follow-up correspondence, and anticipate customer needs. As consumers experience these higher levels of “customer-touch” they will likely grow accustomed to them and expect them from all providers.
- Internet Web Sites/User Generated Content (UGC) — On the internet, information availability evolves in one direction only — more and more. Over time, as more providers embrace customer feedback, and as more consumers are willing to share their opinion, we will begin to see more and more customer feedback on healthcare providers. Today, 77% of consumers say they use online reviews as the first step in finding a new physician. Additionally, as price schedules become “expected” the leading players will embrace publishing their price schedules to the public. This reality is already present in most service provider industries, so it should be no surprise when it arrives full throttle in healthcare.

CVS Care Clinic Price Schedule:

Benchmark Healthcare Investments

Our venture capital firm, Benchmark, has made four investments consistent with the “customer-first” theme.

- Brighter — Brighter is a cloud-based health insurance platform that seamlessly connects patients and doctors to dramatically improve the patient and provider experience while reducing costs for patient, provider and insurer. The company provides its integrated suite of services to leading health services organizations such as Cigna, Aetna and Delta that include enhanced provider search and directory, verified patient reviews, price and quality transparency, online appointment scheduling and patient communications transforming a traditional health benefit into a digital health plan. Brighter has rapidly achieved national scale with distribution to tens of millions of insured patients and over 100,000 providers. Note: Last Thursday, Cigna acquired Brighter to accelerate the development of Cigna’s mobile and desktop platforms and create new end-to-end experiences that connect health consumers and providers with the guidance, support, and incentives they need to increase quality of care and maximize cost-savings.

- OneMedical — One Medical is a member-based and technology-enabled primary care network that challenges the notion that delivering high-quality, accessible health care is either unachievable or prohibitively expensive. In fact, they are working to prove that just the opposite is possible — a system where quality care is affordable and available to everyone. By 2018, they will operate 75 offices in 8 markets with over 400 primary care clinicians. They are typically located in urban areas near consumer's place of work but are also in residential areas. They typically see appointments within 60 seconds of scheduled appointment time and respond to clinical communications in less than two hours, while offering 24x7 virtual care from its employed clinicians often within 60 seconds. As a result of their commitment to service quality, they have a 90 net promoter score. They also drive much lower costs through the use of better analysis, information, and care that helps reduce unnecessary costs with regards to downstream specialists, hospital utilization, and diagnostic testing.
- Solv — Solv is a marketplace for same-day healthcare, connecting patients to urgent care clinics and providers who are committed to delivering a convenient and high quality experience. For consumers, Solv answers simple questions which, until now, have been very frustrating in healthcare: where should I go, when can I be seen and how much will it cost me? For providers, Solv's software improves the in-clinic experience via mobile-first scheduling, online paperwork, wait time reduction and feedback collection. Solv launched in Dallas-Fort Worth earlier this year and quickly expanded nationally after providers across the country requested their consumer-centric healthcare platform. When people get sick, they typically wait days to see a primary care physician, waste hundreds of dollars at an emergency room, or need to juggle their life to fit a visit into their schedule. Solv's mission is to make access to high quality, last minute care simple, fast and effortless by connecting consumers to their national network of providers, who are eager to provide the service.
- Stitch Health — Our most recent healthcare investment, Stitch is a Y-Combinator seeded SaaS company that serves as home base for healthcare teams that aim to deliver customer-first healthcare. The company is HIPAA-compliant, cross-platform (desktop, iOS, or Android), searchable by patient ID, and integrates with existing electronic health records (EHRs). Stitch replaces the fragmented use of pagers, phone calls, EHR message baskets, and emails with a single product. It does this through a user-friendly application that models medical provider workflow and presents patient health data in the context of group chats, direct messaging, private groups, and persistent chat rooms. By making a product that solves the problem of archaic, fragmented tools in the healthcare system, Stitch hopes to make it easy for healthcare teams to provide exceptional care.

As venture capital investors, we value investment opportunities that are exposed to huge shifts in a given market — particularly really large markets such as the U.S. healthcare market. The timing can be tricky, however. You need to enter the market when (1) consumers are showing a unquestionable favoritism for a new approach, (2) they are voting with their pocketbooks in

favor of this new approach, and (3) the incumbents in the market recognize the trend is unstoppable and begin to react (rather than deny or ignore) that trend (which creates the “tipping” force). We believe all these things are currently in place with regards to “customer first” healthcare. Moreover, because of the systematic changes outlined above, the U.S. healthcare consumer is emerging as a true “shopper” for the very first time. This will add fuel to the fire and accelerate the transformation. We are willing to bet on it.

Background: I spent the better part of two-years surveying the Healthcare market in search of an investable opportunity or possibly a key investable theme. At 18% of GDP and rising, it seemed tautological that many entrepreneurial opportunities should exist to use today’s technologies, applications, and devices to build many value-added companies. The first part of this journey was both tedious and eye-opening. This US healthcare market is as flawed and complex as it is large. If you are interested in my overall learnings from that journey, listen to the podcast (transcript also available) I did with Ezra Klein for Vox’s The Ezra Klein Show. In the second part of that same journey, I stumbled upon what I believe to be a large and investible trend — and that is the key subject of this blog post.

Article 5: The Ezra Klein Show: VC Bill Gurley on Transforming Health Care

November 15, 2017:

In November of 2015, I posted a tweet that declared Benchmark was interested in discovering Internet healthcare investments. Our firm has had the good fortune to invest in many two-sided networks that used information aggregation, supplier aggregation, and user generated content to attract and inform consumers and resultantly disrupt and change different industries. Examples of such companies include Yelp, OpenTable, GrubHub, 1stDibs, DogVacay/Rover,

Zillow, and Uber. It only seemed logical to us that the same opportunity should exist in healthcare. Most people are aware that healthcare spending in the U.S. has risen to 17-18% of GDP and is grossly out of line with other comparable nations. Additionally, all of us that have been consumers of the U.S. system are blindingly aware that numerous inefficiencies exist in the system. Simply put, there is ample room for improvement. So if Internet and mobile technologies can be used to change real estate or transportation, why not healthcare?

Over the next two years, I looked at many healthcare IT investment opportunities – I went “all in.” It’s worth noting that our primary focus was on technologies that aided and improved primary care, which is about half of the U.S. market in terms of revenue dollars (there is no question that digital tools will successfully impact specific acute diseases/disorders, but it’s our intuition these are best left to 100% focused HC investors). At first, this deep dive proved frustrating. The more we learned, the more we realized how much we did not really understand. The U.S. healthcare system is confusing and complex. Eventually, however, we gained our footing and developed a mental model for the industry and a framework for where opportunities do exist. We also discovered what we believe is a large and investible trend/theme. In May of this year, Ezra Klein, who is remarkably informed and intelligent on the topic of healthcare, was kind enough to include me on his podcast to discuss and debate my learnings. That podcast is included here along with a transcript.

Ezra Klein: Hello and welcome to the Ezra Klein Show, a podcast on Vox Media Podcast Network. I am Ezra Klein and my guest this week is Bill Gurley. Bill is a general partner at Benchmark, one of Silicon Valley’s really legendary venture capital firms. He is one of Silicon Valley’s legendary venture capitalists. He was named the venture capitalist of the year in 2016 at the TechCrunch’s annual Crunchy awards. He’s been an early investor in Grubhub, OpenTable, Uber, and Zillow and all kinds of things. A very, very smart guy, a very thoughtful guy. We’ve been talking recently because he’s been thinking a lot about healthcare.

They've recently made some investments in that space. The reason I wanted to have him on was that we have been having this conversation in Washington about how do you reform the healthcare system? What would a better healthcare system look like? What would a cheaper healthcare system look like. It is a very narrow conversation. It is had from a very policy-oriented perspective, what can we write into a law? It is made by people who I think often have a pretty limited set of views and experiences on the topic. Gurley's been attacking this from another perspective, that of the entrepreneur. Where can you actually enter the system? Where can somebody come in and make something better and make some money off of it? He's been working on this now for a couple of years.

I thought this would be a good way to think about this from a broader perspective. Think about what is possible and what isn't. You'll hear in here that Bill and I have somewhat different views on this. I am pretty skeptical of consumer driven healthcare systems. I think that is not what people want in healthcare and as such it is not what we are going to get. He has a different view, and I think it is an interesting one. We talk a lot about the Singaporean healthcare system, which has become definitely an obsession of mine. He talks about his view that maybe democracy [and capitalism are just going to eat each other alive. We should be looking at China for the real innovations now.

It's a fun interesting conversation. I like healthcare a lot. I talk more than I typically try to, even though I typically talk a lot in this podcast, but I hope you enjoy it a lot anyway. Before we jump into it. A quick couple of plugs. Check out my other podcast The Weeds, which also has a great discussion of the Singaporean healthcare system. You can download The Weeds live episode for that. My colleague at Vox, Tod VanDerWerff, our critic at large, has a great new podcast called I Think You're Interesting. He has an interview with a bunch of the Samantha Bee writers recently. That is a great interview. I think if you're into the folks that I'm talking to, you'll be into that one. Again that is I Think You're Interesting by Tod VanDerWerff. You can get it wherever fine podcasts are downloaded. Without further ado, here is Bill Gurley. Bill Gurley, welcome to the podcast.

Bill Gurley: Thank you, Ezra. Appreciate it.

Ezra Klein: When we talked recently you told me that you've been on a multi-year learning deep dive on healthcare. Tell me a bit about that. What got you interested and how have you been studying the system?

Bill Gurley: Great. Our firm has been fortunate enough to be an investor in numerous “marketplaces”. I think it started with eBay, but then we got into more vertical specific ones, like Zillow, Grubhub, OpenTable and Uber that I’m on the board of. When you’ve had some successful marketplace investing, you start to say, “Okay, well what are the biggest segments of our economy and is there an opportunity to do something similar against those different industries?” And one that kind of stands out like a sore thumb is healthcare because it’s risen to whatever the latest number is, 17% or 18% of GDP. The other thing that’s pretty obvious, I think, for any entrepreneur, you say, “Wow, look, there’s a lot of room for disruption.” The reason people come to that kind of natural conclusion is because they see waste or they see inefficiency or they see a lack of transparency.

These are areas where digital tools have had an impact on other industries. I think the core thesis is one that’s almost tautological that, “Oh, yeah, you should be able to use these technologies,” smartphones, websites, the internet, transparency, pricing aggregation, reviews, and have some type of impact. But that’s really just the starting point and that’s when I put out a Tweet three years ago and started meeting with digital healthcare [00:05:00] startups.

Ezra Klein: What was that Tweet?

Bill Gurley: Oh, I think I said, “I’m interested in looking at digital healthcare startups,” and created an email that was I think and just kind of opened the flood gates on purpose.

Ezra Klein: Did you get interesting responses to that?

Bill Gurley: I did, and I should caveat that there are a number of great venture firms that get really focused on things like biotechnology and drugs and pharma, and we’re not going to do that. Benchmark has historically been a tech-based startup, so I’ve been mostly looking at ways that digital technologies could impact the healthcare system, not at products or drugs or things like that.

Ezra Klein: Tell me a little bit about the learning journey that emerged from this. What did you learn that surprised you?

Bill Gurley: There's this interesting theory people have that the first part of your learning, your confidence [00:06:00] of what you know actually drops instead of rises and I certainly went down that curve. I would say it probably wasn't until I was two years into the process that I even had confidence to write a check, to make a decision as a venture capitalist, because the first couple years all I learned was shocking and confusing and I'm realizing that was very different from a normal world.

I got very lucky early on because someone introduced me to a book by David Goldhill called "Catastrophic Care." What's interesting about the book is David's an outsider. His father, unfortunately, got into a really bad incident involving the healthcare system and he went deep. He runs the Game Show Network. He's a really odd person to write a healthcare book, but he wrote a fascinating book and I think uncovered all the things about the US healthcare system that kind of undermine its success. He's done podcasts and stuff and I urge you to check out his stuff.

Some of the big things that come up, I first and foremost say it's not a competitive market. I think people have the perspective, especially ... I'll opine on Washington for a second because I think a lot of people that write healthcare policy, they think it's an open market, but you really don't have ... The consumer doesn't know price when it makes a decision. The consumer's not the payer. The payer is the employer. The employer is in the system for what reason exactly? It's super complex, the way people get paid, the way people make decisions, and completely different from every other industry in North America. That creates a ton of problems.

There's no price transparency, that's another big one. I think the current system is self-reinforcing. It's getting bigger and bigger because of the way the dynamics bounce against one another. That would require a deeper dive to explain.

Ezra Klein: We're a pretty deep dive place, but maybe I can unpack a little of that for folks who I think ... Maybe there's a little shorthand there, which is that healthcare has emerged in this very weird way in America where you tend to have third party payers. In between you and the healthcare system, say you have your employer, right? I get my healthcare insurance through Vox Media, so I actually don't know the cost of my healthcare, or the government-

Bill Gurley: Let's talk about that for a minute. I did some research, I wouldn't have known this innately. We're one of the only countries in the G20 where the employer's involved. You say-

Ezra Klein: That's like a weird World War II tax quirk.

Bill Gurley: Yes, yes. Coming out of World War II, the president was definitely afraid of inflation and so there was mandated wage restriction. You couldn't increase wages, and that was mandated by the government. People [00:09:00] started throwing in benefits. Low and behold, here we are 70 years later and we get our healthcare from our employer. We don't get laundry services, we don't get our lawnmower, we don't buy clothes through our employer.

Ezra Klein: Although I guess in tech sometimes you do get your laundry done over there.

Bill Gurley: Fair enough. I think that's being weaned off.

Ezra Klein: Sure.

Bill Gurley: Yeah, we've got this extra person involved for no reason and, of course, a lot of the problems stem from that.

Ezra Klein: I tend to agree with this, but there are two ways of looking at it. One is a way that my conservative friends often look at it. Virtually every healthcare expert I know agrees that that tax break, moving the system to the employer, is the original sin of American healthcare policy, that almost every bad thing flows from right there. My conservative friends look at that and they say, "Well, if we hadn't done that, maybe we could have a real market-based, patient-centered, consumer-driven system." And my liberal friends look at that and they say, "If we had not created this halfway measure of health security, we would have what every other country has," which seems to work well in other places, which is a government-run system where health protection insurance is guaranteed in some way or another, the exact structures differ, but by the state.

This is, I think, an interesting divergent branching, because Goldhill who wrote that great Atlantic article and then his book, which I do recommend people read, sort of takes it in that other direction. He says, "If we didn't have that, then maybe we could really shop for healthcare the

way we shop for TVs, the way we shop for food, the way we shop for furniture, and the system would meet our needs as consumers, and that would be great. A lot of people argue that point.

Talk to me a little bit about how you came to the view, or whether you hold the view, that that is what we need, that a consumer-centered healthcare system is actually a good thing as opposed to a category of some kind.

Bill Gurley: Our system, which is the highest in the world as a percentage of GDP, has the illusion of the free market, the illusion of being highly regulated, and the apparent benefit of neither. My answer to what you just said is we have a faux marketplace right now and I think there's tons of data that says making it more competitive ala Singapore would be better, or making it single payer ala a bunch of other countries would be better. And I have to agree with both of those assertions. What seems obvious is the current state of our system is not the right answer.

Ezra Klein: Well, that I certainly agree with. I want to put a pin in Singapore and come back to it. Let's talk about David Goldhill for a minute, and it's been a minute since I read his work, but he believes that we should have a system that is built around catastrophic care, very, very, very high deductible catastrophic care. He talks at times about tens of thousands of dollars of deductible.

The question I want to pose to you is maybe the reason healthcare evolves in this different way is that it's not a normal good in the way people treat it. That as a society we are okay with the idea that you can't purchase a television, we're okay with the idea that you can't purchase a nice couch, but we're not okay with the idea on some fundamental level that you get cancer and you can't pay for care, or even lower than that, that you break your leg and you can't get it put in a cast by a reputable doctor. And that what people are looking for in healthcare, and I think this often foils the market, is security above all, where in other places they're willing to take risk, they're willing to take chances. I think something that keeps becoming a problem for various sort of consumer-driven initiatives here is that people demand a level of security and predictability and reliability out of [healthcare that keeps them from being able to walk out of a doctor's office and say no, or keeps them from being willing to accept the consequences of a market, which, after all, rely to some degree on scarcity.

Bill Gurley: Yeah. I have two initial reactions to that. One, the more I read about people coming up with solutions for healthcare, a lot of times I see someone that believes in one answer, demonizing the other. We end up just doing neither because we're pointing fingers back and

forth. I could see an argument for having some price controls and more competition. I don't know that these things have to be at odds with one another. So that would be my first assertion.

The second thing I would say is there is certainly an argument that competition can drive quality and results and price. It doesn't have to be true that having more competition will lead to some type of worse outcome versus not having it. In fact, a lot of people believe that the way you get to higher and higher efficiencies is through that competitive process. I would point to the thing that's most frequently commented on in this type of conversation, which is LASIK, where the price and execution of LASIK today, which is typically bought not through insurance, but bought by people as a competitive good, has been driven down and down and down. There's shining a laser in your eye. This isn't like super simple and arguably it's much safer today than when they first started.

Ezra Klein: Yeah, LASIK is such a fascinating example, and people bring it up and I think you're right to focus on it. It has a couple of qualities that I'd be curious to hear how you think about them. One is that it is optional, right? I have glasses and I think a lot about getting LASIK and I am just squeamish about getting a laser cut into my eye, so I haven't done it, which is different than say cardiovascular health treatment.

Bill Gurley: Absolutely.

Ezra Klein: There is a quality of being able to say no and being able to shop around and being able to do things on your timetable that really matters here, but the other thing that I think is interesting there, because here's where I think possibly liberals can take this argument too far. There are a lot of pieces of the healthcare market or healthcare services that could be pulled out, like LASIK, and one thing that some places, and I think when we get to Singapore we can talk more about this, too, is primary care can be treated very, very differently than more specialty care or more catastrophic or chronic disease care. I think one of the questions the LASIK example brings up is are there ways to cut the healthcare system up a little bit differently? Are there ways for more things to be pulled out of third party payer model and it's something you get through HSAs or there's some other way of making it affordable for more people, but because it has this optional asynchronous quality to it, we can expose it more to market forces without saying at the moment you do that, that that also means if you get cancer and you can't pay for it, you're out of luck?

Bill Gurley: Right. Well, look, I think that the high deductible plans do that somewhat in that if you're having cardiovascular work or if you have a premature birth, you're over that cap. You're into that system. And things that are going to live underneath that are going to be more of your primary care. I think about 50% of our market is acute care and about 50% is primary care, so maybe the place ... And I think that makes a lot of sense, right? The place where competition and hopefully consumerization, and when I use that word I mean providers that care about the consumer experience, that can happen down in this primary care bucket, which is half of the system.

This is, I think, a good moment to go a little bit back to your story. There's a lot I want to follow up in here, but I also want to track what you've been doing. You went through a couple years where initially you looked at this and said, "This market is nuts. This system doesn't make any sense. I'm not sure there is a way to expose it to entrepreneurship or there is an inlet for you." What began to convince you that something was changing or that there was an opening? What was sort of the crack in the armor for you?

Bill Gurley: Do you mind if I ... Can I go back and I want to talk about a couple other things that I saw? Because I think that it's important for everybody-

Ezra Klein: Yeah, that's totally ... I do not believe in linear conversations.

Bill Gurley: Okay. The first one is to really understand how big hospitals and big insurance carriers and big employers are all feeding on one another to make the system worse and worse and worse. The way the system's designed, it's just instinctive for them to do this. Most large hospital systems are getting as big as they possibly can. Stanford here in our backyard is gathering up general practitioners, specialists, they're literally getting as many people into their system as they possibly can. You can drive 30 or 40 miles from the Stanford campus and you'll see a new hospital going up with the Stanford name on it. You say to yourself, "Why are they getting bigger?"

Well, there's two things: It gives them leverage with the carrier, but also if their footprint is that big, no employer around here is going to walk a narrow network plan that doesn't have Stanford Hospital System in it. You see this kind of ... And, by the way, if you are a startup that wants to sell to an individual general practitioner, you should know that they're actually on the wane. There's fewer and fewer individuals. They're all getting sucked into these big systems, partially because they don't want to go through the struggle of getting paid and if they can be a part of

this big system, then they're going to have a much easier time getting paid, because that system has more leverage with the carriers and the employers.

It turns out, if you go deep on pricing, if you open a Castlight app and you look at these large hospital systems, you will see over and over again, and this has been written in a number of the articles I'm sure you've read, an 8 to 1 delta in pricing, 8 to 1 versus the low end of the market. It's unbelievable, right? Someone can charge \$3,200 for an MRI when you could get it for \$400. By the way, if your general practitioner gets pulled into one of these big systems, they're going to recommend you get your imaging at that system and you wonder how-

Ezra Klein: Can I hold ... Let me push you on one question about his, Bill, because I think this is fascinating. We've done a lot of work with the Castlight data and I actually completely agree with the larger point that all the pricing is crazy. But there is this kind of thing in healthcare where people get really shocked that MRIs cost different amounts in different places, but we're not shocked by that in cars. We're not shocked ... By that I mean, you can go into San Francisco and you can buy a burger at McDonald's for a buck and you can go then a couple blocks down and buy a burger for \$27.

Tell me what it is that shocked you about it, because you're a guy who ... You're in the business world. People price differentiate all the time. Isn't Stanford just giving you better MRIs? Wouldn't that be their argument?

Bill Gurley: Do you believe that?

Ezra Klein: No, but I want you to say it.

Bill Gurley: Okay.

Ezra Klein: But I think it could be conceptually possible.

Bill Gurley: They're buying the equipment ... They're not making the equipment, they're buying the imaging equipment. They're just running you through it. I don't believe that the reason that

is 8X price is because it's 8X better. I do not believe that. I believe it's 8X priced because they can charge it.

Ezra Klein: So you think what's happening is a kind of ... You think this is the power of concentration, that these systems are getting big enough that it is just easier for the third party payer to pay them off than to turn around and say to their employees, say, for Vox Media to see to me, "Hey, I know you want to go to the dominant hospital system in your area, but we decided it was too expensive and now you can't."

Bill Gurley: Look, this is part of where getting the employer out of the game might be helpful, right? I think narrow networks play a really important, or they represent a really important opportunity to get pricing down. If you talk to a benefits provider at a large company, and I did this as part of my process, I probably had 10 or 15 meetings with these benefits providers, first of all, none of them want to be in this game. This is the most reluctant task that any company has to do. They do not want to be in this game. They are forced into it. Second, their number one task as an employer is to not lose competitive situations for new employees because their benefits aren't good enough.

The number of companies who are maybe self-insured that are willing to push the edge in terms of trying to redefine cost I bet you is 10 or 20. You heard about the Safeway story probably. Remarkable outlier. They're just not going to go break their pick to redefine the system from where they sit. They don't have the authority within the organization to make that their missive, does that make sense?

Ezra Klein: Yeah, but this is so interesting. I'd like you to hold on it for a minute, because I think this is important to what should be the central mystery of all this. In some stylized model of the American healthcare system, what you might say is, "Okay, individuals do not pay for their own care and they do not have full incentives to bring down the cost of their own care." They have some incentive, but they're a little bit insulated. But, employers sure as hell do. And employers have these whole HR departments, so they have all this information and all this expertise and they even have more negotiating leverage than an individual does. You could really imagine a world in which employers were more efficient, not less efficient, at getting good costs on insurance, on negotiating better prices. They have the expertise and they have the incentive and they have the size. Yet, we don't see this world.

It, to some degree, is one of the persistent mysteries in the healthcare system, but a little bit like you're saying, this is in the HR department and the HR department does not want everybody screaming and yelling and then the CEO comes and says, "What the fuck? Why is everybody so mad at me?"

Bill Gurley: That's right. I think it's a complete myth. I think it's a myth that most employers want to drive down costs. The easy thing for them to pick off is apparently premature births and heart attacks can account for like 40% of their bill for a self-insured employer, so they will do things to try and preempt those two events, because they're so large. But generally driving down costs if it means sacrificing employee satisfaction, they will not do it.

There's a large number of people in the general populace that think employers are going to drive down costs, the self-insured ones, and there's a ton of entrepreneur that think it, and from my conversations with these benefits providers, is a myth.

Ezra Klein: And one thing I think is interesting there, too, is that you would also assume that employers would want to get out of this market. You just talked about how reluctant some of these negotiators are, but in health policy consistently what you hear people say, and it's Lucy and the football every time, the reason employers ultimately ... They may not want to be in the market, just like they may not want to pay high costs, but what they really don't want to do is piss off their employees. And pulling out of the market and not giving them insurance anymore pisses them off.

Bill Gurley: Oh, absolutely. If you were to ask them a different question, which is what if the government mandated all employers get out of the business, would you prefer that? They would all say yes, every one of them.

Ezra Klein: So I'm going to disagree with you here.

Bill Gurley: Okay.

Ezra Klein: They could do that. Look, the Chamber of Commerce could lobby for single payer. They don't do that. The NFIB could lobby for a single payer. There was a couple years ago the

Wyden-Bennett bill, which really did a version of that and employers were against it. This is why I say, "This is the Lucy and football of healthcare policy."

Bill Gurley: That's presenting the argument a very specific way where you're forcing them to opt into something else instead of just opting out. Based on the conversations I've had with these people, or even CEOs might be a better way to say it, if we snapped our fingers and in America the employer was no longer part of the healthcare system, would you be okay with that? I think they would all say yes.

Ezra Klein: But why don't they ... If you've had these conversations, if employers were pushing for what we have in every other country, which is a system the government runs and employers aren't part of, we would have had that system a long time ago. Do they say why they don't, then, say to their representative, "Hey, quietly, go work with Bernie on that Medicare for All thing."

Bill Gurley: Fair enough. I haven't gone that deep. I just haven't met a single one of them that finds it to be awesome to be in this role.

Ezra Klein: I definitely think it's not awesome. Okay, so you worked on this. You have the employer problem, what else?

Bill Gurley: There's other things, like people think carriers want to drive down costs and I haven't seen a ton of proof of that either because that involves ruffling feathers, you know? It involves upsetting one of these large hospital care systems if you start pushing narrow networks that they're not in. They make a percentage of the overall pie, so as long as the pie is growing as a percentage of GDP, it's a pretty good place. So I don't think they have much incentive either, so there's a lot of entrepreneurs saying, "Oh, I'm going to help the carrier bring down costs," or "I'm going to help the employer bring down costs," and I don't think the incentives really exist.

Then there's weird stuff like the thing that kind of is just most shocking to me that I think most of ... I'd be surprised if most of your listeners have ever even heard of and may not even believe when I say it, is in 2009 as part of the Reinvestment Act, our government made the decision to pay \$20 billion to doctors to implement software. It's just fascinating, especially from a Silicon Valley perspective. Would anyone ever do that? It's so radical. We were going to pay people,

who are clearly closer to the top 1% than anything else, money, and it's \$44k each, to implement software. It's crazy.

Ezra Klein: You're talking here about electronic health records.

Bill Gurley: Yes. Well, first of all, why do you need to pay them or why do you think you need to pay them? Well, part of the reason is there aren't enough market forces to demand that they implement them in the first place. Every other ... You don't have to pay Cisco to put an ERP system in. They have to do it to be competitive.

Ezra Klein: And it still didn't work. We actually ... So my colleague and I, Sarah Kliff, interviewed President Obama as one of his last interviews about healthcare and we asked him what were his regrets, what did not work? And one of the things he named was EHR adoption had not been what they had hoped, despite the fact that they spent a lot of money on it.

Bill Gurley: The only reason I can believe that it happened is because the only executive on his advisory committee was the CEO of Epic Software, the largest EHR vendor out there. If you go back and study which company benefited the most from that program, it was Epic. That's the only reason I can believe that it happened, but it makes no sense whatsoever.

If you were going to pay somebody to put in software, what would you worry about? You'd worry about that maybe they don't use it. So they then paid, on top of the \$44k, \$17k or something like that if you could verify that you're using this software that they already paid you to buy. As I learned it, I was just agape. My mouth was like ... I can't believe someone tried this. It's prone to failure by design. But if you're out there trying to compete in that market ... Back at that time, all the software vendors had tons of content, web pages, YouTube videos, about what? How to qualify for your payment? So rather than working on software, they were developing web pages and probably holding events, teaching you how you can collect this free money.

Ezra Klein: It's notable that during this period, Google had a big push to do online health records that would be owned by the individual, but hopefully could integrate with medical practitioners, and eventually they closed that whole thing down. It's one of the things that Google made a big

deal about and really tried. I actually played around with that system. It was not a bad system from my perspective. And it totally failed.

Bill Gurley: One of the things as you go deeper on EHR, which I looked at, one of the problems you have is this large hospital systems growing and taking up smaller providers. Because if you're a startup and you want to compete in EHR, you're much more likely to break into small companies than to big ones, and the small ones are going away, so that's a problem.

The second thing is, if you talk ... In my limited conversations with doctors, the majority of the features they're worried about are the things that get them paid, so how well a system does billing, how well a system helps with collections. Those are the features they care about the most. Google probably brought a very different mentality to the table and it's not what people are looking for. And this is my whole point about how the system is just designed and designed and designed to kind of grow and to get bigger on top of itself.

Ezra Klein: So one of the things I thought was interesting when we talked a bit previously was that one of the things that made you optimistic that there might be change in the market, an opening in the market, was actually the Affordable Care Act.

Bill Gurley: A feature of it, yeah. There were two features of it that I was most excited by. One of them was high deductible plans, which ironically is a feature that I think was not well disclosed and that consumers hated when they realized that it was real, but that's a different issue. High deductible plans, and then the other one I really liked, which I don't think will ever see the light of day, is the Cadillac tax. The reason I like the Cadillac tax is because it was the one feature that could start to push employers somewhat out of the system, but that one appears dead. You might know more than me.

Ezra Klein: Yeah, it doesn't look like it's in good shape, but the high deductible plans part is interesting, because that really did happen, is happening. As you say, I do not think that feature was widely disclosed. I know many Republicans who say they oppose Obamacare because it stops high deductible plans from being out there. I often ask them, "You can have a \$6,000 deductible in Obamacare, exactly how high do you want the deductible to go?" But the reputation of the bill is that it is pushing against high deductible plans when, in fact, while it does increase benefits that do need to be covered, it's allowed for quite high deductible and, for that reason, also pushed toward very narrow networks.

Bill Gurley: Yeah, narrow networks and high deductibles, which I think actually is the first thing I've seen that leads towards competition. Obviously when someone has a high deductible plan, until they hit that deductible amount, they're spending out of pocket. So for the first time, perhaps, and I state broadly, that person's heading out into the market as a consumer, which is not something they've done before. They're spending out of their own pocket and they're making a decision as a consumer. I think that that is causing very carefully on the margin some really interesting things to happen.

Ezra Klein: So here to me is the meat of this discussion. It is the thing that I've been thinking about the most listening to the Obamacare debate, listening to the replacement of Obamacare debate, talking to you. As you say, Obamacare created these high deductible plans, these narrow network plans. Those plans did, in some cases, hold premiums further down, at least until recently, they had been estimated to be, and people hate those plans. They hate them. They do not want to have healthcare that is that exposed to the market.

The thing that I think is a real challenge here for particularly folks who are looking to make this a more consumer-driven system is that if we have learned anything from Obamacare, it's that what people seem to want is just peace of mind. They don't want high deductibles. They don't want to be out there shopping in this way. They want to know that if they get sick, somebody's going to cover it the way they do in Medicare, which people like, the way they do in Medicaid, which people like. You get all of this reporting about folks who are in the high deductible plans being mad at the people who are poorer than them who get Medicaid.

To me, the lesson of this has been ... I was not a huge high deductible plans guy at any point, but the lesson of this has been it is going to be very hard to foist this on the public, then Republicans came and said, "The problem with Obamacare is these plans have overly high deductibles and we're going to bring them down." Donald Trump said, "We're going to bring them down." That's not what their plan does, but when you have both parties now saying, "The problem with Obamacare is the deductibles are too high," that to me says something about the plan.

The reason I think this is important is there is this statistic that sticks in my head, it's from the Federal Reserve actually, that about 46% of Americans say they do not have enough money to cover a \$400 emergency expense, 400 bucks. So when you've got half the people in that position and health is so scary, that level of financial instability mixed with high deductible plans, that's a

very tough mix, the kind of thing that eventually is going to get people in the streets and say, "Hey, you've got to give me some relief from this. I need to not be so afraid all the time."

Bill Gurley: Let me try and separate two things. There are questions of policy and certainly if you ask people what they want, that list could grow infinitely, right? They'll take everything they can get. If you ask, "Would you like more?" you're always going to get an answer of, "Yes." But let's separate that for a second from the point I'm making, which is this hopefully not temporary, but maybe temporary, move to high deductible plans is driving change in the marketplace that is resulting in better care for consumers, from my point of view.

I'll go into that for a second. One of the places where high deductible plans are the highest is the state of Texas. In Dallas in particular, I happen to know, urgent care facilities are popping up left and right. These facilities have way more focus on the consumer and more entrepreneurialism than any general practitioner ever had. So there's a pediatric care facility that's open from 4:00 p.m. to midnight. Now, no doctor in our current system that I've ever been aware of has decided, "Oh, I'm serving children. They're in school. We have parents where both parents work, maybe I should shift my hours to 4:00 to midnight." That doesn't happen in our current healthcare system. That happened in this system, though, because someone wanted to differentiate themselves from the next guy and consumers are paying out of pocket and making a choice. There is more parking spaces, it's easier to pull up. They care about net promoter score, they measure the wait time in their facility, they ask for a review after the fact. And satisfaction levels are fantastic.

I'd just separate the point you were making because the point I'm making is that a move towards creating shoppers is creating better care on primary care, just in terms of how we treat the consumer, and the consumers are opting into that and finding it interesting and effective.

Ezra Klein: Let me ask you about why the high deductible plan is necessary for that particular kind of innovation. So backing up on how healthcare is financed, let's say you got a plan with basically no deductible, so you've got first dollar coverage. Let's just say something, a stylized Medicare plan. You still have to choose where you go and the places that are going to make money are the places that attract people to come to their office, right? I feel like the argument for the high deductible is it will make things that are cheaper, which I think is true. You deregulate airlines and you get cheaper airlines. You get Southwest, you get Spirit Air, you get stuff that in many ways is much more bare bones, but when people are paying their own money, they're willing to make that trade offset.

The kind of better care, higher quality care, you're talking about, the thing where you go to the primary care facility and it's beautiful in there, and it opens at 4:00 p.m. and it goes to 11:00 p.m., even in a place where you're not exposed to the cost, but they just need to attract the bulk of the people who have an insurance care, that feels to me like a perfectly reasonable system to incentivize that kind of pro consumer innovation.

Bill Gurley: I would argue we haven't seen that. These things that I'm seeing for the first time, and as a venture investor get excited about because it's the kind of disruption that could lead to fundability, it is in my mind just happening here for the first time. So I don't think our system has done that. I do think there's a middle ground, though, to this, which is flexible spending accounts are first dollar is not out of your pocket, but you do care about the choice you're making. Because you have a piece of the economics in the system. That's a middle ground approach that could achieve both of what you want and what I'm talking about.

Ezra Klein: It's interesting, because that's actually a very good bridge to ... You brought up Singapore at the beginning of our conversation and I have a big obsession with the Singaporean healthcare system, too. Do you want to talk about how that system works from your perspective?

Bill Gurley: The first thing I would say is this: The fascinating thing about Singapore is that they spend about 4% of GDP on healthcare and we spend somewhere between 17% and 18%. Based on the simplest measures that people calculate care, life expectancy, those kind of things, there's no demonstrable difference, and people can certainly argue on the margin. My biggest ... Like, my brain just can't stop from wanting to go, "Oh, my God, they're at 1/4 the cost, 1/4!" That is so dramatically eye opening that our first reaction should be, "We should study this until we can't stay awake anymore, because it is so dramatically different in terms of cost relative to output that they must be doing something we don't understand."

Instead, when you make this argument to people about Singapore, lots of people go, "Oh, but it's a small island Asian country," they start saying, "But, you shouldn't look at it," and I'm like, "Really? Someone's doing something for 1/4 the cost we are and their reaction is to come up with reasons why you shouldn't care about it?" We should just go nuts. We should be like, "Oh, my God, we should try everything they're doing. Every single thing."

Ezra Klein: Also, to just build on that point a little bit, every Western European nation and also Canada and also Israel gets about ... It's about half of what we pay, it's not as cheap as Singapore, but if we only managed to cut our costs in half, that would also be a big advance.

Bill Gurley: Absolutely.

Ezra Klein: So the idea that there is nowhere we can look for some kind of answer here seems pretty ... It's always struck me as quite bizarre.

Bill Gurley: Yeah. So there are multiple parts to the Singapore system as you and I have discussed before. The one that I find most fascinating is they make everyone a payer. The way they do that ... Except there is a social safety net at the bottom, but for the majority of the populace, depending on your income level, they will provide help from the government on a sliding scale percentage. So if you're extremely well to do, you pay 80% of your bill, and if you're down towards the lower income, you pay 20% of your bill, but everyone's in the market shopping. I find that fascinating and I'm not as ... And maybe this comes from the Goldhill camp, but I'm not surprised that that leads to better execution and cheaper care.

Ezra Klein: So I'm going to give a little bit of a quick Singapore overview for folks who aren't as read in on it, and if anybody would like to learn a lot more about this, they can search my name and Singaporean healthcare system. I've got a long explainer about this on Vox.

Singapore is a system that conservatives love. Ross Douthat has called it "the marvel of the wealthy world." Fox News had this op-ed that if we wanted to replace Obamacare, let's copy Singapore's miracle, and what conservatives tend to liken Singapore to is the insurance design. It's a very unusual system. What they do is they have a forced saving account. So the Singaporean government basically diverts 7% to 9.5% of your wages into a compulsory savings account that you can only use for healthcare and, in fact, only use for the particular healthcare they let you use it for, which is interesting. It's a little bit like a health savings account mixed with the Social Security payroll tax.

Then they have catastrophic care, again provided by the government. You pay premiums. That's got a roughly, in our dollars, \$1500-ish deductible, and then there's this meta fund sort of safety net at the very bottom. What conservatives like there is that you've got, as you say, Bill,

everybody's a payer. People are paying first dollar care out of their forced savings account, then they've got catastrophic care over that. You really have to shop. But the other thing, and this is I think such a key thing that gets forgotten or left out about them, it is otherwise a basically government driven medical system where the government decides pricing.

So what you were saying about the rich paying 80-ish%, the poor paying 20%, that's not happening through insurance, it's happening because the government runs the hospitals and it separates them into these different wards and then it prices them based on how much subsidy you're going to get, depending on your income. Drug companies, they can't just charge what they want. If they want their drugs to be provided in those wards and if they want it to be eligible for that forced savings dollars, they have to price it at a level of cost effectiveness that the Singaporean government likes.

So what Singapore is doing, which I think is so interesting and is a reminder that there are much more radical fusions of left wing and right wing ideas than people give credit for, is the government is overwhelmingly regulating both supply and prices to keep costs down. But then with those low costs is creating an insurance system where the average Singaporean is quite exposed to the cost and has a reason to shop. If you tried to do that with our level of costs, you would have to make people divert like 20% of their income, because those forced savings accounts are also for your kids, they're also for your parents, and that would only pay for some of your care.

To me, it's a reminder that there may be more ways to cut this than people realize. That if the government was able to act as a price negotiator and get prices down, a lot of things would open up in how we design insurance, because people would not be so afraid of financial calamity.

Bill Gurley: Look, as I said earlier, I think one of the problems is that people that favor one approach vilify all the others and, for me, it's simply like, "Oh, my God, they're at 1/4 our cost." We should just do a mirror copy of the whole thing. I don't know why you would pick pieces of it. Let's just copy it. I'm not a policy person, but that's my policy reaction.

Ezra Klein: Just control C, control V Singapore?

Bill Gurley: Yes.

Ezra Klein: But this goes to something I think is hard for entrepreneurs, hard for the government, hard for anybody on either side of the aisle who wants to change anything, which is that people are very risk averse about their healthcare. They don't want to change doctors. They don't want things to change under them. They're afraid, and rightfully so, right? When I am sick, the main thing I feel is fear, so I'm not saying ... I don't want to say people, I want to say me here. And this I think is actually a particular problem in some ways potentially for Silicon Valley. There's a culture in Silicon Valley that moves fast and breaks things, right? That's the old Facebook motto. You have a culture like Uber that sort of bum rushes regulators in ways that allow them to make big gains in territory, but really piss people off.

I think folks are maybe open to that in places like social networks or even ride sharing, but if you tried to do that in healthcare or if the government tries to do that and takes away what people have, promising they've got something better, folks get real angry and it only takes one or two bad experiences, one or two people who really have something bad happen to them, to end that real quick.

Bill Gurley: One thing I would say to that is I don't think there are any opportunities to disrupt healthcare in that type of way, simply because the amount, the sheer force of inertia, the amount of regulation that exists, there's no way for someone to rush in and disrupt at that level with kind of hackneyed solutions. I don't think it could happen. It does pose the question, though, that if your assertion is right, that aversion to change is so high that we're just never going to get a shot on goal, then we might be stuck. You might be able to do this podcast 80 years from now and have all the same discussions.

Ezra Klein: I kind of worry I will be able to. Hopefully I'll be well enough to do this podcast in 80 years, and that would be a real triumph of the healthcare system.

Bill Gurley: Let me make this assertion, which I think is, especially if we're on an 80-year time window, I think China is going to be a really interesting thing to watch. I have this theory that democracy and capitalism will destroy one another if you give them enough time, and our most regulated industries are ones that are least open to disruption, so healthcare, finance, telecom, and what ends up happening is the incumbents end up writing the rules and you kind of bog down. China and Singapore, by the way, are nondemocratic capitalistic societies, and so it's actually easier for those types of governments to make wholesale change than it is in our case,

so they can make the types of systems that we've been talking about, or they could decide to mirror Singapore or whatever, and everybody just kind of has to take it.

But the other thing you have in China, so you haven't had much of a healthcare system and so you don't have this regulatory framework that makes it very difficult for new entrants or disruptive entrants, but you've got really successful and talented entrepreneurs. I think you're going to see some failure like you talk about because there is less regulation, but I think you're also going to see some amazing innovation.

I am friends with a couple of venture capitalists over there and things like second opinion via telemedicine, those things are happening there way faster than here. There's a whole network of specialists in the big cities that do second opinion over telemedicine with doctors that are in the rural areas for the customer, which is a practice that doesn't even exist here. People say, "Why isn't telemedicine or email more active here?" Well, they don't know how to bill for it and so it doesn't happen. Doctors don't do it because they can't bill for it. Eventually figure out how to bill for it, and then you'll have a telemedicine with your doctor and 80% of the time, you won't need to go into their building anymore. But that's going to happen slower here than there, precisely because of where we find ourselves. So that will be interesting to watch.

Ezra Klein: Tell me more about your theory that democracy and capitalism will eat each other. Why will that happen?

Bill Gurley: Well, industries get more regulated and incumbents write the regulation. Let's take one of the healthcare things, let's take HIPAA. Every single consumer thinks HIPAA was written to protect them, from my perspective. HIPAA is an extremely dangerous policy in a day and age where we have the communication tools that we do. I've got a friend who's an ER doctor and if he's in the middle of an emergency situation and he's got a friend that has the answer and he texts him and asks for help, that's a HIPAA violation, like \$50,000 fine. Now my friend does it anyway and if your mother were on that table, you'd want him to do it anyway. But you're not supposed to do it ... And, by the way, they have HIPAA audits. So there are people that are paid to provide HIPAA audits where they come around and test your systems, so all this HIPAA this and HIPAA that and, by the way, when Britney Spears' data got disclosed, HIPAA audits tripled at this guy's hospital, so it's nice to know that Britney caused such care.

When you want to build a new system that heightens communication so maybe you can get the better answers faster, you run into HIPAA front, left, and center. Epic, who's the largest

healthcare system tool, EMR company out there, is notorious for not integrating with people. I'm certain one of the reasons they claim they don't have to is because they hold up HIPAA and say, "No, can't do it." These regulations people think are written to protect themselves are written to protect the system. This isn't an argument that all regulation is bad, it's just how it matures over time.

Ezra Klein: Yeah, I certainly think there's something to that.

Bill Gurley: I'll give you a non-healthcare version real quick.

Ezra Klein: Yeah, please.

Bill Gurley: I was a backer of a company called Tropos that we sold, but they provided tools to let a city bathe their city in Wi-Fi. Obviously you think about why a mayor might find that to be interesting, to bathe the city in Wi-Fi. We found tons of mayors that were interested in doing this, and I think it's simple to make the argument that a mayor or city might choose to build a port or a railroad or a highway, why wouldn't they also build a digital highway if they wanted to for their constituency? But, over the years, the telco companies and the cable companies have written law after law after law to make it illegal for that mayor to do that.

If those laws didn't exist when we would get a mayor excited about it, an AT&T lobbyist would show up in the smallest of places and start lobbying against this from the government. Our ability to provide competitive Wi-Fi services through a city, which seems to be, based on that narrative I just used, seems to be something they should be able to do, is blocked by the broader government through rules that were written by the incumbents.

Ezra Klein: So then given these facts, and I agree with you, that healthcare is a place of many, many, many rules and many of them at this point outdated or not helpful to new entrants, and I think we said earlier that this is not an area ripe for overwhelming disruption. What are the layers of healthcare that you think are open to entrepreneurs? What are the spaces in the sector that you think people listening or who are already out there could profitably begin to hack away at in a useful way?

Bill Gurley: Well one thing that happens, and I want to talk about it because we've actually made some bets, so I'm not 100% a pessimist here. I do believe that there are opportunities. One of the things that happens is a lot of startups get pulled into the system and that's unfortunate, because it turns out that when you've got this thing that's 18% of GDP and you start following the money flows, you enter a market in one place with a very altruistic notion that I'm going to change things, and ask things morph, it turns out you're actually just helping the system get bigger and helping people collect, if you will, as a leach against the system.

There was a startup that I met with that was in the messaging space and I'm fascinated by messaging just because I think if there were more communication among everybody, it should lead to a more efficient world. I started asking, "What is it you're providing? What type of messaging and how much do you get paid for it?" And they said, "We get paid \$50 a message." I'm like, "\$50 a message? are like a penny. How could you get paid for that? What are you doing?" And he was connecting these rehabilitation centers with hospitals and it turns out the way our insurance has evolved, a hospital can move someone to a rehabilitation center and keep charging. And I said, "Well, what do you tell them?" And he goes, "When 30 days are up." And I said, "Why 30 days?" And he said, "Well, that's the limit to which you can get reimbursement against this type of facility." This entrepreneur I'm sure started out thinking I'm going to make the system better, but all they were doing was helping the hospital maximize what they could charge. And I think that kind of stuff happens all the time.

Anne from 23andMe told me that she went through a similar journey when she decided to go into healthcare and she just noticed startup after startup that entered the system hoping to help, but when you follow the money flows and start trying to get paid, you find you're actually making things worse. I don't want to fund anything like that, just because ... And it's not like I have some kind of moral high ground, that's not interesting to me, to make it worse. I want to hopefully be part of something that makes it better.

Ezra Klein: So then to go back to the question, what are the layers of this that you think are open to being made better?

Bill Gurley: This notion that I brought up, which we used the phrase "the consumerization of healthcare," I think that's starting to happen. I think consumers have lived through this transformation in other industries. Banks were notoriously open from 9:00 to 3:00. Banker hours is a metaphor that young kids probably won't even know what it means anymore, right? But it's because banks used to not have to be competitive with one another and they had rules that

didn't really think about the customer the way a normal business would. I think that trend is starting to change. We've made a few bets that relate to that.

One of them is a company called One Medical, which we've been an investor in for probably four or five years now, and One Medical is a premises-based healthcare provider. This isn't a software company, although they have software tools. It is literally like Starbucks. They have to put one of these up. They focused on urban areas, so they're downtown near your place of work rather than being near your home, they have a 24-hour appointment policy and I think a one-hour email response policy, and people love it. It turns out that it doesn't take that much convenience to stand out like a sore thumb versus what people have grown to expect.

Ezra Klein: Let me ask you something about that model really quickly, because I know One Medical well and I actually think they are a fascinating company. That seems to me to be almost the opposite of the high deductible consumerization of medical care. One Medical is you pay more on top of your insurance. They have a lot of people who have employer insurance, including a lot of people I know, you pay more on top of what you're already paying for insurance to get better service, which is great, right? One should be able to pay more to get more, that's all fine. But it does not seem to be the folks with the very high deductibles in Obamacare. That doesn't seem to be where that's going to lead.

Bill Gurley: Yeah, and as I said, we made this investment three or four years ago and that was purely a bet that a number of consumers want something more than what they've been getting from their healthcare system. So last week we announced an investment in a company called Solve, which is very new. They just kind of took the covers off for the first time, so it's early, but they're fitting more to what you're talking about. They've built a network, a marketplace, on top of these urgent care facilities and so this is more like OpenTable or Grubhub or Zillow, and it's a curated set of these people that are operating with full price transparency and have this desire to kind of be competitive from a consumerization standpoint.

Like I said, they measure wait times, they want you to be able to come in right away. I think of all the bookings that we've taken, 80% of them have been within a two-hour window. So no one thinks about seeing their general practitioner unless it's a complete emergency within a two-hour window, but the majority of people that book through Solve are doing it within two hours. So it is, trying to put this network layer, you can do things like check in ahead of time as opposed to show up and get handed the large clipboard full of papers to fill out because they know you're going to wait anyway. In this case, you can get that all done up front. So you walk in and get seen and, by the way, after you're done, you get a communication asking you to review that the

actual practitioner wants to see, because they measure NPS scores, which I had talked about in the past.

This is early. That's operating just in Dallas right now, but I anticipate that there's going to be enough competitive providers who are willing to operate with that type of expectation that we'll be able to build this nationwide.

Ezra Klein: Let me ask you something about the broader thinking around both of these, which we were talking about a little bit earlier around the Houston primary care example, too, which is I don't understand really why any of these were not viable businesses in a non-high deductible care model. These are all adding convenience by, I assume, taking a little bit of cut, so in some way like raising price at least a little bit, which is not necessarily a bad thing in this case, but adding convenience onto the system we already have. I think it opens this question of why the system just hasn't had at least more of a demand around quality than it's had.

I expect what's going to happen with the high deductible world is people are going to accept less convenience and less quality. Again, it's going to go in this direction of, if the regulators allow it and this is certainly what Republicans want to do by accelerating the deregulation of very, very narrow network, very, very high deductible plans that don't cover that much and so on and so forth because they're just too expensive. But this stuff, people have always had the ability to pay a bit more to get something a little bit better and it's been a system resistant to it in large part because people seem very resistant to change and very set in their habits. They go to the same doctor for a long time, etc. What do you think here is changing? It feels like it may be something different than what we're talking about.

Bill Gurley: It's totally plausible that they're disconnected, that the time has come and these tools, by the way, because if you look forward, this telemedicine piece for these type of providers is going to become a big piece of it, because there's just more convenience for the consumer that's possible. Maybe it was just the time is right. I happen to believe that having high deductible plans out there or even people that opt out that are paying the penalty, they're shoppers, too, put more people into the frame of mind where they're making those choices.

Look, there's also narrow networks and there's many Kaiser clones popping up. There's one called Scott & White in Texas that's really impressive. It's their own narrow network and they're actually literally listing plans on the exchange. So they're a wholesale carrier provider all in one package, and they are competitive from a convenience perspective, too. Maybe we're just seeing

a whole bunch of alternatives pop up, some of which are driven by this consumerization piece and that's causing choice, and people are opting into it.

Ezra Klein: Let me give you my theory. I think that some of this, and I think One Medical is a good example of it, is we are getting a culture into a different kind of convenience. You used Open Table and Grubhub, which I know are different than the new thing you funded, but I do think are beginning to habituate consumers to that kind of experience, so people are beginning to both expect it and feel more familiar with it when it comes around.

But the place that I'm curious if you looked into when you were doing your research is you've had the Apple Watch and Jawbone and all these different things that are essentially bioinformatics that you wear on you and right now, they're sort of fun things for the fitness set, right? They're for people who are pretty healthy already and enjoy tracking their sleep and quantifying their life and all of that. But it's not too hard to imagine some of these things that are much better at helping folks remember to take their medications, for instance, right? A huge issue is drug adherence, particularly for people who are forgetful or who have mental health issues. Something on the wrist that was really good and simple at making sure they took their medicines, or at least reminding them to do it, could make a big difference.

You could imagine things that, I don't know the science of this that well, but there are early markers of things like heart attacks and possibly there are things people could wear that would help alert them very early. If you had a very at-risk population, maybe that would help. That feels to me like where the technology might really make a big difference and both drive down costs and drive up quality pretty dramatically. Did you see stuff?

Bill Gurley: Yeah, there's a lot of stuff like that. Most of it's targeted at acute care, so you'll see startups like that targeted at cardiovascular issues or diabetes or things like that. They all struggle with how do you lean against the American healthcare system? Some of them end up trying to sell these solutions through the self-insured employer, which we already talked about is a kind of really non-optimal way to get out there. Some of them are trying to create the right to bill for a digital solution. It's very new ground, so if I build an app and a wearable device that if I use, I'll monitor my diet better and, therefore, I'll reduce my carbohydrate intake and diabetes will improve, getting our insurance carriers to accept paying for that app or service as a billable thing is non-trivial. And there are startups trying to do that right now.

It's not the type of bet we've made historically, because it's dependent on your ability to get that acceptance, and I don't know if that will happen or not. It may happen. We may see digital solutions become billable prescriptions. There are a number of startups trying to make that happen. Even if that technology can be helpful in that way, you still have to figure out a way to get charged in the US healthcare system, which is non-trivial.

Ezra Klein: Let me then ask you, I've taken up enough of your time here, the question we use to close out this podcast, which is what are a couple books on healthcare or anything else that you've read that have influenced you that you would recommend to the audience?

Bill Gurley: As I mentioned, the Catastrophic Care by Goldhill I would read on healthcare. Most of the other books I've read recently you've already had podcasts with the authors, like Sapiens I read recently, which I really enjoyed. In healthcare, there's a whole book on the Singapore system you've probably read. I haven't read yet, but I'm interested to read.

Ezra Klein: Jeremy Lim's

Bill Gurley: Is it good?

Ezra Klein: I think it's Singapore Myth or Miracle? Yeah, I think it's excellent.

Bill Gurley: Yeah.

Ezra Klein: It's actually just a good book on healthcare straight up and from a non-American perspective I think really works. I highly recommend that book.

Bill Gurley: Cool, I'll read that. And I listen to all of your podcasts on the subject.

Ezra Klein: Well, thank you. Alright, come on, one book on technology.

Bill Gurley: There's a set of books that I recommend startups read and some of them are basic, but there's a book called Startup by Jerry Kaplan where he had a startup that was in like the tablet space, but it was called Go. It was before all the tablets actually were successful and they had the best investors, the best executives, and it was a colossal failure. What's most interesting is on the way home every day, he recorded into a microphone and so he had a log of the story that was particular high fidelity and then after it was all over, he wrote a book about it.

To me, it's the most real startup journey that's ever been written, and it's actually more real because it didn't work. Most of the people in the book have gone on to do other things very successfully, but it was just super eye opening. So that's one.

Crossing the Chasm for enterprise plays you have to read. Innovator's Dilemma is probably the most efficient analysis of why startups are able to disrupt. These are books people know about, but entrepreneur should read these things like bibles.

One last one, which a lot of people have been recommending, Phil Knight's Nike book that he just came out with about a year ago is just fantastic. Unbelievable.

Ezra Klein: Bill Gurley. Thank you very much.

Bill Gurley: All right. Take care.

Ezra Klein: Thank you to Bill for being on the podcast. Thank you to all of you for listening to the podcast. Thank you to my producers, Byrd Pinkerton and Peter Leonard.

Article 6: Thinking of Home: Dickinson, Texas

September 6, 2017:

For those of you who have moved away from the town where you grew up, the few times that you see your hometown in the national news creates an enormous sense of pride. Over the past few weeks, the town I grew up in, Dickinson, Texas, has been front and center in the national news, but for all the wrong reasons. Dickinson, a small town southeast of Houston on Galveston Bay, has been one of the hardest hit communities by Hurricane Harvey.

I became a resident of Dickinson for the same reason many of my childhood friends did. My father, John, was an early NASA employee, and when Johnson Space Center opened in Clear Lake, he and many of his colleagues made Dickinson their home. It seems like half of the fathers on our street worked at NASA. Gene Kranz, the famous NASA Flight Director is a Dickinsonian. I, along with a handful of others in my class, spent my entire K-12 education in the Dickinson public school system and graduated from Dickinson High School in 1984. When people ask me “where did you grow up?” or “where are you from?” there is one easy answer — Dickinson.

That said, our family’s strongest tie to Dickinson is the countless hours my mother, Lucia Gurley, spent in service of the town and community over her 38 years as a resident. She currently lives in Marble Falls, but during her time in Dickinson, my mother’s impact on the local community was quite significant. She was a substitute teacher for over 20 years, she volunteered at the local library, she helped raise grants for the public school system, and was a key contributor to Keep Dickinson Beautiful. In 1992, she was recognized nationally for her leadership in the H.O.S.T.S. program, receiving the Betty Scharff Memorial Award, and in 1994 was recognized by the local Chamber of Commerce as Citizen of the Year. Most significantly, she served as a councilwoman on the city council for 11 years, and upon retiring was recognized for her efforts in the local newspaper.

Although it does not appear that either were as devastating as Harvey, our family lived through two difficult storms while we lived in Dickinson. In the summer of 1979 Tropical Storm Claudette dumped 43 inches of rain on the area in a single day. Our house ended up with 2-3 feet of water inside, and as a result I have a small sense of how painful life will be for many of the residents over the next many months. In 1983, the eye of Hurricane Alicia went directly over Dickinson. My mother spent the entire evening at city hall, while my father and I worked in our backyard to keep trees from falling on our roof. Alicia's damage was more wind than water.

Harvey's impact has been even more severe. The city estimates that Dickinson received over 50 inches of rain in just a few days. Preliminary damage assessment indicates more than 7,300 homes experienced some level of damage from Hurricane Harvey. And over half of these homes — well over 3,500 — had either major damage or were destroyed, displacing thousands of residents. Almost all of this damage was the result of flooding as Dickinson Bayou backed up due to the storm surge and heavy rains.

In recognition of the immense need in Dickinson, and in honor of my mother's significant contribution to this community, my wife, Amy, and I have decided to donate one million dollars to the city's Harvey Relief Fund. There have been many remarkable fundraising efforts as a result of Hurricane Harvey, and we are both moved by the generosity of Les Alexander, JJ Watt, Michael Dell and countless others. Amy and I wanted to ensure that this small and vibrant community of Dickinson also has the resources it needs to rebuild. If anyone else is interested in helping out, you can find the Dickinson Harvey Relief Fund website here:
<http://www.ci.dickinson.tx.us/626/Donate-to-Dickinson-Harvey-Relief-Fund>

Having lived through two of these storms myself, I can confirm what you have already read in the press. Tragedies like these bring out the very best in a community and neighborhood. During the storms our family encountered, we were awestruck by the sheer volume of neighbors helping neighbors. I have already heard many stories of this amazing spirit of community at work in Dickinson once again in reaction to Harvey. The national news covered many heroic acts of rescue during the storm. I have also heard from those on the ground that neighbors are once again lending a hand as the clean up efforts begin. This same spirit will help this great community rebuild and thrive again.

Article 7: Benchmark's New General Partner Sarah Tavel

May 9, 2017:

The partners at Benchmark are excited to announce that Sarah Tavel has joined the firm as our newest General Partner. We define ourselves by a love for the craft of early stage investing, and Sarah's career-long desire and commitment to be one of the world's great venture capitalists make her an ideal addition to the Benchmark team.

About a year ago, we asked our venture partner Scott Belsky who he thought had the greatest potential to become one of the best investors of the next decade. He answered quickly and definitively: Sarah Tavel. We've gotten to know Sarah over the last year. While we only very recently revealed our interest in having her join us, our interactions with her over the year amplified our instincts. She especially impressed us with the speed and quality of her thinking around disruptive markets, her ability to influence others with her ideas, and the depth of the relationships she has forged.

Throughout her career, Sarah has shown a remarkable ability to spot new companies and markets, and to develop deep bonds with extraordinary entrepreneurs. Early on, at Bessemer Venture Partners, she helped source and pursue companies as varied as Pinterest and GitHub well before they were broadly understood. Not only did she identify these phenomena before others, she left long-lasting impressions on the founders of both companies. In fact, Ben Silbermann thought so highly of Sarah that he recruited her to Pinterest to lead core parts of the product and business after the Bessemer investment. The experience of helping scale Pinterest through a period of explosive growth is an incredible resource for the founders on whose boards she will serve in the future.

Most recently, Sarah worked as an investing partner at one of the great venture capital firms, Greylock Partners, working with some of the sharpest product minds in the business.

Beyond her impeccable resume, from our earliest interactions Sarah demonstrated an investor mindset that just felt consistent with our own. Our small, focused team approach relies on open debate, advocacy, and working together to support the entrepreneurs we serve. Each partner at Benchmark needs to bring a unique perspective while simultaneously enhancing the overall functioning of the team. It is clear that Sarah will get in front of breakout companies early, challenge our thinking on new markets, help us make sharper decisions, and be an incredible partner for the entrepreneurs we back.

Adding a new partner is an infrequent event for Benchmark. Our structure – now six equal partners – means Sarah joins with the same authority, responsibility and ownership as the current partners. We have the highest conviction Sarah will excel at the complex craft of early stage venture investing and are thrilled to welcome her to the team.

Bill, Eric, Matt, Mitch and Peter

Follow Sarah on Twitter: [@sarahtavel](https://twitter.com/sarahtavel)

Article 8: On the Road to Recap:

April 21, 2016:

Why the Unicorn Financing Market Just Became Dangerous...For All Involved

In February of last year, Fortune magazine writers Erin Griffith and Dan Primack declared 2015 “The Age of the Unicorns” noting — “Fortune counts more than 80 startups that have been valued at \$1 billion or more by venture capitalists.” By January of 2016, that number had ballooned to 229. One key to this population growth has been the remarkable ease of the Unicorn fundraising process: Pick a new valuation well above your last one, put together a presentation deck, solicit offers, and watch the hundreds of million of dollars flow into your bank account. Twelve to eighteen months later, you hit the road and do it again — super simple.

While not obvious on the surface, there has been a fundamental sea-change in the investment community that has made the incremental Unicorn investment a substantially more dangerous and complicated practice. All Unicorn participants — founders, company employees, venture investors and their limited partners (LPs) — are seeing their fortunes put at risk from the very nature of the Unicorn phenomenon itself. The pressures of lofty paper valuations, massive burn rates (and the subsequent need for more cash), and unprecedented low levels of IPOs and M&A, have created a complex and unique circumstance that many Unicorn CEOs and investors are ill-prepared to navigate.

Many have noted that the aggregate shareholder value created by all of the Unicorns will vastly overshadow the losses from the inevitable failed unicorns. This likely truism is driven by the clear success of this generation’s transformational companies (Airbnb, Slack, Snapchat, Uber, etc). While this could provide some sense of comfort, most are not exposed to a Unicorn basket, and there is no index you can buy. Rather, most participants in the ecosystem have exposure to and responsibility for specific company performance, which is exactly why the changing landscape is important to understand.

Perhaps the seminal bubble-popping event was John Carreyrou’s October 16th investigative analysis of Theranos in the Wall Street Journal. John was the first to uncover that just because a company can raise money from a handful of investors at a very high price, it does not guarantee (i) everything is going well at the company, or (ii) those shares are permanently worth the last round valuation. Ironically, Carreyrou is not a Silicon Valley-focused reporter, and the success of the piece served as a wake-up call for other journalists who may have been struck by Unicorn fever. Next came Rolfe Winkler’s deep dive “Highly Valued Startup Zenefits Runs Into Turbulence.” We should expect more of these in the future.

In late 2015, many public technology companies saw a significant retrenchment in their share prices primarily as a result of a reduction in valuation multiples. A high performing, high-growth SAAS company that may have been worth 10 or more times revenue was suddenly worth 4-7 times revenue. The same thing happened to many Internet stocks. These broad-based multiple contractions have an immediate impact on what investors are willing to pay for the more mature private companies.

Late 2015 also brought the arrival of “mutual fund markdowns.” Many Unicorns had taken private fundraising dollars from mutual funds. These mutual funds “mark-to-market” every day, and fund managers are compensated periodically on this performance. As a result, most firms have independent internal groups that periodically analyze valuations. With the public markets down, these groups began writing down Unicorn valuations. Once more, the fantasy began to come apart. The last round is not the permanent price, and being private does not mean you get a free pass on scrutiny.

At the same time, we also started to see an increase in startup failure. In addition to high profile companies like Fab.com, Quirky, Homejoy, and Secret, numerous other VC-backed companies began to shut their doors. There were in fact so many that CB Insights started a list. Layoffs have also become more prevalent. Mixpanel, Jawbone, Twitter, HotelTonight and many others made the tough decision to reduce headcount in an attempt to lower expenses (and presumably burn rate). Many modern entrepreneurs have limited exposure to the notion of failure or layoffs because it has been so long since these things were common in the industry.

By the first quarter of 2016, the late-stage financing market had changed materially. Investors were becoming nervous and were no longer willing to underwrite new Unicorn-level financings at the drop of a hat. Moreover, once high-flying startups began to struggle on the fundraising trail. In Silicon Valley boardrooms, where “growth at all costs” had been the mantra for many years, people began to imagine a world where the cost of capital could rise dramatically, and profits could come back in vogue. Anxiety slowly crept into everyone’s world.

About this same point in time, the journalists that focus specifically on the venture capital industry noted something quite profound. In 1999, record valuations coexisted with record IPOs and shareholder liquidity. 2015 was the exact opposite. Record private Unicorn valuations were offset by increasingly fewer and fewer IPOs. If 1999 was a wet (read liquid) bubble, 2015 was a particularly dry one. Everyone was successful on paper, but in terms of real cash-on-cash returns, there was little to show. In Q1 of 2016 there were zero VC-backed technology IPOs. Less

than one year since declaring it the “Age of the Unicorns,” Fortune Magazine was back with a dire warning, “Silicon Valley’s \$585 Billion Problem: Good Luck Getting Out.”

As we move forward, it is important for all players in the ecosystem to realize that the game has changed. Equally important, each player must understand how the new rules apply to them specifically. We will start by highlighting several emotional biases that can irrationally impact everyone’s decision making process. Next we will highlight the new player in the ecosystem that is poised to take advantage of these aforementioned changes and emerging biases. Lastly, we will then walk through each player in the ecosystem and what they should consider as they navigate this brave new world.

Emotional Biases

When academicians study markets, one common assumption is that the market participants will act in a rational way. But what if the participants are in a position that leads them to non-optimal and potentially irrational behavior? Many biases bring irrationality to the Unicorn fundraising environment:

- Founder/CEO — Many Unicorn founders and CEOs have never experienced a difficult fundraising environment — they have only known success. Also, they have a strong belief that any sign of weakness (such as a down round) will have a catastrophic impact on their culture, hiring process, and ability to retain employees. Their own ego is also a factor — will a down round signal weakness? It might be hard to imagine the level of fear and anxiety that can creep into a formerly confident mind in a transitional moment like this.
- Investors — The typical 2016 VC investor is also subject to emotional bias. They are likely sitting on amazing paper-based gains that have already been recorded as a success by their own investors — the LPs. Anything that hints of a down round brings questions about the success metrics that have already been “booked.” Furthermore, an abundance of such write-downs could impede their ability to raise their next fund. So an anxious investor might have multiple incentives to protect appearances — to do anything they can to prevent a down round.
- Anyone that has already “banked” their return — Whether you are a founder, executive, seed investor, VC, or late stage investor, there is a chance that you have taken the last round valuation and multiplied it by your ownership position and told yourself that you are worth this amount. It is simple human nature that if you have done this mental exercise and convinced yourself of a foregone conclusion, you will have difficulty rationalizing a down round investment.

- A race for the exits — As fear of downward price movement takes hold, some players in the ecosystem will attempt a brisk and desperate grab at immediate liquidity, placing their own interests at the front of the line. This happens in every market transition, and can create quite a bit of tension between the different constituents in each company. We have already seen examples of founders and management obtaining liquidity in front of investors. And there are also modern examples of investors beating the founders and employees out the door. Obviously, simultaneous liquidity is the most appropriate choice, however, fear of price deterioration as well as lengthened liquidity timing can cause parties on both sides to take a “me first” perspective.

The Sharks Arrive With Dirty Term Sheets

Who are the Sharks? These are sophisticated and opportunistic investors that instinctively understand the aforementioned biases of the participants and know exactly how to craft investments that can exploit the situation. They lie in wait of these exact situations, and salivate at the opportunity to exercise their advantage.

“Dirty” or structured term sheets are proposed investments where the majority of the economic gains for the investor come not from the headline valuation, but rather through a series of dirty terms that are hidden deeper in the document. This allows the Shark to meet the valuation “ask” of the entrepreneur and VC board member, all the while knowing that they will make excellent returns, even at exits that are far below the cover valuation.

Examples of dirty terms include guaranteed IPO returns, ratchets, PIK Dividends, series-based M&A vetoes, and superior preferences or liquidity rights. The typical Silicon Valley term sheet does not include such terms. The reason these terms can produce returns by themselves is that they set the stage for a rejiggering of the capitalization table at some point in the future. This is why the founder and their VC BOD member can still hold onto the illusion that everything is fine. The adjustment does not happen now, it will happen later.

Dirty term sheets are a massive problem for two reasons. One is that they “unpack” or “explode” at some point in the future. You can no longer simply look at the cap table and estimate your return. Once you have accepted a dirty offering, the payout at each potential future valuation requires a complex analysis, where the return for the Shark is calculated first, and then the remains are shared by everyone else. The second reason they are a massive problem is that their complexity will render future financings all but impossible.

Any investor asked to follow a dirty offering will look at the complexity of the previous offering and likely opt out. This severely heightens the risk of either running out of money or a complete recapitalization that wipes out previous shareholders (founder, employees, and investors alike). So, while it may seem innocuous to take such a round, and while it will solve your short term emotional biases and concerns, you may be putting your whole company in a much riskier position without even knowing it.

Some later-stage investors may be tempted to become Sharks themselves and start including structured terms into their own term sheets. Following through and succeeding at such a strategy will require these investors to truly embrace being a Shark. They will need to be comfortable knowing that they are adverse to and in conflict with the founders, employees, and other investors on the capitalization chart. And they will need to be content knowing that they can win while others lose. This is not for the faint of heart, and certainly is not consistent with the typical investor behavior of the past several years.

Let us now take a deeper dive into what this new fundraising environment means for each participant in the ecosystem.

Entrepreneurs/Founders/CEOs

Today's Unicorn entrepreneur has been trained in an environment that may look radically different from what lies ahead. Here is the historic perspective. Money has been easy to raise. The market favors growth over profits. Competition also has access to capital. So, raise as much as you can as fast as you can, and be super-ambitious. Take as much market share as you can.

Never in the history of venture capital have early stage startups had access to so much capital. Back in 1999, if a company raised \$30mm before an IPO, that was considered a large historic raise. Today, private companies have raised 10x that amount and more. And consequently, the burn rates are 10x larger than they were back then. All of which creates a voraciously hungry Unicorn. One that needs lots and lots of capital (if it is to stay on the current trajectory).

For the first time, perhaps in their lives, these entrepreneurs may face a situation where they cannot raise a clean incremental financing at a flat to up round. This is uncharted territory. There are a few alternatives:

- The first option available to many Unicorns today is a dirty term sheet. As discussed above, these terms can cleverly fool the inexperienced operator, because they are able to “meet the ask” with respect to cover valuation, and the accepting founder does not realize the carnage that will come down the road. The only reason one would accept such a deal is to maintain valuation appearances that simply do not matter. Taking a terms-laden deal is like starting the clock on a time bomb. Your only option is to hit the IPO window as fast as possible (Note: Box and Square were able to thread this needle successfully), otherwise, the terms will eat you alive. The main problem is that you will never raise another private round again, as no new investor will want to live on top of the termy round. So you will be stuck negotiating with the lender that already proved they were smarter than you.
- Take a clean round at a lower valuation. This will seem like a massive failure to many modern entrepreneurs, but they should quickly adjust their thinking. Reed Hastings at Netflix raised money in a high profile down round as a public CEO. Every single public CEO has had days where the stock price falls — it is common and accepted. The only thing you are protecting is image and ego and in the long run they absolutely do not matter. You should be more concerned about the long-term valuation of your shares, and minimizing the chance that you have the whole thing taken away from you. Terms are the true Godzilla that should scare you to death. A down round is nothing. Get over it and move on. Option #2 is way better than option #1.
- Buckle down and do whatever it takes to get cash-flow positive with your current cash balance. This might be the most foreign of all the choices, as your board of directors has been advising you to do the exact opposite for the past four years. You have been told to be “bold” and “ambitious” and that there is no better time to grab market share. Despite this, the only way to be completely in control of your own destiny is to remove the need for incremental capital raises altogether. Achieving profitability is the most liberating action a startup can accomplish. Now you make your own decisions. It will also minimize future dilution. Gavin Baker, a high-profile portfolio manager at Fidelity has a message for Unicorn CEOs: “Generate \$1 of free cash flow, and then you can invest everything else in growth and stay at \$1 in free cash flow for years. I get that you want to grow and I want you to grow, but let’s internally finance that growth by spending gross margin dollars rather than new dilutive dollars of equity. Ultimately, internally financing growth is the only way to control your own destiny rather than being at the mercy of the capital markets.”
- Go public. In the long run, the very best way for founders to look after their own ownership as well as that of their employees is to IPO. Until an IPO, common shares sit behind preferred shares. Most preferred shares have different types of control functions and most of them have a

senior preference over common. If you really want to liberate your own common shares and those of your employees, then you want to convert the preferred to common and remove both the control and the liquidation preference over your shares. Many founders have been erroneously advised that IPOs are bad things and that the way to success is to “stay private longer.” Not only is an IPO better for your company (see Mark Zuckerberg and Marc Benioff on this subject), but an IPO is the best way to ensure the long-term value of your (and your employees’) shares.

It is worth noting that stock prices go up and stock prices go down. There is not a single high-profile public company that has been able to avoid time periods where their shares underperformed. Amazon went from \$106 to \$6 as a public company. Salesforce went from \$16 to \$6 and stayed below \$10 for many months. Netflix went from \$38 to \$8 in six months. Remember Facebook’s first six months as a public company?

If you cannot handle a down valuation you should seriously consider abandoning the CEO position. Being a great leader means leading in good times as well as tough times. Taking a dirty deal is jeopardizing the future of your company, solely because you are afraid to lead through difficult news.

Employees

The explicit details of the capital structure of a company are typically obfuscated from the average employee. You know you work for a Unicorn, and you know you have some common shares. You might also know what percentage you own. And unfortunately, you may assume that the product of your Unicorn valuation and your percentage ownership is what you are worth. Of course, for that to be true, you need to reach a liquidity event (IPO or M&A) at or above the last round valuation with no incremental dilution from new rounds. But guess what: M&A is scarce (no large company wants to pay these prices or absorb these burn rates), and many founders have been told IPOs are bad. So how will you ever get liquid?

For the most part, employees are in the exact same position as founders (above), with the exception that they don’t participate in the decision tree outlined above in 1-4. That said, they should be asking the exact same questions of management: Can we get to break-even on the money we have? Do we need to raise more money? If so, can we do it on clean terms (vs. dirty)? Employees should want to know if the founder/CEO would/did take a dirty deal, because common is at the most risk in such a situation. And then you should want to know if your leader

is anti-IPO. If your CEO/founder will take a dirty round, and is also anti-IPO the chance that you will ever see liquidity for your shares anywhere near what you think they are worth is very, very low. You should probably move on to another company.

INVESTORS

Disclosure: It should be noted that the author of the article and his investment firm reside in this category.

For the most part, early investors in Unicorns are in the same position as founders and employees. This is because these companies have raised so much capital that the early investor is no longer a substantial portion of the voting rights or the liquidation preference stack. As a result, most of their interests are aligned with the common, and key decisions about return and liquidity are the same as for the founder. This investor will also be wary of the dirty term sheet which has the ability to wrestle away control of the entire company. This investor will also have sufficient angst about the difference between paper return and real return, and the lack of overall liquidity in the market. Or at least they should.

The one exception to this is the late-stage investor or the deep-pocketed investor who may represent a substantial part of the overall money raised. This particular type of investor may have protected their ownership through the use of active pro-rata or super pro-rata investing. They may have even encouraged the aggressive “spend-to-win” mentality knowing that they can keep writing checks. They have been acting like a loose-aggressive player at a poker table.

There are two forces which have begun to slow down this type of investor. First, as failure has begun to arrive on the scene, these investors have suffered some really big write-offs. These spectacular losses result in a lack of confidence not only for the investor, but more importantly for their LPs. The second problem is that for many of these investors, a single holding can become too large relative to the overall fund. They basically cannot afford to expose themselves to any more risk in a particular name. They use euphemisms to describe having over-eaten such as “fully allocated” or “at capacity.”

This form of big investor indigestion has created a really bizarre and unprecedented activity in the Unicorn world. High-profile investors, who are already armed with plenty of capital, have resorted to hitting the phone banks to solicit others to pile in behind them in their names. The voracious Unicorns need even more capital than these big-boys can afford. Ironically, if you look at the big historic wins of this investor class, there is no record of sending out Evites to other investors. But now they “need” others, which should signal risk to all parties involved. More on this later.

Investors also have to worry about raising their next fund, which can lead to unusual behavior that is independent of each individual company’s situation. Do you support the dirty term sheet because this allows you to keep your paper-mark and not spook your investors? Even though you know this may be bad for the company in the long run? Do you feel the need to raise more capital quickly before the prices erode further and bring down your IRR? Do you feel the need to have more money to keep feeding the cash hungry companies you have already funded?

LIMITED PARTNERS (LPS)

LPs are the large pools of capital, such as endowments and foundations, that invest in VC firms, hedge funds and the like. They are the real capital that make the system work. LPs evaluate the performance of the different investors in the ecosystem and make decisions about whether to fund their next effort or not. It’s a difficult job because the feedback cycles are so long — especially when it comes to investing in illiquid assets like startups (and Unicorns).

Another big challenge for LPs is that they are asked to measure the performance of these illiquid assets even though doing so is quite difficult and may not be indicative of future real cash returns. In this case, many LPs have incorporated the high performance of Unicorn valuations into their overall results which has created very strong performance gains for the venture capital category. In a sense they have already “banked” the gains. The problem obviously is that the lack of any material liquidity in the market combined with the recent correction creates a risk that they may not see the actual cash returns for the paper gains they already booked.

Furthermore, as mentioned earlier, they may face increased solicitation from VC firms who want to accelerate their fundraising process in the middle of this highly anxious environment. A recent WSJ article, “Venture-Capital Firms Draw a Rush of New Money,” highlights that VC firms are raising new funds from LPs at the highest rate in 15 years, even though cash liquidity is sitting at a seven-year low. A few sentences from the article are worth republishing here:

- In recent years venture firms have written bigger checks and encouraged companies to spend to battle for market supremacy. That left some venture firms short of cash, requiring them to raise money sooner than in years past to continue reaping fees and making new investments.
- Some venture capitalists say the fundraising spike is timed to ensure that paper gains on startup investments still look attractive.
- Cash distributions are what matter at the end of the day, but big paper gains still make for good fundraising pitches.

In addition to these issues, there has also been an increase in “inside rounds” where investors write new checks into companies where they are already investors, avoiding the “market check” that might have resulted in a potentially down valuation. This activity, which has an obvious conflict of interest, makes the LP’s job of judging VC performance even more difficult.

Against this difficult backdrop, many firms are asking their LPs to make new accelerated commitments to their next fund, exactly when evaluation is most difficult and anxiety may be at a cyclical peak. Moreover, deep down most LPs know that performance in the VC sector is counter cyclical to the amount of money raised by VCs. If you over-fund the industry, aggregate returns fall. Writing huge checks to bloated multibillion dollar VC funds could easily exacerbate the problems that already exist.

One response from the LP community might be to demand commitments from new funds that prohibit inside-led rounds and cross-fund investing. This can help to ensure that new capital is not put to use in an attempt to save previous investment decisions — an activity known as “throwing good money after bad.”

If this were not enough, some LPs are also being solicited to participate in SPVs (Special Purpose Vehicles), frequently from the very funds they have backed. As discussed earlier, some investors have reached a stage when they are overcommitted to a particular company in a particular fund (“at capacity”). Yet these investors want to keep providing capital to their Unicorns and support a growth-over-profits attitude. So they create a one-time special purpose investment vehicle (while greedily asking for even more carry). And the SPV has the added risk that it has no portfolio diversification or “look-back” feature to provide downside protection.

Obviously the LPs can just say “no” to participating in the SPV (even though they may feel the pressure of obligation from the fund). This is likely the smart move. First, someone is asking you to write a check at the exact time everyone else is overcommitted. Hey, come help us out, we are drowning over here! Second, you already have ample exposure to this exact company, through your original investment. Lastly, it is quite unlikely that a historical study of peak-cycle SPV participation shows good returns.

ALL PREVIOUSLY UNTAPPED FINANCIAL SOURCES (FAMILY OFFICES, SOVEREIGN WEALTH FUNDS, ETC)

If you have a large pool of money and you haven’t been approached to invest in a Unicorn, it’s simply because people do not know where to find you. There are three types of people who are likely now approaching you, all of whom you should engage with quite carefully:

- SPV promoters – As mentioned in the section on LPs, investors have also broadened their SPV marketing more broadly to family offices and other pools of capital. The pitches typically involve phrases such as “you are invited to” or “we will provide access to” an opportunity to invest. This “you are so lucky to have this opportunity” pitch is eerily Madoffian. And remember, this solicitation is coming from investors who actually have money, but already know they are overcommitted.
- Brokers and 3rd-tier investment banks promoting the sale of secondary shares in Unicorn companies – If you ask any large family office, they will tell you they are being bombarded with calls and emails offering secondary positions in Unicorn companies. Often with teasers such as “20-40% discount to last round price.”
- Incremental Unicorn round – You might also be called on simply to pump more capital into a standard Unicorn round. With many investors “at capacity” due to the historic amounts of capital already raised, some companies are looking under any and every rock they can for more dollars.

One of the shocking realities that is present in many of these “investment opportunities” is a relative absence of pertinent financial information. One would think that these opportunities which are often sold as “pre-IPO” rounds would have something close to the data you might see in an S-1. But often, the financial information is quite limited. And when it is included, it may be presented in a way that is inconsistent with GAAP standards. As an example, most Unicorn CEOs still have no idea that discounts, coupons, and subsidies are contra-revenue.

If an audit is included, it might have massive “qualifications” where the auditor lists all the reasons that this particular audit may not comply with GAAP standards and that things could change materially if they dig in deeper. Investors need to really open their eyes to the fact that these are not IPOs. The companies have not been scrubbed in the same way, and the numbers they are looking at on a PowerPoint deck are potentially erroneous. Here is a recommendation: If you are about to write a multimillion dollar check for an incremental Unicorn investment, ask to speak to the auditor. Find out exactly how much scrutiny has been applied.

New potential investors might also be surprised how few Unicorn executives truly understand their core unit economics. One easy way to spot these pretenders is that they obsessively focus on high level “gross merchandise value” or “multi-year forward bookings” and try to talk past things like true net revenue, gross margin, or operating profitability. They will even claim to be “unit profitable” when all they have really done is stopped being gross margin negative. These companies will one day need real earnings and real profits, and if the company does not proactively address this, you should not be giving them millions of dollars in late stage financings.

Perhaps the biggest mistake untapped investors will make is assuming that because there are branded investors already in the company, that the new investment opportunity must be of high quality. They use the reputation of the other investors as a proxy for due diligence. There are multiple problems with this shortcut. First, these investors are “pot committed.” They invested a long time ago, and without your money their investment is “at risk.” Second, as discussed, they are already full and nervous. They didn’t call you before when they built their reputation. Why are they friendly now?

The main message for investors who are just now being approached is the following: it’s not the second inning or even the sixth, it’s the fourteenth inning in a five-hour baseball game. You are not being invited to a special dance, you are being approached because you are the lender of last resort. And because of how we meandered to this place in time, parting with your dollars now would be an extremely risky move. Caveat emptor.

SEC Visits Silicon Valley

A few weeks ago, on March 31, 2016, the Chair of the SEC made a trip to Silicon Valley and gave a speech at an event at Stanford Law School. For those that are participating in Unicorn investing

or for those considering investing in Unicorns, it would be a good idea to read the entirety of her presentation (which can be found [here](#)). Bloomberg's interpretation of her presentation was that "Silicon Valley Needs To Corral Its Unicorns."

Chair White seems quite aware of the issues and pressures that have an ability to distort the Unicorn fundraising process:

Nearly all venture valuations are highly subjective. But, one must wonder whether the publicity and pressure to achieve the unicorn benchmark is analogous to that felt by public companies to meet projections they make to the market with the attendant risk of financial reporting problems.

And then she sends a message to all former and future investors regarding the need for increased due diligence:

As I will discuss, the risk of distortion and inaccuracy is amplified because start-up companies, even quite mature ones, often have far less robust internal controls and governance procedures than most public companies. Vigilance by private companies about the accuracy of their financial results and other disclosures is thus especially critical.

It would be quite unfortunate if the fundraising behavior of the Unicorn herd led to increased SEC involvement and rules with respect to private venture-backed startups. But if those involved believe that "not being public" also means "not being responsible," we will quickly find ourselves in that exact place. We will have deservedly invited more scrutiny.

Mo Money Mo Problems

Perhaps the biggest lapse in judgment for all of those involved is the assumption that if we can just raise "one more round" everything will be fine. Founders have come to believe that more money is better, and the fluidity of the recent funding environment has led many to believe that heroic fundraising is a competitive advantage. Ironically, the exact opposite is true. The very best entrepreneurs are relatively advantaged in times of scarce capital. They can raise money in any environment. Loose capital allows the less qualified to participate in each market. This less

qualified player brings more reckless execution which drags even the best entrepreneur onto an especially sloppy playing field. This threatens returns for all involved.

The reason we are all in this mess is because of the excessive amounts of capital that have poured into the VC-backed startup market. This glut of capital has led to (1) record high burn rates, likely 5-10x those of the 1999 timeframe, (2) most companies operating far, far away from profitability, (3) excessively intense competition driven by access to said capital, (4) delayed or non-existent liquidity for employees and investors, and (5) the aforementioned solicitous fundraising practices. More money will not solve any of these problems — it will only contribute to them. The healthiest thing that could possibly happen is a dramatic increase in the real cost of capital and a return to an appreciation for sound business execution.

Article 9: In Defense of the Deck

July 7, 2015:

My partners and I have noticed an interesting trend over the past few years: an increase in the number of entrepreneurs who prefer to pitch us without the use of a presentation deck. On one hand, this is totally understandable. Many believe that PowerPoint decks are emblematic of the type of bureaucracy disparaged in Dilbert cartoons. Others want to appear “casual” and “conversational” and view the presentation as overly formal. But, going deck-less can be a risky move, and here is why. Investors are not solely evaluating your company’s story. They are also evaluating your ability to convey that story. Efficiently communicating your strategy, business model, and competitive differentiation is required for many critical things you will do as a company.

Can you raise money without a standard slide presentation? Sure. Can you have a great investor meeting that is purely conversation? Absolutely. But it is important to separate the possible from

the optimal. If you are the next Google and everyone knows that you are in the driver's seat, you should certainly do as you please. But if you are one of the thousands and thousands of startups that merely want to have an optimal fund raising process, I highly recommend that you develop a killer presentation.

Here are six reasons why good presentation decks are impactful:

- Importance of Narrative – Last year I was turned on to an amazing book by Jonathan Gottschall titled *The Storytelling Animal*. Gottschall explains how storytelling plays a critical role in each and every human's life. The purpose of a presentation deck is to enable entrepreneurs to effectively tell the story of their business. In many ways it's like a structured scientific proof. You want to walk the listener through an argument as to why this is going to be an amazing business. The goal is to bring the investor to the VC equivalent of Q.E.D. A well-organized deck will gradually transport the listener to the desired conclusion – "this will be a great investment." A rambling free-speech conversation is much less likely to achieve this goal.
- Controlling the Cadence – When you have a single hour with investors, you want to use your time wisely and ensure that you deliver all your key points. The organized deck helps you control the tempo and guarantee that you make all your arguments, sequentially, in the time allotted. Once again, this is like a structured proof. You want your arguments to build towards a conclusion in a systematic way. For this same reason, you should also avoid jumping around in the deck (another common occurrence, especially from entrepreneurs with decks that are too large). It might seem to make sense to jump to another slide to give the investor an immediate answer, but this takes you off your game and out of the flow you intended. If the question is answered later in the deck, tell the listener you will discuss it later and postpone answering the question.
- Numeracy – You will not find a single definition of "entrepreneur" that does not include the word "business." Startups are businesses, and businesses run on numbers. Even if you are just starting your company it's useful to have numeric analysis. It may simply be an expense analysis, or a detailed pricing model, or a TAM (total available market) analysis. If you are post launch, it might involve a viral coefficient discussion or a cohort analysis. If you are post-revenue, it should unquestionably include a financial statement and forward forecast. The one thing your presentation should not be is numberless. It's nearly impossible to convey complex numerical arguments with only words. Charts, graphs, and tables are orders of magnitude more efficient at this task. The best entrepreneurs I have worked with are all intensely focused on the numbers.
- Storytelling Never Ends – As CEO you are the company's number one salesperson and storyteller. You will spend a large portion of your time recruiting. You will raise more money at later stages. You will do business development meetings. You will take meetings with large

customers and prospects. You will need to motivate your employees, and you will (hopefully) be invited to speak at important industry conferences. It is highly unlikely you will do all those things without a structured presentation deck. One-off speeches will have less efficiency and impact. As your company's "storyteller-in-chief," it is important for you to be great at this technique. And it's a skill where practice really impacts performance. So you should start practicing as soon as you possibly can. VCs believe that better storytellers make better entrepreneurs.

- **The Process Itself Is Useful** – The process of crafting the story of your company for the first time can be a cathartic experience. As you and your co-founders start to lay out things like positioning, business model and pricing assumptions, market focus, and key recruiting priorities, you will likely find that not everyone is on the same page. Developing a presentation deck gives you a great forum to nail those things down and to ensure that everyone is working with a common purpose. You will also find that some people are more creative than others at cramming the key parts of a presentation into 20-25 slides (don't do more than 25) and delivering a very persuasive structured story for your company. The first version will not be great. Show it to your internal team, show it to a few outsiders, get feedback, and iterate. It's a process. If your team is new to this, I recommend reading *Presenting To Win: The Art of Telling Your Story* by Jerry Weissman.
- **Be Like Steve** – Take to YouTube and do some searches for the very best entrepreneurial CEOs. Search for 'Jeff Bezos presentation,' or 'Marc Benioff presentation,' or 'Elon Musk presentation' or 'Steve Jobs presentation,' and you will see that they universally use some form of presentation deck to guide their delivery. I have also seen modern day entrepreneurial leaders like Brian Chesky and Travis Kalanick speak at investor conferences, confidently leveraging the power of a deck. If you choose to freestyle without a deck when so many of the greats make it a normal practice, you risk leaving the impression that either (a) you don't have the skills to produce a killer presentation, or (b) you are simply indifferent to why it is important. Neither is a good impression to leave with investors.

There is one situation where meeting without a presentation deck is warranted. If you have never met the potential investor and are unsure you want to share your data with this individual, then you have a very valid reason not to go through a detailed presentation. In this case, I would suggest that you make it clear up front that you view this as a "get-to-know-you" meeting and that you will not be diving deep on the business at this time. This will avoid having mismatched expectations.

If you are lucky enough to grow your company from Series A to Series B to Series C, and on to hundreds of millions of dollars in revenue and a successful IPO, you will need to tell your

company's story in high-stakes situations over and over and over again. Because of this, venture capitalists place huge positive weight on how good you are at this skill. The great storytellers have an unfair competitive advantage. They are going to recruit better, they will be darlings in the press, they are going to raise money more easily and at higher prices, they are going to close amazing business developer partnerships, and they are going to have a strong and cohesive corporate culture. Perhaps more to the point, they are more likely to deliver a positive investment return.

Article 10: ...Be Like Dave

May 4, 2015:

Like many of those that had the distinct pleasure of knowing Dave "Goldie" Goldberg, I was shocked and in disbelief when I received the tragic news this past Saturday. I first spent time with Dave when he joined us as an EIR at Benchmark back in 2007, and over the years, we had become good friends. I clearly had become quite accustomed to seeing Dave, because when I realized I would not have a chance to hang with him again it hit me like a ton of bricks. Like so many others, I really, really miss him.

For those of you that do not know him as well, you have likely read the numerous articles highlighting what an amazing guy he was. I was particularly moved by Kara Swisher's "Does Silicon Valley Have a Soul? It Did — as Well as a Heart — in Dave Goldberg" and Adam Lashinsky's "Remembering Dave Goldberg." And there were countless others, that all portray Dave as a special human being that uniquely stood out among so many other remarkable people. An outsider might find these comments overly grandiose, or consider them to be a bit of

retroactive embellishment. That would be an error. The stories are completely accurate — Dave was really this special.

For me, it all starts with his intelligence. Dave was wicked smart, and what is really cool is that he could care less whether you knew that or not. Over the years, I have had detailed conversations with David about business, politics, sports, music, poker, and many other subjects. He could go deep in so many areas. He was super-even keeled in most of these discussions, not allowing emotion to distract from his perspective. He was also a fiercely independent thinker, and frequently held opinions that cut against the norm. In each case he would back his argument with data and in most cases would convince others to change their mind. Because of this, I loved chatting with him, particularly about business and Silicon Valley. If we were ever on different pages, I wanted to sort it out right then and there. I never wanted to be executing a plan that cut against his better judgment.

The other thing that stands out for me is that Dave was insanely funny. At first, I just thought he was kind-of funny, but the more time I was able to spend with him, the more I realized this guy was really f***ing funny. One of the funniest guys I have ever known. This was not jocular humor, but quite the opposite; witty creative humor. His intelligence soaked into his jokes the way syrup penetrates a pancake. And his humor was augmented by one of the most spectacular laughs I have ever heard. He could probably get me going with just that smile and that laugh, but the combination of his humor and that laugh was too much. I do not know how many people were able to see this side of him, but if you did you were quite fortunate.

As others have highlighted, he also had a huge heart and a big tent. He had what seemed like inexhaustible time, patience, and advice for an amazingly large number of people. It is quite remarkable how many people in this ecosystem he has touched, and how many of them are positively moved by the experience. Countless people sought his counsel, and he was always generous with his time. Notably, he was an impeccable listener, a tremendously rare skill that eludes many of the brighter stars in our industry (as well as myself). I always felt like Dave understood and respected me, and I would bet there are many hundreds of others that feel the exact same way.

Most importantly, Dave showed us all exactly what being a great human being looks like. In a post this weekend on Facebook, Jason Calacanis succinctly noted “He was a better friend, a better husband, a better father, a better leader, and a better person than all of us — and we knew that.” When I read these words, I thought “Precisely! That was Dave Goldberg!” I had been thinking the exact same thing over the weekend. Dave was better on all these dimensions and

we did all know it. But it was never frustrating because Dave's greatness was not competitive or threatening, it was gentle, inspirational, and egoless. He was the quintessential standard for the notion of leading by example.

This was Dave's greatest gift to me — I now know where true north is. I doubt I will ever achieve his lofty aspirational standard on so many of his unique characteristics. But I know which direction to head. I have a target. And as I circumvent my remaining days on this planet, I have no doubt that I will reflect on his high bar, and think about what I can do to be more like Dave.

I am so grateful to have known him.

Article 11: Investors Beware: Today's \$100M+ Late-stage Private Rounds Are Very Different from an IPO

February 25, 2015:

[An edited version of the following blog post originally appeared in a modified form in the pages of the weekend edition of the Financial Times last Saturday.]

Every successful technology company raises money throughout its lifecycle, perhaps starting with a seed investment and progressing through Series A, B, C, late-stage investments, and, for the most successful companies, an IPO. Historically, different financial institutions specialized in different stages, because the assessment of risk and opportunity was considered unique at each stage — for example, a seed investor was unlikely to do late-stage financing, and vice versa.

Over the last few years, the late-stage (pre-IPO) market has become the most competitive, the most crowded, and the frothiest of these financing stages. Investors from all walks of life have decided that “late stage private” is where they want to play. As a result, a “late-stage” financing is no longer reserved for high-revenue, pre-profitability companies getting ready for an IPO; it is simply any large round of financing done at a high price. An unprecedented 80 private companies have raised financings at valuations over \$1B in the last few years. These large, high-priced private financings are the defining characteristic of this particular technology cycle.

Some have argued that each of these companies would already be public in a prior era. Buying into such a notion is dangerous – dangerous for the entrepreneur and dangerous for the investor. Actually, very few of these companies are at a point where they could or should consider being public. Lost in this conversation are the dramatic differences between a high priced private round and an IPO. Understanding these differences is crucial to understanding the true risks in this large private-round phenomenon.

Ironically, 2014 was a record year for IPOs, so the suggestion that these “extra” companies were supposed to be public does not really make sense – the companies that were supposed to go public went public. The size of these companies’ private valuations may be similar to a traditional public company valuation, but that is where the similarities begin and end.

The first critical difference is that these late-stage private companies have not endured the immense scrutiny that is a part of every IPO process. IPOs are remarkably intense, and represent the most thorough inspection that a company will endure in its lifetime. This is why companies and their board of directors agonize over whether or not they are “ready” to go public. Auditors, bankers, three different sets of lawyers, and let us not forget the S.E.C., spend months and months making sure that every single number is correct, important risks are identified, the accounting is all buttoned up, and the proper controls are in place. Conversely, these late stage private rounds have no such pageantry or process. There is typically just a single PowerPoint deck presentation.

In the absence of this auditor deep-dive, investors are assuming that the numbers they see in the fund-raising deck are the same as those they might see in an S-1. However, many of these private companies will wait up to twelve months after the end of a fiscal year to complete their audit. And even then, the auditors do not roll up their sleeves in nearly the same way they do during an IPO process, where they know the SEC will review their work in excruciating detail. As a simple example, many investors and entrepreneurs do not realize that coupon or discount use is a contra-revenue event when it comes to revenue recognition. You must subtract it from your

top-line revenue. Yet, for many “promising” private consumer companies this marketing tactic is widespread, and many improperly account for this in their financial presentations.

Without the guidance of a banker, companies may also mischaracterize their financial positioning relative to industry standard or norm. As another example, consider that most public marketplace companies, such as ebay or GrubHub, report revenues on a “net” basis rather than gross (approximately 80-90% of revenues go to supplier partners, so this is the proper conservative representation). Despite this, startups commonly highlight “gross revenue” even when 80+% goes out the door for every single transaction. A good banker in a normal IPO process would get this straightened out. You should not pay a net revenue multiple for a gross revenue disclosure.

The very act of dumping hundreds of millions of dollars into an immature private company can also have perverse effects on a company’s operating discipline. The only way to use the proceeds of such a large round is to take on massive operating losses. Historically, as a company neared an IPO level of revenues (say \$50-\$100mm), investors would expect convergence toward profitability. As these late-stage private companies digest these large fund raises, they are pushing profitability further and further into the future, as well as the proof that their business model actually works.

Consider the case of Fab.com. In a February 6th article in Business Insider, Allyson Shontell discovered that a mere four months after adding \$150 million to a total of \$330 million in invested capital, the founder and CEO disclosed to its employees that “we have spent \$200 million and we have not proven out our business model.” Investors must realize that it is materially easier to take a company to substantial revenue if you generously relax the constraint of profitability. Customers will love you for giving away more value than you charge, and therefore, focusing exclusively on revenue success is a sure-fire path to risk exposure.

In order to overcome such risks, the onus is on the investor to dive deep and unpack the actual unit economics in the underlying business. This requires analyzing the “true” contribution margin of the business; not simply looking at gross or net revenue and the proper contra-revenue treatment, and not even looking just at gross margin as defined by the company. Many companies embed costs that are truly variable (for instance customer support, marketing, credit card processing) below the gross margin line. If you want to know if the business model truly hunts, you must pay careful attention. Otherwise, you may have simply found a company that is simply selling dollars for \$0.85.

Lastly, there are structural issues in private company investing that are simply absent when you invest in public companies. Most private company financings involve the use of preferred stock with liquidation preferences. These liquidation preferences give the investor a debt-like downside protection. When you have many of these preferred rounds on top of one another, the future payouts at different valuations can be wildly divergent depending on whether the company clears certain preference hurdles. As these preferences pile up, the new incremental investor begins to worry that the “percentage” of the company they are buying may not actually equate to their eventual payout. In some cases, these incremental investors require special terms to protect their interest, but ironically that makes this cap chart even more complicated and unfriendly to new investors.

Eventually, the only way to escape this capitalization chart calcification is to actually go public. In going public, all preferred shares are converted to common shares, and the pile of liquidation preferences goes away. This was the recent case with the Box.com IPO. It is obviously quite ironic that the very event that many of these entrepreneurs were hoping to avoid (the IPO) becomes their only saving grace. Yet, because they did not focus on the normal steps that lead up to an IPO, they are ill prepared for this singular redemptive path.

All of this suggests that we are not in a valuation bubble, as the mainstream media seems to think. We are in a risk bubble. Companies are taking on huge burn rates to justify spending the capital they are raising in these enormous financings, putting their long-term viability in jeopardy. Late-stage investors, desperately afraid of missing out on acquiring shareholding positions in possible “unicorn” companies, have essentially abandoned their traditional risk analysis. Traditional early-stage investors, institutional public investors, and anyone with extra millions are rushing in to the high-stakes, late-stage game.

We might all do well to heed the advice of Warren Buffet who said, “there is a fool in every market and if you don’t know who it is, it is probably you.”

Article 12: Uber's New BHAG: UberPool

January 30, 2015:

"Can you take me Higher?

To a place where blind men see

Can you take me Higher?

To a place with golden streets"

— Creed, Higher

In their seminal 1994 book *Built to Last: Successful Habits of Visionary Companies*, Jim Collins and Jerry Poras coined the term BHAG (pronounced BEE-hag) — an acronym that stands for "Big Hairy Audacious Goal." Collins and Porras suggest that the very best companies set an audacious, very long-term goal that shines a light towards "an envisioned future." BHAGs serve as a rallying cry for the company culture, an ambitious target for the future, and a focusing tool for corporate decision-making. As we turn the page to 2015, Uber has a new BHAG, and it's name is UberPool.

A Quick Look Back

Before we dive deep on UberPool and explain why this program is worthy of being the company's BHAG, let us first look back at some of the key strategic decisions in the company's history. If you understand the journey that the company has taken up until now, the more clear it will be why UberPool is the obvious next step.

Uber's founding tagline was "everyone's private driver." Today, the company's mission statement is "transportation as reliable as running water, everywhere for everyone." The common component of both the original tagline and the new mission statement is the word

“everyone.” In order for Uber to serve everyone it is critical that Uber not only achieve price leadership, but that the company continually search for new ways to deliver transportation at lower and lower price points. This goal – to deliver the highest possible value to the customer – is a key catalyst for UberPool.

Delivering More Value to Consumers Through Lower Prices

Of course, Uber is not the first company to choose a corporate strategy of price leadership. Sam Walton and Jeff Bezos both espoused the benefits of rewarding customers with the highest possible value by delivering to them the lowest possible prices. What is really interesting is that both make the exact same non-obvious argument – that low prices are the very best way to maximize cash flow, and therefore equity value.

“... But this is really the essence of discounting: by cutting your price, you can boost your sales to a point where you earn far more at the cheaper retail price than you would have by selling the item at the higher price. In retailer language, you can lower your markup but earn more because of the increased volume.”

– Sam Walton, founder of Wal-Mart

“We’ve done price elasticity studies, and the answer is always that we should raise prices. We don’t do that, because we believe — and we have to take this as an article of faith — that by keeping our prices very, very low, we earn trust with customers over time, and that that actually does maximize free cash flow over the long term.”

– Jeff Bezos, CEO of Amazon

In a separate comment, Bezos was more direct in his commitment to delivering the lowest possible price point to Amazon’s customers, noting “There are two kinds of companies, those that work to try to charge more and those that work to charge less. We will be the second.” Like Wal-Mart and Amazon, this is Uber’s philosophy as well.

Learning From UberX Price Cuts

UberPool is actually Uber's second major initiative targeted at lowering consumer prices. When Uber launched its low-cost UberX offering in the summer of 2012, the company quickly realized that the demand for its transportation services is HIGHLY elastic. As the company achieved lower and lower per-ride price points, the demand for rides increased dramatically. A lower price point delivered a much better value proposition to the consumer, yet still remained a great business decision due to the remarkable increase in demand.

Armed with this new data, Uber leaned on its legendary "math department" to help drive prices even lower. This is the name that founder and CEO Travis Kalanick has given to his team of scientists and hardcore mathematicians who own the back-end routing algorithms for Uber. Uber's technology goes well beyond its client side smartphone applications; there is also a server-side intelligence system that provides demand prediction, congestion prediction, supply matching, supply positioning, smart dispatch, and dynamic pricing. These are the systems that help balance the more than one million rides per day that are matched on the Uber system.

The "math department" and management realized that if they could increase driver utilization (the number of rides per hour for a driver), then they could lower the price for the end user while maintaining earnings quality for the driver. Higher efficiencies through higher volumes and better algorithms could help deliver the desired lower price points and better cash flows. Interestingly, these lower price points would lead to more demand, even more liquidity, an even higher utilization, and then another incremental price decrease. Pretty quickly UberX passed UberBlack to become the highest volume service on the Uber platform.

Getting Ahead of the Game

Uber repeated this circular pattern so many times in so many different cities that some cities witnessed more than six price cuts in a brief two-year period. While these highly successful initiatives have led to prices that can be as much as 40-50% below that of a taxi, this sheer number of price changes can be confusing to the ecosystem. This January, the company took an even bolder move announcing simultaneous cuts in 48 cities, and backing these up with income guarantees for drivers. How could they make such an aggressive move? Basically, the company's immense historical database of supply and demand curves at different price points makes it easy to predict how these markets will evolve. This allows the company to "forward invest" capital to help these markets achieve lower consumer prices even faster. You might call this "betting on the math department."

What is UberPool?

Which brings us to UberPool. The concept behind UberPool is rather straightforward (see graph below). Basically a single driver picks up not one, but two passengers who are headed in the same direction. She then drops off one passenger, and perhaps picks up a third before the first is dropped off. In this scenario, customers are literally “ride-sharing.” If you can manage the system such that each driver averages more than a single rider per trip, you can achieve an even HIGHER level of efficiency, and deliver even lower prices to the consumer. As you can see, this is the natural evolution after UberX and UberX price optimization.

This program is already up and running in San Francisco, New York, and Paris, and the company is already seeing habitual behavior with many riders using UberPool on the same route, five days a week.

The idea of UberPool may seem simple, but the implementation is unquestionably not. If you previously studied combinatorial optimization in theoretical computer science or operations research you may be familiar with the “traveling salesman problem,” or TSP. TSP problems require computationally intensive integer linear programming techniques to find exact solutions. Since there are too many permutations for these problems to be accurately solved, sophisticated heuristic approximation methods have to be developed. It turns out that writing the algorithms for UberPool is quite a bit more complex than a simple TSP, because (1) you have many more than one “salesman,” (2) the destinations are dynamic, (3) new “salesmen” are constantly entering and leaving the system, (4) vehicles have limited seating capacity, and (5) new requests for rides are continually streaming in. This is not just closer to the dynamic mTSP (multiple TSP) problem, which falls under the intimidating classification of “NP-hard,” but moreso under the broader and even more formidable VRP (Vehicle Routing Problem). The math department has plenty to do.

So what makes UberPool worthy of being the defining initiative at Uber?

- Magnifying the Positive Impact on Cities. UberPool will allow Uber to achieve radically lower price points, magnifying the already positive impact Uber is having in its partner cities. Uber is

reducing drinking and driving, reducing the need for parking, and reducing congestion on our roads. With UberPool the company has the ability to further reduce traffic and congestion, potentially lowering pollution, and providing a real economic alternative to car ownership for the largest number of possible customers. Most cars sit idle 95% of the time. Does that really make economic or environmental sense?

- UberPool is Technically Difficult. Nailing UberPool is simultaneously “hairy” and “audacious.” UberPool is a technically challenging pursuit that will require the highest level of execution and innovation from the engineering team at Uber. Fittingly, these are the exact types of pursuits on which Silicon Valley companies thrive. Watch the video at the end of this post from the DLD15 conference in Europe (starting at 3:30 into the video), and you will see Travis Kalanick layout a vision for “the Perpetual Ride” whereby a driver would always have a customer in the car – an even more audacious vision.
- UberPool leverages Uber’s leadership position. This is really key. To make a concept like UberPool work you need a really high amount of base liquidity in the system – tons of cars and tons of riders. Otherwise, you will not have enough people moving in the same direction at the same time. Obviously, with its leadership position in the market, Uber is in the pole position to turn this concept into a reality. UberPool builds on the incredible scale that the company has already achieved, and can leverage the existing base of millions of customers that have already downloaded the application. With its recent multi-billion dollar fundraising, the company has stated that a large proportion of the funds are earmarked specifically to make UberPool successful. As with UberX price cuts, the company can use its substantial capital resources to forward invest in UberPool, increasing the likelihood of success. Betting on the math department again!
- UberPool is a platform for the future. Many people like to speculate as to whether or not Uber will eventually move beyond transporting people and into broader logistics. The technology and algorithms behind UberPool will lay the groundwork for the capability to do multiple stops with multiple cargos, increasing the future optionality for the Uber platform. So UberPool is a fundamental enabling technology for Uber in addition to providing lower price points and increased efficiency.

It is hard to imagine a world where Uber riders do not want faster pick up times and lower price points. Uber is 100% committed to leveraging its scale and volume to deliver ever lower prices for consumers. The company spent most of 2014 raising optimization and utilization, such that UberX could be as affordable as possible for the largest constituency possible. UberPool is the natural evolution of this journey, and obvious BHAG candidate for 2015 and beyond. In closing I would point you towards another Jeff Bezos quote that does a spectacular job of highlighting the motivations behind Uber’s obsessive push forward on UberPool.

“I very frequently get the question: ‘What’s going to change in the next 10 years?’ And that is a very interesting question; it’s a very common one. I almost never get the question: ‘What’s not going to change in the next 10 years?’ And I submit to you that that second question is actually the more important of the two — because you can build a business strategy around the things that are stable in time. ... [I]n our retail business, we know that customers want low prices, and I know that’s going to be true 10 years from now. They want fast delivery; they want vast selection. It’s impossible to imagine a future 10 years from now where a customer comes up and says, ‘Jeff I love Amazon; I just wish the prices were a little higher,’ [or] ‘I love Amazon; I just wish you’d deliver a little more slowly.’ Impossible. And so the effort we put into those things, spinning those things up, we know the energy we put into it today will still be paying off dividends for our customers 10 years from now. When you have something that you know is true, even over the long term, you can afford to put a lot of energy into it.”

Article 13: Meet Benchmark’s New Partner: Eric Vishria

July 23, 2014:

Today Benchmark announced that Eric Vishria has joined us as a General Partner. Eric is one of the up-and-coming stars in the technology industry, and we are very excited he is becoming our partner. In Benchmark’s team dynamic, character and attitude really matter. Eric’s keen intellect, his experience as an entrepreneur and CEO, his depth in infrastructure and enterprise software, and his infectious optimism about technology make him an ideal Benchmark partner.

Eric demonstrated a unique passion for startups and entrepreneurship from an early age. After graduating from Stanford in mathematical and computer science when he was just 19, Eric joined the newly-formed enterprise software company Loudcloud (which became Opsware in 2002). Eric rose quickly, and by the age of 26 he became Opsware’s Vice President of Marketing, remaining in that role through the company’s acquisition by HP in 2007. He stayed briefly at HP as a vice president.

In 2008 Eric co-founded his own startup, RockMelt, and ran the company as CEO until its acquisition by Yahoo last year. We followed Eric's adventure as founder and CEO at RockMelt as he worked through the roller coaster of a startup. While RockMelt may not have achieved all of its intended objectives, it gave us a window into Eric's true character. We admired his courage, relentless optimism and sense of commitment to his mission. He never gave up, ultimately finding a home for the company and a fair outcome for his employees and investors. Our friend and mentor the great Bill Campbell knew Eric through this lens and was a huge advocate for his candidacy here at Benchmark.

One of Benchmark's core principles is the power of a fully equal partnership. Every one of our general partners, regardless of track record or seniority, has equal ownership in the firm and an equal stake in its future. We believe that this promotes teamwork, minimizes politics, and most importantly allows us to deliver the power of the entire team to the entrepreneurs we serve. It also allows us to recruit the best possible partner candidates, like Eric Vishria, early in their careers and allow them to dedicate many years to refining their craft as venture investors and board members.

We believe that successful early-stage venture investing is just that: a craft. It is a service-oriented business, not an industrial process that can be scaled. It requires investors to work diligently on the boards of startups, providing advice and counsel and supporting the visions and dreams of entrepreneurs. Eric expects to spend the majority of time investing, among other things, in enterprise and infrastructure companies. As Eric said to us, he is addicted to the energy of working on ambitious ideas with amazing people, and can't wait to get started.

Any success that Benchmark has had over the years has been the direct result of partners working together as a team to support entrepreneurs at the highest level. With Eric Vishria as a partner, we have an exciting opportunity to invest in new companies and an extraordinary new partner to help our current portfolio companies succeed. We believe that all of our companies, not just the new ones Eric invests in, will benefit from his presence on our team. We could not be happier to have him on board.

— Bill Gurley, Matt Cohler, Mitch Lasky & Peter Fenton

Article 14: How to Miss By a Mile: An Alternative Look at Uber's Potential Market Size

July 11, 2014:

On June 18, Aswath Damodaran, a finance professor at NYU's Stern School of Business, published an article on FiveThirtyEight titled "Uber Isn't Worth \$17 Billion." This post was a shortened version of a more detailed post he had written for his own blog titled "A Disruptive Cab Ride to Riches: The Uber Payoff." Using a combination of market data, math, and financial analysis, Professor Damodaran concluded that his best estimate of the value of Uber is \$5.9 billion, far short of the value recently determined by the market. This estimate of value was tied to certain "assumptions" with respect to TAM (total available market) as well as Uber's market share within that TAM. And as you would expect, his answer is critically dependent on these two assumptions.

As the Series A investor and board member at Uber, I was quite intrigued when I heard that there was a FiveThirtyEight article specifically focused on the company. I have always loved the deep, structured analysis that Bill Simmons and Grantland bring to sports, and when Nate Silver also joined ESPN, I was looking forward to the same thoughtful analysis applied to a much broader range of subjects. Deep research and quantitative frameworks are sorely lacking in today's short attention span news approach. I could hardly wait to dive in and see the approach.

The funny thing about "hard numbers" is that they can give a false sense of security. Young math students are warned about the critical difference between precision and accuracy. Financial models, especially valuation models, are interesting in that they can be particularly precise. A discounted cash flow model can lead to a result with two numbers right of the decimal for price-per-share. But what is the true accuracy of most of these financial models? While it may seem like a tough question to answer, I would argue that most practitioners of valuation analysis would state "not very high." It is simply not an accurate science (the way physics is), and seemingly innocuous assumptions can have a major impact on the output. As a result, most

models are used as a rough guide to see if you are “in the ball park,” or to see if a particular stock is either wildly under-valued or over-valued.

So here is the objective of this post. It is not my aim to specifically convince anyone that Uber is worth any specific valuation. What Professor Damodaran thinks, or what anyone who is not a buyer or seller of stocks thinks, is fairly immaterial. I am also not out to prove him wrong. I am much more interested in the subject of critical reasoning and predictions, and how certain assumptions can lead to gravely different outcomes. As such, my goal is to offer a plausible argument that the core assumptions used in Damodaran’s analysis may be off by a factor of 25 times, perhaps even more. And I hope the analysis is judged on whether the arguments I make are reasonable and feasible.

Damodaran uses two primary assumptions that drive the core of his analysis. The first is TAM, and the second is Uber’s market share within that market. For the market size, he states, “For my base case valuation, I’m going to assume that the primary market Uber is targeting is the global taxi and car-service market.” He then goes on to calculate a global estimate for the historical taxi and limousine market. The number he uses for this TAM estimate is \$100 billion. He then guesses at a market share limit for Uber – basically a maximum in terms of market share the company could potentially achieve. For this he settles on 10%. The rest of his model is rather straightforward and typical. In my view, there is a critical error in both of these two core assumptions.

Total Available Market Analysis

Let’s first dive into the TAM assumption. In choosing to use the historical size of the taxi and limousine market, Damodaran is making an implicit assumption that the future will look quite like the past. In other words, the arrival of a product or service like Uber will have zero impact on the overall market size of the car-for-hire transportation market. There are multiple reasons why this is a flawed assumption. When you materially improve an offering, and create new features, functions, experiences, price points, and even enable new use cases, you can materially expand the market in the process. The past can be a poor guide for the future if the future offering is materially different than the past. Consider the following example from 34 years ago that included the exact same type of prediction error:

“In 1980, McKinsey & Company was commissioned by AT&T (whose Bell Labs had invented cellular telephony) to forecast cell phone penetration in the U.S. by 2000. The consultant’s

prediction, 900,000 subscribers, was less than 1% of the actual figure, 109 Million. Based on this legendary mistake, AT&T decided there was not much future to these toys. A decade later, to rejoin the cellular market, AT&T had to acquire McCaw Cellular for \$12.6 Billion. By 2011, the number of subscribers worldwide had surpassed 5 Billion and cellular communication had become an unprecedented technological revolution.” (article via @trenggriffin)

The tweet included here from Aaron Levie highlights the key point we are making – Uber’s potential market is far different from the previous car-for-hire market, precisely because the numerous improvements with respect to the traditional model lead to a greatly enhanced total available market. We will now walk through those key differences, dive deep on the issue of price, and then consider a range of expanded use cases for Uber, including one that changes the game entirely.

A Radically Different Experience

- **Pick-up times.** In cities where Uber has high liquidity, you have average pick-up times of less than five minutes. For most of America, prior to Uber it was impossible to predict how long it would take for a taxi to show up. You also didn’t have visibility into its current location; so having confidence about the taxi’s arrival time was nearly impossible. As Uber becomes more established in a market, pick-up times continue to fall, and the product continues to improve.
- **Coverage density.** As Uber evolves in a city, the geographic area they serve grows and grows. Uber initially worked well primarily within the San Francisco city limits. It now has high liquidity from South San Jose to Napa. This enlarged coverage area not only increases the number of potential customers, but it also increases the potential use-cases. Uber is already achieving liquidity in geographic regions where consumers rarely order taxis, which is explicitly market expanding.
- **Payment.** With Uber you never need cash to affect a transaction. The service relies solely on payment enabled through a smartphone application. This makes it much easier to use on the spur of the moment. It also removes a time consuming and unnecessary step from the previous process.
- **Civility.** The dual-rating system in Uber (customers rate drivers and drivers rate customers) leads to a much more civil rider/driver experience. This is well documented and understood. With taxis, users worry about being taken advantage of, and many drivers spend all day with riders accusing them of such. This can make for an uncomfortable experience on both sides.
- **Trust and safety.** Most Uber riders believe they are safer in an Uber than in a traditional taxi. This sentiment is easy to understand. Because there is a record of every ride, every rider, and

every driver, you end up with a system that is much more accountable than the prior taxi market (it also makes it super easy to recover lost items). The rating system also ensures that poor drivers are removed from the system. Many of the women I know have explicitly stated that they feel dramatically safer in an Uber versus a taxi.

Different Economics

I find it surprising that a finance professor like Damodaran did not consider the impact of price on demand. As Uber becomes more and more liquid, its drivers enjoy higher and higher utilization. Utilization is a measure of the percentage of time drivers are working versus waiting. Think about rides per hour as a similar measurement. As utilization rises, Uber can lower price, and the drivers still make the same amount. Uber does in fact choose to do this, and has done it many times. Just last week, the following email went out to all users in Los Angeles (see graphic below). If you look at the bottom of the graphic, you will see that Uber is now priced dramatically below a taxi. The relationship between price and demand is well understood, and while Damodaran may not have the numbers he would need to calculate Uber's specific price elasticity, let me assure you that it is high. This only makes sense – lowering the price of car-for-hire transportation will increase the usage.

Most taxi services in the majority of U.S. cities have a fixed supply through some type of medallion system. In NYC today there are 13,605 licensed taxis. In 1937, when the modern system was created, there were 11,787. Additionally, prices only go up, they never go down. How could one possibly know if this is the appropriate supply of taxis and an optimal price point? Doesn't the high-value of medallions (over \$1mm in some markets) implicitly prove that the market is undersupplied and that prices are above true market clearing prices? What if someone could run a more convenient, safer service at a much lower price and with much higher availability? You would end up with dramatically more rides – and that is exactly what is happening.

New Use Cases

- Use in less urban areas. Because of the magical ordering system and the ability to efficiently organize a distributed set of drivers, Uber can operate effectively in markets where it simply didn't make sense to have a dense supply of taxis. If you live in a suburban community, there is little chance you could walk out your door and hail a cab. And if you call one of the phones, it is a very spotty proposition. Today, Uber already works dramatically well in many suburban areas outside of San Francisco with pick up times in less than 10 minutes. This creates new use cases versus a historical model.
- Rental car alternative. When I used to travel to Los Angeles and Seattle on business I would use a rental car. Today I only Uber. It is materially better. I do not have to wait in lines, and I avoid the needless bus rides on each end of the trip. I don't have to map routes. I don't have to find parking. I don't have to pay for parking. The rental car market is \$27B in the U.S. The global market would obviously be much larger. And you are also eating into the parking market here.
- A couple's night out. The liquidity is so high in the San Jose Peninsula that a couple living in Menlo Park will Uber to a dinner in Palo Alto (perhaps 3 miles away) to avoid the risk of driving after having a glass of wine. This was not a use case that existed for taxis historically. It's also great for getting from San Francisco back home to the suburbs after a night on the town. This was a historic black car market, but the ease and convenience greatly increases the number of times it is now done, by a multiple.
- Transporting kids. An article in the New York Times titled "Mom's Van Is Called Uber" suggests that parents are using Uber to send their kids to different events. I don't think very many people put young kids into taxis (due to trust), but they are quite comfortable doing this in an Uber. It is also common for parents with teenagers to encourage taking Uber when they go out, to reduce the risk that they end up in a car with someone who may have been drinking.
- Transporting older parents. I know many people who are looking after older parents, who have insisted their parents put Uber on their phones to have an alternative to driving at night or in traffic. Convincing them to use Uber is much easier a task than suggesting they call a taxi due to both convenience, ease of use, and social acceptance.
- Supplement for mass transit. If you are someone who primarily uses mass transit, you are likely to consider UberX (low price offering) for exceptions such as when you just miss a train, or when you might be late for a meeting. Lower price points than a taxi and more reliability make this possible. A study from the city of San Francisco argues that more taxis will result in more mass transit use, as it makes it easier not to need a car.

The Game Changer: Uber as a Car-Ownership Alternative

Damodaran likely never considered this possibility: Could Uber reach a point in terms of price and convenience that it becomes a preferable alternative to owning a car? Farhad Manjoo wrote a compelling piece for the New York Times (“With Uber, Less Reason to Own a Car”) making just this argument. And Gregory Ferenstein at VentureBeat dove a little deeper in terms of the math of how this would work. According to Ferenstein, “AAA estimates that the average cost of car ownership per year is about \$9,000.” If you take that number and divide it by your average Uber fare you can calculate number of rides you could afford a year, and compare that with what you need. For many, the math is already working. I know numerous people who have already given up their cars, and several people have anecdotally sent photos to Uber of the check they received for selling their car.

Some interesting demographic trends are also underway that favor Uber’s opportunity in this market. First, there is the continuing trend of urbanization in America. But more importantly, America’s youth have fallen out of love with the notion of owning a car. Kids are no longer rushing to obtain their license on the day they turn 16, and according to Edmunds, car ownership among 18-34 year olds has fallen a full 30% in recent years. Here are just a few of many articles published over the past two years on this topic:

- Why Don’t Young Americans Buy Cars? The Atlantic (3/25/12)
- Young Americans ditch the car CNN (9/17/12)
- The End of Car Culture The NYTimes Sunday Review (6/23/13)
- Young Americans Are Abandoning Car Ownership and Driving The Daily Beast (7/5/13)
- The Auto Industry’s Hard Sell to Convince Your Kids They Need a Car Time (1/24/14)
- Millennials Don’t Care About Owning Cars, And Car Makers Can’t Figure Out Why Fast Company (3/26/14)

There are two other points worth considering with respect to Uber as a car ownership alternative. First, the consumer is most likely to replace their “extra” car first. You may see an urban family going from two cars to one. Or perhaps a suburban family will reduce its fleet from four to three or three to two. The fixed costs of this marginal car are very high (DMV registration, insurance, depreciation), yet the usage of that car is much lower. The second point worth nothing is that for certain people the benefits of not driving are so high that they will switch to Uber before the economic case is specifically advantageous, choosing to pay a premium for the convenience. This would include people that consume alcohol after work and do not want to risk

driving, people that are frequent users of smartphones when they commute (now considered a bigger risk than DUI), and people that loathe spending time parking their vehicle.

How big is the car-ownership-alternative market?

- According to this NADA report, total dealership sales (including service) is about \$730 billion annually. However, that really isn't what car replacement is all about. Car replacement includes all the costs of owning a car – not just the car purchase, but also insurance, DMV registration, parking, gasoline, repairs, oil changes, etc.
- The number of cars in circulation in the world is just over 1 billion, with 25% of those in the United States. AAA estimates that the average annual cost of owning a car is \$9,000. While this number may seem high, if you read the report you will see that the key drivers: the rising costs of gasoline and raw materials and insurance alone averages \$1000/year. It is hard to imagine a scenario where these costs fall (most are rising), and many of these costs are now consistent on a global basis. But we will conservatively cut that number by 33% to \$6,000.
- One billion global cars multiplied by a \$6,000 annual cost of ownership results in a \$6 trillion market for annual car ownership costs. How much of that market Uber can take is an interesting question to ponder (which we will), but the fact that 25% of that market is in the U.S. is a huge advantage for the company.

Driving home the point – Uber's potential market is far different from the previous for-hire market precisely because the numerous improvements over the traditional model lead to a greatly enhanced TAM.

Why only 10%?

Now let's turn our attention to the 10% maximum market share number that Damodaran chose for his analysis. He argues that regulatory restrictions and competition will limit Uber's market share. He also makes the point that there are no advantages that cross from city-to-city, a point we will dispute later.

Eighteen years ago, Brian Arthur published a seminal economic paper in the Harvard Business Review titled, "Increasing Returns and the Two Worlds of Business." If you have not read it, I

highly recommend that you do. His key point is that certain technology businesses, rather than being exposed to diminishing marginal returns like historical industrial businesses, are actually subject to a phenomenon called known as “increasing returns.” Gaining market share puts them in a better position to gain more market share. Increasing returns are particularly powerful when a network effect is present. According to Wikipedia, a network effect is present when “... the value of a product or service is dependent on the number of others using it.” In other words, the more people that use the product or service, the more valuable it is to each and every user.

So the right questions are, “is Uber exposed to some form of network effect where the marginal user sees higher utility precisely because of the number of previous customers that have chosen to use it, and would that lead to a market share well beyond the 10% postulated by Damodaran?”

There are three drivers of a network effect in the Uber model:

- Pick-up times. As Uber expands in a market, and as demand and supply both grow, pickup times fall. Residents of San Francisco have seen this play out over many years. Shorter pickup times mean more reliability and more potential use cases. The more people that use Uber, the shorter the pick up times in each region.
- Coverage Density. As Uber grows in a city, the outer geographic range of supplier liquidity increases and increases. Once again, Uber started in San Francisco proper. Today there is coverage from South San Jose all the way up to Napa. The more people that use Uber, the greater the coverage.
- Utilization. As Uber grows in any given city, utilization increases. Basically, the time that a driver has a paying ride per hour is constantly rising. This is simply a math problem – more demand and more supply make the economical traveling-salesman type problem easier to solve. Uber then uses the increased utilization to lower rates – which results in lower prices which once again leads to more use cases. The more people that use Uber, the lower the overall price will be for the consumer.

David Sacks of Yammer and Paypal, recently tweeted a napkin-sketch captioned, “Uber’s virtuous cycle. Geographic density is the new network effect” that succinctly highlights the points just mentioned.

Uber also enjoys economies of scale that span across city borders. Many people who travel have experienced Uber for the first time in another city. When the company enters a new city they have the stored data for users who have opened the application in that area to see if coverage is available. These “opens” represent eager unfulfilled customers. They also have a list of residents who have already used the application in another city and have a registered credit card on file. This makes launching and marketing in each additional city increasingly easier.

There are other economies of scale that come with being the market leader. When you consider that Uber is partnering with smartphone vendors, credit card companies, car manufacturing companies, leasing companies, and insurance companies, you can imagine that being larger is a distinct advantage. As an example, on May 28th Uber announced a partnership with AT&T to embed Uber on all its Android phones. Then on June 9th, they announced a partnership where American Express users will get 2X loyalty points on all Uber rides. Additionally, Membership Rewards users can use those points to pay for rides directly in the application. It is also easy to imagine a future where Uber drivers receive discounts on things like leases, gasoline and car repair. Scale clearly matters for these types of opportunities.

Undiscovered Clues

There are clues to be found, if you know where to look. In this video recorded in October of 2012 (about 20 months ago), Uber’s CEO, Travis Kalanick, notes that when Uber launched its services in 2010 there were about 600 total black cars in San Francisco. At the time of this video, Travis notes that more than 600 black cars were active on Uber and the company was still growing at 20% month over month (at the time, UberX had just launched, so Uber’s fleet was all black cars). So 20 months ago in San Francisco, Uber was already at 100% of Damodaran’s historic market, and growth was still tilting up and to the right. The only way this is possible is if the market is expanding at rapid pace, beyond the historical limit.

More recently in a WSJ interview dated June 6, 2014, Travis notes “When we got this company started (in 2009) we were pitching the seed round and we pulled a bunch of research from this report that showed that San Francisco total spend on taxi and limo was like 120 million bucks. But we’re a very healthy multiple bigger than that right now, just Uber in SF. So it’s not about the market that exists, it’s about the market we’re creating.” He then goes on to note that the San Francisco market for car ownership is closer to \$22 billion. So today, less than two years after the video, he is highlighting that Uber’s San Francisco revenues are a “healthy multiple” bigger than

the historic market for both limousines and taxis. And Uber is still growing quite nicely in that market. Plus there are other competitors in the market. So Damodaran's math simply does not hold up. This cannot be yesterday's market.

There is another quite simplistic methodology that might have helped Professor Damodaran avoid his unnecessary error. He could have simply asked his friends that were moderate to heavy Uber users the following question: "How does your current annualized Uber expenditures compare to your spend on taxis plus limousines two years ago?" For most of the people I know, the answer to this question is somewhere north of three times as large. That data point alone implies that this is an entirely new market.

Our Proposed Estimates (25x)

So now let's consider scenarios whereby Uber's potential market could be 25 times higher than Damodaran's original estimate. His original estimate was based on Uber topping out at 10% of a \$100 billion market. We would argue, for the reasons included herein, that the features and functions of Uber's new car-for-hire service significantly expands the core market. Based on San Francisco alone, it appears that that market is already potentially 3X the original. For two reasons, I would consider this 3X market multiplier the low end of the range. First, Uber is still growing aggressively in San Francisco, so this new market is far from saturated. Also, when you consider that these services are succeeding in areas where taxis were previously not prevalent, this would imply a higher multiplier as well. In our model below, we assume that the expanded car-for-hire market is 3-6X bigger than the historic market.

Now we consider Uber-like services as a car ownership alternative. This trend is just beginning, but because of the points highlighted herein, we believe this to be a real opportunity. For our model, we assume that Uber-like services will encroach on a mere 2.5%-12.5% of this market. This represents a potential opportunity of \$150-\$750 billion depending on how aggressively one believes these services can succeed as a car alternative.

Combining these two opportunities, you end up with a potential range of new TAM estimates from \$450 billion all the way up to \$1.3 trillion. Now we calculate the market share Uber would

need against these new TAM estimates to arrive at an opportunity that is 25X that of Damadoran's \$10B. The table below shows those estimates. In the most bearish case (Scenario A) where the expanded market opportunity is capped at 3X and these new services only marginally impact car ownership, Uber would need a market share of 56%. Arguably it already has that share today, and this number is not unreasonable in a world of network effects (a point that Damadoran cedes in a more recent post). In the case I think is more likely (Scenario G), the expanded market multiplier is 6X and you see a 10% impact on global car ownership, Uber's market share need only be in the 20% range. Once again, the fact that the U.S. represents 25% of the car-ownership market adds more likelihood to Uber's ability to capture that opportunity.

As discussed up front, the key objective of this exercise is to present a reasonable and plausible argument that Uber's market opportunity might be 25X higher. Interestingly, this case is made without any consideration for whether Uber can impact the logistics market or expands into any incremental services whatsoever. We have simply taken a structured look at how traditional human car transportation can change as a result of today's technology.

There are many biases that can come into play when making estimates. For example, as an investor and board member at Uber one might conclude that I am biased to see things in a more positive light. That would only make sense. In the conclusion to his original post, Damadoran made a similar argument, "it is worth remembering that even smart investors can collectively make big mistakes, especially if they lose perspective." Somewhere in the editing process between Damadoran's original post on his web site, and the version that ended up on FiveThirtyEight, this little nugget was left out:

"As I attempt to attach a value to Uber, I have to confess that I just downloaded the app and have not used it yet. I spend most of my of life either in the suburbs, where I can go for days without seeing a taxi, or in New York City, where I find that the subways are a vastly more time-efficient, cheaper and often safer mode of transportation than taxis."

Article 15: Welcoming Jason Kilar, Richard Tom and the Vessel team to the Benchmark family

June 24, 2014:

Today Benchmark is excited to announce that we will be partners with Jason Kilar and Richard Tom on their next exciting project — Vessel. Working with amazing entrepreneurs is the number one reason we enjoy venture capital, and rarely do you have the opportunity to work with a team that has a track record like these two. While they are not planning to disclose any specifics today about the company, you can rest assured that they plan to bring their amazing product instincts and cultural leadership that were at the heart of Hulu's success.

We are also excited to be partnering again with Jeff Bezos and the team at Bezos Expeditions, as well as David Sze and the team at Greylock. Previously we've worked with Bezos Expeditions on investments including Twitter, Uber, and Nextdoor, and alongside Greylock with Nextdoor, Edmodo, Zuora and recently Docker.

Not much more information than that right now, but of course there will be plenty to talk about in the future. We look forward to an incredible journey.

Article 16: Disrupting Finance From Above: Wealthfront

June 18, 2014:

Many entrepreneurs in Silicon Valley believe that the financial services industry in the United States is “ripe for disruption.” The basis of this argument is really two fold. First, they believe that the current offerings from the financial incumbents are lacking. They would argue that credit card fees are too high, that there is a lack of true competition amongst American financial institutions, and that the ACH process is borderline asinine. They also believe that today’s technologies, most notably the smartphone, should allow for remarkably simpler one-click paperless transactions that have transaction costs that are a fraction of the status quo. Consumers want faster, simpler, and cheaper transactions, and entrepreneurs want to give it to them. The problem is that this drumbeat has been going on for many, many years, yet little seems to change. The key questions are “why?” and “might we need a fresh approach?”

A quick look at the U.S. consumer financial landscape raises a number of questions. Here are just a few examples:

- **Credit Card Fees.** U.S. credit card transaction fees are some of the highest in the world. If you look at the graph below, U.S. fees can be as much as 4.5X those in Australia, and are clearly larger than the rest of the world. Shouldn’t our access to technology and scale lead to lower rates than say Bulgaria? And keep in mind that credit cards still work in these other lower fee regions. The same companies operate there and here.
- **Checking Account Competition.** Over the past four to five years, U.S. banks consumer checking offerings have become less favorable across the board. “Free Checking,” which was once a mainstay of U.S. bank competition is now all but gone. If we are in a true competitive market, and one where technology should make things easier and cheaper, why are the offerings becoming more expensive? There are now 61mm unbanked citizens in the United States, and that number is rising.
- **ACH Payments.** Perhaps the most ludicrous piece of the U.S. banking system is the Automated Clearing House network, broadly known as ACH. This supposedly “electronic” network enables people to transfer funds from one bank account to another. The pathetic thing is that this “electronic” network takes three earth days to settle. I can ping Madagascar from my desktop in California in 368ms, but it takes 72 hours for a U.S. bank transfer to happen. Why? Guess who controls ACH? It’s the large banks, and ACH is slow for the same reason Vegas Casinos have long cab lines – they don’t want you to leave. In July of 2009, the UK instituted a new network known

as Faster Payment Service with same day settlement to replace their equivalent of ACH. In 2013 there were 967 million FPS transactions. Interbank transfers all over China are also same day.

The point to understand is that the U.S. financial system does not operate as a perfect competition – in fact, it is far from it. One could argue over the cause, but a likely contender is the overt level of regulation. Regulation becomes the friend of the incumbent in highly regulated industries through a process known as regulatory capture. Many blame Dodd-Frank and the consolidation post 2009 for the loss of free checking. Banking may be naturally prone to this calcification, and it is worth noting that the low credit card fees in Australia/France, as well as the FPS in the UK were the result of government intervention. So these “achievements” were not the result of a competitive bank ecosystem.

This past spring, Benchmark spent a week in China meeting with the leading Chinese Internet companies. Like Google, Amazon, ebay, and Facebook, the leading Internet companies in China are interested in disrupting payments. Both Alibaba and Tencent have made huge strides on this point. Alipay now claims to be the world’s largest mobile payment solution, with 100 million users, and 2.78B transactions for a total volume of \$150B. Tencent has also been ramping their own payment service known as Tenpay on top of WeChat, the company’s leading messaging service. Tencent now has 20% of the market. Both these companies are aided by the lack of a defunct service like ACH. As noted earlier, it is much easier to fund an online wallet from your bank account in China.

While in China, we learned about a radically new approach that opened our eyes to what it might take to truly disrupt banks. Alibaba, a very ambitious company, was perhaps unsatisfied with users transferring small amounts of money periodically into their Alipay accounts. So they had the bold idea to launch a savings account alternative called Yu’e Bao. Yu’e Bao isn’t just a savings alternative, it’s a highly disruptive one that offers almost 200 basis points more interest than the rate most banks are offering. In a little over 12 months, Yu’e Bao has gathered 100mm investors and over US\$87B in assets. Alibaba may be willing to forgo profits on savings accounts in order to grow assets, and that is wonderful for consumers. Isn’t that the exact type of competition we would love to see in the U.S?

Of course, the Chinese banks are now doing what any well-captured regulated incumbent would do – they are encouraging lawmakers to stop Alibaba. They have also put limitations on online transfers (its doubtful they will be able to make it as bad as ACH, but who knows?). Learning about Yu’e Bao gave us an epiphany that Jack Ma likely had years ago. If you want to truly disrupt the financial services industry, perhaps you need to stop attacking the transactional experience

and launch a competitive product on the asset gathering side. Once you have the assets, all the disruptive things that Silicon Valley types want to do will be easy. The hardest part has been getting access to the funds.

Thinking about this on our way back to the U.S., we immediately thought of Wealthfront, the automated investment service started by Benchmark founder Andy Rachleff. Wealthfront is at the cutting edge of wealth management. Whenever someone asks for personal advice on what to do with their savings, I have always recommend they read Burton Malkiel's *A Random Walk Down Wall Street*. This book offers the most pragmatic advice for the long-term saver, and teaches the reader to avoid the get-rich-quick schemes that stymie most investors. Prior to Wealthfront, doing what Malkiel recommended was easier said than done. It was simply too complicated to remain fully invested and properly allocated all the time. Wealthfront leverages ETFs and modern technology to perform these actions for you. The Wealthfront model is quite disruptive to broad-based asset management in that it replaces the inherently inefficient national wealth management sales force and the active fund managers with automated algorithms that better meet the needs of the household or individual. Unsurprisingly, Malkiel has joined Wealthfront as Chief Investment Officer.

It may just be that "grabbing the assets" is more disruptive than trying to take control of the transactions. Visa, MasterCard, and all the large banks watch after the transactions like a hawk. More importantly, the banks make it very difficult or expensive to move funds out of your checking account, effectively stranding your assets in their system. Wealthfront just hit \$1B in assets in a little over 2.5 years, and there are many reasons to believe that the path to \$10B will be easier than the path to \$1B. A longer track record and larger assets under management will build increasing trust. Soon, you may see Americans directing their paychecks directly into Wealthfront. At this point they will have stepped above the banks in the food chain, and from there the options to be disruptive are endless.

With the benefit of our newfound perspective, Benchmark asked Andy and CEO Adam Nash if there might still be an opportunity to invest. We are thrilled to announce that they kindly obliged.

Article 17: HackerOne: A Superior Solution for Solving Web Vulnerabilities

May 28, 2014:

In early April, Neel Mehta of Google first publicly reported the web vulnerability that we now refer to as the Heartbleed bug. Early analysis suggested that 17% of the servers on the Internet were vulnerable, which represents about half a million unique computers. This list included some of the world's most heavily trafficked sites including Facebook, Google, and Yahoo. On Monday May 5th, Target Corporation removed Gregg Steinhafel from his role as CEO as a result of his unsatisfactory response to a cyber security threat that compromised millions of user accounts at the retail giant. The Boston Globe suggested that "Target's data theft leaves CEOs everywhere on the hot seat." The Seattle Times declared "CIOs in hot seat since Target data breach." Risks are clearly increasing, and the world is in need of an innovative solution to help address this growing problem.

Some companies have attacked this problem by offering financial rewards to researchers that help them identify vulnerabilities. It's a very clever way to ensure that everyone's interests are aligned – that of the company with a large web site, and that of the researcher/hacker. The problem is that running this type of program is complex, and why it might be feasible for Microsoft or Facebook to build such a program, it would be much harder for each and every company to build one on their own. Also, if these programs are run independently, you fail to develop incremental leverage from understanding the unique skill sets of each and every researcher, and the incremental company will have a harder time attracting researcher interest.

Enter HackerOne, a shared community marketplace that brings together the Internet's leading web sites, with a community of the Internet's leading researchers. The result is a hyper-efficient way to help minimize your company's exposure to vulnerabilities. It's also a remarkably interesting marketplace company where each participant in the community is properly rewarded for their impact, and their reputation and skill set improve and evolve over time. And it is already being used by such leading worldwide web destinations like Yahoo and Mail.Ru. HackerOne is a true win-win, researchers are rewarded for their unique skills, and companies are able to identify vulnerabilities in a way that limits repercussions for their users.

HackerOne was founded by Jobert Abma, Michiel Prins, CEO Merijn Terheggen, and Alex Rice. Alex recently was in charge of the bug bounty programs at Facebook. Today the company has announced that Katie Moussouris who ran these same programs at Microsoft, has also joined the company. Furthermore, Benchmark is thrilled to announce that we have been selected to lead the Series A investment in HackerOne, and I am excited to join their board of directors, along with John Hering, the founder of Lookout Mobile. This is a fascinating company with an innovative solution to an increasingly critical problem. Moreover, the vibrancy we see in the HackerOne community is quite similar to what we have seen with other community/marketplaces we have backed including ebay, Yelp, OpenTable, Zillow and Uber.

If you want to get your company started, and potentially avoid the fate of Gregg Steinhafel, you can follow this link to help your company get started right away.

Article 18: Stitch Fix: Reinventing Retail Through Personalization

October 17, 2013:

Early this year Amie Fineberg, who has been my amazing assistant for over 10 years, mentioned that she and several other employees at Benchmark had fallen in love with a new ecommerce service, and that I might want to check it out. The company, which the founder cleverly named “Stitch Fix,” had a remarkably unique offering compared to other women’s fashion experiences. Customers are first asked to fill out an in depth profile to help identify their size, style, and preferences. Then, on the customer’s requested date, the company sends a personally styled offering (a Fix) of five items (previously unseen) to the individual to try on in her own home. You only keep and pay for what you like, and send back what you do not. Stitch Fix keeps track of what you keep, what you don’t, and why and integrates this your profile, growing smarter over time.

Having read the majority of Peter Lynch's investment books, I knew not to ignore the overwhelmingly positive feedback from our team. It turns out that the majority of the women in our office were rabid fans of the service, and what's more, so were many of their friends outside of Benchmark. Awareness of the service was clearly spreading virally through word of mouth. As I continued to learn more about the company, I found that Stitch Fix was commanding a greater share of its' clients annual clothing budget. Lastly, I asked a few women that were not customers to try the service. Even those that started skeptically came back enthused. I immediately reached out to the founder and CEO, Katrina Lake, who had previously worked for another Benchmark portfolio company in the fashion space, Polyvore.

To be candid, I entered my first meeting with the company with some skepticism. Despite Benchmark's strong association with ecommerce during the late 1990's due to the success of companies like eBay, we have not been particularly active in ecommerce in the past several years. Fundamentally, we share the common concern that many of the new "Ecommerce 2.0" companies lack a core competitive advantage or material barriers to entry. A new pricing or packaging model does not by itself represent a meaningful core differentiation, and the rising abundance of "subscription" or "flash sales" companies heightened our concern with regard to barriers to entry. Also, many of these companies were built with heavy doses of advertising spend, a clear red-flag in our book.

In addition to market concerns, I had the unique experience of working with Dan Nordstrom and the team at Nordstrom.com in August of 1999. While I am extremely proud of that team's accomplishments (the parent company recombined Nordstrom.com in 2002 and the direct division now has revenue of over \$1.25B and is the fastest growing unit inside of Nordstrom), I built a healthy respect for the complexities and difficulties of managing women's fashion inventory. Seasons, styles, sizes, and high industry-wide return rates all combine to create numerous opportunities for failure. Only with precision execution can one hope to succeed.

Somewhere very early in my first meeting with Katrina, these concerns began to fade quietly in the background, and I began to have a deep respect for the fundamentally unique company she is building. For starters, the business metrics are quite compelling. The company has clearly "struck a chord" with consumers. The majority of its growth is from word of mouth, and both frequency and share of wallet are high. Customers love feeling special and they love the "surprise" Stitch Fix delivers. Katrina herself is equally impressive. Not only does she have a remarkable feel for her customer, but she also has a keen awareness for the business and supply chain issues that can trip-up naive ecommerce founders. Katrina has also proven herself in the recruiting field, having recruited Eric Colson from Netflix to run analytics and algorithms, Mike Smith from WalMart.com to run operations, and Jeff Barrett from Opower to build engineering.

Likewise, she had recruited both Julie Bornstein from Sephora and Sukhinder Singh from Google as advisers. Most importantly, I became convinced that Stitch Fix was one of those rare companies where the unique product advantage also contributes to a unique business model advantage.

Back in the mid 1990's I had a front row seat to watch Dell's ascendance from a small company in Austin, Texas to the world's largest manufacturer of personal computers. I began covering Dell as an equity analyst for First Boston in early 1994, and over the six years that followed, Dell's stock would appreciate 100x; a remarkable and perhaps unprecedented run of value creation. The engine at the core of that growth was a highly advantaged customization offering that took years and years for Dell's competitors to figure out. By building products to order rather than inventory, Dell's inventory turns, capital efficiency, and ROIC were dramatically better than the competition. And due to falling competent prices, Dell's inventory turn advantage also contributed to a gross margin advantage. Dell's product offering advantage, building to custom order, simultaneously created a business model advantage.

Stitch Fix's personalization technology creates a very similar dynamic within women's fashion. Through a better understanding of the customer, and using data to predict future orders, Stitch Fix has an engine that simultaneously better serves the individual desires of the customer and also contributes to higher inventory turns, fewer write-downs, higher capital efficiency and higher ROIC. This is business model nirvana.

Today, we are thrilled to announce that Benchmark has led a \$12mm Series B investment in Stitch Fix, and that I have joined their board of directors. I look forward to working on the BOD with Steve Anderson of Baseline Ventures, with whom we co-invested with in Instagram, as well as Julie Bornstein whom I had the pleasure of working with at Nordstrom.com.

While we were working on the investment, the company has continued its remarkable momentum. On August 23, Stitch Fix announced that it had shipped its 100,000th Fix, and today the company announced that it has grown 500% since its last financing round this past February. The company also continues its remarkable string of recruiting victories, today welcoming the arrival of three amazing executives. Lisa Bougie joins from Nike as Chief Merchandising Officer, Meredith Dunn joins from Stella & Dot as Vice President of Styling, and Jennifer Olson joins as Chief Marketing Officer from the same role at Crate & Barrel. Each of these executives shares a remarkably similar perspective on the uniqueness of Stitch Fix as we do. The company is also announcing two new board members in addition to myself, Marka Hansen, former president of

North America for Gap, Inc., and John Fleming, previously EVP of Walmart and CEO of Walmart.com.

The promise of “Big Data” is that we can enter the age of personalization, providing a unique customer experience for each and every user. Yet in practice it is remarkably hard to affect such a reality, and it is even harder to “personalize at scale.” In order to deliver its offering, Stitch Fix has analyzed over 500 million individual data points. And despite having shipped over 100,000 Fixes, the company has never shipped the same Fix twice. Benchmark could not be more excited about the opportunity to work with Katrina and her team at Stitch Fix. The special differentiation of the company gives it not only the opportunity to be a leader in its field, but also the opportunity to revolutionize an entire industry.

Company: Stitch Fix

Website: www.stitchfix.com

CEO: Katrina Lake

Location: San Francisco

Twitter: [@stitchfix](https://twitter.com/stitchfix)

For male readers, while you cannot experience the offering, it makes an amazing gift for loved ones in your life. And you don’t have to worry about picking out the right clothes!

<https://stitchfix.com/gifts>

Article 19: Conversion: The Most Important Internet Metric of All (Revisited)

October 2, 2013:

Over 13 years ago, in March of 2000, I wrote a blog post titled “The Most Powerful Internet Metric of All.” The key thesis was this: if an Internet company could obsess about only one metric, it should be conversion. No other metric so holistically captures as many critical aspects of a web site – user design, usability, performance, convenience, ad effectiveness, net promoter score, customer satisfaction – all in a single measurement. Yet despite the remarkable power of this metric, it is alarming how few companies today truly understand conversion and how to optimize it. As such, it is time to pound the table again – conversion is by far the most powerful Internet metric of all.

Internet analytics can be roughly broken down into two simple activities – customer acquisition and customer optimization. Nearly every Internet company on the planet has invested in some form of the first activity, customer acquisition. The most obvious form of this, and by far the easiest to implement, is Google AdWords. As a result, AdWords boasts over one million customers and over \$30B in annual revenue. I rarely meet a company that hasn’t experimented with AdWords in some way, and most of those that do understand the basic math around the cost of customer acquisition. Customer acquisition efforts are pervasive in our industry.

There are two reasons why customer acquisition alone is a poor place to establish your company’s competitive advantage. First, the sheer intensity of the competition for effective AdWord inventory reduces the likelihood of a sustainably high ROI. Second, ad spending does not provide leverage. Each year, your company will want to grow by a higher absolute dollar amount than the previous year, and as a result you will need to buy even more traffic. This is the piece that the LTV-zealots always miss: the spending will never stop.

The second activity, which I believe should be the obsession of all analytical startups, is customer optimization. Think of this as understanding how to optimize the performance of the customers you already have. This is the art of conversion: improve your site’s conversion and you simultaneously increase operating leverage AND increase competitive differentiation – a truly powerful combination.

Basic conversion is easy to understand. In its most simplistic form, it is the ratio of customers that achieve some desired action or activity divided by the total number of visitors to your web site. Your web site likely has a single overall conversion rate (the table below highlights one firm’s view of industry-by-industry “overall” conversion rates). However, in order to truly master conversion you have to understand that there is not just one conversion rate, but numerous

conversion rates throughout your site. You need to understand the rate for each and every landing page. You need to understand it for each and every source of traffic. You want to understand it in each section of your website. You want to know what it is for each and every outreach campaign. You want to know and understand bounce rates for each and every page. “Conversion Rate” is a misleading term. To truly understand conversion you need a “conversion matrix” for every path through your site.

Even this does not tell the whole story. In 2013, we are in the midst of a critical platform transition from the browser-based Internet to mobile applications platforms like iOS and Android. This transition adds even more complexity to the conversion puzzle, as you now need to track and understand conversion on mobile as well. The bad news is that the tools for doing mobile conversion measurement are immature at best. The good news is that if you can master them at this early stage, you will have a significant competitive advantage.

The best place to focus your efforts to improve conversion are within the product itself. Conversion at its essence is a proxy for usability and convenience. Compare Amazon’s one-click experience with an e-commerce site that requires five pages of information input in order to affect a sale. Which do you think will have a higher conversion? Conversion is also influenced by effective personalization. If a site is designed to respond to my particular needs, I will obviously be more inclined to transact there. This is the dream of “big data” – to harness the information you already have to deliver a personalized experience for each user.

Unfortunately, conversion improvements typically are the aggregate gain of 100 tiny improvements, not one silver bullet. Rarely will you find one single change that is going to have a 5% lift in conversion (you might if you have never tried, but this type of win will go away quickly). Rather you will find 30 things on a page that all have a tiny impact, and the overall impact, after months of work might be 5%. You have to be willing to toil in the minutia knowing that the impact on the overall system will be the combined result of many tiny little changes.

Despite the huge potential for gain, conversion improvements are fleeting for many organizations. Many product teams view web-site design as more art than science. Highly paid designers are employed to create beautiful web pages and mobile applications, and their

opinions are coddled as divine wisdom. Measuring the efficacy of their divine wisdom at 100 different places in your customer flow funnel can often prove to be controversial, and it can produce friction between the marketing department, who often owns customer optimization, and product development, which owns design. Not all organizations can operate with the proper amount of transparency and self-awareness, or have the patience to try a number of different approaches to produce very small incremental gains. The companies I have seen that are most successful with optimization are assiduous in their approach.

So, given how hard it is to improve conversion, why bother? Because improving conversion, even a little bit, can produce insane economic leverage for your business. The table inserted below looks at five leading consumer Internet companies – Blue Nile, TheKnot, C-Trip, Trip Advisor, and Priceline – and models what would happen if they improved conversion 10%. Just to make this clear, we are talking about moving from say a 6% overall conversion rate to 6.6%, or simply a 60 basis point increase in absolute conversion. Because conversion improvements impact the customer flow you already have, they lead to a direct increase in revenue, offset solely by the cost of running the conversion improvement effort. In this case we used \$1mm/year cost for the smaller companies, and up to \$10mm/year for Priceline.

If you look across the group you will see impressive increases in operating income, and net income margin percentage. Additionally, the ROI on the conversion costs range from 650% to 4000%! Even if you only achieved a 5% increase (versus the 10% we modeled), you would still see ROI in the 275%-1940% range. And for a 6% converting site, we are once again talking about a 30 basis point improvement in absolute conversion rate. Tiny moves have huge financial consequences which almost seem magical or unfair. You can build a similar model for your own business, and put in the inputs as you see fit, but you will not find another single area in your business where small improvements will have such a powerful impact.

Furthermore, the larger your company, the more you should increase your focus on conversion. With a large customer base, you are able to leverage any improvement against a much broader audience. You can see this in the model – bigger companies get a bigger advantage, even when we estimate a 10X larger budget for conversion improvement. Investing in a conversion improvement effort is a no brainer for these larger companies.

All companies should prioritize customer optimization ahead of scaling customer acquisition. Think about customer acquisition as buying fuel, and customer optimization as measuring the fuel efficiency of your engine. Ironically, many more companies focus on buying fuel in volume than they do improving fuel efficiency. The whole world has it ass-backwards. You should focus on fuel efficiency first, and when you know that it is solid, then you can start buying fuel in volume. Yet 90% of the companies I meet are buying and buying customers (acquisition) without any sophistication around understanding conversion (optimization).

Unless you are fairly certain you have a high conversion rate versus your peer group, you can be at an extreme disadvantage buying high volume advertising. Conversion rate directly impacts how much you can affordably spend on advertising. If you have 2X the conversion rate on your competitor, then you can spend twice as much and get the same outcome. Likewise, if you have a poor conversion rate versus your competition, then you are bringing a knife to a gun-fight. Ever been a room where an entire team all agrees that your competitor must be an idiot because they are spending so much at such high rates on Google? The answer may be that they have a much higher conversion rate, and that you are eligible for the role of the idiot. Don't push the gas pedal if you don't know your fuel efficiency. Likewise, if you know you have a conversion advantage, you also have an ad buying advantage.

Benchmark has such conviction about the amazing power of conversion that we have made two investments in the past year in companies whose products help drive material conversion lift for their customers.

Optimizely

The first company, Optimizely, has the market's leading product for A/B testing, the fundamental technique used in improving customer optimization. Optimizely's impressive SAAS service allows marketers to A/B test using a simple WYSIWYG editor on any page in your site, with zero impact on your engineering team or resources. It's such a strong value proposition that they have over 4,500 happy customers, including CBS, Disney, Starbucks, and many more. Optimizely's product should be the fundamental building block for anyone that has any interest in conversion optimization. The product is designed with a clear understanding that optimization is about experimentation, and it greatly lowers the cost and complexity of that experimentation.

Sailthru

The second company, Sailthru, uses its unique personalization technology to help their customers improve conversion. More specifically, clients aggregate all of their customer data points under one roof to provide truly personalized experiences across all platforms and devices (specifically including mobile). Using Sailthru, companies build 360-degree profiles of each and every user that can then be used to personalize emails, site and in-app experiences, search results, and more. Online publishers have seen 10-35% improvements in click through rates that regularly yield 30+% lifts in page views, resulting in substantial incremental ad revenue and profitability. Commerce players have driven 6-10% lifts in average order values, 15%+ improvements in purchase frequency and major improvements in overall customer retention. Most importantly, Sailthru makes personalization achievable and scalable; a near-term reality versus a multi-year project that will never see the light of day.

Looking forward, you should expect customer optimization and conversion analysis to move to the forefront of analytical marketing work. We are likely moving into an “age of enlightenment” where the scientific method is available to all, and ideas win (and are tested) on their empirical results. With improved tools and techniques, and innovative products like Optimizely and Sailthru, highly optimized sites will redefine the new fitness level required to stay afloat in online businesses. Darwin will take care of the rest.

Other resources:

- Try out Optimizely today
- Video: Learn more about Sailthru
- 71 Things to A/B Test
- 53 Ways To Increase Conversion Rate
- 40 Checkout Page Strategies to Improve Conversion Rates
- 100 Conversion Optimization Case Studies
- A “Meta-list” on Startup Management (Thx:William Mougayar)
- (send me more and I will add them to the list)

Article 20: Transitioning To a Mobile Centric World

July 17, 2013:

“If you choose not to decide, you still have made a choice.” — Freewill, Rush

If you happen to be a sports fan (I am), one of the coolest features to emerge in our lifetime is the ability to program your DVR remotely. The game is about to start, and you forgot to record it. No problem — you can simply talk to your DVR remotely. It’s like magic. When you get home your game is there. DirecTV has supported this feature for some time, initially on the Internet via the browser and more recently via their smartphone application. Ironically, the smartphone version of this experience renders the browser-based experience antiquated, even painful. On the browser, the DirecTV user is always required to sign-in, which is time consuming and tedious. Plus who remembers their TV provider’s login credentials? On the iPhone, the user is never required to log-in, which is a remarkable contrast. On the desktop navigating the schedule is cumbersome, slow, and deep in the feature hierarchy. On the smartphone it is quick, responsive, and right up front. When I am sitting at my desktop at work with the browser open and high-speed bandwidth at my fingertips and want to program my DVR, I pick up my iPhone.

For a large variety of applications and services, users favor mobile applications over browser based applications. Over 45% of Yelp’s* searches begin on mobile. For Zillow*, 50% of home views are now on mobile. For each and every Internet company out there, mobile is rising as a percentage of all user visits. Mobile applications are instantly accessible as the smartphone is always with you. The applications can also leverage mobile-only features such as GPS search and the camera interface. And many of them, like the DirecTV application, are simply designed better. Many will argue that there is a safe middle ground where you can “have your cake and eat it too” — the HTML5 based “mobile web.” Yet early user data disagrees. A recent Compuware survey found that 85% of users favor apps over the mobile web. Guess whose vote matters most?

When users greatly favor a new user experience over an old one (in this case the mobile application environment versus a browser based desktop environment), the implication is clear – we are in the middle of a critical platform transition. Platform transitions are rare, yet highly consequential. The first consumer-based transition was DOS to Windows in the late 1980s. Many fortunes were won and lost based on how well companies like Borland and Lotus executed this transition. Then came client-server, which also launched new winners at the expense of older incumbents. The next obvious transition was the rise of the browser in 1996, which transformed not only the software application market but also the print and media world. The browser-based Internet launched many new companies, several of which have achieved market capitalizations in the billions. Most interestingly, new company wealth (pure play Internet companies) far exceeds “transitioned wealth” (incumbent companies transitioning their model successfully to the new platform). TripAdvisor and Yelp rule the day, not Frommers and Zagat. Likewise Priceline and Expedia rule travel, not some travel company that existed pre-Internet. Google, Yahoo, Ebay, Facebook, and Twitter rule the Internet, not Microsoft.

We are now seeing a new transition – away from the browser and back towards stand-alone applications, this time on mobile devices. We are also seeing the emergence of mobile-only companies whose presence is singularly focused on mobile as opposed to the browser based Internet. Key examples include Instagram*, Uber*, Snapchat*, and a variety of game companies like Rovio, Supercell, and Natural Motion*. This critical platform shift should weigh heavily on the minds of all companies that have something to lose; primarily browser-based Internet incumbents. The stakes are quite high, and it may even be too late.

As we transition from one world to another the rules are changing under our feet. The development tools are different, and the development objectives have changed. The distribution techniques are completely new. On the browser, SEO and SEM are paramount, but the equivalent tools on mobile are either non-existent or at best immature. Living in the middle of these two worlds simultaneously creates interesting and unique challenges. Yet the consequences of not playing are high. Here are some key considerations as you look to map the mobile application transition for your own company.

- Design takes on a greater role. Users favor mobile applications that are crisp, clean, and quickly responsive. My partner Matt Cohler has written that the smartphone is a “remote control for your life.” This is a clever metaphor that succinctly specifies the objectives for an ideal mobile application. Like a remote control, it should be quickly responsive, and do what you want with very few button clicks. The Uber* experience is a great example. Press a button, receive a ride, and everything else disappears – even payment is automated. Websites do not always have this same “one-click” usability expectation, and as a result web designers can easily come up short by

building mobile applications that are overly complex. The limited screen real estate, and limited user-attention on the smartphone forces better design decisions. Lastly, lower mobile bandwidth (versus the desktop) increases the consumer benefit of pre-cached content and UI.

- Feature depth is inherently limited. Consumers clearly dislike deeply nested features on mobile phones. They prefer the remote control “one button” experience. They want to get in, solve their problem, and be done. This is challenge for larger feature-rich sites like Facebook and Yahoo, and a real benefit for focused best-of-breed providers like Instagram. It is also why YouTube, Google Maps, Facebook messenger and Vine are separate from their mothership. This limited depth concept is huge and vastly misunderstood. Mobile values the single solution, one sharp blade rather than a Swiss army knife.
- Development complexity is a reality as we transition. Not only do you have to continue to support the desktop web, but now each company must develop and test for iOS and multiple flavors of Android. These may not be skills you have in-house. Plus the design elements of the app world are different, implying that your desktop web developers may not be good at mobile app design. If that were not enough, you now have to support the “mobile web” platform also to capture any users that have not downloaded your application. Unfortunately, this is table stakes. You don’t get to choose not to play. One might think that this type of complexity favors larger companies with more resources. However, this is offset by the fact that larger mature companies typically lack the skills and the adaptability to develop quickly on new platforms. Complexity in this case favors the newcomer.
- HTML5 is a head-fake. Due to the design complexity outlined above, many developers attempt to short-cut the system by blending elements of the desktop or mobile web world into their applications (or will argue to simply wrap HTML in a container and call that a mobile app). This is a dangerous decision where the developer is optimizing for themselves and not the user. You should never optimize developer convenience over user experience. One high profile example of this is ESPN ScoreCenter. You move through the different leagues and scores with blinding speed. However, try to download detailed stats and you can see the app open an embedded browser and load a web page. A user cannot help but feel cheated as they wait for this “page” to load. Does ESPN not have enough resources to build a fully native iPhone app?
- SEO non-presence is hugely consequential. One of the key reasons that mobile apps have a cleaner design is the absence of SEO (search engine optimization). Design on the desktop web has been compromised by the need to intersect with Google’s search paradigm. This is the same reason no one uses Adobe’s Flash on leading web sites. “Links,” “deep linking,” and “structured taxonomy” are fundamental design requirements for the desktop web. No one can afford to risk losing their SEO mojo. Mobile changes that paradigm, and most of the emerging mobile-first companies listed above are non-SEO focused. As an example, Twitter’s lack of an SEO centric product made mobile app design much more straight-forward. Of course, the absence of SEO may be positive for design, but it removes a key customer acquisition strategy for many startups.

Deep linking into apps is emerging as a new paradigm, but this is primarily a tool of incumbents with a large previous SEO presence.

- The core concept of “search” is in transition. Search plays a completely different role on the desktop than it does on the smartphone. On the browser, nearly every activity starts with search. On the smartphone, apps replace search as a starting point. Consider the case when you are curious about the weather forecast? On the browser you might simply type “weather 94025” into the browser. On the smartphone you never do this. The same could be said for an Amazon search, a Yelp search, or a LinkedIn search. On the smartphone, these searches start in the application. This trend is quite positive for early smartphone application leaders.
- A locked-in mobile application user is worth more than a desktop user. Talk to any leading Internet company, and they will echo this philosophy. The logic is that once a user goes through the trouble of downloading an application and committing their limited screen real estate, they are now a more committed user that will use your app more frequently and churn less. These early applications leaders become functional “goto” apps for the user (i.e. Yelp for local). Going to a competitor is not as simple as doing another search, or clicking on another link. You have to go to the trouble to download a whole new application and learn a whole new navigation interface.
- Customer acquisition techniques are shifting. Startups like tried and true browser-centric customer acquisition techniques like SEO and SEM, but the mobile app world is different. To make matters worse, no new systematic customer acquisition model has emerged. Embedded placement deals would seem likely on Android (they were prevalent on feature phones), but this environment still feels nascent. More surprisingly, neither Apple nor Google offer the equivalent of SEM slots alongside their app store taxonomy (although this appears quite common in China). This represents a huge missed opportunity for both platform providers, and a missing resource for companies that wish to pay to acquire users (of which we all know there are many).
- Payment could be a new platform battleground. Continuing with the “remote control” theme, users will clearly want payment to disappear into their button-pushing experience. Many large credit-card/credential holders such as Amazon, Apple, Ebay/Paypal, and Google, have a great deal at stake in this battle. And of course, incumbents like Visa, Mastercard, Chase Paymentech and Bank of America have a view, as do disrupters such as Square, Braintree, Stripe, and Swipely. Even the large physical retailers see this as an opportunity to pry themselves out from under the 2%+ credit card payment fee. They have created an entity called MCX precisely with this in mind. We have been waiting 15 years (remember Microsoft Passport?) for one-button payment. Whoever delivers will be in a very strong strategic position, especially if they can also disrupt the processing fee. But prepare for a battle royal.
- The platforms are still evolving. iOS and Android are dynamic platforms, and both Apple and Google are still evolving their corporate strategy for each. Google would likely favor an HTML centric world that returns search on the smartphone to the central place it holds on the browser

(notice the recent voice search announcement). As they invented the app-centric Smartphone world we inhabit, Apple is likely to keep pushing in this direction. They even brought the app store backwards to the Mac desktop OS. Lastly, competitive dynamics may force each provider “up the stack” eating into the app ecosystem. We have seen this be the case with both music and maps.

Who are the winners in a mobile application centric world? In the near term, a continued move towards a more app-centric world is a big boon for the application providers who have made the transition to mobile and “locked-in” real estate on user’s mobile devices. Not only is the app “locked-in,” but so is the navigation know-how, which clearly creates switching costs for new entrants. Users will only keep a small number of brands on their smart-phone, and they start their activities in these apps – not with a traditional search engine. This is not to say we will not see new entrants – witness Snapchat. But the combination of lock-in and a lack of a truly liquid new distribution hooks will favor the “new incumbent” mobile leaders.

The biggest losers will be the web incumbents who do not understand the rules of the new road, or the consequences of missed execution. Anyone lost in the desktop world who fails to appreciate the criticality of the mobile-first mindset is subject to demise. Consumers prefer mobile and they prefer mobile apps to the mobile web. Deny that reality at your own risk.

A few weeks back, Nextdoor* – the leading social network for your neighborhood – launched their much-anticipated mobile application for iOS. This anticipation emanated directly from the user community, where a mobile application has long been the most requested feature. The first several reviews on the iTunes store included comments such as “I’ve been waiting to use Nextdoor via my iPhone after joining my neighborhood almost 7 months ago. So happy to see this finally launched!” and “...the iPhone app turns Nextdoor into an even better tool.” Some of the reviewers even threw out this juicy comment – “this is better than the desktop application.” An increasingly common refrain.

*Benchmark is an investor in these companies.

Article 21: Grubhub and Seamless: Effecting The Elusive Private-Private Merger

May 20, 2013:

Today, Seamless and Grubhub announced the signing of a definitive agreement to merge two of the nation's premier services for ordering takeout online. As Benchmark is a large institutional investor in Grubhub, we were actively involved in the merger process, and we are quite excited about the potential of the two companies coming together. There are many synergies – different geographic strengths, different core customer bases, and different product strengths. And of course, we are afforded the advantage of greater scale.

Despite that there may be many obvious reasons for any two companies to combine, most private-private mergers (where both companies are private entities) never come to fruition. Public-public, and public-private are actually much easier to consummate. There are many reasons why private-private is so difficult, but allow me to highlight three specific challenges that seem quite prevalent.

1) Structural Challenges

Private companies typically have capitalization structures that are very complex. There are common stock, common options, and as many as three to five different layers of preferred stock, each with a specific liquidation preference. Finding a way to meld two complex capital structures is non-trivial, and may require compromise from many parties involved. But institutional investors are loath to give up previously negotiated rights, and this can be especially true when the investor in a competitive company is the one bringing the request. Even melding two separate option programs can be challenging. There are numerous techniques for bringing together two such structures, but none of them are remotely elegant, and they all involve spending many, many hours with lawyers. At the end of the day, structure is not a show stopper, but it creates a very high bar for consideration – you have to really want to make it happen to be able to sit down and sort through the complexity.

2) People Challenges

Prior to a merger, you have two separate management teams (with two separate cultures), and in order to merge, you have to agree on who is going to do what, and what each executive's new title will be. It should come as no surprise that executives are fairly sensitive when it comes to topics of reporting structure and titles. Plus, you have the natural tendency to view any discussion as an "us versus them" type argument, which is not a frame of mind that is conducive to collaboration. The bottom line is that it is very hard to merge two management teams, especially when you consider the contracted time window typically associated with such a discussion. It's speed dating. As a result, only if you have two teams with a shared vision for the future, and minds that are open to compromise could you ever hope to be successful. Some pretty high-profile mergers have fallen apart because of this issue.

3) Investor/Founder Mindset Challenges

Most founders and investors typically think about their personal stakes in a private company in terms of "ownership percentage." An investor may say "we own 22% of the company", or a founder may note, "I still own 31% of my company." These same constituents think about the overall company value in terms of dollars. As an example you might hear someone say, "we closed the last round at \$100 million post." When two private companies began discussions on merging, these overall corporate values are often debated. I call this the "dueling blowfish" problem. Private company valuation techniques are particularly specious (this contrasts with a public company that every day has a definitive market capitalization). Anyone can create any number they want (within reason), as there is no one specific formula or metric for such work. Most models are also based on forward forecasts, which offers another avenue for inflation. Basically, everyone uses loose finance arguments to over-inflate their own company's valuation so that they can demand a bigger slice of the pie of the new company.

The only way around this is to reverse your way of thinking. First, you have to focus on the dollar value of your new stake in the combined company instead of focusing on the specific percentage. Even in a 50/50 scenario, each ownership stake is half what it once was. Assuming the deal is accretive, this should be "no-brainer" math; your new stock in the combined company is worth more than it was before. However, the "ownership" focused mind has a real problem with their stake being reduced so dramatically. Second, you need to only negotiate in terms of percentages (versus dollar value). One company will get X% of the combined company, and one company will get 1-X%. Taking this approach is the only way around the dueling blowfish problem. Assuming both sides think the merger is a good idea (and accretive) the future value is

obviously going to be higher. The real question is how do we split the company amongst the two players, and focusing on this out of the gate will save an incredible amount of time.

These are just the challenges that you meet on the way to the altar. Many mergers fail not in the deal process but in the implementation process, as integration is very difficult, especially when it's a merger of equals. And the human and cultural issues outlined above continue to exist as you attempt to merge two companies into one. Getting the "deal done" is only the beginning.

Once again, I am quite excited about the Grubhub/Seamless merger, and tip my hat to Matt Maloney, Mike Evans, Jonathan Zabusky, and both the Grubhub and Seamless management teams. Had they not started from day one of our discussions with a partnership mindset, we would have never have reached this milestone. I look forward to working with them both, as well as the investors and independent directors from both sides to help take the merged company to new heights.

Article 22: A Rake Too Far: Optimal Platform Pricing Strategy

April 18, 2013:

In a casino, the term "rake" refers to the commission that the house earns for operating a poker game. With each hand, a small percentage of the pot is scraped off by the dealer, which in essence becomes the "revenue" for the casino. While casinos use the term "rake," a plethora of interesting word choices exist which all describe the same thing – keeping a little bit of the revenue for the company that is running the service. Examples include "commission," "fee," "toll," "tax," "vig" or "vigorish," "juice," "the take", and "graft" (although this last one is typically associated with corruption in politics).

Many Internet marketplaces also have a rake or vig. The percentage rake is the amount that the marketplace charges as a percentage of GMS (gross merchandise sales), which typically represents net revenues for the marketplace. As an example, eBay's 2011 marketplace revenues were approximately \$6.6B against GMS of approximately \$68.6B for a rake percentage of just under 10%. It may seem tautological that a higher rake is always better – that charging more would be better than charging less. But in fact, the opposite may often be true. The most dangerous strategy for any platform company is to price too high – to charge a greedy and overzealous rake that could serve to undermine the whole point of having a platform in the first place.

Before discussing the merits of low rakes versus high rakes, let us first take a look at current examples of different rakes across the Internet. The table above shows estimated rakes for several online businesses as a percentage of GMS. Do not assume that these numbers are specifically accurate as some vendors make these very hard to deduce.* There is also the added noise of kick-backs that are common in industries like ticketing. You can see very high rakes in the case of iTunes, Facebook, and GroupOn down to especially low rakes for the likes of OpenTable and HomeAway. Amazon marketplace fees are published on their website, and vary by category, but they basically range from 6-15%, so let's say the average is approximately 12%. eBay recently launched an aggressive campaign attacking Amazon's rate table on a vertical-by-vertical basis (those percentages can be found here). One company with an astonishingly high rake is recently IPOed Shutterstock, a photo-purchasing marketplace where the content owner receives only 30% of gross receipts. As we will argue below, this could in fact be a very fragile situation.

When evaluating new marketplace investments, we are naturally biased towards entrepreneurs who understand the strategic rationale behind the argument for a lower rake. If your objective is to build a winner-take-all marketplace over a very long term, you want to build a platform that has the least amount of friction (both product and pricing). High rakes are a form of friction precisely because your rake becomes part of the landed price for the consumer. If you charge an excessive rake, the pricing of items in your marketplace are now unnaturally high (relative to anything outside your marketplace). In order for your platform to be the "definitive" place to transact, you want industry leading pricing – which is impossible if your rake is the de facto cause of excessive pricing. High rakes also create a natural impetus for suppliers to look elsewhere, which endangers sustainability. These reasons are likely behind the struggles in GroupOn's core Daily Deals business (North America Third Party Revenue is down in Q4 both YOY and QOQ). With a rake of approximately 38% (and this is "after" asking the merchant to underwrite a 50% discount to the consumer) the recovery from each transaction for the supplier is only 30%, representing an "effective" rake of 70%.

High volume combined with a modest rake is the perfect formula for a true organic marketplace and a sustainable competitive advantage. A sustainable platform or marketplace is one where the value of being in the network clearly outshines the transactional costs charged for being in the network. This way, suppliers will feel obliged to stay on the platform, and consumers will not see prices that are overly burdened by the network provider. Everyone wins in this scenario, but particularly the platform provider. A high rake will allow you to achieve larger revenues faster, but it will eventually represent a strategic red flag – a pricing umbrella that can be exploited by others in the ecosystem, perhaps by someone with a more disruptive business model. As Jeff Bezos is fond of saying, “your margin is my opportunity.”

Many people do not know this, but one of the most amazing Internet success stories is the European division of The Priceline Group, which operates under the brand Booking.com. Booking.com is the unquestioned leader in online travel in Europe, and represents a substantial portion of TPG’s astounding \$35B market capitalization. Booking.com was not always the online leader in Europe – in fact they were a disrupter stealing the flag from other large incumbents. In the late 1990’s companies like Expedia and Travelocity had become enamored with what is known as the “merchant model.” Basically, these companies would “package” vacation offerings for the consumer and sell them as a bundled offering. The merchant model could produce a rake of well over 30%, and was therefore attractive to companies like Expedia. Booking.com took a much more aggressive approach (perhaps because it was the only one available) . They started with a 10% “agency model,” which not only represented a lower rake, but also provided better cash flow terms to the supplier. As such, they were able to sign up nearly every small hotel in Europe. This resulted in more selection for the consumer and more support from the supplier base. Dennis Schall at Skift.com has a wonderfully detailed account of how Booking.com came to dominate Europe, along with a more recent article addressing the lingering ramifications of the industry’s natural shift to the lower friction (lower rake) agency model.

It turns out that the average rake at Priceline Group is even higher today, as they allow merchants to voluntarily bid up their rake for better placement in the network (you can see this in the table above). This is one of my favorite marketplace business model “tweaks.” You start with a low rake to get broad-based supplier adoption, and you add in a market-driven pricing dynamic that allows those suppliers who want more volume or exposure to pay more on an opt-in basis. This way no one leaves the network due to excessive fees, yet you end up with a higher average rake over time due to the competitive dynamic. And when prices go up due to bidding

and competition, the suppliers blame their competition not the platform (part of the genius of the Google AdWords business model). This also allows you to extract more dollars from those suppliers who desire to spend more to promote themselves (without raising the tax on those that don't).

All of which leads us to two very interesting rake examples that are front and center in today's Internet – Facebook and Apple. Both of these companies charge a hefty 30% fee for transactions on their platform. Because most of the developers building on these platforms make software, the developers do not experience immediate pain when they share 30% of top-line revenue. After all, marginal costs are near zero, and therefore the fee is tolerable. But the real question is: Does the 30% marketplace on top of the platform help to reinforce the strategic positioning of the platform itself? Or is it merely a revenue extraction exercise? And if so, is there a risk that a "rake too far" could be a net-negative from a strategic standpoint?

Let's start with Facebook. For the first several years, Facebook's application platform was a smashing success. The distribution power of their pervasive platform proved a remarkable vehicle for many companies; particularly games companies. The platform was so successful so quickly that many early adopters of the platform rocketed to hundreds of millions in sales. Zynga, which was particularly adept at surfing the Facebook wave, catapulted to \$1 billion in revenue in its sixth year of existence! Everything looked incredible. Fast-forward to today (only a few years later), and games companies are no longer betting their whole company on Facebook. Oddly, they are aggressively and strategically looking to expand non-FB distribution.

It is really hard to pinpoint exactly what went wrong. One might question Facebook's commitment to being a game platform. Some might also highlight the lack of breadth in its success, and argue that Zynga had it "too good" versus other players in the field. And some might point to the rise of mobile which created a difficult platform transition for Facebook (which we will address shortly). In addition to these issues, there is also a strong argument that 30% was simply an excessive rake.

When you consider that many of these same game companies were also large buyers of Facebook's ad products, it suggests that the "actual" rake, the real cost of being competitive on the platform, was much higher than 30%. Given Facebook's position as the leading global social network with high barriers to entry, there was no need to maximize revenue on day one. It was far more important to prove the platform as a viable and efficient distribution mechanism for a broad range of products and services, and to convince all partners of the unquestioned efficacy of the platform itself.

Last November, Zynga and Facebook together renegotiated their previous long-term business agreement. According to the old agreement, Zynga was required to shell out 30% of their revenue even if they generated revenue “off Facebook”. That is a very aggressive rake. Now Zynga is freed from many commitments it had made to the Facebook platform, and is allowed to build independent revenue streams outside of Facebook. The reality is that Zynga is still highly dependent on Facebook. However, Zynga shareholders are now tracking Zynga’s percentage of revenue tied to Facebook and consider it a positive if they can reduce this dependency. The bottom line is that the entire gaming industry has lost some of its enthusiasm for the Facebook platform, and it will be difficult for Facebook to recreate the magic and momentum they once had.

The Apple case is more extreme as the impact is more consequential. Despite the fact that Apple had/has industry leading hardware margins on its incredible computing products, Apple felt the need to take 30% of the revenue that was created by its app ecosystem as well as 30% of the revenue from media rentals and sales. In retrospect, demanding to be paid on both sides was a sign of overconfidence. However, the truth is they made this work for a very long time. Many companies, thriving on the Apple platform, didn’t exist and wouldn’t exist were it not for iOS. For itself, Apple has created billions and billions of high margin revenue and corresponding bottom line profits as a result of the amazing success of its 30% rake. All of which helped catapult Apple to the very top of the business hierarchy – the largest market capitalization company in the world.

The single-biggest problem with Apple’s aggressively high rake was its impact on potential long-term strategic partnerships. Specifically, two companies that potentially could have helped to reinforce the success of the iOS platform blinked, paused, and then went on to support a competitive platform. Both Amazon and Facebook could have been and should have been BFFs with Apple. And if Apple could go back in time, they would surely opt to be BFFs also. The most threatening company for all three players was clearly Google. However, Amazon owns a digital media business built around Kindle. And Facebook, as discussed, has a 30% rake business helping game developers distribute and monetize games throughout its network. When Facebook and Amazon read the terms of service of the iOS platform, and came to grips with the reality of the 30% rake, they saw an instant road-block – a show-stopper to their potential success on that platform. It was very hard to imagine their business model and Apple’s business model coexisting, and so they eventually punted on a full commitment to iOS.

The bottom line is they could have been amazing partners. If Apple had a lower rake, or even had they been less obstinate about their existing rake, a partnership could have formed (ask anyone in Hollywood – “splits” can solve any problem). iOS could have been both the definitive Facebook mobile device, AND the definitive Amazon shopping device. They could have been integrated from the beginning at a deep level: your social network in contacts; your Amazon 1-click credentials a fingertip away. Jeff Bezos, Mark Zuckerberg, and Steve Jobs on a stage together talking about the truly amazing things these companies have done together. It could have been awesome. But it didn’t play out that way.

Instead, as you are aware, Facebook’s new Home mobile application is available only on Google’s Android, Apple’s key nemesis of the past decade. There are currently no plans to offer Home on iOS, and Eric Schmidt, Google’s esteemed Chairman, cheered along in appreciation at the recent Dive Into Mobile Conference, “I think it’s fantastic — I love it,” Schmidt said. Instead of becoming a platform differentiator for Apple, Facebook is now aiding and abetting Apple’s only real competition.

The Amazon situation vis-a-vis Apple is more severe. In stiff-arming Amazon over its “30%” Apple not only alienated a key partner but launched a competitor. Amazon has obviously designed its Kindle Fire system on top of an Android variant. But that is only half the problem. Amazon, in true Amazon fashion, is now attacking Apple’s exposed business underbelly: the fat margins they receive by charging both high hardware margins and a high rake on content. As outlined in its recent Letter to Shareholders, Amazon does not believe that its customer should have to pay fat margins on hardware AND content. “Our business approach is to sell premium hardware at roughly breakeven prices. We want to make money when people use our devices – not when people buy our devices.” Amazon plans to subsidize the hardware platform and live solely on the content margin. The 30% rake basically launched a nasty competitor with a disruptive pricing model.

Number one on the list of Peter Drucker’s Five Deadly Business Sins is “Worship of high profit margins and premium pricing.” As Drucker notes: “The worship of premium pricing always creates a market for the competitor. And high profit margins do not equal maximum profits. Total profit is profit margin multiplied by turnover. Maximum profit is thus obtained by the profit margin that yields the largest total profit flow...” Most venture capitalists encourage entrepreneurs to price-maximize, to extract as much rent as they possibly can from their ecosystem on each transaction. This is likely short-sighted. There is a big difference between what you can extract versus what you should extract. Water runs downhill.

[After this post was written, several readers pointed out that perhaps the most amazing example of using lower pricing to disrupt a marketplace leader was Taobao vs eBay in China. If the pending IPO of Taobao's parent, Alibaba.com, is half as big as people expect, then this may have been the ultimate marketplace pricing win of all time.]

*Please let us know if you have other names you would add to the table, or if there are numbers you think need correcting. I will update the table and put the rolling updates in the answer to this quora post on the same topic.

Article 23: Favorite Longreads of 2012

December 26, 2012:

Over the past several years, I have become a huge fan of Mark Armstrong's web service, Longreads. For those of you that don't know, Longreads is a Twitter handle (@longreads), and a web service (www.longreads.com) that points to the best long form content on the Internet. At its core, it's an amazingly effective editorial and discovery engine. Combined with a product like Instapaper, it creates an online/offline reading experience that feels purpose-built for a tablet world. Many short form articles can be read quickly while you browse through your Twitter feed. But the really great articles that make you think and help you learn (the ones that use Daniel Kahneman's System 2), require more dedicated reading time. Longreads+Instapaper is basically "time-shifting" for the written word. I am an addict.

Several others have posted their favorite longreads of the year (you can find them [here](#)). Unfortunately, I did not keep track as much as I should have. Next year I aim to do better. With that caveat, here are a few of my favorite long-form articles from last year.

A Basketball Fairy Tale in Middle America, by Sam Anderson (New York Times Magazine)

This article ran as a cover story in the November 8th issue of the New York Times Magazine. Like many great longreads, this article is about much more than its core subject, which in this case is a basketball team. It dives deep into the ethos of the city, and the elements of the Thunder team that make it much more special than your ordinary NBA team. Durant of course plays a huge role, but there are many more nuanced elements certain to drive any Seattle basketball fan to the edge of tears. Thanks to Sam Anderson for making me even more of an OKC fan than I already was.

The Most Amazing Bowling Story Ever, by Michael Mooney (D Magazine)

It really doesn't matter if you are into bowling or even if you are a sports fan. You still should read The Most Amazing Bowling Story Ever, from the July issue of D Magazine. Well written nonfiction begs you to finish it all in one sitting. In The New Journalism, Tom Wolfe argued that properly written nonfiction could be more compelling than fiction. If the world ever wants a movie about bowling, the screenplay is already written. Prior to this article, I was unfamiliar with Michael Mooney's work, but I will be watching going forward. Fantastic.

The Man Who Broke Atlantic City, by Mark Bowden (Atlantic Magazine)

This article chronicles the gambling success of Don Johnson, who more than once walked away from Atlantic City casinos with outsized wins. What is great about this story is how the hero capitalizes on the greed of the casino managers. He was able to persuade them to relax their rules, which allowed math back into the equation. You wonder how many of these stories never get told (which would seem appropriate).

Scamworld by Joseph Flatley (The Verge)

Turning towards the Internet, Joseph Flatley's Scamworld is a look inside the dark underbelly of "Internet Marketing." For many, the trick of the close is much more important than what is

actually sold. Flatley is focused specifically on online criminals, but the tools they use are eerily similar to a subset of startups that live in the vast grey-zone of Internet marketing activities.

Why the Clean Tech Boom Went Bust, by Juliet Eilperin (Wired Magazine)

Ambition, passion, intelligence, and a boat-load of money can only take you so far. You still need physics and economics on your side. Wired Magazine often surprises with a contrarian viewpoint, and in this case published an article everyone else was afraid to write. If you want your venture to succeed, it must succeed as a business – eventually.

Is Sugar Toxic, by Gary Taubes (New York Times Magazine)

Technically, this article was published in 2011, but that should not stop it from being further distributed. Gary Taubes, as well as others, have uncovered the real cause of America's obesity. Michael Bloomberg may look silly trying to outlaw mega-sodas, but at the very least he is calling attention to the proper villain. This is an amazing lesson in how everyone can get it wrong for decades – the scientists, the government, and the doctors.

Cormac McCarthy's Apocalypse by David Kushner (Rolling Stone)

This one will cost you money, but the subject matter is interesting and the money goes to a great cause. Cormac McCarthy's Apocalypse (originally published in 2007) is offered as premium content behind the Longreads subscription wall. America's most treasured modern novelist happens to be a consistent presence at one of America's most interesting research institutions, the Santa Fe Institute. Friends I know close to Santa Fe confirm that he is not merely present, but also an active and skilled participant. I also understand he may have "edited" one of my favorite longreads of all time, Brian Arthur's Increasing Returns and the Two Worlds of Business from HBR in 1996.

Snow Fall: The Avalanche at Tunnel Creek by John Branch (New York Times Magazine)

This is perhaps the most interesting longread of the year. The subject matter is backcountry skiing, but that has little to do with Branch's phenomenal achievement. The concept of computer generated "multi-media" dates back to the early 1990's, which is the first time we could imagine text, pictures, audio, and video all combined in a single content offering. However, most efforts over the past 20 years appear to be a technology looking for a solution – there is no flow. Snow Fall may be a seminal accomplishment in multimedia where the insertion of each media type builds upon the story in a remarkably compelling way. I wouldn't be surprised if this article takes on historical journalistic importance. Bonus: Q&A with the author.

In addition to longreads, I am equally enamored with great non-fiction video on the Internet. I have no doubt that one day there will be a very important and valuable company that categorizes and helps users discover great non-fiction Internet video. If you see a company in that space, please do me a favor and let me know. Until then, I will append a few video recommendations to my longreads list.

Jeff Bezos on Charlie Rose, November 16, 2012

Any interview with Jeff Bezos is a "must watch," but this particular interview is my favorite of all time. Bezos is simultaneously admired on Wall Street and in Silicon Valley, filling the void left by Steve Jobs as the most admired leader in technology. He offers advice on everything from running a BOD meeting to maintaining innovation in a large company. The whole time he is remarkably on message (per Amazon) and remarkably happy. Eighteen years in and killing it.

Adam Darwin: Emergent Order in Biology and Economics by Matt Ridley

Two of my favorite innovative thinkers from history are Charles Darwin and Adam Smith. Left leaning philosophies favor Darwin and not Smith. Those on the right espouse Smith but not Darwin. Ironically, Darwin borrowed many of his ideas from Smith. Ridley discusses their similarities and why we should embrace both perspectives.

Everything You Need to Know About Finance and Investing in Under an Hour by William Ackman

If you have studied finance or business you can easily skip this video. If however, you have never studied finance or business, and you are working on a startup, I would highly encourage you to spend 44 minutes with this video. It is quite enlightening and dense in data. Worth your time. Thanks to @vanninicapital.

Article 24: All Markets Are Not Created Equal: 10 Factors To Consider When Evaluating Digital Marketplaces

November 13, 2012:

Since Benchmark's investment in Ebay 15 years ago, we have been fascinated by online marketplaces. Entrepreneurs accurately recognize that the connective tissue of the Internet provides an opportunity to link the players in a particular market, reducing friction in both the buying and selling experience. The arrival of the smartphone amplifies these opportunities, as the Internet's connective tissue now extends deeper and deeper into an industry with the participants connected to the marketplace 24x7 – whether they are in the office, at home, or out in the field. It is a special experience to see an entrepreneur go from a PowerPoint describing a new marketplace opportunity to having established an online hub at the epicenter of a particular industry.

Following our investment in Ebay, we have been fortunate enough to invest in several companies that link consumers and suppliers through a successful online marketplace. Companies such as OpenTable, Yelp, Zillow, oDesk, GrubHub, 1stdibs, UShip, and Uber have all reached significant scale within their respective markets. But we have also invested in several companies that we thought had marketplace opportunities that simply did not play out as

expected. Simply put, some industries are much more susceptible to the arrival and success of online marketplaces than others.

A true marketplace needs natural pull on both the consumer and supplier side of the market. Aggregating suppliers is a necessary, but insufficient step on its own. You must also organically aggregate demand. With each step, it should get easier to acquire the incremental consumer AS WELL AS the incremental supplier. Highly liquid marketplaces naturally “tip” towards becoming a clearinghouse where neither the consumer nor the supplier would favor an alternative. That only happens if your momentum is increasing, and both consumers and suppliers are sensing an increasing importance of your place in the world. Much easier said than done.

Here are 10 factors to consider when evaluating the potential success of a new marketplace opportunity:

- **New Experience vs. the Status Quo.** Great marketplaces do not simply aggregate a market; they enhance it. They leverage the connective tissue to offer the consumer a user experience that simply was not possible before the arrival of this new intermediary. OpenTable enables the consumer to search reservation availability across hundreds and hundreds of restaurants in a matter of seconds. That capability never existed before, and as a result the delta of the new experience vs. the incumbent experience (dialing restaurants one by one) is extremely high. Another company with a high experience delta is Uber. By aggregating thousands of licensed limousine drivers, and overlaying that with a new-age supply chain management solution, Uber gives it users an experience that is drastically improved compared to the previous alternative. Today, GrubHub announced “Track Your Grub”, a service that allows you to watch your food on the way to your house. When this experience delta is great enough, it creates “wow” moments for new users. “Wow” moments lead to word-of-mouth viral growth and high net promoter scores.
- **Economic Advantages vs. the Status Quo.** Some marketplaces provide enhanced economic advantages. oDesk enables companies to easily provision programming talent from all corners of the globe. This helps purchasers procure a cheaper alternative, while also providing brand-new economic lift to the programmer (supplier). Both sides experience an economic advantage. Another interesting example of this bi-directional advantage is AirBNB. For the property owner, the income is “found money” that simply didn’t exist prior to the marketplace. And in many cases the consumer receives a better price as well. If you can positively change the economics of an industry, you will find the participants on both sides rooting for your success. This gives you a huge head start when it comes to tipping the marketplace.

- **Opportunity for Technology to Add Value.** In many marketplaces, the technology offering greatly enhances the user experience. Zillow provides homebuyers with an abundance of data that was historically kept in proprietary systems. They have overlaid this data with maps and search technology that provide remarkable richness to the home buyer. Smartphones take this even further, with the ability to learn a great deal about any property with a one-click GPS enabled search. At Uber, the system has “perfect” information in an industry where just two years ago there was a complete lack of visibility (on both sides of the network) that led to enormous waste of resources. Uber’s system enables higher car utilization, more fares per hour for the driver, and faster and faster pickup times for the consumer. At oDesk, the platform enables the planning, development, and transfer of code from the supplier to the purchaser. The marketplace is also a work-flow system that enhances the overall experience for all parties. Facilitating work-flow reduces work for the participants, as well as increasing switching costs.

- **High Fragmentation.** High buyer and supplier fragmentation is a huge positive for an online marketplace. Likewise, a concentrated supplier (or purchaser) base greatly diminishes the likelihood of a successful online marketplace. A highly concentrated supplier base will be reluctant to allow a new intermediary in their market, and as a result will likely fight rather than support your arrival. They will also be very reluctant to share in the economics of the industry, as anyone in the online travel industry can confirm. The large airlines have all but obliterated the economics of online ticketing marketplaces, leading all the online players to focus on hotels where the fragmentation and therefore the economics are higher. If you look at the list above of successful Benchmark investments, you will see a common theme of fragmented supplier base.

- **Friction of Supplier Sign-Up.** In some markets signing up suppliers is relative easy. In others, it can be a painfully slow process that requires lots of touch and local presence. At companies such as Yelp, Uber, and GrubHub, new city launches are relatively quick after a process model had been established for how to launch those cities. The opposite was true for OpenTable where the installation of a personal computer and internet connectivity were part of the early roll-out requirements. High friction supplier signup can be a barrier to entry (as it is for OpenTable) if you are able to build a successful marketplace. But in the early stages, this friction slows your roll-out and increases the costs associated with supplier aggregation. Remember, however, that supplier aggregation is the easy part. Aggregating demand is much harder and more critical.

- **Size of the Market Opportunity.** A proper TAM (total available market) analysis is imperative, but it is easy to make mistakes looking only at TAM. As a starter, if all the other factors are negative, it will not matter that the market is large. Some markets are crappy candidates for marketplaces. Second, you should also consider the percentage of the market that is likely to use the online alternative. In certain industries, there may be large portions of the market that may not be available to the new online marketplace. An interesting example is healthcare, which is unquestionably a very large market. However, the oligopoly of large players in this market controls a massive percentage of market and is unlikely to support a new alternative. You can also miss-analyze TAM in the other direction. In the case of OpenTable many investors missed

the opportunity by mistakenly assuming the TAM was too low. In this case, they underestimated the percentage of the market that OpenTable could penetrate. OpenTable recently passed 10 million diners a month with less than 20% of transactions in North America currently online. You must combine a TAM analysis with the likelihood of marketplace success and penetration.

- **Expand the Market.** Another potential error that can be made while analyzing TAM is to fail to understand that the features and enhancements of the new marketplace may actually expand the market opportunity for the whole industry. This may sound like a brazen claim, but certain marketplaces do indeed expand the market — by exploring new price points or enhancing convenience or usability. oDesk greatly simplifies the process of outsourcing code development, and as such many of its use cases are expansive to the overall market. oDesk's presence increases the number of first time software outsourcers. Uber's ease of use and simplicity have led many of its users to greatly increase the number of times they use an alternative car service. Some customers now use it as a second car alternative. As such, the company is meaningfully expands the market for black car services, which is in turn a huge boon to the suppliers that share in the economic expansion.

- **Frequency.** All things being equal, a higher frequency is obviously better. Yelp, GrubHub, OpenTable, 1stdibs (for the designer) and Uber are all high frequency use cases, where the consumers can rely on the marketplace as a utility. Many failed marketplaces attack purchasing cycles that are simply way too infrequent, which makes it much more difficult to build brand awareness and word-of-mouth customer growth. Another repeated mistake is attacking verticals where a satisfactory supplier "match" ends the customer's need to re-enter the market in search of an alternative. This second point negatively impacts many vertical service provider markets (such as pediatricians) where customers actually prefer a monogamous relationship.

- **Payment Flow.** All things being equal, being part of the payment flow is superior to not being a part of the payment flow. This is due to the fact that it is much easier to extract reasonable economics when you are in the flow of payment. The supplier not only looks to you as a provider of revenue, but they receive that revenue "net of the fee." Contrast this with a marketplace where you add value first, and then send a bill to the supplier at later date for services rendered. In this latter case the marketplace appears as an expense, and it's easier for the supplier to view it as a "tax" versus a distribution relationship. Cash is king, and if you bring the cash, you are king. Unfortunately, some industries (like autos) just are not set up for this type of arrangement, as the payment likely lives at the end of a long purchasing process.

- **Network Effects.** Network effects are tricky and hard to describe but fundamentally turn on the following question: Can the marketplace provide a better experience to customer "n+1000" than it did to customer "n" directly as a function of adding 1000 more participants to the market? You can pose this question to either side of the network — demand or supply. If you have something like this in place it is magic, as you will get stronger over time not weaker. In the early days of OpenTable we noticed that the reservations per restaurant in a given city were correlated to market penetration. Clearly, the more restaurants that were on the network, the better the

value proposition was for the consumer. Something similar occurs with Uber. As the company grows, they are able to facilitate more cars on the road, and along with their investment in route and load optimization, this allows for shorter and shorter pickup times. The experience gets better and better the longer they are in the market. UGC sites like Yelp and TripAdvisor also have strong network effects. Network effects are rare but golden. If you don't have one try to find one; if you do have one, try to enhance it.

It is unlikely that you will find a marketplace opportunity that would score ten out of ten with respect to this list. However a 7 or 8 out of 10 would imply that your opportunity of success is much, much higher than if you only match 3 or 4 out of 10. It is also important to realize that finding a great opportunity is only a start, and this analysis could easily mislead one into underestimating the critical role that execution plays when it comes to marketplace businesses. Great marketplace execution is more nuanced and less systematic than other venture backed categories, and for every successful marketplace, you will find an amazing entrepreneur that out-executed the many others that had chosen to attack the same market. In addition to great marketplace characteristics, you also need a world-class entrepreneur to make the dream come true.

*For a real-time look at this analysis in action, see Our Most Recent Marketplace Investment, DogVacay from Los Angeles.

Article 25: Our Most Recent Marketplace Investment, DogVacay from Los Angeles

November 13, 2012:

Earlier today, DogVacay, an exciting new startup in Los Angeles, announced that Benchmark has led its most recent round of financing. DogVacay is an online marketplace that links dog owners with passionate dog care providers who open up their own home as an alternative to the

traditional cage-oriented kennel. At first blush, a web site that allows owners to book a “Dog Vacation” for their esteemed pet may seem like an unusual choice for a venture investment. However, a more analytical and detailed look at the market uncovers that this is a high potential, high probability online marketplace opportunity.

The most recent Above the Crowd blog post, titled All Marketplaces Are Not Created Equal, outlines ten different ways to judge the potential effectiveness of an online marketplace. You may be surprised how well DogVacay checks out against this list:

After taking a detailed look at the crowd-sourced dog care market; we became quite excited about the opportunity at DogVacay. In addition to our analysis, we had the added benefit that the company had been live since March, and we were able to confirm our analysis by witnessing amazing early traction in the field. DogVacay’s six-month ramp and current monthly gross transaction revenue are very reminiscent of the very best of our previously funded successful marketplaces. From our perspective, DogVacay is a winner in the making.

We are super excited to be working with Aaron Hirschhorn, the founder and CEO of DogVacay. He is not only an amazingly smart entrepreneur, but also a passionate dog owner. We are also thrilled to be working with First Round once again (as in Mint, Uber), and are excited about our first partnership with Peter Pham, Mike Jones, and the team at Science in Los Angeles.

September 4, 2012:

Many consumer Internet business executives are loyalists of the Lifetime Value model, often referred to as the LTV model or formula. Lifetime value is the net present value of the profit stream of a customer. This concept, which appears on the surface to be quite benign, is typically used to compare the costs of acquiring a customer (often referred to as SAC, which stands for Subscriber Acquisition Costs) with the discounted positive cash flows that will come from that customer over time. As long as the sum of the discounted future cash flows are significantly higher than the SAC, then people will argue it is warranted to “push the accelerator,” which typically means burning capital by aggressively spending on marketing.

This is a simplified version of the formula:

The key statistics are as follows:

- ARPU (average revenue per user)
- Avg. Cust. Lifetime, n (This is the inverse of the churn, $n=1/[\text{annual churn}]$)
- WACC (weighted average cost of capital)
- Costs (annual costs to support the user in a given period)
- SAC (subscriber acquisition costs, sometimes referred to as CAC = customer acquisition costs)

The LTV formula, when used correctly, can be a good tactical tool for monitoring and comparing like-minded variable market programs, especially across channels. But like any model, its proper use is entirely dependent on the assumptions used in that model. Also, people who have a hidden agenda or who confuse a model with reality can misuse it. For many companies that subscribe to its wisdom, the formula slowly takes on more importance than it should. Seduced by the model, its practitioners often lose sight of the more important elements of corporate

strategy, and become narrowly fixated on the dogmatic execution of the formula. In these cases, the formula can be confused, misused, and abused, much to the detriment of the business, and in many cases the customer as well.

Here are ten reasons to avoid worshipping at the LTV altar:

- **It's a Tool, Not a Strategy.** Heavy LTV companies forget that the LTV model does not create sustainable competitive advantage. You shouldn't confuse output with input. The LTV formula is a measurement tool to be used by marketing to test the effectiveness of their marketing spend – nothing more and nothing less. If one asserts that buying customers below what they charge them is a corporate strategy, this is in essence an arbitrage game, and arbitrage games rarely last. Too many of the variables (specifically ARPU and SAC) are outside of your control, and nothing would prevent another player from executing the exact same strategy. It's not rocket science; it's a formula that any business school graduate can calculate. Do not fool yourself into believing it creates a proprietary advantage.
- **The LTV Model Is Used To Rationalize Marketing Spending.** Marketing executives like big budgets, as big budgets make it easier to grow the top line. The LTV formula "relaxes" the need for near term profitability and "justifies" the ability to play it forward – to spend today for benefits that are postponed into the future. It is no coincidence that companies that put a heavy emphasis on LTV are also the ones that have massive losses as they scale, frequently even through an IPO. Consider that most companies limit any "affiliate fee" they would be willing to spend to 5-10% of sales. Yet when they are marketing, they use different math. They use LTV math, and all the sudden it's acceptable to spend 30-50% of revenue on customer acquisition. Find the most boisterous executive recommending excessive spending, and you will usually find a loyal servant of the LTV religion.
- **The Model is Confused and Misused.** Frequently the same group that is arguing for more spending is the same one that "owns" the LTV calculation. (This is a mistake – finance should monitor LTV). As a result, it is not uncommon for one to see shortcuts taken that allow for greater freedom. As an example, marketers often divide spend by total customers to calculate SAC rather than just those customers that were "purchased." If you have organic customers, they shouldn't be included in the spend calculus. They would have arrived regardless of spend. Also, many people discount "revenues" rather than marginal cash contribution. It is critical to bundle all future variable costs of supporting the customer in order to fairly estimate the future contribution. As an example of the sloppiness that exists around the formula, consider this blog post (<http://blog.kissmetrics.com/how-to-calculate-lifetime-value/>) from KISS metrics, a company whose aim is to "help you make smarter business decisions." Not only do they include a version of the model that specifically ignores future costs, but also they recommend taking an

average of three different results, two of which are clearly flawed. This voodoo-math has no place as part of a multi-million dollar marketing exercise.

- **Business Isn't Physics – The Formula Is Not Absolute.** LTV zealots often hold an overly confident view of the predictive nature of the formula. It's not "hard science" like say predicting gravity. It's at best a "good guess" about how the future will unfold. Businesses are complex adaptive systems that cannot be modeled with certainty. The future LTV results are simply predictions based on many assumptions that may or may not hold. Yet the LTV practitioner often moves forward with a brazen naiveté, evocative of the first time stock buyer who just found out about the price/earnings ratio, or the newcomer to Vegas who has just been taught the basics of twenty-one. LTV models win arguments because executives perceive them to be grounded in science. Just because its math, doesn't mean its good math.
- **The LTV Variables "Tug" at One Another.** This may be the single most important issue and it lies at the heart of why the LTV model eventually breaks down and fails to scale ad infinitum. Tren Griffin, a close friend that has worked for both Craig McCaw and Bill Gates refers to the five variables of the LTV formula as the five horsemen. What he envisions is that a rope connects them all, and they are all facing different directions. When one horse pulls one way, it makes it more difficult for the other horse to go his direction. Tren's view is that the variables of the LTV formula are interdependent not independent, and are an overly simplified abstraction of reality. If you try to raise ARPU (price) you will naturally increase churn. If you try to grow faster by spending more on marketing, your SAC will rise (assuming a finite amount of opportunities to buy customers, which is true). Churn may rise also, as a more aggressive program will likely capture customers of a lower quality. As another example, if you beef up customer service to improve churn, you directly impact future costs, and therefore deteriorate the potential cash flow contribution. Ironically, many company presentations show all metrics improving as you head into the future. This is unlikely to play out in reality.
- **Growing Becomes a Grind.** Let's say you have a company that estimates it will do \$100mm in revenue this year, \$200mm the next, and \$400mm the year after that. In order to accomplish those goals it is going to invest heavily in marketing – say 50% of revenues. So the budget for the next three years is \$50mm, \$100mm, and \$200mm. How realistic is it to assume that your SAC will drop as you 4X your spend? Supply and demand analysis suggests the exact opposite outcome. As you try to buy more and more of a limited good, the price will inherently increase. The number one place on the planet for marketing spend is Google Adwords, and make no mistake about it, this is an increasingly finite resource. Click-outs are not growing at a meaningful pace, and key word purchases are highly contested. Assuming you will "get better" at buying while trying to buy more is a daunting assumption. The game will likely get tougher not easier.
- **Purchased Customers Underperform Organic on Almost Every Metric.** Organic users typically have a higher NPV, a higher conversion rate, a lower churn, and more satisfied than customers acquired through marketing spend. LTV heavy companies are in denial about this point. In fact, many of them will argue until they are blue in the face that the customer dynamics are the same

while this is rarely the case. A customer that “chooses” your firm’s services will be much more satisfied than one that is persuaded to buy your product through spend. Find any high-marketing spend consumer subscription company, and I will show you a company with numerous complaints at the Better Business Bureau. These are companies that make it almost impossible to terminate your subscription. When you are scheming on how to trap the customer from finding the exit you are not building a long-term brand.

- **The Money Could Go to the Customer.** Think about this. If you are a company that spends millions and millions of dollars on marketing, wouldn’t you be better off handing that money to the customer versus handing it to a third-party who has nothing to do with the future life-time value of the customer? Providing a better value-proposition to the customer is much more likely to endure goodwill than spending on marketing. A heavy marketing spend necessitates a higher margin (to cover the spend), and therefore a higher end user price to the customer! So the customer is negatively impacted by the presence or “need” of the marketing program. Plus, a margin umbrella now exists for competition that chooses to undercut your margin model with a more efficient customer acquisition strategy (such as giving the customer the money). “More and more money will go into making a great customer experience, and less will go into shouting about the service. Word of mouth is becoming more powerful. If you offer a great service, people find out.” – Jeff Bezos

- **LTV Obsession Creates Blinders.** Many companies that obsess over LTV, become overwhelmed by LTV. In essence, the formula becomes a blinder that restricts creativity and open-mindedness. Some of the most efficient forms of marketing are viral, social, and effective PR (public relations). Most companies that obsess about LTV are less skilled at these more leveraged techniques. Ironically, it’s the scrappy and capital starved startup with absolutely no marketing budget that typically finds a clever way to scale growth organically. I love this historic slide from Skype comparing their SAC with that of Vonage, an iconic disciple of LTV analysis.

10. **Tomorrow Never Arrives.** The Utopian destination imagined by the LTV formula is a mirage. It almost never works out as planned in the long run. Either growth begins to slow, or you run out of capital to continue to fund losses, or Wall Street cries uncle and asks to see profitability. When this happens the frailty of the model begins to appear. SAC is a little higher than expected. You met your growth target, but the projected loss was bigger than expected. Wall Street is hounding you for churn numbers, but you are reluctant to give them out. The lack of transparency then leads to cynicism, and everyone assumes the worse. It turns out that the excessive marketing spend was also propping up repeat purchase, and pulling back to achieve profitability is increasing churn. Moreover, a negative PR cycle has ensued as a result of your stock decline, and the press’ new doubts about your model. This also impacts results, and

customer perception of your brand. The bottom line is that “one day we can stop spending and be remarkably profitable” rarely comes to fruition.

It is not impossible to create permanent equity value with the LTV approach, but it's a dangerous game of timing – you don't want to be the peak investor. Let's say a new business starts with an early market capitalization of A (see graph below). Through aggressive marketing techniques, and aggressive fund raising, the company is able to achieve amazing revenue growth (and corresponding losses), but nonetheless creates a rather sizable organization. At this point, the company is value at point B. Eventually, however, gravity ensues and the constraints outlined herein raise their head, resulting in a collapse to point C. For early founders and investors at point A, they may do OK (as long as $C > A$), but it will be accomplished on the backs of later stage investors that helped fund the unsustainable push to point B. This is the story of many a telecom and cable provider expansion history, as well as a few recent Internet companies.

This should not be misconstrued as a eulogy for the LTV formula. It has a very important place in business as a way to contrast and compare alternative marketing programs and channels. It is a tactical marketing tool that requires candor and thoroughness in its implementation. The fundamental reason that it is so amazingly dangerous and seductive is its simplicity and certainty. Generic marketing is conceptual. LTV marketing is specific. Building a plan to grow to a million users organically is an order of magnitude more difficult than doing it with the aid of the LTV formula. There is comfort in its determinism, and it is simply easier to do.

Some people wield the LTV model as if they were Yoda with a light saber; “Look at this amazing weapon I know how to use!” Unfortunately, it is not that amazing, it's not that unique to understand, and it is not a weapon, it's a tool. Companies need a sustainable competitive advantage that is independent of their variable marketing campaigns. You can't win a fight with a measuring tape.

Article 27: Social-Mobile-LOCAL: “Local” Will Be The Biggest of the Three

June 25, 2012:

“Well I was born in a small town

And I live in a small town

Prob’ly die in a small town

Oh, those small – communities”

— Small Town, John Mellencamp

While “Social-Mobile-Local” is certainly an overused buzz phrase, most of the attention has been placed on the “social” and “mobile” parts of the phrase. In social, the spectacular rise of Facebook and Twitter is clearly a disruptive and critical trend. In mobile, the adoption of the smartphone (led by Apple’s iPhone and now catapulted forward by Android) is also a fundamentally important platform transition. Much less attention has been paid to the third concept, “local,” which is ironic since it may be a much larger real business opportunity than either social media or Smartphone application revenue. Over the next five years, this massive opportunity will come into focus as local businesses embrace the Internet and adopt new interactive technologies that increasingly automate the connections between their customers and themselves.

A Huge Opportunity

The attached slide will look familiar to readers in Silicon Valley. It appears to be a disruptive, up-and-to-the-right graph that we normally associate with break-out technology companies. This slide, however, maps the rise of the Yellow Pages industry in North America from 1920 to 2007. As you can see, the Yellow Pages business saw incredible revenue growth as the phone became the key point of connectivity for interaction with local business. At its peak in 2007, the North American Yellow Pages business topped out somewhere between \$14-16 billion, depending on the source.

Total local advertising and promotion is much larger than just the Yellow Pages. A separate analysis done by Advertising Age, suggests that in 2007, local U.S. businesses spent around \$123 billion annually on local media. However, starting in 2008, this market began to materially erode. Why? Newspapers, magazines, local radio, and Yellow Pages represent about 80% of this spend, and the rise of the Internet is unquestionably undermining the core structure of these industries. Since 2007, Yellow Pages revenues have fallen in half in five years, after taking 87 years to reach their peak. Many newspapers have closed, and others teeter on the edge of bankruptcy. This is not at all shocking. We know that consumers are using these products less frequently every day. The Yellow Pages business itself suffers from a terminal disease.

If you think back to five years ago, the small business owner was clearly an Internet skeptic. People would say things like “you should have a web site,” but for most local business owners — like a pet-shop or a locksmith — this didn’t mean anything. They had a phone, it was listed in the Yellow Pages — and people could find them. And if the potential consumer went online, the phone number could be found there as well. No problem. For those that did put up a web site, it was, in many cases, a non-event. Some customers might find it, but only the ones that were already looking for them. What’s the big deal?

An Online Awakening

Two things then happened. The first is the critical success of Yelp. Local merchants were suddenly profiled in an environment where the consumer, not the business owner, controlled the copy and the narrative. At first, it was easy to disregard this thing called Yelp as a passing fad. But the voices got louder and louder — both the happy and the unhappy ones. Accountability and transparency had arrived at the local level. One has to suspect that Facebook’s pervasiveness played a roll in awakening the small business owner too. By 2011, Facebook had reached 71% penetration of all 221mm U.S. Internet users. Regardless of industry, when the small business owner now went home, his or her family was constantly on the Internet — playing games, doing research, connecting with friends. The Internet’s pervasiveness could no longer be denied.

Today, the small business owner’s attitude has shifted from denial to anxiety, and, as a result, these local business owners are rushing to the Internet in droves. In Benchmark’s own portfolio, we have eight companies (OpenTable, Uber, Zillow, Yelp, DemandForce, GrubHub, 1stdibs, and Peixe Urbano, *) that generate the majority of their revenue directly from local businesses. Based on estimates, these companies will represent approximately \$735mm in revenue in

calendar year 2012. Four of these companies have already seen a liquidity event (OpenTable, Zillow, and Yelp have had successful IPOs, and DemandForce was recently purchased by Intuit for \$425 million). As small business owners embrace the Internet, the local Internet is firing on all cylinders. Not bad for a customer segment that was once considered a “do not enter” zone for venture capitalists.

The Smartphone as a Catalyst

If the decay of the Yellow Pages was a catalyst for the local Internet, then the rise of the smartphone is an accelerant. Smartphone adoption is staggering. Today, there are over 1 billion smartphone users worldwide, and in the U.S., smartphone penetration recently passed 50%. Google has announced that Android is activating over 850K new users a day. These mobile devices are frequently the preferred device (vs. a personal computer) when a consumer looks to interact with local businesses. For the eight companies mentioned above, mobile usage already represents between 25-50% of overall customer usage depending on time of day and day of week. And mobile usage looks destined to increase from here: DigitalBuzz predicts that mobile Internet users will pass desktop Internet users within the next 3 years.

The rise of the Smartphone as a new platform is a huge benefit for entrepreneurs. Simply put, large incumbents are typically slow to make shifts to new platforms. This is either because they are overly focused on their current strength, or simply too large and bureaucratic to move quickly. Often, it is a combination of both. Startups on the other hand are eager to find a point of leverage or advantage, and rush to new platforms. New platforms typically have “hooks” that enable features that never existed on the previous platform, further differentiating the startups offerings. A great example on the Smartphone is using GPS for one button local search. New platforms also require new distribution techniques, and in such a “jump ball” scenario the incumbent’s advantage evaporates. One could argue the incumbents are even at a disadvantage as they are less likely to have the cutting edge technical employees who understand the new platforms.

Changing the Game: Going Deep

But there is an even greater limitation on the power of incumbents than their discomfort with new platforms. As the market moves away from Yellow Pages-like listings and directories as a proxy for advertising, many young companies, taking a page out of the playbook of data-driven software-as-a-service companies, have created deep vertical integration within their spaces in

order to drive traffic and enable services. By organizing small business owners, supplementary service providers, and customers on a single canonical set of data, these companies are not only providing new ways for customers to discover local businesses: they are creating new ways for local businesses to interact with customers. They are moving from “listing” services to “automation” services, and they are stitching these Internet services deep into the nervous system of the target industry.

For example, a company like OpenTable provides, on a stand-alone basis, a premises based computer that is an extremely effective tool for restaurants to manage their tables — a digital version of the reservation book on the maitre d’s desk. By connecting that same data on the Internet, and aggregating that data from other restaurants, you have OpenTable’s incredible online reservation system. Along that same data spine, customers can add reviews, limousine services and florists can enhance the dining experience, and a location-aware Smartphone app can tell you what restaurant within walking distance of where you are has a table available right now. The “offering” is the complete network, not just one specific piece, and the pieces alone are less compelling.

Going “deep” like this is a significant challenge for larger incumbents. The playbook requires a deep understanding of the industry, access to all the key content and its structure, a targeted and experienced sales structure, and a willingness to invest in a market that may seem “niche” to the broader service provider. You have to be willing to get your hands dirty. These large companies favor a horizontal, one-size-fits-all approach, offering a widget that all local companies would potentially use (such as virtual loyalty cards). But these lightweight offerings from the incumbents will fall well short of the “automation” features and functionality enabled by the innovators digging deeper into the vertical.

We’ve already seen a couple of recent examples of this with Google. In mortgages, Google launched a product but ultimately retreated, citing prioritization concerns and “taking a hard look at products that haven’t been as successful as we had hoped.” A seemingly simple category like mortgages proved difficult to nail within the overall Google strategic framework. Likewise, in order to gain a foothold in travel — a space where deep verticals thrived for many years — Google ultimately realized they had to pay \$700mm for ITA Software in order to acquire the vertical tools they needed to be successful.

The Real Winner: The Customer

If you look closely at many of the leading companies developing these deep verticals, like Zillow or OpenTable or Uber or AirBnB, they are providing far more than just advertising opportunities for local businesses. These companies are using new technologies like mobility and location to improve communication, interaction and overall customer experience.

The amazing thing about these new local Internet companies is how much value the consumer gets from this data-driven, vertically-integrated experience. Watching your Uber driver approaching your location on GPS forever alters your experience of taxis and limos, while at the same time providing total transparency up and down the value chain, from dispatcher to driver to fleet manager.

But the really exciting part is that we are still really early in this process of transformation away from listing/directory advertising to a local Internet. By way of comparison, in the fourth quarter of 2011, Southwest Airlines reported that 86% of its revenue was booked online. By comparison, only 12% of US restaurant reservations are booked online. Only 15% of dentists are connected to customers through services like DemandForce. Only 3% of takeout orders are processed through online offerings like GrubHub. And less than 1% of realtors are premier agents on Zillow.

We all know intuitively where those numbers are headed in the future.

*Benchmark Capital is also super excited about its investment in Nextdoor, the leading social network for local neighborhoods and communities. Join 3,000 other local communities who have revolutionized how neighbors interact online. Check it out at www.nextdoor.com.

Article 28: You Don't Have to Tweet to Twitter

November 15, 2011:

Frequent comparisons to Facebook leave many confused about the true value of Twitter.

[Follow Me on Twitter]

“In a brand new direction

A change of perception

On a brand new trajectory”

– UB40

[Disclosure: Benchmark Capital is a major investor in Twitter, and my partner Peter Fenton sits on the Twitter BOD.]

Twitter is having a remarkable year. Active users have soared to over 100 million per month, with daily actives now above 50 million. Tweets per day are over 250 million. Most top actors, athletes, and artists are all active on Twitter. Every news and sports program proudly advertises its Twitter account handle. No one would consider running for public office without a strong Twitter presence. Global news in any region breaks first and spreads fast on Twitter. Even uber-socialist Hugo Chavez of Venezuela has 2.24 million followers (which puts him slightly behind Mandy Moore, but just ahead of Queen Latifah).

So, Twitter’s traffic has been growing in leaps and bounds. It has become an indispensable tool for managing personal and corporate brands. And Twitter, along with its verb form “tweet”, have become words in everyday usage all over the world. Yet despite these impressive strides, Twitter’s upside is far, far greater and its user base will expand by an order of magnitude – as soon as the service can overcome a major perception problem.

Twitter suffers from two key misperceptions that need to be resolved before the business can reach its true potential. The first misperception is that Twitter is simply another social network, like Facebook. People commonly think of Twitter as a variant of Facebook. The press frequently positions the two together as “leaders in social networking.” This pairing erroneously implies that the two services are used for the exact same thing, even though the two platforms are very different. Facebook is a few-to-few communication network designed for sharing information and life events with friends. Twitter, on the other hand, is a one-to-many information broadcast network. The only way magic happens on Facebook is through reciprocity: I friend you and you friend me back – then information flows. But on Twitter, I can get something out of following Shaquille O’Neil who has no social obligation to follow me back.

As its roots are in communication, a key part of the Facebook value proposition is sharing information. Any potential anxiety with regards to Facebook sharing is reduced by the fact that these communications are generally seen only by one’s friends. In fact, users react quite negatively when this information is unknowingly shared more broadly. For the people who view Twitter as a Facebook variant, they immediately assume the platform’s core purpose is for the user to broadcast his or her own thoughts and personal information (like Facebook), but to a much broader public audience. For those with this perception, the notion of potentially exposing their own private thoughts to the broad public Internet is overwhelming and uninteresting.

The second, and more critical, Twitter misperception is that you need to tweet, to have something to say and broadcast, for the service to be meaningful to you. For many non-Twitter users, Twitter is an intimidating proposition. “Why would I tweet?” and “...but I don’t want to tweet” are two common refrains from the non-adopter that highlight this key misperception. But this completely misses the point as to why Twitter has become such an amazingly powerful Internet destination for 100 million others. For the vast majority of Twitter’s next 900 million users, the core usage modality will have very little to do with “tweeting,” and everything to do with “listening” or “hearing.”

Twitter is an innovative and remarkable information service. While it is amazingly democratic and allows literally anyone to broadcast publicly as a “tweeter,” the core value in today’s Twitter is the amazing flow of curated and customized information that emanates from its crowd-sourced user feeds. Other Internet networks like to keep the user “inside.” Much like Google, Twitter points out to the world. It’s a “discovery engine” and an “information utility” rolled into one. With Twitter, you get news faster, you see updates from your favorite artists, you hear directly from key politicians, and gain insights from influencers in a wide variety of specializations. Just as Facebook is symmetric in terms of its poster-reader relationship, Twitter is highly asymmetric. The majority of the tweets on Twitter are posted by a small sub-set of the

users. And the majority of the users get value from “reading” or “listening” to the tweets from these core influencers. Once again, for most users it’s more about what you hear, learn, and find than the fact that you can tweet.

In many ways, Twitter is much more of a competitor to other “discovery tools” and “information sources” than it is to Facebook. Facebook is unquestionably the number one resource for “sharing with the people in your life.” From this perspective, Facebook competes (extremely well) with email, instant messengers, and certainly other symmetric social networks like MySpace. Twitter, on the other hand, competes most directly with other tools that help you find important links, news, and information. It is in this broad, non-friend based crowd-sourcing and speed of discovery where Twitter truly shines. A recent Tweet by famed sci-fi author William Gibson highlights this point. Having become accustomed to the non-linear speed of information flow on Twitter, Gibson grew frustrated watching news of the Osama bin Laden killing on TV: “Network news feels like trying to suck cold tar through a milkshake straw.”

Some who understand this point have suggested that Twitter is merely a “Better RSS reader.” While this analogy is directionally more accurate than the Facebook comparison, it greatly underestimates the power and value of Twitter. RSS feeds are simply computerized information “routers” that require complex setup, initialization, and maintenance. Twitter has three breakthroughs that make it dramatically more powerful than simple RSS. First and foremost, your personalized Twitter feed is human-curated by a potential universe of millions of curators. When you “check Twitter” you are looking at the specific articles and links purposefully chosen by people you have chosen to follow. That is powerful leverage. Second, it is easily extensible. Due primarily to the concept of “retweeting,” the simple act of using Twitter exposes you to new and interesting sources to follow. It evolves into a richer and more customized offering over time. You discover new people as well as new information. Lastly, Twitter’s unique handles and follower networks create a strong-form network effect that has high lock-in and high switching costs. Twitter and its top tweeters have a deeply symbiotic relationship.

So what can Twitter do to solve this misperception problem? The first thing they can fix is the new user registration flow, a process that has already begun. Earlier this year, a new user would be encouraged to “tweet” very early in the registration process, basically reinforcing the perception problem. Today’s “first 60-second” Twitter experience is quite different and revolves around choosing the influencers you will follow. You should expect even more evolution in this direction in the future. Next, Twitter must make it crystal clear to the press and prospective user that there is an amazingly powerful value proposition for non-broadcasting users. This will not be easy, as it requires a reprogramming of perception across a broad audience. Not only will this aid in incremental adoption, but it will also help subdue the confusion with respect to Facebook.

Twitter is on an amazing trajectory and will continue to increase in usage and influence. However, the power of this discovery platform is much more about the tweets themselves, and not simply about every single user having the ability to tweet.

[Follow Me on Twitter]

Article 29: Steve's Jobs Remarkable Value Creation

October 9, 2011:

In addition to inspiring others and building breakthrough new products, he also lit up the biggest scoreboard in business...the company's market capitalization...(courtesy of Forbes):

Article 30: Understanding Why Netflix Changed Pricing

September 18, 2011:

Many journalists have offered their opinion on Netflix's recent changes, its stock price decline, and their even more recent branding changes (Qwikster). Yet in each article, it appears as if the journalist all agree that the price move (creating separate prices for streaming and DVDs) was a bad strategic move. As an example, Techcrunch notes:

"Raising prices for those of us who opt for both streaming and DVDs would have been fine if Netflix had a deeper streaming catalog. But the gap is still too big, and the price hike seemed premature. Your customers are extremely loyal. Don't piss them off."

The problem with this perspective is, in my opinion, the price move was not a "decision," so much as a "reality" presented to Netflix from the content owners in Hollywood.

Hollywood is a unique place, and understanding "business" in Silicon Valley leaves you ill-prepared to understand what makes Hollywood tick (for more on this see: When It Comes To Television Content, Affiliate Fees Make The World Go 'Round). Very few people understand the key underpinning of the Netflix "original" business model — a 1908 Supreme Court Ruling known as "first sale doctrine." From Wikipedia:

"The doctrine allows the purchaser to transfer (i.e., sell, lend or give away) a particular lawfully made copy of the copyrighted work without permission once it has been obtained."

Because of the first-sale doctrine, any DVD reseller, including Netflix, can basically buy a DVD at WalMart, and turn around and rent it to someone else the very same day. The content owners have absolutely no control over whether the copy can be resold or rented. Period. As such, Netflix has the ability to rent (via DVD) any movie which has ever been sold on DVD, and its costs are relatively fixed as a result of the retail price of the actual DVD. In some ways, it is a perfect storm.

Fast forward to digital streaming and all bets are off. More specifically, the first-sale doctrine does not apply. That's right. For DVDs, Netflix's rights are unlimited and its costs are constrained. For digital, its rights are constrained and its costs are unlimited. In the absence of the first-sale

doctrine, Netflix must negotiate each and every title, and the price of the right to stream that digital title is up to the whim of the content owner. For many titles, you cannot even obtain digital rights, because they can't find all the people they need to release the rights to do so.

So here is what I think happened with Netflix's recent price change (for the record, I have no inside data here, this is just an educated guess). Netflix has for the past several years been negotiating with Hollywood for the digital rights to stream movies and TV series as a single price subscription to users. Their first few deals were simply \$X million dollars for one year of rights to stream this particular library of films. As the years passed, the deals became more elaborate, and the studios began to ask for a % of the revenues. This likely started with a "percentage-rake" type discussion, but then evolved into a simple \$/user discussion (just like the cable business). Hollywood wanted a price/month/user.

This is the point where Netflix tried to argue that you should only count users that actually connect digitally and actually watch a film. While they originally offered digital streaming bundled with DVD rental, many of the rural customers likely never actually "connect" to the digital product. This argument may have worked for a while, but eventually Hollywood said, "No way. Here is how it is going to work. You will pay us a \$/user/month for anyone that has the 'right' to connect to our content – regardless of whether they view it or not." This was the term that changed Netflix pricing.

With this new term, Netflix could not afford to pay for digital content for someone who wasn't watching it. This forced the separation, so that the digital business model would exist on its own free and clear. Could Netflix have simply paid the digital fee for all its customers (those that watched and not)? One has to believe they modeled this scenario, and it looked worse financially (implied severe gross margin erosion) than the model they chose. It is what it is.

Netflix is an amazing company, and Reed Hastings is one of the best CEOs Silicon Valley has ever seen. That said, at age fourteen, the digital world is forcing Netflix to execute a pivot. And the world they are entering is radically different from the world they are leaving. There is no longer a first-sale doctrine to keep things neat and tidy.

Article 31: On IPOs: If You Are Going To File, Make Sure You Price

September 14, 2011:

As you likely know, I am a big believer that the IPO can play a key role in the development of a company's life. Moreover, I have argued that many in our ecosystem have an unhealthy anxiety regarding the dangers and consequences of being public. Lastly, I have argued that the IPO window is wide open for great companies – something I still believe today. All that said, I have been quite surprised by the recent trend in companies that file and then chose to delay. If you are going to file the S-1, it is imperative that you are prepared to follow through. Standing too long in the middle of the financial equivalent of the river Styx can have severe consequences.

Why is this a bad thing? The longer a company remains on file without pricing, the more questions arise about “why” the company may be struggling to move forward. Did they miss their numbers already? Are they having cold-feet? Are they not ready? Do investors not like the company? Have the bankers lost their belief on the company? Employees may begin to wonder the same thing. As you are in a quiet period, it may be difficult for you to respond to concerns through the press. If you then take the added step and “pull” your IPO, you now risk being considered a “broken” deal and potentially a “broken” company. Potential acquirers will certainly see it that way. These problems can be especially acute in Silicon Valley, where competition for talent is intense. Lastly, to file and not price is to give up all the benefits of being private with none of the gains of being public. You have been exposed, but you have nothing to show for it.

There are many things that can cause delays in filed IPOs. The most common factor is unexpected questions from the SEC that cause iteration and re-filing. This is especially true of the SEC questions that require the auditors to revisit their original assumptions. Shaky investor sentiment as a result of a weak broader stock market can cause both investors and bankers to have “cold feet.” There may also be concerns with valuation and dilution. If your company looks like it is going to price at a 30% discount to what your bankers conveyed on filing date, you may not want to suffer unexpected dilution. Lastly, there may simply not be enough demand for your IPO – which is an amazingly tough position for your company.

The attached table shows the # of days from pricing to filing for some recent IPOs as well as the days on file for Zynga, GroupOn, and Kayak. These five companies had an average pricing-filing span of just under 100 days. Two of the IPOs in which Benchmark was lucky enough to be an investor (Zillow and ServiceSource) had particularly good showing on this “pricing-to-filing” metric with 93 and 94 days respectively. (*Just added Bankrate, which had an error-free 62 day filing to pricing window). GroupOn is starting to move outside this ban, but recent news suggests they may be back “on track” with a target date of late October (this would equate to 150 days on file). Zynga’s IPO is listed as “delayed” on Yahoo Finance while standing at 75 days. Kayak, a leader in the travel search space, had been on file for 301 days – a precarious position for any company.

While many of these potential causes of delay appear external and “out of your control,” there are in fact many things you can do to minimize the number of days between filing and pricing.

- Don’t start the process until you are ready. This certainly includes knowing your business is performing well, but also includes having the auditors ready, having your financials in order, having a strong CFO and general counsel, having your BOD ready to go, and generally being prepared for what is about to happen. Talk to other CEOs who have kept the process on time, and find out how they prepared.
- Pick a banker who understands that you are sensitive to filing-pricing timing. Some bankers will tell you this metric is not critical. You own the problem if you are stuck in a filed but un-priced company. You should tell the service provider what is important to you, not the other way around. Great investment bankers have a strong understanding of SEC process, SEC rules, and may even have an ex-SEC representative on staff. These things matter, and you should be able to tell whether or not they matter to your banker. Also, find out before you file if your banker believes in you and your business. If you are defending your business to your banker “after” filing the S-1, you had a clear sequencing problem.
- Watch out for “wedding planners.” IPO are expensive and as such, they tend to attract “service providers” encouraging you to purchase the “royal package” at every turn. The argument, just as with a wedding, is that you only do this once, and therefore; expense should be of little concern. There are two problems with this logic. First, companies about to be public should not be carelessly wasting money. Second, the “royal” package takes more time and slows things down, and will inherently contribute to extending the pricing-filing window.

- Pick experienced professionals in every slot. There are many constituencies that are involved in your IPO process – auditors, valuation firms, compensation firms, external counsel, underwriter’s counsel, bankers, analysts, even these whacky constituents known as “printers.” You want professionals who know how to get things done, which is very different from the “wedding planners.” Think Harvey Keitel as Winston Wolf from Pulp Fiction. “I solve problems.” Facilitation is key.
- Intentionally target a smaller offering. Many investment banks will encourage larger offerings (see point 3). While this serves them well, it may be at odds with maximizing the probability of a successful pricing. Less supply means less demand is required to pull off a successful offering. A smaller offering also will make all shareholders less sensitive to dilution and therefore pricing. Once again, do not file if you do not plan to price, and this includes all prices in the planned offering range.
- Don’t disrespect the precious nature of an open window. The four companies above were on file during a very strong IPO window, and as a result had seemingly error-free processes. Being prepared to go when things are good means avoiding the situation where you file, and the global market melts down in your face. If (1) your company has the numbers to be public, (2) your company is ready and prepared to be public, and (3) the IPO market is healthy and the window is clearly open and you still chose to wait to go public than you are accepting the timing risk of the future. As Geddy Lee of Rush says, “If you choose not to decide, you still have made a choice.” Growth can slow, markets can turn, new competitors can show up. Going public too early clearly has risks – but so does waiting too long and missing your opportunity.

IPO markets will always have “pulled” and “delayed” IPOs. This is simply the nature of the beast. An open IPO window attracts two types of companies – those that should go public, and those that “need” to go public for capital reasons. Portions of the “need” group will always fail to find supporters, and therefore you should not view delays and withdrawals as signs of a weak IPO market. That said, certain delays can and should be avoided. If you are stepping up to the plate for an IPO, be ready, be prepared, and be committed to seeing it through. Don’t submit an S-1 if you don’t plan to price. Waiting on file for extended periods of time can be catastrophic.

May 24, 2011:

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“ Don’t you know that you are a shooting star,
And all the world will love you just as long,
As long as you are.” — Paul Rodgers, Shooting Star

With the IPO market now blown wide-open, and the media completely infatuated with frothy trades in the bubbly late stage private market, it is common to see articles that reference both “valuation” and “revenue” and suggest that there is a correlation between the two. Calculating or qualifying potential valuation using the simplistic and crude tool of a revenue multiple (also known as the price/revenue or price/sales ratio) was quite trendy back during the Internet bubble of the late 1990s. Perhaps it is not peculiar that our good friend the price/revenue ratio is back in vogue. But investors and analysts beware; this is a remarkably dangerous technique, because all revenues are not created equal.

What drives true equity value? Those of us with a fondness for finance will argue until we are blue in the face that discounted cash flows (DCF) are the true drivers of value for any financial asset, companies included. The problem is that it is nearly impossible to predict with any accuracy what the long-term cash flows are for a given company; especially a company that is young or that might be using an innovative and new business model. Additionally, knowing what long-term cash flows look like requires knowledge of a vast number of disparate future variables. What is the long-term growth rate? What is the long-term operating margin? How long will this company hold off competition? How much will they be required to reinvest? Therefore, from a purely practical view, the DCF is an unruly valuation tool for young companies. This is not because it is a bad theoretical framework; it is because we don’t have accurate inputs. Garbage in, garbage out.

Because of the difficulty of getting DCF right, investors commonly use a handful of other shortcuts to determine valuations. “Price earnings ratio” and “enterprise value to EBITDA” are

common shortcuts, with their own benefits and limitations. I want to argue that for a variety of reasons, the price/revenue multiple is the crudest valuation tool of them all.

The following chart highlights 2012 forward price/revenue ratios for 122 global Internet stocks. The broad range of results is nothing short of staggering. On one end is Overstock, trading at 0.2X analyst's 2012 revenue estimates. On the other end is Youku.com, the leading Chinese video website (recent IPO LinkedIn is not included in this list). Youku trades at 21.7X analysts average 2012 revenue estimate. The other companies live at many different places along this wide continuum. Now consider that the press and some investors frequently use price/revenue as their primary valuation tool when our data suggests there is a 100X difference in value per sales dollar from Overstock to Youku.com. Talk about room for error! What is that hot new company worth? This graph would suggest that the company's revenue alone is a very poor guide.

Before we talk about why there is such disparity, it is important to highlight a few more points. As you can see in the above graph, there is a very long tail to the left. Basically, there are many more low-price/revenue multiple companies than high. The following table shows this statistically. Over 72% of the companies have a 2012 price/revenue multiple below 4x. Also, you can see that only 12 of these 122 companies (<10%) have multiples over 7X. There are only 5 above 10X. Also recognize that the majority of these high multiple companies are domiciled outside the U.S. This is important because the press tends to favor the higher multiples, such as 10X revenues, as their "defaults." The problem is, only a handful of companies deserve to be in the "10X club."

What causes such a wide dispersion of price/revenue multiples? While one might not have the specific numbers required to complete an accurate DCF, we do know which business qualities would have a positive impact on a DCF exercise, all things being equal. When investors see a large number of these traits, they then have an increased confidence that the elements are in place that will lead to a strong DCF value over time. You often hear people refer to companies with strong DCF characteristics as having high "revenue quality." Companies with characteristics that are inconsistent with a strong DCF model are said to have low "revenue quality."

Here are some of the key business characteristics that would be used to separate high quality revenue companies from low quality revenue companies, and therefore are the distinguishing traits that warrant high price/revenue multiples.

1. Sustainable Competitive Advantage (Warren Buffet's Moat)

By far, the most critical characteristic that separates high multiple companies from low multiple companies is competitive advantage. This concept, well explained in Porter's book by the same name, basically asks the question, "How easy is it for someone else to provide the same product or service that you provide?" If your company has "high barriers to entry," Wall Street will be super excited, as investors will have confidence discounting cash flows many, many years into the future. Coca-Cola has a 5% estimated 2012 growth rate, and a 3.6x price/revenue multiple. RIM has a 12% estimated 2012 growth rate and a 0.77x price/revenue multiple. What gives? Investors expect Coke to be around in pretty much its same form 50 years from now. It is much harder to say that with confidence about RIM. Warren Buffet famously refers to these barriers to entry as an "economic moat," inferring an image of the body of water that protects access to a castle.

[For more on this topic, I highly recommend an amazing paper on this subject, Competitive Advantage Period "CAP," The Neglected Value Driver by Mike Mauboussin, the Chief Investment Strategist at Legg Mason, and an adjunct finance professor at Columbia Business School.]

If high price/revenue multiple companies have wide moats or strong barriers to entry, then the opposite is also true. Companies with little to no competitive advantage, or companies with relatively low barriers to entry, will struggle to maintain above-average price/revenue multiples. If an investor fears that a company's competitive position (which allows them to create excess cash flow) is tenuous and will deteriorate, then the value of the enterprise may be worth the cash flows only from the next several years.

2. The Presence of Network Effects

No discussion of competitive advantages and barriers to entry is complete without a nod to perhaps the strongest economic moat of all, network effects. In a system where the value to the

incremental customer is a direct function of the customers already in the system, you have a powerful dynamic that tips towards winner take all. Perhaps the definitive piece on this type of advantage is Brian Arthur's Increasing Returns and Two Worlds of Business published in HBR back in 1996. This "second world" that Brian refers to is one where the market leader has an unfair advantage that is reinforced by network effects.

There are a few important things to remember about network effects. Some network effect systems are stronger than others. What is key is the decay rate of value of the incremental user to the customer value function. Second, networks effects are discussed way more than they exist. Many things people identify as network effects are merely economies of scale, which are not nearly as powerful. Unfortunately, strong form network effect companies are far and few between. Fortunately, when they do exist, they are typically leading candidates for the 10X+ price/revenue multiple club. Microsoft, Ebay, Skype, Google Adwords, and Facebook (in their prime) all benefited from network effects.

3. Visibility/Predictability Are Highly Valued

For the same reason that investors favor companies with sustainable competitive advantages, investors favor pricing models that provide a high level of predictability and consistency in the future. It is easy to see why revenue visibility would have a positive impact on a DCF analysis. The more certain you can be of future cash flows, the higher premium you will put on a business, and as a result, you will see a higher price/revenue multiple. One obvious example of this is the predictable nature of SAAS subscription revenue. Salesforce.com trades at a staggering 7.5x 2012 estimated revenues. SuccessFactors trades at 7.9x 2012 estimated revenues. Subscription revenue businesses take longer to grow than traditional software businesses, but once you reach scale investors put premium multiples on the predictable future revenue streams.

The opposite of subscription revenue is revenue that is one-time or episodic. Traditional software models are one-time in nature. Consulting revenue is also typically one-time. Revenue that will only happen once, or that is highly likely to go away in future years, will command much lower price/revenue multiples. As a general rule, game companies, where the "hit" nature of the product offering will eventually ensure a finite life of most of its products, typically trade at discounted price/revenue multiples. Activision trades at just over 2X 2012 estimated revenues. Electronic Arts trades at 1.7x times the same estimate. Non-publisher game companies, where revenues may often come from a single title, will have even lower price/revenue multiples. Conversely, the game companies that get higher multiples are ones that own more of a

publishing/distribution platform, such as TenCent in China. These companies are able to extract rent from whatever the hot game happens to be, and are therefore less vulnerable to “hit” risk.

4. Customer Lock-in / High Switching Costs

If investors value predictability, then retaining customers for long periods of time is obviously a positive. Conversely, if customers are churning away from your company, this is a huge negative. Investors are highly fixated on churn rates, as they should be. Churn has a direct and significant impact on a DCF model. With subscription models, a low-churn customer is quite valuable. In fact, companies with excessively low churn rates (5% annually or less) are very likely to have price/revenue multiples in the top decile. Obviously, high churn rates are really bad for all valuation multiples.

For non-subscription businesses, customer-switching costs also play an important role. If it is relatively easy for your customer to switch back and forth from your products to your competitors, you will likely have a lower price/revenue multiple as your pricing power will be quite limited. On the other hand, if it is quite difficult for a customer to switch away from your product/service, you are likely to have stronger pricing power, and longer customer life, which will inevitably result in better DCF dynamics. Switching costs can take many forms – technical lock-in, data lock-in, high startup costs with a new vendor, and downstream revenue dependencies are just a few. All things being equal, high switching costs are a positive for price/revenue multiples, and low switching costs are a negative.

5. Gross Margin Levels

This may seem super-basic or even tautological but there is a huge difference between companies with high gross margins and those with lower gross margins. Using the DCF framework, you cannot generate much cash from a revenue stream that is saddled with large, variable costs. As a result, lower gross margin companies will trade a highly discounted price/revenue multiples. Amazon (20% gross margin), which is certainly among the very best retailers when it comes to execution, trades at a low 1.5x 2012 revenue estimates. Wal-Mart (25% gross margin) trades at 0.41x 2012 revenues. Best Buy (24% gross margin) trades at only 0.22x forward revenues. All things being equal, gross margin percentage should have a direct impact on price/revenue multiple, as there will obviously be more gross margin dollars to contribute to free cash flow. Journalists who quickly apply 10x multiples to all private companies should at the very least consider gross margin levels in their analysis.

6. Marginal Profitability Calculation

Investors love companies with scale. What this means is that investors love companies where, all things being equal, higher revenues create higher profit margins. Microsoft had wonderful scale in this manner for many, many years. Selling more copies of the same piece of software (with zero incremental costs) is a business that scales nicely. Companies that are increasing their profit percentage while they grow are capable of carrying very high valuation multiples, as future periods will have much higher earnings and free cash flow due to the cumulative effect of growth and increased profitability.

In order to measure how a business is scaling, many investors look at marginal incremental profitability. This can be done on a quarter-over-quarter basis, or a year-over-year basis. Simply look at the change in revenue versus the change in costs, and then calculate the incremental operating margin of the two results. If this marginal profitability number is much higher than historical profitability, a company is scaling nicely, and the investor has picture proof of that occurrence. If this number is lower than historic profitability, it raises a red flag for investors, who may be concerned that investments in new growth initiatives are yielding lower cash flow per dollar than previous investments.

Google's recent first quarter results provide a nice example here. As you can see in the graph, Google's incremental marginal profitability for Q1 was actually negative on both a year-over-year and a quarter-over-quarter basis. If a company is scaling nicely, you will see a marginal incremental profitability that is actually higher than the current profit margin. Google stated on its earnings call, that the company was simply investing for the long-term over the short-term, and was not concerned about this trend. Investors viewed things differently, and sent the stock down \$48 the next day, representing a 7% fall from \$578 to \$530/share.

This is also the reason that "human capital" businesses like consulting businesses often have trouble with low valuations on Wall Street. If the majority of costs are people, and people are also the key input for any work product, you will find the ability to generate increased marginal profitability quite difficult.

7. Customer Concentration

In their S-1, companies are required to highlight all customers that represent over 10% of their overall revenue? Why do investors care about this? Once again, all things being equal, you would rather have a highly fragmented customer base versus a highly concentrated one. Customers that represent a large percentage of your revenue have “market power” that is likely to result in pricing, feature, or service demands over time. And because of your dependence on said customer, you are likely to be responsive to those requests, which in the long run will negatively impact discounted cash flows. You also have an obvious issue if your top 2-5 customers can organize against you. This will severely limit pricing power. The ideal situation is tons of very small customers who are essentially “price takers” in the market. Google’s AdWords program is a great example.

8. Major Partner Dependencies

Investors will discount the price/revenue valuation of any company that is heavily dependent on another partner in some way or form. A high profile example of this is Demand Media’s reliance on Google’s SEO traffic. Google isn’t the customer per se, but they can heavily impact the outcomes for Demand. And even if they don’t impact them (the recent quarter was in line with expectations), the mere awareness that they could, can have drastic impact on long-term valuation, and therefore price/revenue multiple. These dependencies are also disclosed in the S-1 under “Risk Factors.” Here is the example of the risk disclosure of Demand’s dependence on Google from an SEO perspective:

“We depend in part on various Internet search engines, such as Google, Bing, Yahoo!, and other search engines to direct a significant amount of traffic to our owned and operated websites. For the quarter ended September 30, 2010, approximately 41% of the page view traffic directed to our owned and operated websites came directly from these Internet search engines (and a majority of the traffic from search engines came from Google), according to our internal data.”

These strong dependencies eat away at investors simply because the company is exposed to issues that are out of the control of management. As an example, Kayak’s potential IPO buyers will need to get comfortable with Google’s acquisition of ITA, Kayak’s use of ITA, and whether or not Google goes from being a source of traffic to a competitor. Likewise, if and when Zynga files

for an IPO, new investors will be inherently betting on whether or not Zynga's Facebook dependency is a positive or a negative. No one wants a partner policy or algorithm change to have unpredicted negative impacts on a public company. These risks are accounted for with lower valuation multiples.

9. Organic Demand vs. Heavy Marketing Spend

All things being equal, a heavy reliance on marketing spend will hurt your valuation multiple. Think about this simplistic example. There are two stores in the middle of town. One has a product/service that customers love, and as a result, customers flock to the store day in and day out all on their own. These customers then tell other potential customers, and through this "word of mouth" process, the customer base grows even larger. The second storeowner advertises frequently, and all new customers are a result of this advertisement and promotion (which obviously costs \$\$). Which business would you prefer to own? Which one would likely have higher cash flows? If you have to "buy" or "rent" your customers, you have a non-optimal business model – plain and simple.

The empirical data backs this up. You will be hard pressed to find a company with a heavy marketing spend with a high price/revenue multiple. Perhaps the very best Internet company that invests heavily in marketing is Netflix (marketing is about 15% of sales in recent quarter). When it comes to execution, Netflix is considered by many to be the best of the best. So you have a company that is highly regarded for their management prowess, and that is growing over 50% year over year. Yet, they trade at 4X 2011 revenue estimates and 3X 2012 estimates. And this is the best of the best. The majority of companies that are heavy marketers trade at price/revenue multiples well below Netflix.

Consider another point. Most of the companies that have really high multiples, and that have been highly respected by investors all have or have had organic growth: Yahoo, Ebay, Google, Facebook, Skype, OpenTable, Baidu. These business models did not require marketing. The picture included below is borrowed from a Skype slide deck from a few years back, and does an amazing job of highlighting the difference between "bought traffic" and organic growth. As Niklas highlighted, the cost of acquiring a new Skype user was \$0.001, versus \$400 for Vonage, a very heavy marketer. Which company deserved a higher price/revenue multiple?

For a period of time, Jeff Bezos was a heavy investor in marketing, but after a while he retrenched. “About three years ago we stopped doing television advertising. We did a 15-month-long test of TV advertising. And it worked, but not as much as the kind of price elasticity we knew we could get from taking those ad dollars and giving them back to consumers,” said Bezos. “More and more money will go into making a great customer experience, and less will go into shouting about the service. Word of mouth is becoming more powerful. If you offer a great service, people find out.”

This should not be read as a blanket condemnation of all marketing programs, but rather a simple point that if there are two businesses that are otherwise identical, if one requires substantial marketing and one does not, Wall Street will pay a higher valuation of the one with organic customers.

10. Growth

We saved the best for last. Nothing contributes to a higher valuation multiple like good ole’ growth. Obviously, the faster you are growing, the larger, and larger future revenues and cash flows will be, which has direct implications for a DCF. High growth also implies that a company has tapped into a powerful new market opportunity, where customer demand is seemingly insatiable. As a result, there is typically a very strong correlation between growth and valuation multiples, including the price/revenue multiple.

There is another reason why the premium paid for growth in 2011 may be even higher than it has been in the past. As you can see from the table below, some of the largest names in technology are really struggling to grow. When you combine this fact with the paucity of IPOs from the past five years, the public technology investor has been starved from investing in companies with interesting growth characteristics. As such, they are likely to be super-excited by any company with a growth rate over 25%. If its over 50 or 100%, they will be ecstatic. Trading in and out of companies with low growth rates is simply not that interesting to an investor.

So growth is good, correct? There is a reason to save growth for last. While growth is quite important, and even though we are in a market where growth is in particularly high demand, growth all by itself can be misleading. Here is the problem. Growth that can never translate into long-term positive cash flow will have a negative impact on a DCF model, not a positive one. This is known as “profitless prosperity.”

In the late 1990s, when Wall Street began to pay for “revenue” and not “profits” many entrepreneurs figured out a way to give them the revenues they wanted. It turns out that if all you want to do is grow revenues, with disregard for the other variables, it is quite simple to “manufacture” awe-inspiring revenue growth. To prove the point, consider this oft-used example from the Internet bubble. What if I had a business where I sold dollars for \$0.85? What would my revenue growth look like? Obviously, you could grow this business to \$ billions in revenue tomorrow. While this may be tongue and cheek, the real world example of the “dollar for \$0.85” metaphor is any business where the value transfer to customers and suppliers and employees cannot be sustained at a positive profit. The customer will be thrilled with any “below market” offering, and will rush in to get all they can. In this case, the growth was actually created by the demand for the unsustainable offering.

There is another situation where growth can be misleading. If a company stumbles on to a hot new market, but lacks “barriers to entry” or does not have a sustainable competitive advantage, there will eventually be trouble. In fact, the very success of the first company in the field will act as a siren inviting others into the market, which, in the absence of a competitive advantage, will lead to margin erosion. Many electronics products follow this trend as some hot new product is quickly commoditized.

The 10X Club

So there are ten business characteristics that can impact a company’s chances of making it into the 10X+ price/revenue multiple club. Clearly, some of these variables are interdependent, and clearly you may find a company or two without every single characteristic, that still make the club. That said, most of the companies that trade at 10X or higher in terms of price/revenue will do extremely well against this scorecard.

All of which brings us to last week’s real world example, LinkedIn. There has been much written about the LinkedIn IPO, and its tremendous after-market performance. As of Monday, LinkedIn’s market capitalization was \$8.3 billion. Analysts have not published forward revenue estimates,

but we have heard of investor models that put 2012 revenue anywhere between \$550 and \$700mm. Assuming these are accurate, LinkedIn trades between 11.8-15x 2012 revenues. This lofty valuation has attracted scrutiny from around the globe, including skeptical analysis from both the New York Times and Barron's.

In the table below, you will see that LinkedIn does extremely well against our 10X club criteria list. It has growth, it has very high barriers to entry, it has network effects, and it has little to no dependencies. The only criticism one might have is that they are not showing enough profitability or marginal profitability. Profitability increased from Q3 to Q4 last year, but the company ramped sales spending in Q1, and profitability waned. So, assuming that the company is willing to show profit expansion over the next few years, it's not that unreasonable for the company to trade at a 10X price/revenue multiple.

However, all companies with which the press and public are enamored are not LinkedIn. There are many hot brand-names with lofty private valuations and strong revenues, that would not do so well on the "10X scorecard." Over the next 12-18 months we should see these companies test the public markets, and with the benefit of data and a truly liquid marketplace, we should gain a better appreciation for real valuation. If we've learned anything from the past market cycles, it's that the fundamentals eventually matter, and all revenues are decidedly not created equal.

Update (5/26/2011): After some feedback from readers, and some further thoughts, there are a few more additions to the list worth mentioning, although in less detail.

1. Capital Expenditure Intensity – All things being equal, a company with heavy CapEx will trade at a lower price/revenue multiple (for sure). Capital intensity requires constant funding which will dilute either shares (through increased offerings) or directly use up earned cash.

2. Cash flow / Earnings – Some companies generate way more cash flow than earnings, and some do the opposite (generate way more earnings than cash flow). The higher your ratio is of cash/earnings the better off you are. This can be accomplished in numerous ways, but one of the more common is to collect cash from your customer ahead of your accounting driven revenue-recognition. Cash is king, and if your cash margin is better than your accounting net income

margin, you are golden. The opposite is also true. Companies that generate far less free cash flow than earnings are going to have lower valuation multiples.

3. Optionality – This topic is a bit more abstract, but sometimes a company, due to its market position, is in a strong position to have optionality on a whole new business. A few years back, Amazon was trading at 1x revenue and had just launched AWS. AWS was an “option” on a whole new business, and eventually began to be valued as such.

4. TAM – One of the readers asked about TAM, which stand for Total Available Market. The assertion is that TAM can affect valuation multiple. I understand the concept, but I have not seen this play out in reality. Most of the companies that suffer from TAM never make it to the public markets. Also, companies that have high price/revenue multiples typically have optionality into other markets. So basically, I think TAM can radically affect private company valuations, but less so for public.

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Article 33: Silicon Valley's IPO Anxiety

November 15, 2010:

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“Living in the limelight

The universal dream

For those who wish to seem.

Those who wish to be

Must put aside the alienation,

Get on with the fascination...”

— Limelight from Moving Pictures, Rush

If you could travel back in time to the early 1990’s and ask Silicon Valley’s top entrepreneurs and private company executives about their long-term career ambitions, you would hear a constant theme – they all wanted to be part of an Initial Public Offering (IPO). Back then, taking a company public, either as a CEO, CFO, or founder, held an allure similar to that of a young athlete dreaming of making it in the major leagues. Clearly, not everyone was able to go public, but that of course added to appeal. Everyone still wanted to go public. They all dreamed of playing on the business world’s biggest business stage.

A great deal has changed since then. First, we lived through the peculiar time now known as the Dot-com bubble, where the elite requirements for going public were greatly reduced. This was followed by a period of heavy regulation where many aspiring startups felt as if they were absorbing the burden of sins committed by the likes of Enron and WorldCom, two companies that are far away from Silicon Valley. If you believe what you read, we now live in a world where young entrepreneurs have a more cynical view of the IPO and being public in general. It is common today to read a phrase like “You don’t have to go public early to provide liquidity to early investors or employees.” It is critical to consider just how far away “don’t have to” is from “want to” or “dream of”.

How Did It Get This Bad?

There are many potential causes of this widespread pessimism. First and foremost, going public and being public are not nearly as much fun as they once were. The combination of a rise of ambulance-chaser shareholder lawsuits, Sarbanes-Oxley, the requirement for CEO and CFO signatures on financial filings, and limited personal trading flexibility has unquestionably made

being public less enjoyable for executives. Increased bureaucracy and red-tape almost never lead to increased enthusiasm.

We may also have a perturbed notion of what a “healthy” IPO market looks like. For many, the go-go days of the late 1990’s stick in their mind as the definition of a strong IPO market. Unfortunately, the IPO market of 1999 was a myth, a façade, a once-in-a-lifetime mirage that you will never see again. While that period was economically fruitful, it was clearly manic and a long, long way from being healthy. Moreover, it was completely and utterly unsustainable. It also may have “cheapened” our view of the IPO. If anyone and everyone can go, it is no longer a heroic accomplishment.

One recent argument knocking the IPO is as follows: Wall Street is too short-term focused, and that if you want to run your company for the long-term you should remain private. There are three great reasons that this “can’t focus on the long term” argument falls short — Jeff Bezos, Marc Benioff, and Reed Hastings. All three of these amazing entrepreneurs turned CEOs took their company public on a standard IPO time frame. They also all three conveyed to Wall Street that they would postpone short-term earnings results in order to chase a greater long-term objectives and ambitions. The intelligent mutual fund investors that were swayed by their convincing arguments (there were many) were handsomely rewarded. Furthermore, Bezos, Benioff, and Hastings all three used “being public” as a bully-pulpit to tell their version of their industry’s story, thereby aiding their advantage. If you are unconvinced go ask Steve Riggio, Tom Siebel, or Blockbuster CEO Jim Keyes.

Certainly one contributor to the negativity surrounding the Silicon Valley view of the IPO market is the negative perception of the local press echoing off the hillsides of the Santa Cruz mountain peaks. Over the past several years, it has become quite common to read Silicon Valley articles and blog-post offering near-eulogies of the high-tech IPO. TechCrunch refers not to simply the “IPO” but to the “dreaded IPO,” or the “Poor, Pilloried, Tech IPO.” Famed early stage investor and typically glass-half-full blogger Fred Wilson recently penned “IPOs Just Aren’t What They Used To Be.” The San Francisco Chronicle stated that the “market for initial public offerings remains badly broken,” and the ecosystem “..has been destroyed.” And despite the numerous successful IPOs in the last two years that have supposedly put an “end to the IPO drought,” the only thing that doesn’t seem to go away is the use of the phrase “IPO drought.” If that were not enough, the NVCA (National Venture Capital Association) argues the situation is so dire that we need a Four Pillar Plan To Restore Liquidity. The pessimism is consistent and deafening. The glass isn’t simply half-empty; everyone seems to think there is a hole in the bottom of it.

How Bad Is It Really?

A more optimistic eye can see that the IPO data is actually improving. This quote from the NVCA's second quarter update is rather straightforward:

Venture-backed company exit activity showed continued momentum during the second quarter of 2010, with the best quarterly total for venture-backed Initial Public Offerings (IPOs) since the fourth quarter of 2007, according to the Exit Poll report by Thomson Reuters and the National Venture Capital Association (NVCA). The quarter ended with 17 venture-backed IPOs, marking the third consecutive quarter for increased offerings, by number and by dollar amount.

Looking at the Q3-2010 NVCA data included above, you can see that 2010 is markedly improved over 2009. We have already tripled all of last year in the first three quarters of this year. Moreover, with a healthy Q4, we could meet or beat the annual numbers from 2005 and 2006. If you limit the data to VC backed companies in the U.S. in high technology (leaving out Pharma and bio med; which is different from the above), there were five in 2008, twelve in 2009, and 25 year-to-date in 2010. These data points are clearly up and to the right. And while they may not hit the bar we are looking for for a cyclical market high point, it surely makes it hard to say the IPO market is fatally flawed. And it unquestionably not "closed."

The Majority of Recent IPOs Are Outside of Silicon Valley

U.S. High Technology / VC Backed IPOs Since the Beginning of 2008 (XLS)

The Excel spreadsheet embedded above contains a detailed look at all of the high-tech VC backed U.S. IPOs since the beginning of 2008. There is some very surprising data in this table. First, these IPOs have performed relatively well since their initial offering. On average, these IPOs have averaged 55.9% in price appreciation since their IPO date. This represents almost \$14B of post IPO value creation as a group. Moreover, 19 of the 42 companies are worth over \$1B. A full nineteen VC-backed companies with recent IPOs are now worth over \$1b! The press that keeps yearning for the next "big" IPO in Silicon Valley and complaining about the health of the IPO

market, doesn't spend much time talking about RackSpace (\$3.3B market cap), RealPage (\$1.8B market cap), GreenDot (\$2.2B), or Ancestry (\$1.1B) – all recent IPOs that have traded up quite nicely since they went public. Maybe there is a reason for this.

Is there any chance that the negative IPO sentiment that is reverberating through Silicon Valley is actually having an impact on the local IPO volume? One might expect, that as the epicenter of innovation, Silicon Valley would warrant more than its fair share of IPOs. But the data shows the exact opposite (see table below). In this same spreadsheet of recent IPOs, we have highlighted whether each company has its headquarters here in Silicon Valley or elsewhere in the United States. The shocking reality is that only 11 of the 42 high-tech, venture backed IPOs since 2008 reside in Silicon Valley. In other words, 74% of these IPOs hail from outside of the SV echo chamber. If you look at the data in terms of initial IPO value, 78% of the overall value is from outside SV. In terms of value today its 73.5% (SV IPOs have outperformed those outside SV). Perhaps these out-of-market IPOs aren't well covered within Silicon Valley, and perhaps the negative IPO sentiment isn't well heard outside of it. Our pessimism may have led to a self-fulfilling prophecy.

Demand or Supply Problem?

There is an interesting commentary at the end of the San Francisco Chronicle article that we previously discussed. "Brent Gledhill, with William Blair & Co., a small investment bank in Chicago, said he has buyers for small IPOs, but can't get sellers." This argument, which was also supported by Paul Deninger of Jefferies, suggests that we have a "supply" problem, not a demand problem. He has BUYERS but not SELLERS. The problem is not that Wall Street doesn't want product, it is the opposite; that we are not offering them enough of it. While it is clearly a chicken-egg argument, you simply cannot have a healthy IPO market if the leading high-quality companies are unwilling to file. The problem may be attitudinal, not structural.

To this point, and perhaps ironically to some, most of the people I know that work in high tech mutual funds and hedge funds would like to see more IPOs not less. They are tired of trading the same large technology names that are showing limited equity returns over the past 10 years, and have very low growth opportunities/ambitions. If you look at the the forward revenue growth estimates for technology bellwether stocks you may be surprised: Intel (3.5%), HP (5.6%), Microsoft (6.8%), Cisco (11.1%), Ebay (11.4%), and Yahoo (3.3%). And many of these stocks are

flat to down for the past decade! Even Google, the youngest of the large cap tech plays has a go forward growth estimate of below 20%. As you can imagine, these traditional “must have” technology names are not contributing to mutual fund outperformance the way they once did. Fund managers desperately need more exposure to growth. They also crave exposure to new trends like social networking and mobile computing, but with limited IPOs they have limited ways to invest in these new innovative trends. They simply need more “quality” product.

Valuations Are “Higher” in the Public Market

As a result of this scarcity of growth across the broader set of public companies, strong category leaders like OpenTable, GreenDot, Realpage and Ancestry.com are seeing healthy valuations in the public market. These high growth Internet leaders trade at PE multiples (30-50x) that are roughly twice that of Internet leaders Microsoft, Yahoo, Ebay, and even Google. The IPO market is currently paying a substantial premium over the M&A market (the exact opposite of what you read). The same large companies that are struggling to find growth have reduced valuation multiples (P/E, P/S). This in turn makes it hard for them to pay strategically high prices in an acquisition. Therefore, entrepreneurs that follow the advice from the San Francisco Chronicle, and are “looking to be acquired” may be leaving ample money on the table.

As an example, drill down on RealPage, a Dallas based leader in SAAS solutions for property management companies. It is currently trading at \$1.86B after a successful August IPO. They currently trade at about 8.7X annualized Q2 revenue. Which potential acquirer would pay this valuation for a private vertical industry specific SAAS play? Do you think Salesforce, who has never done a large acquisition, would? Do you think Oracle (who trades at 3.5x sales would)? What about SAP (3.8X sales)? IBM (1.7x sales)? Or consider GreenDot which went public in July and currently trades at a \$2.2B market capitalization. This valuation equates to roughly 6 times 2010 revenues. Do you think American Express (currently trades at 2X revenues) would have offered that in a private transaction? What about Ancestry.com? This recent Internet IPO is currently trading at a market capitalization of \$1.17B. Which large Internet company would have paid close to \$1B for Ancestry? None is my answer.

We should also consider DataDomain, 3Par, and Arcsight, all companies with remarkable sell-side M&A transactions who went public BEFORE engaging in an M&A transaction. Being public is a wonderful way to establish a baseline valuation in an eventual corporate sale. There is no chance someone would make an offer at or below the current market price, as the expectation is to pay a market premium. And because the BOD has a very high duty in terms of maximizing shareholder value, these deals are often seen by multiple bidders and therefore more likely to be

competitive than a private transaction. Lastly, and not to be ignored, public company sales have zero escrow provisions. These escrows typically put at risk 10-15% of the transaction value when a private company is acquired. Being public before you get acquired can be extremely valuable.

Your Company Is Not Facebook

A large contributor to the negative IPO press is Facebook's definitive view that it prefers to postpone its IPO well into the future. Recent comments suggest an IPO may be put off until 2012. As a top three worldwide Internet site, the press is obviously interested in what Facebook wants to do. Also, because of its huge impact, and the emerging trend of social networking, the buy-side is quite interested in owning Facebook. The demand for an IPO, were one to happen, would be enormous. And that is probably an understatement. However, it is critical to put this in perspective relative to everyone else.

Facebook is the exception not the rule. They can do what they want when they want. They can raise money privately at any time if they feel the need to do a cash acquisition. There are literally firms willing to wait in line to give them money. They can hold a press events and everyone comes, so they certainly do not need to be public to broadcast their message. However, they are also a miserable proxy for the average private company CEO and BOD to consider. Your company is not like Facebook, and it should not build its IPO plans based on what Facebook does or does not do.

Things Are Looking Up

This entire problem may be self-correcting. The BOD and executives from the companies that have not gone public have certainly noticed the successful offerings, post-market performance, and valuations of the IPOs mentioned herein. As such many of these executives are now marshalling the forces for their own IPO. As an example, Betfair, a long awaited IPO in the UK (congrats @jdh) just went public and had strong results. Skype and ZipCar have filed, and all indications are that LinkedIn is working on its own filing. There is also a good chance that companies like AutoTrader and eHarmony will come public soon, and there have been multiple rumors of IPOs at companies such as Hulu and Pandora.

In addition, the very recent press seems to also be singing a different tune than the dire press from this summer. Check out the following headlines from the last few weeks:

- 11/15 Analysts See Pickup In IPO Market In 2011
- 11/15 IPO Market Rising from the Financial Crisis Grave
- 11/15 Momentum in US IPO market continues to build
- 11/15 US Options Exchanges Watchful On Signs Of IPO Rebound
- 10/28 IPO market springs to life
- 10/26 Quietly, IPO market is staging a rally
- 10/24 Can the Top 12 IPOs of 2010 Go Any Higher?
- 10/1 IPO, M&A Boosting Venture Capital Fortunes

I recently had the opportunity to hear the story of how Tim Sullivan, the former leader of Match.com, went into Ancestry.com five years ago as CEO. At the time, the company's growth had slowed and many had assumed it had seen its better days. Tim and his team began a multi-year turn-around that would eventually lead to last year's respectable IPO. Last week, the company completed a successful secondary offering. Tim shared with me all of the amazing work that went into reigniting this market leader (a very impressive story), but I was most surprised when he talked about the IPO process. His face broke out into this huge grin as he described watching the stock trade that first day. You could clearly see the type of IPO enthusiasm that once reigned supreme in Silicon Valley. For Tim, the dream was still alive, and more importantly he was able to turn his dream into reality.

Waves of pessimistic analysis can become self-reinforcing and began to influence rather than just inform. That appears to be the case with respect to local attitudes towards high-tech IPOs. Next time you hear someone talking about how broken the IPO market is, please let him or her know that despite what you read, many great companies are going public and are having remarkable success. And if they still doubt you, tell them reach out to Steven Streit at GreenDot, Zorik Gordon at ReachLocal, Doug Valenti at QuinStreet, or any of the 38 other CEOs who recently stood up and walked through the door that everyone else says isn't open. Their story should be at least as compelling as focusing on the few companies that don't seem all that interested.

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Article 34: On Google, Growth, Pricing Power, and Valuation Multiples

July 15, 2010:

Last night, Google reported financial results for the second quarter of 2010. While revenue growth was up 24% year over year, revenue was fairly flat compared with Q1 of 2010. Moreover, earnings fell short of average street estimates sending Google down \$20 per share (4%) in the aftermarket. Based on current estimates (which might change tomorrow), Google currently trades at 18 times the street average for 2010 earnings, and 15.5 times the same number for 2011. These represent price/revenue multiples of 7.5 and 6.5 for 2010 and 2011 respectively. For a long-term tech investor, these valuation multiples seem surprisingly low for a proven market leader. What gives?

Over the past 30-40 years of tech investing, public investors have come to expect the market leaders in each sector to trade at valuation premiums. On average, these market leaders have had respectful PE multiples of over 30X forward 12-month earnings, and price/revenue multiples in the 6-10X range. As examples, Microsoft and Cisco held 30X+ PEs for many, many years. With this as a backdrop, many are surprised that Google, which is relatively young at only 12 years old, is burdened with a PE multiple that is typically associated with the senior-citizens of tech leadership. Google's forward current PE multiple isn't remarkably higher than Microsoft (12.75) or Cisco (15).

While there is no exact science for what leads to higher PEs, there are many theories. Some argue that PE's relate to growth. That said, Google's growth is much higher than Microsoft and

Cisco, and yet it doesn't have that much higher a multiple. My good friend, Mike Mauboussin of Legg Mason, suggests that higher PEs reflect more concrete competitive advantages. I have always been a huge fan of this theory he calls CAP (which stands for Competitive Advantage Period). It also dovetails nicely with Warren Buffet's competitive moat theory. However, when I look at Google, I see a company that is well positioned strategically. All attempts at dislodging their leadership have been unsuccessful to date. As such, I don't think they suffer in this area. One other area typically cited is the more amorphous category of "execution." I also have a hard time seeing this as the culprit, as Google's recent execution on Android is pure genius. Moreover, the Google Apps progress is extremely impressive.

So if its not growth, competitive position, or execution, what is the shortcoming that hurts Google's valuation? Believe it or not, the problem is that their initial business model was "too good." Before I explain take a look at the included chart. Microsoft was founded in 1975, it went public in 1986, reached \$10B in sales in 1997, and fell below 20% growth in year 2000. Google was founded in 1998, went public in 2004, hit \$10B in sales in 2006, and fell below 20% growth in 2009. So it took Microsoft 22 years to hit \$10B in sales. Google did it in 8 years. Resultantly, Microsoft had growth of greater than 20% for 26 years; Google for only 11.

I would argue the reason for the noted disparity is pricing optimization and pricing power. When Microsoft first established DOS as a market standard, they reaped about \$10/PC in royalties. By the heyday of Windows NT, Microsoft was receiving well over \$120/PC in the enterprise. Additionally, they layered in Microsoft Office on top of the OS, which took revenue/PC well north of \$200. That's a 20X increase from where they started. Google's brilliant bid/market based ad product optimized pricing remarkably quickly. As such, Google reached \$10B in revenue in about 3X more quickly than Microsoft. Unfortunately, this coin has two sides.

With its ad optimization engine so amazingly efficient, Google has no obvious pricing power against its current installed base. There is simply no way to "double" the amount of spend from each customer, much less a way to take it up 20X. Additionally, they have not yet identified a product that would represent the Google's version of Microsoft Office in terms of revenue leverage. The Enterprise Apps offering is phenomenal, but the numbers are simply too small relative to search. More importantly, the Enterprise App product does not "sit right on top of" the search franchise (as Office was to Windows), limiting the ability to leverage the success of one product into the other.

Of course, there is little reason to weep for Google. As mentioned earlier, they appear to be rocking in many areas. Google mail and calendar are now used by over 2 million unique organizations. Also, the execution of the Andoid team will be talked about for decades to come. And even though they may be limited in their price leverage on core search advertising, they still have that blank wide open home page, that I suspect is at least \$1 billion in forgone annual ad revenue.

Article 35: Google's Acquires ITA: Will Deeper Vertical Integration Lead to Higher Revenues?

July 8, 2010:

"It's funny how fallin feels like flyin,
for a little while..."

— Jeff Bridges, Crazy Heart Soundtrack

On July 1st, Google announced its intention to acquire ITA Software. ITA owns a primarily B2B airfare search and pricing system called QPX. Several of the leading online travel sites, like Orbitz, Kayak, and Bing Travel, use information from QPX to power their airfare search. Many in the industry view this move as a seminal event in Google's history, as the company makes a decisive step from being a general search engine, into more structured vertical search. Certainly, Google already offers vertical search in Images, Videos, Maps, News, and several other categories. Despite that, ITA feels different. Perhaps the difference is that this is a step into a vertical where

many independent incumbents, like Priceline and Expedia, who are material customers of Google, have large established businesses.

There are two reasons mentioned for why Google feels compelled to dive deeper into verticals. The most straightforward explanation is competitive pressure. Following its own acquisition of Farecast, Microsoft has subsequently launched Bing Travel, a much richer travel search product than offered on Google today. The second argument given for the move is that by moving deeper into verticals, and closer to the actual transaction that Google can actually make more money per visit. This argument suggests that CPA (cost-per-action) is a fundamental improvement over Google's current business model, CPC (cost-per-click). The competition argument seems obvious and accurate. However, it is not at all clear that going deeper in verticals will raise Google's revenues. In fact, there are several scenarios where they could actually go down.

Let's first address the easy part – competition. Bing buys Farecast and Google needs to respond. This makes sense, but it is not the whole story. If you are searching for a book or an author you go to Amazon, or at the very least you do a search like "Man in Full Amazon" so that you go directly to the page you want on Amazon. The same is true for hotels with TripAdvisor and for restaurants with OpenTable. These sites offer deeper and richer experiences for a vertical searcher precisely because they incorporate deep meta-data, faceted search, transaction connectivity, and typically a form of community or UGC (user generated content). These things simply do not exist in the simple but limited Google user interface that Om Malik affectionately refers to as "10 blue links." So Google has competition in verticals not just from Microsoft, but also from best of breed vertical sites offering users a richer, deeper experience.

Some have suggested that Google's move into a deeper vertical experience is more about greed (more money) than fear (competitive) response. The argument voiced by Barclay's analyst Douglas Anuth and others, is that by moving closer to the transaction, Google can ask for CPA fees, which naturally carry higher margin. Clearly, a single CPA fee will be much higher than a single CPC fee, but you will also have much fewer of them. The variable that links the two is conversion. One can certainly argue that Google can drive higher conversion if they can help drive the customer closer to the actual result they need. This will require a materially better product. Even then, however, there are two key reasons Google may not see higher revenue with deeper vertical integration.

Reason #1: Irrational CPC Pricing on Google Today, "Uber-Optimization"

Some might argue that Google's current bid-based CPC model results in "optimal" pricing. The argument would be that the market-clearing price settles out at the precisely rational price for each and every keyword pair. A market-place model naturally results in efficient pricing. While this makes logical sense, we all know that there are companies participating in the CPC purchasing game who simply are less sophisticated than others. Moreover, many of these buyers win bids and have huge CPC budgets. The point is that there are plenty of startups, arbitragists, and even large companies "experimenting" with CPC purchasing in an attempt to gain an edge. The winner in this bidding game isn't the most rational, but simply the one with the highest price. Certainly, over the long run if a company irrationally pays too much for CPC ads, they will eventually go out of business. But the key word here is eventually. For a long period of time, they are paying an "uber-optimized" price for their keywords.

If there are enough of these players in the market, then Google's CPC prices aren't economically rational. Rather, they live slightly above that level driven by irrationality and experimentation in the market. If you have a hard time with this theory try typing a search term like "laser treatments" in Google and look through the list of CPC purchasers on the right side of the screen. Would you put money in these companies? Do you have confidence they will be around in ten years? Have you ever heard of them? It gets even better. Many believe that Google uses a low quality rating score on these "middle-men" to force them to pay a higher fee for a single CPC, thus getting an even higher price than previously discussed. That's right, for certain CPC buyers, Google has a mechanism for extracting an even higher price, even if the buyer is already the high bidder!

As Google moves past its "10 blue links" model and connects directly to airlines, hoteliers, etc, it will be removing the irrational and arguably temporary middle-man from the system. This fleeting but determined participant, very likely has a negative long term ROIC, and Google, riding the brilliance of the CPC model, stands as the beneficiary. With this player out of the system, and with the connections directly to the service provider, the model will naturally trend to a more efficient pricing. You will have fewer larger players, who are all more rational, and all more experienced. As such, you would have to expect more rational, and therefore lower, pricing. Building a better product could actually result in less lead-generation revenue.

Reason #2: Moving from a Marketing Channel to a Transaction Channel

If you have ever sold anything on the Internet, ask yourself the following question. What is the maximum amount you would want to pay for a transaction fee? 5%? 10%? There is data in looking at typical affiliate fee percentages, which can range from say 4-15%. Amazon charges 6-15%. Ebay charges about 11% (with Paypal). Comparison shopping engines make even less. When an etailer assumes they are “always going to pay” for something on every single transaction, they are very sensitive to the % of revenues, as this payment will always reduce their margin. One could assume the general average for all affiliate fees or similar distribution type arrangements is around 10%.

Now, ask someone in your marketing department how much they are willing to pay to “acquire a customer.” While I don’t pretend to support this logic, the Lifetime Value of the Customer (LTV) model depicted herein mesmerizes many marketing managers. Using this simplistic but highly regarded model, many marketers justify “acquiring a customer” not as a percentage of revenue, but as a percentage of life-time value. The key to reaching this Zen state of marketing awareness is to believe that Google is sending you this customer only this one time, but for here ever after this customer is going to come directly to your own site, bypassing Google. This logic supports a much larger denominator, known as LTV. With LTV, ad buyers are easily willing to spend 25-50% of a first purchase in order to “acquire a customer.”

We could talk forever about the LTV formula, and we could argue back and forth about its efficacy, but that would miss the point. Consider the following assertion. People that are buying CPC ads are frequently marketers, and marketers are much more likely to think in terms of LTV. When you enter into a CPA deal it feels very transactional. When you do deep integration it feels very transactional. And, if Google is building a deep vertical site in travel that will pass leads to companies like American Airlines it will feel very transactional. It will be harder and harder to assume that you are “acquiring a customer,” and it will feel more and more like you are paying a distribution fee to a channel. As such, it may turn out that moving deeper into a vertical will puncture the illusion that marketers are “acquiring a customer” from Google, and get them in touch with the fact that they have a permanent CPA “transaction fee” they need to “pay” to Google. The end result is a lower overall rake for Google with the per transaction model.

Could this be wrong? Absolutely. Perhaps conversion rates will triple due to the incredible design, implementation, and ease of use of the Google’s new product, more than offsetting the two points we just mentioned. Or perhaps, Google will have such a powerful place in the travel ecosystem that travel companies will simply be “price-takers.” If this is the case then Google will once again find the exact right way to optimize their business model. It is equally likely, however, that Google’s current business model is highly, highly optimized and tweaking it may have as much risk as upside.

Article 36: When It Comes to Television Content, Affiliate Fees Make the World Go ‘Round

April 28, 2010:

“The clock on the wall’s moving slower

My heart it sinks to the ground

And the storm that I thought would blow over

Clouds the light of the love that I found”

– Fool in the Rain, Led Zeppelin

More often than not, we here in Silicon Valley are prone to idealism. We see a scenario the way we want to see it, and make predictions that fit our view of how we think the world should work, or perhaps even how we would like the world to be. This is especially true when it comes to technology. Outsider “luddites” who do not immediately grok the remarkable disruptive power of our latest and greatest technologies are doomed to the business trash heap – driven there by obsolescence and an obstinate refusal to accept their fate. Often times, our version of them “accepting their fate” would require them to abandon everything they know, walk away from the majority of their revenue, and terminate 80% of their employees. But hey, that’s their problem, not ours. We love disruption. It serves our purpose.

One often discussed target of such criticism is the media industry. There is a widespread belief that Hollywood now faces the same digital threat that has plagued the music industry over the past ten years. The argument goes something like this: There is nothing Hollywood can do to stop this train. The problem, you see, is that technology is merciless, impersonal, and unforgiving. Video can be turned into bits; Moore’s Law will make a pile of bits smaller and

smaller over time; and efforts to erect pay walls will prove fruitless and even Quixotic. Studio heads should simply throw in the towel now and take what's coming to them. Denial equals delay, and delay costs you time away from learning how to execute within your new constraints. All content will be free, and you simply have to live with that fact. The sooner you get in touch with it the sooner you will learn to execute in the new reality.

There are three key reasons why Hollywood is under less duress than Silicon Valley wants to believe. For starters, the leaders are wide-awake. Ever since Boxee offered Hulu (and were told to stop), the executive ranks at the major cable companies have been alert and engaged. Second, Hollywood has a solid track record of enforcement. They understand the stakes are high, and they are willing to invest in lobbying, regulation, litigation, and enforcement. They are also unafraid to throw around their weight (witness Viacom vs. Google). The final and most significant reason is that this is a massive, massive business, and it is critically important to understand where the money flows (most people don't). You can spend plenty of time talking about other issues, but when it comes to understanding the key factor at play in nearly every major business decision in television, you will find affiliate fees – all \$32 billion of them.

For those who do not know, affiliate fees are the primary revenue stream that funds today's mainstream television content development. These are basically a "share" of the subscription fee you pay to your cable or satellite operator that is then shared back to the content owner/distributor (typically on a per subscriber basis). As an example, you will hear that some less notable cable-only channel was able to negotiate \$0.25/sub/month, or that ESPN can negotiate \$2.00/sub/month, because any aggregator would be afraid to market a television package without ESPN. Over the past 30 years, these fees have become the lifeblood of the TV content business – affecting how the major aggregators think and operate, and also affecting how content is produced, financed, and packaged.

Here are some specifics to help frame the issue. According to Matthew Harrigan at Wunderlich Securites, in 2009 DirecTV paid approximately \$37/sub out of an ARPU of \$85/sub to content owners for programming costs (i.e. affiliate fees). In this case, affiliate fees represent roughly 43% of total revenue for DirecTV. Similarly for Comcast, Matthew estimates programming costs at 37% of video revenue (Comcast has high-speed data and voice revenue that are separate). These are just two examples, but to give you a sense of scale these numbers represent around \$7-8 billion/year each for Comcast and DirecTV. The recent, and very well written Business Week cover story on this same topic pegs the aggregate fees of all content providers at \$32B per year. These are big, big numbers. To put things in perspective this is about 33% higher than Google's annual global revenues including revenues for its advertising network.

Affiliate fee optimization is the key objective behind many of the industry's most high profile strategic moves. Here are a few examples.

- Cablevision vs WABC. Recently, there was a high profile stand-off between WABC in New York City and Cablevision. As is often the case, the content owner here was threatening to cut-off access to their content precisely before a very high profile and high demand piece of content was set to air. This particular piece of content was the Oscars. A cable channel owner holds up a cable company to extract a higher per-sub affiliate fee for the next contract. They always put the customer in the middle, and both sides try to argue that they are virtuous and that the other is greedy. There have been numerous examples like this over the years, and it is common to see one of these showdowns each and every year.
- Modern Day Cable Channel Strategy. Today's most typical cable strategy is built entirely around profit maximization utilizing affiliate fees. If you own a cable channel, your goal is to develop one or two key, hit programs, and fill the rest of the linear lineup with very inexpensive content. The "hits" make you a "must have" for any cable or satellite carrier – granting you the right to ask for fees. Too many hits drive up costs. This is why you will see more and more hit shows on the less well-known cable channels. Mad Men on AMC is a perfect example. How can a cable company not offer Mad Men? Once you nail the single channel game, you immediately try to proliferate that into multiple channels a la MTV and ESPN.
- Comcast Acquires NBC. Why would a cable distribution network want to own content? First, it's a hedge against rising content costs (affiliate fees). Second, it offers leverage vis-à-vis their competition. DirecTV needs NBC. DirecTV will have to negotiate affiliate fees for NBC with Comcast (Comcast also owns other channels like E! Entertainment, The Golf Channel and Versus). This helps keep Comcast's business model in check. It's also why Comcast made a huge play for Disney in 2004. Affiliate fees have been rising for some time.
- Networks Ask for Fees. For the longest time, the major networks were not part of the affiliate fee gravy train. In fact, due to "must carry" laws, most networks never considered intentionally restricting their own distribution. They were simply pleased to get redistributed over cable and satellite. As these fees have grown in size and importance, the networks have changed their position and have come to the table asking for affiliate fees also. The WABC case above is one such example.
- Oprah Asks for Fees. Many people seem confused by Oprah's decision to abandon her network television show after 25+ years of unquestionable success and relaunch it within her own cable network. Why would she do such a thing? Because she can. When Oprah launches her own network (with the help of Discovery), she will get per sub affiliate fees. Which cable company is

not going to carry Oprah? What programs will be on during the other 23 hours? As stated in #2, it really doesn't matter. They still need to carry the Oprah channel. That said, Oprah has proven she can launch other personalities (Dr. Phil), and one would suspect that any new celebrity she "launches" will be tied to the Oprah network, increasing her leverage and her affiliate fees.

- Sports Networks Ask for Fees. Affiliate fees are driving an endless supply of channels for anyone that has "must see" content. The NFL has a channel, and had some high profile disagreements with the carriers over the "need" for its affiliate fee. You also see an NBA channel, an MLB channel, and pro wrestling is vying for one as well. If you own exclusive content, you might as well build a channel around it. This endless proliferation of channels will one day reach a limit, but for now it's the game on the field.
- Hulu/Boxee. Many people blamed Hulu for its decision to block access on the Boxee platform. These users simply didn't understand the power of affiliate fees. Comcast told NBC/Fox that if Hulu could distribute their content for free, then they would like to take their own affiliate fees (the newly negotiated ones in #4) to \$0.00. This caused NBC/Fox to tell Hulu that maybe Boxee isn't such a good idea.

In addition to not appreciating these money flows, most of the digerati in Silicon Valley have huge misperceptions about the content owner's preferences. They assume that content owners would like to distribute directly to consumers precisely because the Internet allows them to do so. They would no longer be in the "death grip" of the content packager (cable and satellite companies) who take an unreasonable fee for their services. This is simply not how these content owners view the world.

Content owners absolutely prefer to be aggregated in a bundle of channels and, as a result, to receive affiliate fees. They also have little interest in "a la carte" packaging, a concept dreamed up by regulators in Washington but not desired by the heads of the content studios. Simply put, there is adequate value provided in distribution and revenue collection. To launch a direct channel (and forgo these fees), and then attempt to regain your customers one by one is a harrowing experience. Why earn your customers one by one when you can get to mass volumes, and a fixed amount of recurring revenue, through a distribution partner? If you create a new piece of camping equipment would you sell it online or try to obtain distribution through REI?

ESPN360 is a solid example of content owner's preference for the affiliate fee driven/distribution partner model. As the Internet became fast and pervasive, ESPN (owned by ABC/Disney) saw a clear opportunity to deliver more programming to their users and launched an online-only product called ESPN360 (recently renamed ESPN3). This on-demand, "over the top" offering is a killer product for the true sports fan, offering access to significantly more live

games that was ever possible on a traditional linear cable channel. Despite the fact that ESPN has the brand, the reach, the market power, and the technology to charge users directly for this new product, they chose a different path. ESPN sought out distribution partners to bundle ESPN360 in with their standard video television packages, even though this was confusing and even baffling to most Internet users.

So against this backdrop, the cable companies have developed a remarkably shrewd strategy to simultaneously leverage their broadband infrastructure and affiliate-fee money flows. This concept, known as TV Everywhere, has two main components (once again, this move by the cable companies is extremely well articulated in the recent Business Week cover story on the same subject). First, you tell your customers that you want to provide them with a killer new service. They are already paying for all the content they receive through the linear channel stack. What if that same content could be viewed at any time “on-demand” and also through multiple devices (TV, PC, and mobile)? Sounds great so far. Who wouldn’t want this? And “everything” on a service like Comcast is more than any digital aggregator has yet even dreamed of aggregating. Ignore for a moment that this is not completely working just yet and focus on what they will “eventually” deliver. It’s also helpful to show the FCC you are being innovative, and not resting on your laurels the way a true monopolist would. Check.

Next comes the clever part. The cable companies go to the content owners and make the following argument. With Internet-connected TVs on the horizon, you can no longer separate the Internet from the TV or the office from the living room. We pay you an affiliate fee to distribute your content to the homes we serve. We understand you have multiple distribution partners. What we don’t understand is why you would give content to some of them for free, and still expect us to pay our fees. Check-mate. This is the move that forced Hulu to a subscription model. The content owners, struggling with depressed advertising rates as a result of the global recession, quickly acquiesced to Rupert Murdoch’s assertion that maybe all their content should have a price. Disruption disrupted.

Some have even suggested that Comcast has approached the large networks and offered an “extra” affiliate fee of around \$0.50/sub to pay for over-the-top rights. Proactively increasing your own costs is a fairly unique business strategy. But this move also increases the costs for the disrupters, who are far less likely to be able to afford it.

As a result of these maneuvers, the current trend in the market is for less rather than more prime-time content to be openly available for free on the Internet. Do you remember when South Park boldly made all episodes available for free on the Internet? Check out where things

are today. Try to watch the recent Facebook parody “You Have 0 Friends,” and you will receive the official message “DUE TO PRE-EXISTING CONTRACTUAL OBLIGATIONS, WE CANNOT STREAM THIS EPISODE UNTIL 05.08.10.” They may have wanted it to be free, until someone threatened to take their affiliate fees away. Viacom also recently removed shows like “The Daily Show” and “The Colbert report” from Hulu noting that “we could not agree on a price.” Suggesting there is a “price” at all would indicate they were discussing affiliate fees, as opposed to ad splits.

While this likely enrages the disruption enthusiasts, expect this trend to continue over the next year. More and more content owners will rip their shows “over the paid wall” as they get reacquainted with their own affection for affiliate fees. There is much speculation about Hulu’s forthcoming subscription launch with many journalists hopefully optimistic that Hulu as we know it will remain free and that all sorts of new features (TV support, iPhone support) and content (movies, back catalog) will be behind the paid wall. They may be surprised to find that “paying” may be necessary just to obtain what users see today. Affiliate fee parity may demand it.

So does this imply the end of all digital packagers? Not at all. Most clearly, Netflix has successfully built a hybrid physical/digital strategy while maintaining its “all you can eat” model. It is also going toe-to-toe with other packagers by striking deals to lock up digital content (including TV programming). Furthermore, Hulu has executed well beyond anyone’s original expectation, and there is no reason to expect that to change as they move to a new model. One would expect them to continue to lead in terms of ease-of-use and simplicity even within a new model. Also keep in mind that Amazon has a strong VOD offering integrated into its overall purchasing experience, and many suspect both Apple and Google will enter the game as well. Despite this level of competition, all of these vendors will need to find unique ways to compete against TV Everywhere. And with “free” off the table, the dimensions of competition will be inherently less disruptive.

There are two other potential challenges for non-facilities based content aggregators. First, as was the case with Satellite radio, we may see a “no holds barred” price war break out in an attempt to grab “exclusive” content to distinguish one’s package. As we all know, exclusive deals with the likes of Howard Stern nearly killed XM and Sirius. DirecTV already pays \$700 million per year to the NFL to have an exclusive offering of every NFL game on every weekend (NFL Sunday Ticket), and they recently coughed up over \$4 billion to extend this deal. Wow. What if other digital “packagers” look for unique differentiation by leveraging the cash on their balance sheet? If this happens, any digital aggregator without deep pockets will be holding a knife at a gun fight.

The second externality that could cause trouble is “bandwidth limits” or “metered usage” on the Internet. While some people assume this will never happen (especially the idealist in Silicon Valley), the quiet momentum is building. There are continuing tests at AT&T and Time Warner, and AT&T’s president Randall Stephenson spoke openly about metered Internet pricing as recently as a month ago. Also, the Supreme Court recently put the kibosh on the FCC’s deliberate effort to make net neutrality one of its defining policies. This is perhaps an entirely separate post, but one should be confident that the rate charged the consumer by the owner of the transport for one hour of Internet video would be quite a bit higher than that for one hour of the same video over their own “optimized” TV infrastructure (backed up with an ample helping of technical analysis and white papers). The fox isn’t just guarding the henhouse, he designed it.

There are still two legitimate arguments that trump all these discussions of affiliate fees and deft corporate strategy – piracy and content democratization. Let’s start with piracy.

What if “BitTorrent 2.0” in whatever form it takes is just blatantly unstoppable? No matter what you do, content has become too small relative to the big broad pipes and storage devices. Technology trumps determination, and the minute something has been shown once, it will be free for all takers. Isn’t this true in China today? It’s a big leap from expecting this to happen “someday” to expecting a content creator/owner to throw caution to the wind and immediately adopt a strategy that is congruent with unlimited free distribution (what is this strategy by the way? can’t ads be removed also?). Technology is inevitably a tough competitor, but so is regulation and enforcement, and you should expect that a mighty effort on the part of a multi-billion dollar industry would mute any expectation of an overnight transformation. In her latest post at All Things Digital, Kara Swisher suggests that a recent increase in the number of intellectual property enforcement officers at the DOJ may be a direct response to the immediate needs of the entertainment industry.

Other cheerleaders of the disruption bandwagon point to the undeniable future where the availability of low-cost, high-feature camcorders at BestBuy will lead to a mass democratization of content creation. In this brave new world, the bloated and lavish infrastructure of Hollywood will give way to thousands of mini-Tarantinos who produce hit after hit on shockingly low new-world budgets that redefine the content creation business. This is the video equivalent of the infinite monkey theorem. While this may be true when it comes to low-budget formats like game shows, talk shows, and reality television, today’s fussy television viewer has come to expect a product that is much more equivalent to feature films than home movies. Each episode of *Lost* costs well over \$1mm to produce. Cheap cameras do not disrupt “production quality”. And let’s not forget that *The Blair Witch Project* was over ten years ago, and desperately stands alone as an exception and not a rule.

In the long run, the disruption zealots may be right. It may all come undone in the unstoppable Armageddon of unlimited “all you can eat” content enabled by the undeniable liberation of all bits big and small. But with \$32 billion on the line, don’t expect it to happen overnight. You will be sorely disappointed.

Article 37: Virtual Goods, Accounting, and the Power of the “Rental” Model

February 8, 2010:

American journalists and corporate executives have been slow to appreciate the beauty, brilliance, and consumer allure of the virtual goods business model. It’s not that they did not have data points – China is chock full of multi-US\$ billion market capitalization companies that are based on this business model. That said, many luddites predicted it was an “Eastern” fascination that would never spread to the West. They never fully understood it.

As a result of this headstrong denial, I have often wondered what data point would finally convince me that the West had fully accepted the reality of the virtual goods business model. Last week I received my answer. Jeff Grabow from Ernst and Young asked my partner Mitch Lasky and I to sit down with Mick Bobroff, an audit partner developing an expertise in virtual item based revenue recognition. Now I wasn’t exactly waiting for a sign from God or anything – rather just a small signal that confirmed this new model was legit. Having an audit partner at a top three accounting firm become an expert certainly qualifies as a step in the right direction.

Mick had prepared a remarkably succinct and information rich presentation (here is a link to their PDF on the subject). I was fairly excited to go through it – at least as excited as anyone should get when discussing accounting principles. Here is a summary of what Mick had to say in

his presentation titled “Revenue Recognition Considerations for the Sale of Virtual Goods”. [If you want to reach Mick, his contact info: 415-894-8205, ]

- [Legal Point First] Michael made it clear that this document represented general observations and should not be used specifically as accounting advice. I understand and concur with regards to this post also. For your own books verify with your own accountant.
- There are already a ton of companies that trade on American stock exchanges (NYSE, NASDAQ) that use virtual goods models and adhere to GAAP. To the point above, they are all in China. Examples: ChangYou (CYOU), Giant (GA), NetEase (NTES), Perfect World (PWRD), The 9 (NCTY), Shanda Games (GAME). [For the record, TenCent is Hong Kong listed.] The current GAAP revenue recognition policies were honed with these companies.
- When a company sells virtual currency, this is not a revenue event (even though it may clearly be a cash event). When purchased but not yet used, virtual currency sits on the balance sheet as a customer deposit or deferred revenue (i.e. a liability).
- Revenue recognition commences when virtual goods are bought with virtual currency by the consumer. Exactly how it “commences” depends on the following.
- There are two categories of virtual goods – (1) consumable items that are used once and gone, and (2) durable items that “work” over an extended period of time.
- For “consumable items” you can recognize revenue when it is consumed.
- For durable items (which many are), things are much trickier. You need to amortize the revenue (linearly) over the useful life of the good, or the average life of the actual user (i.e. – what is the average customer life of your customer?). This is a messy problem, especially when you understand how difficult it is to measure “customer life” when some customers never pay and others come and go in fairly random patterns. Also, your “average customer life” may change over time creating very complex accruals.
- The bottom line: getting this right requires quite a few database entries for tracking the sale and usage of every single virtual good sold in your digital world, in addition to the supply and usage of each virtual currency account, and the activity levels of each user (to estimate average life).

These policies were not particularly surprising. That said, when I was listening to the complications of the “durable item” revenue accounting, it reminded me of something I learned for the early leaders in the virtual items space — innovative Korean companies such as Nexon.

The “Rental” Model

About four to five years ago, the team at LindenLab (SecondLife) held a pizza night at their offices with the goal of learning more about the virtual item games that were wildly popular in Korea. We invited two bilingual gamers to install and play Audition, Kartrider, and FreeStyle. My big takeaway from that night was that not one of these titles actually allowed for the “sale” of virtual goods. Rather, each virtual item could only be “rented.” In each case, the user was given the option of one, seven, or thirty-day rental. I assumed this was Darwinian, and immediately began to wonder why “renting” might be better than outright ownership when it comes to virtual goods.

- In world inventory gluts. As virtual worlds mature, they often suffer from game-wide inventory glut. Items that were once useful to newbies become throw-aways for the more advanced user, and can literally pollute the world and compromise the in-world economy. Allowing rental is like having free garbage collection. Everything eventually goes away.
- User inventory clutter. More advanced users typically have a huge problem managing large inventories of items. Also, many items are trend-oriented and trends change. With the rental model, no user sits around thinking “wow, why did I really buy that two months ago and what do I do with it now?,” and “why am I buying all this stuff?” The rental model simplifies inventory management for the user.
- More marketing opportunities. When an item expires, it offers a unique time to re-market to the user for either an extension of the current good, to a trade to a newer, fresher, and perhaps more interesting item.
- Price segmentation. By offering 1, 7, and 30 day rentals, the merchant has basically price-segmented the market. This theoretically allows more users to experience the good than may have with a single, and arguably higher, price point.
- Good business. Why sell something that lasts forever if you can sell something that has to be naturally repurchased?
- Simpler accounting. I didn’t think of this sixth point until my meeting last week. The rental model does away with the notion of a “durable” virtual good, as they all expire. What’s more the time frame over which you recognize the revenue is now fixed at 1, 7, or 30 days. This dramatically reduces the accounting complexity.

Thanks again to Michael and Jeff at E&Y for reaching out and setting up the meeting. It’s great to recognize that virtual goods businesses are finally mainstream here in North America, and that

they even have their own appropriate accounting policies. I also appreciate having one more reason to favor “rentals” vs “sales” when it comes to virtual items.

[I have received several comments that concern this post and how it relates to SecondLife. For those of you that don't know, SecondLife doesn't actually sell virtual items, its residents do. As such, this post does not relate to SecondLife at all. It pertains to the 98% of virtual worlds where the hosting companies ALSO is in the digital goods business. Nothing would stop SL from offering rental as a choice to its developers, but the main message is that this post does not pertain to SL (which has a different business model altogether.)]

Article 38: Google Redefines Disruption: The “Less Than Free” Business Model

October 29, 2009:

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I like to think of myself as an aficionado of business disruption. After all, as a venture capitalist it is imperative to understand ways in which a smaller private company can gain the upper hand on a large incumbent. One of the most successful ways to do this is to change the rules of the game in such a way that the incumbent would need to abandon or destroy its core business in order to lay chase to your strategy. This thinking, which was eloquently chronicled in Clay Christiansen's The Innovator's Dilemma, is the key premise behind recently successful business movements like SAAS (Software as a Service), open source software, and the much-discussed Freemium Internet model. And while each of these disruptions are impressive in their own right, when I read this week that Google was including free turn-by-turn navigation directions with each and every

Android mobile OS, I had an immediate feeling that I was witnessing a disruptive play of a magnitude heretofore unseen.

Google has long had an interest in maps. Early in its history, the company added “Maps” as one of the coveted tab alternatives offered at the top of the screen above its famed search box. At that time, Google did what many others did to enter the mapping business – they licensed data from the two duopolists that ruled the mapping business – Tele Atlas and NavTeq. Over the years, as these two companies gained more and more power, and larger and larger market capitalizations, Google’s ambitions were growing too. Google wanted to spread its maps across the web, and to allow others to build on top of its mapping API. The duopolists, recognizing a fox in the henhouse, were apprehensive to allow such activity.

In the summer of 2007, excitement regarding the criticality of map data (specifically turn-by-turn navigation data) reached a fever pitch. On July 23, 2007, TomTom, the leading portable GPS device maker,

agreed to buy Tele Atlas for US\$2.7 billion. Shortly thereafter, on October 1,

Nokia agreed to buy NavTeq for a cool US\$8.1 billion. Meanwhile Google was still evolving its strategy and no longer wanted to be limited by the terms of its two contracts. As such, they informed Tele Atlas and NavTeq that they wanted to modify their license terms to allow more liberty with respect to syndication and proliferation. NavTeq balked, and in September of 2008

Google quietly dropped NavTeq, moving to just one partner for its core mapping data. Tele Atlas eventually agreed to the term modifications, but perhaps they should have sensed something bigger at play.

Rumors abound about just how many cars Google has on the roads building its own turn-by-turn mapping data as well as its unique “Google Streetview” database. Whatever it is, it must be huge. This October 13th, just over one year after dropping NavTeq, the other shoe dropped as well.

Google disconnected from Tele Atlas and began to offer maps that were free and clear of either license. These maps are based on a combination of their own data as well as freely available data. Two weeks after this,

Google announces free turn-by-turn directions for all Android phones. This couldn't have been a great day for the deal teams that worked on the respective Tele Atlas and NavTeq acquisitions.

To understand just how disruptive this is to the GPS data market, you must first understand that "turn-by-turn" data was the lynchpin that held the duopoly together. Anyone could get map data (there are many free sources), but turn-by-turn data was remarkably expensive to build and maintain. As a result, no one could really duplicate it. The duopolists had price leverage and demanded remarkably high royalties, and the GPS device makers (TomTom, Garmin, Nokia) were forced to be price takers. You can see evidence of this price umbrella in the uniquely high \$99.99 price point TomTom now charges for its iPhone application. When TomTom bought Tele Atlas, the die was cast. Eat or be eaten. If you didn't control your own data, how could you compete in the GPS market? This is what prompted the Nokia-NavTeq deal.

Google's free navigation feature announcement

dealt a crushing blow to the GPS stocks. Garmin fell 16%. TomTom fell 21%. Imagine trying to maintain high royalty rates against this strategic move by Google. Android is not only a phone OS, it's a CE OS. If Ford or BMW want to build an in-dash Android GPS, guess what? Google will give it to them for free. As we noted in our take on the free business model, "

if a disruptive competitor can offer a product or service similar to yours for 'free,' and if they can make enough money to keep the lights on, then you likely have a problem." It would be one thing if this were merely a mean-spirited play by Google to put an end to the GPS data duopoly. But it is not. There are multiple facets to this remarkably disruptive move.

While it is obvious that this maneuver creates a problem for the multi-billion dollar GPS market, it also poses real challenges for the leading smart phone players – RIM's Blackberry and Apple's iPhone. Without access to their own mapping data, these vendors now face an interesting dilemma. Do you risk flying naked without free navigation or do you suck it up and swallow the above average royalty fee for each and every handset? Neither option is stellar. This problem isn't nearly as daunting as the one now faced by the Windows Mobile and Symbian teams. As software providers, they are lucky to get a per unit royalty equal to that extracted by the GPS data guys. If they are now forced to integrate this data merely to keep their product competitive, their gross margin just went negative. Ouch!

This is not just incredible defense. Google is apt to believe that the geographic taxonomy is a wonderful skeleton for a geo-based ad network. If your maps are distributed everywhere on the Internet and in every mobile device, you control that framework. Cash starved startups, building interesting and innovative mobile apps, will undoubtedly build on Google's map API. It's rich, it is easy to use, and quite frankly the price is right. In the future, if you want to advertise your local business to people with an interest in your local market, chances are you will look to Google for that access.

Introducing the "Less Than Free" Business Model

Google's brilliance doesn't stop there. It is hard not to have been surprised by the rapid rise in recent buzz surrounding the Google Android Smartphone OS. When I asked a mobile industry veteran why carriers were so willing to dance with Google, a company they once feared, he suggested that Google was the "lesser of two evils." With Blackberry and iPhone grabbing more and more subs, the carriers were losing control of the customer UI, which undoubtedly represents power and future monetization opportunities. With Android,

carriers could re-claim their customer "deck." Additionally, because Google has created an open source version of Android, carriers believe they have an "out" if they part ways with Google in the future.

I then asked my friend, "so why would they ever use the Google (non open source) license version." (EDIT: One of the commenters below pointed out that all Android is open source, and the Google apps pack, including the GPS, is licensed on top. Doesn't change the argument, but wanted the correct data included here.) Here was the big punch line – because Google will give you ad splits on search if you use that version! That's right; Google will pay you to use their mobile OS. I like to call this the "less than free" business model. This is a remarkable card to play. Because of its dominance in search, Google has ad rates that blow away the competition. To compete at an equally "less than free" price point, Symbian or windows mobile would need to subsidize. Double ouch!!

"Less than free" may not stop with the mobile phone. Google's CEO Eric Schmidt

has been quite outspoken about his support for the Google Chrome OS. And there is no reason to believe that the “less than free” business model will not be used here as well. If Sony or HP or Dell builds a netbook based on Chrome OS, they will make money on every search each user initiates. Google, eager to protect its search share and market volume, will gladly pay the ad splits. Microsoft, who was already forced to lower Windows netbook pricing to fend off Linux, will be dancing with a business model inversion of epic proportion – from “you pay me” to “I pay you.” It’s really hard to build a compensation package for your sales team on those economics.

Naysayers of these assertions will likely have the same retort – quality is key. They will argue that Google’s turn-by-turn apps are inferior to their well honed market leading products. With regard to Android, Google will lack the user interface or embedded software expertise necessary and will deliver a subpar product. Plus, because the Android OS will be so splintered, QA testing will be difficult and incompatibility issues will abound. In the short run, these issues will exist.

Despite these challenges, it would be a dangerous strategy for any of the many threatened players in these markets to hang on to this “quality” rationalization for very long. First, Google’s products will get better over time. The sheer volume of the Android phones in the market will give them new data feeds to complement their own mapping effort. Also, they can create UGC hooks for users to embellish their own maps (like in Google Earth), offering themselves further differentiation. With regard to Android, version 3 will be better than version 2 will be better than version 1. Microsoft knows this game well.

Another perhaps even more important factor is that when a product is completely free, consumer expectations are low and consumer patience is high. Customers seem to really like free as a price point. I suspect they will love “less than free.”

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September 29, 2009:

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We are clearly at a very important point in time when it comes to Internet video, especially video that is served to your television, but over the Internet (also known as “over-the-top” Internet video). Christmas of 2009 and Christmas of 2010 will mark the point in time that Internet menus began to show up in-mass on televisions, DVD players, and game machines. That said, one would be hard pressed to predict exactly how this market will evolve. There are simply way more questions than answers. For example:

- Who will own the operating system layer?
- Who will own the menu “stack” which dictates discovery?
- What will be the key features of this menu system, and which applications will be most useful and successful?
- What type of programs are most popular in this format?
- What are the typical pricing/product offerings?
- Will this product live inside the carrier set-top box or outside?
- Will the carriers that control the pipe also control this interface (either directly or indirectly)?
- Are these systems selling at rates that are above or below expectation? Why or why not?
- Is it considered a viable alternative to cable or satellite?

One way to have an advantage in “predicting” what will happen is to look at other countries that are further evolved in terms of broadband. The most obvious of these, with over 90% broadband penetration, is South Korea. Three providers in Korea offer an over-the-top Internet set-top box, and recent press suggests that there are now just over 800,000 subscribers of these services (out

of roughly 16-17mm South Korean HHs). The leader is KT with their Mega TV offering, followed by LG Dacom, and then SK Broadband. While these numbers are certainly impressive, if memory serves, the estimates from a few years back were for multiple-millions at this point, so for some reason the roll out has not gone exactly as planned.

According to this article from January, MegaTV has 38 live channels and 85,000 episodes in VOD format. Also, the video included immediately after this paragraph shows an integration of the Mega TV service on the Playstation 3 (unfortunately its not in English). This highlights the complexity of the “who owns the menu” question. Mega TV is a set-top box as well as service offering on other boxes.

Unfortunately, outside of what is shared here, I do not have much detail on exactly how this market is evolving. If any readers have more data, or have perspectives or answers to any of the questions listed above, add them to the comments or send them to me at with “Korea IPTV” in the subject, and I will incorporate the responses into this post. In other words, I will try to make it a living blog post with the latest and greatest on the Korean “over-the-top” video market. Thanks a ton – I look forward to hearing from you!

Article 40: What Is Really Happening to the Venture Capital Industry?

August 24, 2009:

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Many are speculating that the year two thousand and nine represents a fundamental turning point for the venture capital industry. Some are arguing that the industry is in dire straits after years of poor performance. Others have argued that the math simply does not work for the industry's current size. Another theory suggests that permanent challenges with the IPO market call into question the fundamental economics of the VC industry. Lastly, some credible authors have suggested that things are so bad that a federal bailout may be in order.

Venture capital funds receive the majority of their funds from large pension funds, endowments, and foundations which represent some of the largest pools of capital in the world. This "institutional capital" is typically managed by active fund managers who invest with the objective of earning an optimal return in order to meet the needs of the specific institution and/or to grow the size of their overall fund. These fund managers have one primary tool in their search for optimal returns: deciding which investment categories (referred to as "asset classes") should receive which percentage of the overall capital allocation. This process is known in the financial field as "asset allocation."

Asset allocation is the strategy an investor uses to choose specifically how to divide up capital amongst asset classes such as stocks, bonds, international stocks, international bonds, real-estate funds, leveraged buys-outs (LBOs), venture capital, as well as other obscure classes such as timber funds. Some of these asset classes, such as stocks and bonds, are known as "liquid assets," because these instruments trade on a daily basis on exchanges around the world. For these assets, investors can be quite sure of the exact value of their holdings, as the price is set continuously in the market. Also, if they need to sell, there is a ready market to accept the trade. Illiquid assets, also known as alternative assets, include all the other investment classes that do not trade on a daily exchange. These "private" investments (as compared to "public" liquid investments) are considered higher risk due to their illiquidity, but also are expected to earn a higher return. Some hedge funds are included in alternative assets either because they themselves invest in illiquid investments or because they put strict limitations on the trading capability of the institutional investors, rendering themselves "illiquid".

Asset allocation is a well-studied area within the field of finance. A prototypical U.S.-based asset allocation model might allocate 25% to U.S. stocks, 30% to U.S. debt, 25% to international equity

and debt, and let's say 20% to all alternative assets. Within alternative assets, LBOs might be 60%, and venture capital could be as low as 10% (of the 20%). As a result, venture capital could be as low as 2% of a institutional fund's overall capital allocation. Most people fail to realize just how small venture capital is in the overall scheme of things.

Very generally speaking, experts and academicians have considered it "conservative" to have a smaller allocation to all alternative assets reflecting the risks of illiquidity, the inability to ascertain price, and the higher difficulty in analyzing the non-standard vehicles. It is a fairly straightforward, conservative investment approach to favor liquidity and certainty over absolute potential upside (this is the same argument for holding bonds over stocks).

Over the past decade or so, a large number of very influential institutional funds have substantially increased their allocation in alternative assets. In some extreme cases, these investors have taken this allocation from a conservative amount of say 15-20% to well over 50% of their fund. Many people suggest that David Swensen at Yale was the original architect of a strategy to adopt a much higher allocation to alternative assets. Regardless of whether he was the leader or not, several funds simultaneously adopted this higher-risk, higher-return model. (For a more detailed look at how this evolved and why, see [Ivy League Schools Learn a Lesson in Liquidity](#) and [How Harvard Investing Superstars Crashed](#). For an even deeper dive including comparative asset allocation models see [Tough Lessons for Harvard and Yale](#).)

Contributing to this dynamic on the field, the early movers to this model were able to post above-average returns.* Also, due to the high disclosure policy of most universities, these above average performances were often touted in press releases. This "public benchmarking" put further pressure on competing fund managers who were not seeing equal returns, which as you might guess, led to them mimicking the same strategy. As a result, alternative assets have grown quite substantially over the past ten years. This is perhaps best seen in the size of the overall LBO market. The included chart shows the money raised in the LBO market over the past 30 years. As you can see, the amount of dollars pouring into this category over the past five years is nothing short of breathtaking.

The market contraction of late 2008 and early 2009 severely compromised the high-alternative asset allocation strategy. The liquid portion of average portfolio contracted as much as 30-40%, which had two resulting impacts. Initially, this resulted in most fund managers having an even higher portion of their funds in illiquid investments. Ironically this was largely an accounting

issue. Most likely, the illiquid pieces of their portfolio had declined just as much, but as illiquid investments are not valued on a day-to-day basis, they simply were not properly discounted at this point (over time they “would” and “are” eventually coming down). But with one’s fund already down 30% or so, no one is eager to further decrement the value. Despite that this may have only been an “accounting” issue, it presented a problem nonetheless, as many fund managers have triggers that force them to reallocate capital if they go above or below a certain asset allocation. This is one of those policies that encouraged selling at a point that may be the exact wrong time, contributing to further declines.

A second and more complicated problem also emerged. It turns out that when an institutional investor “invests” in an LBO fund they don’t actually invest the dollars all at once, rather they commit to an investment over time, which is “drawn down” by the LBO manager (venture capital works in the same way, but once again is a much smaller category). As these funds substantially increased their commitment to the LBO category, they were de facto increasing a guaranteed negative cash flow in the future to meet these draw-downs. Now, with portfolios out of balance, and lack of new liquidity events from the M&A and IPO markets, these funds have cash needs (to meet the draw-downs) that are not offset by cash availability. If anything, the universities and endowments these managers represent want more cash now to deal with the difficult overall economic environment.

To meet these new liquidity needs an institutional investor could:

- Sell more of its liquid securities. This is problematic because it further compromises the target asset allocation.
- Try to sell the LBO commitments on the secondary market. As you might suspect the secondary market is extremely depressed. Some have even suggested that due to the forward cash need on an early LBO fund, an institution might have to “pay” to get out of the position, and to encourage someone else take on the future cash commitment.
- Default on the commitment. While this does have penalties in most cases, it would not be out of the realm of possibilities for this to occur if the investor has lost faith in the manager, and it is early in the fund (with more cash needs in the future).
- Try to raise more capital. Not surprisingly, donations to foundations and universities are down dramatically due to the overall decline in the capital markets. This makes this strategy unlikely.

As you can see, none of these options are overly compelling.

If this is not bad enough, many institutional fund managers and the groups to whom they report (such as a board of trustees) are now second-guessing the high-alternative asset allocation model. As a result, they may desire to return to the more conservative and more traditional asset allocation of 10-20% allocated to alternative assets. Ironically, they are in no position to rebalance their portfolio precisely because they lack incremental liquidity. Think about it this way – it is very easy to shift a portfolio from liquid assets to illiquid. You simply sell positions in highly liquid securities, and buy or commit to illiquid ones. Going the other way is not so simple, as there is no ability to conveniently exit the illiquid positions.

This is a very long explanation, but the punch line is that as these large institutions adjust their portfolios and potentially abandon these more aggressive strategies, the amount of overall capital committed to alternative assets will undoubtedly shrink. As this happens, the VC industry will shrink in kind. How much will it go down? It is very hard to say. It would not be surprising for many of these funds to cut their allocation in the category in half, and as a result, it shouldn't be surprising for the VC industry to get cut in half also.

The second reason the category will not be abandoned is contrarianism. Most students of financial history have read the famous quote attributed to Warren Buffet, "We simply attempt to be fearful when others are greedy and to be greedy only when others are fearful." One of the biggest fears of any investor is to abandon an investment at its low point, and then miss the corresponding recovery that would have helped offset previous poor returns. While this mindset will not guarantee the 100-year viability of the venture capital category, it should act as a governor on any mass exodus of the category. The more people that exit, the more the true believers will want to double-down.

So when will this happen? One thing for sure is it will not happen quickly. The VC industry has low barriers to entry and high barriers to exit. Theoretically, a fund raised in 2008, where all the LPs have no plans to commit to their next fund, may still be doing business in 2018. VC funds have long lives, and the point at which they decide to "not continue" is usually when they go to raise a new fund. This would typically be 3-5 years after they raised their last fund, but could be expanded to 5-7 years in a tough market. In some ways the process has already started. Stories are starting to pop up about VC funds that were unable to raise their next fund. Also, some entrepreneurs are starting to discuss favoring VCs of which they can be confident of their longevity. All in all, one should expect a large number of VC firms to call it quits over the next five years.

How should Silicon Valley think about these changes? It is important to realize that there are approximately 900 active VC firms in the U.S. alone. If that number fell to 450, it is not clear that the average Silicon Valley resident would take much notice. Another interesting data point can be found in the NVCA data outlining how much money VCs are investing in startups (as opposed to LP's committing to VC firms). VC firms invested about \$3.7B in the second quarter of 2009. Interestingly, this number is about half of the recent peak of around \$8B/quarter. It is also quite similar to the investment level in the mid 1990s, prior to both the Internet bubble, and the rise of the aggressive asset allocation model. So from that perspective, this, meaning the investment level we see right now in Q2 of 2009, may be what it is going to be like in the future.

There are many reasons to believe that a reduction in the size of the VC industry will be healthy for the industry overall and should lead to above average returns in the future. This is not simply because less supply of dollars will give VCs more pricing leverage. We have seen over and over again how excess capital can lead to crowded emerging markets with as many as 5-6 VC backed competitors. Reducing this to 2-3 players will result in less cutthroat behavior and much healthier returns for all companies and entrepreneurs in the market. Additionally, at a stabilized market size of well over \$15B a year, there should be plenty of capital to fund the next Microsoft, Ebay, or Google.

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* To date, it is unclear if these "above-average" returns were a result of the liquid half of these portfolios or the illiquid half. As we mentioned earlier, it is extremely difficult to ascertain the actual value of an illiquid investment. In many cases, the institutional fund manager relies on the investment manager of the asset in which they invested to prescribe a value to the investment, even though they may be highly biased. If it turns out a large portion of the "above-average" returns of these early adopters of this more aggressive strategy were on the illiquid side, we may have yet again another example of the dangers of mark-to-market accounting.

Article 41: A Real Time Free Vs Fee Example: Rosetta Stone vs. LiveMocha

August 20, 2009:

As I was driving to work this morning listening to NPR, it became clear to me that this “free vs fee” discussion has some legs (to listen to the NPR piece [click here](#)).

Last week, Rosetta Stone was back in the news with regards to an earnings miss as well as pulled secondary offering. Over a year ago, I had the chance to meet with a very interesting Seattle based company called LiveMocha (we are not an investor in LiveMocha). As you might have guessed, LiveMocha offers language learning on the Internet, in a manner that is similar to Rosetta Stone, for free.

If you read our previous thoughts on the free business model, we made one key point. Free is not necessarily a game plan, or a guaranteed model for success, but rather a market reality. Someone may be able to do what you do for free. Does it guarantee they will be wildly successful? No, but it still may be a massive threat. Microeconomics is not a zero-sum game. It’s perfectly reasonable for all the players in a market to not generate excessive (or any) profits.

Let me tell you a bit more about LiveMocha. The company runs a web site where you can learn any number of languages. What’s really cool is that it is also an online community, so they connect you with people that are learning the same language as you, as well as people that are proficient in it, who go so far as to listen to your audio samples and offer 1-1 feedback. Based on these rich community features, LiveMocha argues that their “Free” product is even better than Rosetta Stone.

One other key component of LiveMocha’s business is that the community provides all of it’s contribution for “free,” including translating the courses into more and more languages (this is really, really cool). That represents immense leverage, and from my perspective is problematic

for Rosetta Stone. LiveMocha's cost of building its content is "close enough" to zero, and as such, I suspect they will be able to have a free offering for a long, long time.

Does this mean that LiveMocha will be successful? Not at all. First, they have to be "known." Today, I suspect their awareness is a mere fraction of that of Rosetta Stone. More critically, they are still experimenting and learning on the monetization front. I believe the current plan is a combination of "freemium" and advertising, but there is still a long way to go from here. It also isn't directly clear who wants to target this group from an advertiser stand point.

I can certainly see how Rosetta Stone's management would disregard LiveMocha as a small company that no one knows.* Moreover, I suspect that they would argue that LiveMocha has no material impact on the current quarter (i.e. it didn't cause the recent miss). Still, I would not be too quick to dismiss the rising threat of the free offering, especially in this type of economy. I was able to find this interesting post from the Orange Beach Library in Orange Beach, Alabama, titled "Goodbye Rosetta, Hello LiveMocha". Worth a quick read.

As I said before, "free" is more of a threat than a strategy. If someone can do what you do for free, you are forced to deal with it.

* It is important to note that the very beginning of the risk section of Rosetta's S-1 states, "A decline in demand for our language learning solutions or language learning in general could impair our ability to generate revenue and compromise our profitability, as could the growth of free language learning software and online services and intense competition in our industry."

August 4, 2009:

For those of you that get the subscription VentureWire emails, you may have noticed the subtitle today "Recent buyout-backed IPO activity is a positive sign, but don't expect any VC-funded IPOs anytime soon." It also included the equally pessimistic, "...but doesn't expect any venture-backed companies to price before Thanksgiving."

For the life of me, I cannot figure out why the press is so feverishly pessimistic about the IPO market. In 2009, no major company IPO filings have been pulled. Moreover, all five companies that have gone have done extremely well. Meanwhile, while VentureWire is laying it thick on the negative side, Ancestry.com files its S-1.

Hats off to management team and the investors in Ancestry. Many had written off this company, and it looks like they have done a great job of reinvigorating growth and generating profitability.

I wonder how many successful IPO's we need before people will stop saying the window is closed. Looks perfectly open to me.

Article 43: Do VCs Help in Building a Technology Platform; Part 2

December 5, 2008:

Over three years ago, I wrote a post titled, "Do VCs Help in Building a Technology Platform?". The premise (as you can go see), was that VCs who once primarily invested in companies built on Microsoft's platform, had almost universally switched to the open source

LAMP stack as their technology platform of choice. This activity obviously helps reinforce the chosen platform, as the more apps built on top of it, the more universal solutions that are then available for that platform.

I wanted to offer two updates that relate to this theory/proposition.

First, Microsoft recently announced that startups can get three years of free software and service. From my point of view, this thoroughly supports the theory that where startups are deploying matters. Otherwise, why do it? It also reinforces the point that developers have been moving away from Microsoft — choosing other platforms, which is what likely promoted the discount offer.

What's perhaps even more ironic is that three years ago, the key alternative to choosing Microsoft as a platform on which to deploy your startup was Open Source (LAMP). Fast forward three years, and there are three new entrants — Salesforce, Facebook and Amazon's cloud service — that are all demanding an amazing amount of attention from VCs. What's more, each of these companies are doing a good job actively reaching out to the VC community and encouraging development on their platform.

It obviously would be overstating it to suggest that VCs help “choose” the platform that wins. That said, it is a powerfully positive indicator if VCs show confidence in a new platform by shifting where they deploy their capital.

Take Our Poll

Article 44: Benchmark Capital: Open For Business

December 1, 2008:

“People see you having fun

Just a-lying in the sun

Tell them that you like it this way”

– BTO, Takin’ Care of Business

The seemingly chronic state of our economy, combined with the thundering sound of dire financial news has left many in a state of shock. This unprecedented moment in time has resulted in unprecedented questions, such as, “Do you think California Municipal bonds are safe investments?” Hard to imagine in the past, but with the country’s richest state begging for a federal bail-out, who knows?

There have been similar questions raised about the VC industry, and perhaps many of them are equally unprecedented. Do VCs have money to invest? Are they pulling back? Do they have access to their money? Do they have enough capital for follow-on investments? Are the LPs pulling back for their own liquidity? The list goes on and on, and if you read the popular press you might think we are all under our desks dreaming of 1999.

I can't speak for other firms, but make no mistake about...Benchmark Capital is wide open for business and we are eager to invest new capital behind great entrepreneurs. Right now. In this environment. Today.

You may wonder why I feel the need to make this pronouncement, and you may even consider this a stunt. It is not. We have made fourteen new investments this year, and are actively considering new investments each and every day.

What is driving our enthusiasm to be optimistic while the general perception is that we should be "scared"? Here are four answers on a roll:

- 1) We make money investing, not sitting on our money. Innovation and disruption are constant and not subject to the whims of the overall economy.
- 2) We believe that environments like this tend to sort out the true entrepreneurs from the pretenders. When money is easy in Silicon Valley, it tends to attract short-term opportunists looking to make a fast-buck rather than build a lasting company. Only the best entrepreneurs set sail in rough seas like this.
- 3) We like the probability for startups (especially Series A deals) in this environment. Consider that people are easier to hire and rent is cheap. Incumbents are cutting their R&D budgets, and there will be fewer startups in each space, all of which means less competition. These are good things.
- 4) Graham and Dodd said it first and best, but one "... should try to be fearful when others are greedy and greedy when others are fearful." Pretty clear what time it is.

If you hear anyone asking if VCs are "puling back" and unwilling to invest, please tell them to call us. We are open for business.

Article 45: BAILOUT what?

July 22, 2008:

I wish someone could help me understand why Fannie Mae and Freddie Mac stock prices are not hovering near zero. Is our government really going to bail out equity investors in a failed business enterprise? I totally get keeping America afloat, but it is critical that failed businesses FAIL. They must FAIL. You can't provide band-aids to equity failure. The whole system will come to a halt. Risk that pans out must result in failure. It is a crucial part of the system.

Article 46: Bleak VC Quarter? Why?

June 30, 2008:

Matt Richtel over at the New York Times wrote an interesting article last week titled, "Venture Investors Wrap Up an Unusually Bleak Quarter."

The main data point that spurred the article is that this is the first quarter since 1978 that not one venture backed company went public. I don't aim to dispute the facts. This is indeed

true. However, the article goes on to imply that the buy-side doesn't want the companies being backed by VCs. This perspective is most strongly suggested by Paul Kedrosky, investor and the author of *Infectious Greed*, "There is nothing that the industry is producing that investors want...The stuff they're investing in is idiosyncratic — it's fun and appealing to them but Wall Street doesn't care."

Having had several conversations with mutual fund managers in the last three months, I personally disagree with this perspective. Many funds are starved for growth and appreciation. Many of the leading large capitalization technology companies have seen flat stock prices for as many as seven or eight years. Without a robust IPO market, these investors are not able to balance this lack of growth in their current portfolios. Moreover, the investors themselves lack the exposure to the new trends and disruptions. At a recent Wall Street conference, several investors were visibly upset that the venture community was not bringing more companies public. I feel very strongly there is no a "demand problem" when it comes to IPOs.

So where is the disconnect? If it's not a demand problem, what is the issue?

If you went back to say 1995 and asked any entrepreneur or tech executive, "what is your one key goal for your company?," they would all say — "IPO". This overwhelming desire to be a part of a company that achieved a public offering was universal. It mirrored an athlete going to the Olympics, or perhaps playing in the pros. This passionate desire to be public is completely gone in Silicon Valley. For reasons you could easily list — Sarbanes Oxley; 12b1 trading rules; shareholder litigation; option pricing scandals; personal liability on 10-Q filing signatures — it is simply not much fun being a public executive.

The Benchmark portfolio current has over 15 companies north of \$50MM in revenues, and they are all private. This would have never happened in 1995 (even pre-bubble) where most of these companies would ALREADY BE public.

I don't think we have a demand problem, we have a supply problem. No one wants to manage a public company.

Article 47: Back to Blogging (maybe)...

June 19, 2008:

I haven't written a public post in over two years, and many people ask me when I might write again. The bottom line is I have been really busy. Busy with our investments here at Benchmark, and busy with three growing kids at home. But in the end, I am quite fond of writing, and I have been inspired by some of the great writing of others.

That being the case, I thought I would start with an overview of some of the blogs that I visit daily, with a brief overview explaining why.

My first two stops each day are GigaOm and TechCrunch. This shouldn't be much of a surprise here to anyone in the valley. Om Malik and Michael Arrington have put themselves at the ground zero in Silicon Valley. Plus, they have both developed a POV that is interesting and differentiated.

I have also been extremely impressed (as I know many have) with Marc Andreessen's writing. Very thoughtful pieces that are very well reasoned, and at times quite lengthy. Makes you think — which I believe is the highest objective of great writing.

I would also suggest that anyone that is trying to keep up with the edge between digital and media pay attention to Shelly Palmer's daily video blog. Very terse, but always right on. Shelly is very bright in this field, and is heavily used by the media industry as a consultant. In the valley, it's easy to know the perspective of the "disrupter". Shelly can give you the perspective of the industry you are trying to impact.

Anyway, I hope that this post will be the first of many more to come.

Article 48: Techdirt: The Fake Broadband Price War

July 12, 2006:

Link: Techdirt: The Fake Broadband Price War.

Techdirt has a great article on the reality with respect to broadband pricing in America. The monopolistic carriers want congress to believe prices are low and falling. Nothing is further from the truth. Turns out that they routinely overstate coverage and availability of DSL also.

Article 49: MMOs (MMORPGs) Continue to Rock

April 27, 2006:

MMOs (MMORPGs) Continue to Rock

There is a great deal of interesting activity in MMO land these days. You may remember that we highlighted the invest-ability of this trend/category about 18 months ago. Despite my enthusiasm, I could have never anticipated the massive impact of World of Warcraft. It appears today to be the most valuable title in the history of gaming. There are also rumors that Vivendi (parent of Blizzard) may spin it out to get full credit from investors. Huge Kudos to the team at Blizzard for firing the “shot heard round the world”.

Some updates and tidbits:

- There is a new subscriber update at MMOGCHART.com. This is a great site that tracks subscriber counts for the major titles.
- SecondLife is on the Cover of BusinessWeek this week (FYI-Benchmark is an investor in SecondLife). Very interesting story highlighting how entrepreneurs are making real money developing real IP inside the virtual world.
- I don't think Electronic Arts has had a blow away quarter since WOW launched. In fact there has been a lot of downward guidance. You don't here much talk about it, but the substitution effect must be tremendous. Wow launched in November, 2004.
- Microsoft buys Massive.com, the leader in in-game advertising. My own guess is that the price is closer to \$100MM, rather than the \$200-400 that the press is reporting. This follows on the heels of Xfire being acquired for about \$102MM by Viacom (MTV). Microsoft clearly wants to make sure that they are the Google of this space, and that they don't let the ad network fall into other hands. I have a hard time seeing how XBOX can thrive in MMO land if Microsoft won't share the network fees with the developers. Today, only Microsoft gets “subscription” fees. Ironical that the PC is the alternative here.
- Many of the rising stars of multi-player interactive entertainment are more social than interactive. They also target much broader demographics than gaming ever dreamed of hitting. Consider three sites targeted at younger children and teens that are all doing extremely well — NeoPets, HabboHotel, and GaiaOnline (Benchmark is an investor in HabboHotel).
- Lastly, there is an amazing amount of cool things happening in Korea these days, all around a category that many are calling “Advanced Casual”. These are games where users interact with multiple-players in a quick (5-7 minute) interlude. Once again, very broad demographic. The unquestioned leader here is KartRider by Nexon. Rumor has it that Nexon will file to go public on the JSE (click here to see why JSE instead of NASDAQ), and should be a whale of a stock. Other cool titles include Audition (multi-player Dance, Dance, Revolution), Sudden Attack (looks like a Counter Strike knock off), and FreeStyle (3 on 3 street basketball), which was recently licensed by Vivendi for launch in the US. One more is Pangya, a multi-player casual golf game.

All of this is quite amazing and exciting. Multi-player interactive is going to be a massive, massive category.

Article 50: As Wifi Grows, So Do the PR Attacks

April 25, 2006:

An AP story ran yesterday suggesting there are problems with a city-wide Wifi network in St. Cloud, Florida. What is amazing here is that the writer talks to 3 people total and then infers many grand assumptions.

Here are the facts:

In a few short weeks over 3600 residents of St. Cloud have registered for the service. This is a higher penetration rate (by an order of magnitude) that EVDO has seen in any city.

The performance of the network is as high as 10X over EVDO downstream, and 100X upstream.

The gentleman that complained is outside the coverage zone and can't get service. In other words, the big negative here is that more people want it than can get it. Hmmmm....

EVDO is not planned to be deployed in a town this size (28K residents) anytime soon. The carriers are focused on the higher density cities.

Talk to the people and policy makers in St. Cloud and they will tell you this is a huge success. They post updates frequently.

Esme gets is right over at MuniWireless.

Better performance than EVDO at a much lower cost. You won't stop this with an AP article. Are their issues? Sure, but I drop 5 cell calls a day in Silicon Valley and that technology (cellular voice) is over 25 years old.

Article 51: Why SOX Will Lead to the Demise of U.S. Markets

April 5, 2006:

Everyone should read this article from the CEO of Nasdaq. He is properly concerned that the overly bureaucratic Sarbanes-Oxley (SOX) processes could lead to the end of global domination by the U.S. capital markets. Ironically, the two gentlemen that created SOX did it with the intention of "preserving" U.S. capital market leadership. Their fear was that people viewed our markets as too risky, and so they created SOX to ensure that investors would "trust" our markets.

It turns out that SOX is doing the opposite – it is ensuring the demise of the leadership of U.S. capital markets. New up and coming companies outside the U.S. are now shunning the U.S. markets in mass. Let us not forget that the Nasdaq has and as always had "weaker" listing requirements than the NYSE. And eventually, the then new and up and coming companies like Microsoft, Cisco, and Intel eventually came to dominate the Fortune 500 – and they all started as emerging companies that preferred the Nasdaq. Now companies are going to "prefer" other markets with requirements that are less stringent than the SOX laden U.S. markets.

This is a HUGE issue. I applaud the Nasdaq BOD for going after the LSE, and I have to wonder whether Mr. Sarbanes and Mr. Oxley have any idea that they will go down in history as the specific architects of the demise of U.S. capital market leadership.

Article 52: Wifi Nation...

July 22, 2005:

Click on this graphic from the most recent edition of Business Week. What you will see, and what many continue to deny, is that Metro-scale Wifi isn't a theory, its a reality. The networks are live. They perform way better than EVDO or any cellular alternative. They are cheaper to deploy. AND, there is huge momentum around more and more networks.

This is classic "Innovator's Dilemma" type disruption. And the incumbents should start to embrace it instead of trying to pass laws to make it illegal.

Resistance is futile...and denial is typically a poor business strategy.

Article 53: Do VCs Help in Building a Technology Platform?

July 19, 2005:

Here is an interesting article on whether or not Microsoft's ".Net" technology is attracting the interest of the venture capital community.

As a platform company, Microsoft has reaped huge benefits from the formation of vibrant application opportunities on top of its OSes. In the 80's, the Microsoft desktop OS was the breeding ground for such successful application companies as Lotus, Borland, Adobe, and many more. Many of these companies were very successful stand-alone public companies. In the 90's, many enterprise software startups were successful by betting early on Microsoft NT. IPO's resulted here as well.

Venture Capitalists look to the public markets for clues on where to go next. There is no point in investing in technologies that don't lead to liquidity events. What the article stresses is that the majority of VC money these days is being spent on top of the Open Source platform rather than the Microsoft's .Net platform.

It's not clear to me if this is because (1) VCs are making a conscious bet on the future success of the Open Source platform, or if (2) VCs have recognized that Microsoft tends to move up the stack quickly eating up these application opportunities, and have therefore turned to a platform that is seemingly more benign. It is also unclear what impact this will have on the overall staying power of the Microsoft platform. Rapid and fervent application availability certainly reinforces, fortifies, and protects any platform play.

Article 54: DVD Glut

July 12, 2005:

There is another big issue. Why, in 2005, are we creating "inventory" of a digital good that can then be returned and cause an earnings miss? Why not VOD, or at least "print on demand" at Best Buy and Tower Records. Or at the very least, only recognize revenue on sell through. This seems like a 1980 problem raising its head 25 years late.

Perhaps Amazon can solve the problem...

Article 55: Pro-Broadband Muni Issue Goes National

June 23, 2005:

The battle to allow cities to control their own broadband future is now national. See the front page of today Wall Street Journal. Also, see this three page article in this week's Forbes. The anti-broadband, anti-competition group appears to be back on their heels, as the WSJ exposes Pete Sessions key reason for his position — campaign contributions. Municipal WiFi is cheaper and faster than any other alternative...and VoWifi is coming soon.

Article 56: Texas Sets Key Precedent for Other States in Refusing to Ban Municipal Wireless

June 2, 2005:

Last week, despite huge efforts mounted by the incumbent carriers, the Texas legislature adjourned without support for a proposed incumbent-backed bill that would have outlawed or severely restricted municipal wireless networks. This decision by Texas will undoubtedly be the "Gold Standard" precedent that other states look to when evaluating this issue on their own. As such, one can anticipate many other state legislatures standing up for the rights of their citizens by denouncing the incumbent efforts to restrict competition, and resultantly slow the deployment of broadband in the U.S.

The reason the Texas decision was such a landmark event is that it was the first time that both the incumbents and the pro-competition broadband proponents were geared up to fight the battle at the same time. The Pennsylvania decision was done quickly before the pro-broadband team was organized. As such, the state-by-state battles in the future are much more likely to look like Texas than Pennsylvania. In addition, this time everyone was watching. As noted by Forrest Miller, SBC's group president for external affairs and planning, on May 12th and prior to the decision, "Federal legislators will have an eye on how this (sweeping telecom dereg bill) is being viewed in Texas." Everyone knew how much was at stake.

It is remarkable how much effort the incumbents put into trying to outlaw and restrict municipal broadband in Texas. The incumbents staffed over 160 lobbyists in Texas alone. That is more than one lobbyist for every voting district. The key members of the telecom committee, like Phil King of Weatherford, were all bathed in campaign donations. They also encouraged self-funded "research" groups to write articles about "why municipal broadband won't work," completely ignoring the hundreds of city-wide deployments where it already works. After the pro-broadband movement resulted in the language being removed from the house bill in committee, a representative from San Antonio added it back at the last minute on the house floor. A similar trick was planned in the Senate, but by then the pro-broadband movement had gained too much steam. The incumbents should be thankful to Phil King, who, though he failed, put the interests of the incumbents above his own citizens from the beginning, through the middle, and all the way to the end.

The CEO of Verizon even chimed in with a remarkably proficient viewpoint; "That could be one of the dumbest ideas I've ever heard." He went on to suggest that cities will be unsuccessful because they will be inept at deployment. There is incredible irony in the notion that these incumbents are spending so much time and effort working to block a competitor that they also declare will be pathetic at implementation. Are they really that fearful of "all" competition? Even those that they have already self-prescribed as weak?

The reason the pro-broadband movement was successful is because they organized, they gathered the real data on the success of municipal wireless deployments, and they were able to inform the citizens about this effort by the incumbents and their key legislators to use regulation to restrict competition. They leveraged the Internet, blogs, and mailing lists, and made a huge difference. The tech community also played a role with the AEA, the Broadband Coalition, and TechNet all speaking out against this effort to intentionally slow technical progress. These lessons and resources are now focusing on other states to ensure the Texas outcome.

One should note that carrier sponsored broadband deployments didn't end in Texas last week. No one cancelled DSL or cable modem initiatives. In fact, many next generation FTTH initiatives from multiple carriers are happening right in Texas. No one "stopped" those efforts simply because cities are now free to deploy low-cost broadband to their citizens "if they chose". Competition doesn't slow alternate deployments, it speeds them up. DSL speeds in Japan are approaching 50Mbps at prices at or below those in the U.S. This is not because the Japanese government removed all competition to make it easy on NTT. This is because they made it possible for Yahoo!BB and others to launch competitive services. As the U.S. falls from 13th per capita in the world in broadband deployments to 16th, we can only wish we were as lucky as the Japanese.

October 19, 2004:

It's so easy when you know the rules

It's so easy all you have to do

Is fall in love, play the game

-Queen, Play the Game

What's the most valuable Internet company in China? Is it a portal? Is it an e-commerce site? No. The most valuable Internet company in China, clicking in at US\$2.0B in market cap, is an MMPORG. MMPORG, an acronym whose length is matched only by PCMCIA, stands for Massively MultiPlayer Online Role-playing Game (a shorter acronym, MMOG is also gaining acceptance). Simply speaking, MMOGs enable multiple players from multiple geographies to meet online and interact in some form of digital group activity. Once considered a niche business, and even a failed one in the U.S., the prospects for multi-player gaming businesses are rising sharply. This renewed faith may be prescient, as the business case for MMOGs is remarkably compelling.

Today's MMOGs are direct descendants of Multi-User Dungeons ("MUDs"); text-based multiplayer adventures popular with the UNIX crowd in the early 1990's. Since then, there have been numerous failed attempts at MMOGs, including several companies such as Worlds, Inc. that achieved a high profile status during the original Internet boom. The first title to obtain undisputed business success was Ultima Online, originally released in 1997 by Electronic Arts' Origin Studios. In a telling move, the creator of Ultima Online, Richard Garriott (aka "Lord British"), is now working with Korea's NCSoft, as MMOG's have found their largest audiences in the Asian markets.

NCSoft's hit MMOG, Lineage, has amassed more than four million users, and NCSoft has gone on to deliver many successful follow-ups, including Lineage II and more recently City of Heroes, which they are marketing primarily in the US. Like China's Shanda, NCSoft sports an impressive market capitalization of US\$1.7 billion. Webzen, the number two player in Korea, sports a US\$780 million capitalization, while NetEase, a portal in China that generates over 50% of revenue from gaming, has a market cap of US\$1.3B. Make no mistake about it — these are real businesses.

Shanda, despite being considered by some a "Johnny-come-lately" and by others a mere distributor, is the undisputed champion of the Chinese MMOG market. The company, which began by repackaging a massively multiplayer game from the Korean developer Actoz, is a distribution machine. It was early to deploy its provisioning technology and promotional materials to nearly all of China's several hundred thousand Internet cafes. This allowed the

Internet cafes to collect cash on behalf of Shanda, a critical accomplishment in a market that lacks credit card adoption. Shanda is now investing in original intellectual property and will be more publisher than distributor in the future.

Despite a price point that can be as much as ten times lower than that in Korea, Shanda's 2005 forecasted revenues of US\$160 million will come close to matching those of NCSoft. This is because Shanda's average number of concurrent users (700K+) is greater than the number of members that have ever played the corresponding leading title in the U.S. If this were not enough, roll in the low cost of Chinese development, and operating margins come in north of forty percent.

Despite Asian dominance, there are U.S. success stories as well. The leading U.S. MMOG is Sony's EverQuest, which has attracted around 500K registered users. Concurrent users are likely 10-20% of this number, perhaps 50 to 100K; still dramatically lower than that of Shanda. With a \$50 initial fee and a \$13 monthly subscription fee, EverQuest is likely in the \$80-90 million dollar per year revenue range. A recent Forbes article notes that, "Sony figures it could earn up to \$500 million in profits in eight years on EverQuest, which costs \$30 million to build and \$14 million a year to update." Nice.

With numerous, innovative MMOGs in the market, the genre has moved beyond its swords and sorcery fantasy beginnings. Players can replicate WWII as a grunt in Battlefield 1942, join in an intergalactic struggle in Planetside, decorate their virtual homes and entertain friends in Sims Online, or build comic book characters and battle evil in City of Heroes. MMOG players make astonishing emotional commitments to their in-game characters and to the master narrative of the virtual world. It's not uncommon for users to continue paying monthly service fees long after they stop playing regularly, so that they don't have to "kill" digital avatars in which they have invested literally hundreds of hours of activity.

In fact, in many MMOGs, the opportunity to "make a living" playing the game is totally feasible, and there are many examples of gamers earning north of \$40K a year selling virtual property from within the game world. In Korea, some of these passionate activities have taken on a more serious tone, as the government has responded to numerous reports of digital theft. To be clear, this is where one player "steals" a digital asset from another user inside the game world, and the police intervene to try and reciprocate what they view as an abduction of value. Even more seriously, some Korean players have resorted to real-world physical retaliation for battles they may have lost within the game.

Over time, as millions and millions of people from across the globe interact across the Internet, today's role-playing games will become one of many genres of MMOGs. Already there are examples of MMOGs that are more casual and that penetrate more demographics than today's titles. In Korea, the leading chat site SayClub has morphed into a multi-player avatar-driven gaming destination. China's leading instant messenger company TenCent has added gaming to its QQ client and is rapidly becoming a leader in casual multi-player gaming. AOL and Yahoo are quickly mimicking their Asian counterparts. NeoPets, an Internet site focused primarily on children, may in fact be the most successful MMOG in the U.S. While many hard-core gamers

may not consider NeoPets a true MMOG, a closer look will reveal many of the core elements, such as avatars, persistence, intellectual growth, group activities, and a virtual economy.

Perhaps the most ambitious MMOG to date is LindenLab's SecondLife. SecondLife, which most closely resembles Neal Stephenson's famed Metaverse, from the pages of cyberpunk best-seller SnowCrash, is based on the theory that the MMOG itself should delegate to the users as much creative freedom as possible. In other words, let the community design and build as much of the environment as it can, simultaneously unlocking human potential and business economies of scale. LindenLab has also established an interesting new pricing model where users pay for such things as "land" and "taxes," and where the community creates actual digital businesses, such as a virtual nightclub that charges admission to an event.

There are many reasons why MMOGs make enviable businesses:

1. **Recurring Revenues.** Anyone who has ever sold software covets the predictability of recurring revenues, particularly subscription revenues that are basically "good until cancel." Most of the leading MMOG businesses employ some form of subscription pricing.

2. Competitive Moats. Warren Buffet is fond of saying he likes businesses with castle-like moats (i.e., ones with high barriers to entry). As users invest more and more time into a persistent character, into an avatar, into accomplishments, into online relationships, and into the resulting reputation, the higher the costs to switch to an alternate platform.

3. Network Effects / Increasing Returns. There is no better online barrier to entry than a strong community. Witness how Amazon and Yahoo both failed to distract eBay users even when offering a free product. For most MMOGs, the more users a particular game has, the more compelling the experience is for incremental users. This self-reinforcing form of Metcalfe's Law is alive and well in many MMOGs.

4. Real Competition. In the future, traditional software-based games will merely be practice vehicles for the much more interesting endeavor of multiplayer competition. MMOGs allow for a sense of competitive accomplishment and provide vehicles for the human ego to be rewarded, all of which drives extremely obsessive behavior.

5. Time Engaged. According to the previously mentioned Forbes article, “a good PC-based game has a lifespan of 30 hours of play; a good multiplayer game gets 20 hours in just a week.” This puts MMOGs, from the perspective of today’s users, on par with television in terms of time engaged.

6. Unlimited Complexity. In a world where other players are part of the user experience, the number of permutations of experiences is quite realistically limitless. From the relatively simple rule-sets and economies present in most MMOGs, astonishingly complex emergent behaviors arise. This offers a stark contrast to previous interactive entertainment where the game can eventually be “beaten” by the user.

In the future, one interesting characteristic to watch is just how susceptible a particular title is to increasing returns. As we mentioned, most MMOGs are partial to increasing returns, but there are different levels of scale. Many MMOGs reach an upper limit to their network effect. For example, consider online chess or backgammon. A room of 200 players does not offer a dramatically different experience than a room of two million. For a four-player game like Hearts,

that number may be 400 or 500. Add a competition or ladder scheme to the mix and even for simple games, the network effect can rise higher and higher. Complex fantasy games like Lineage or Shanda's Mir have an even higher liquidity threshold, although they are sometimes limited by their own architecture (only so many players can interact on a particular server instance). The ultimate MMOG will have a viral, self-reinforcing value proposition and no upper limit on its ability to exploit network effects.

Some skeptics argue that MMOG is still a "niche" business and that the same half-million users are migrating from Everquest to Ultima Online to City of Heroes. Under this theory, MMOGs will never be mass market and will never really "matter" in the \$20 billion interactive entertainment business. However, with billion dollar businesses now dotting the NASDAQ, it becomes harder and harder to invoke such skepticism. And if new paradigms, architectures, and broadband speeds allow for titles that meet the needs of a wider demographic, ignoring MMOGs may be equivalent to ignoring the successor to television.

Article 58: Entrepreneurialism and Protectionism Don't Mix

May 6, 2004:

"I think it's time That you found what the world is waiting for I think it's time To get real." - Stone Roses, What the World is Waiting For

It is quite bizarre to see John Kerry, Pat Buchanan, and Ross Perot all on the same side of a political issue. Of course, regular Above the Crowd readers might find it equally bizarre to be reading about politics in this newsletter. However, one recent political issue directly threatens the high-tech community. Economic protectionism, the mandate that strangely ties the above three gentlemen together, suggests that in order to protect jobs in America, the government should put up barriers to free trade that "advantage" the American worker over others. If implemented, a protectionist policy will have a profoundly negative affect on high-tech startups, entrepreneurialism, and innovation.

Here are seven reasons why Silicon Valley should be very alarmed over protectionism:

1) Protectionism Will Hurt the Overall Economy:

History has confirmed that Adam Smith's theory of comparative advantage was remarkably prophetic. Not only have scores and scores of countries thrived as they initially encountered

global trade, but many others have crashed dramatically upon raising barriers to the same. While there are many examples of such catastrophes, including China at the end of the first millennium, Holland in the 1600's, Great Britain in the 1800's, and Japan in the late 1900's, perhaps the most relevant is America's own protectionist movement in the late 1920's, which led to the single worst economic drought in American history. Ignoring the theory of comparative advantage is the intellectual equivalent of harboring thoughts that gravity might be a myth or suggesting that diet and exercise really aren't that important. While it may seem trite to mention it, crashing the overall economy will certainly hurt the market for startups.

2) Startups Don't Collect Subsidies:

One typical method for implementing protectionism is to offer subsidies or tariff advantages to local companies such that they have an advantage vis-à-vis foreign competition. Here is the catch: startups have no idea how to file for subsidies. They don't have large lobbying groups in Washington. They have no idea how to schmooze their Congressman in order to increase their chances of receiving preferential treatment on some new multi-billion tax credit program. These are the skills of large, bureaucratic companies in staid industries that already have hundreds of employees in the nation's capital.

3) Diversity Is Critical to Startup Success:

The startup world embraces diversity like no other industrial sector. It is not unusual for a company in Silicon Valley to have employees from numerous geographies, representing numerous religions, and numerous languages. More importantly, no one seems to notice. Companies succeed, because they can recruit the very best from all around the globe. Multiculturalism is ingrained in the fabric of everyday life. The xenophobic notion that someone deserves a job over someone else simply because of religion, ethnicity, or nationality has no

place in the 21st century. Protectionism will only serve to bring tension to a community that has none.

4) Startups Are Increasingly Global at an Early Age:

Ironically, the protectionists in Washington are beginning to beat their drums just as startups have become dramatically more adept at crossing borders. Jamdat*, an emerging player in the mobile gaming space, is distributing software in 29 countries, transacting business in 9 currencies with 60% of its employees living outside the U.S. Skype, a company that began just 18 months ago in Europe, already has 40% of its users in the Americas and Asia. Google may have grown internationally faster than any company previously. It already offers its search service in 97 languages across 95 international domains and in its recent quarter, international revenues were already 30% of its overall results. The Internet has reduced friction in communication and distribution and has enhanced the speed at which young companies can serve the entire world. Protectionism will put a quick end to this remarkable development.

5) The Critical Emerging Markets Are Outside the U.S.:

The leading cellular markets are in Europe. The most innovative broadband carriers are in Korea and Japan. Increasingly, the majority of consumer electronics are being designed and assembled in Taiwan and China. The largest emerging market for every product under the sun is also in China – the country with the leading GDP growth, and the country that will one day be the largest industrialized country in the world. America is interesting, but it's hardly where the action is. Startups are increasingly focusing on markets outside the U.S. – sometimes bypassing the U.S. and entering the market elsewhere. Protectionism will slam the door on the most critical opportunities for startups.

6) Taking a Step Backwards:

The U.S. Government, as well as leading companies such as Intel, just spent the past year convincing the Chinese government to embrace a single global standard for 802.11 wireless products, bypassing its previous decision to implement a proprietary security standard. This single feat will have an overwhelmingly positive impact on thousands of small companies that build products based on 802.11 in the United States. All of their products will now work out of the box in the most important emerging market on the planet. It seems laughable that just as we convinced the most historically communist country of the benefits of free trade and comparative advantage, a few of our own leaders seem to have contracted amnesia.

7) Protectionism Is Inconsistent with the Entrepreneurial Mindset:

It is hard to imagine a successful entrepreneur arguing that he or she deserves a job over someone else that is equally skilled and willing to work for a lower wage. The entire spirit of entrepreneurialism is based on finding ways to do something better, faster, and cheaper. It is the whole nature of the game. If someone can do something better somewhere else, it simply means it's time to innovate again – with intellect and technology, not politics.

Perhaps the only saving grace is that the international community may protect Silicon Valley from Washington. Just as our entrepreneurial founding fathers must have had choice words for a maturing Europe, America is now being criticized by the emerging economies of our time such as India and China. The WTO has taken on a significant role in the global economy and many of its

members are specifically targeting U.S. protectionist policies as their key agendas. Just as many countries criticized what they consider to be unilateral U.S. military behavior, they are equally up in arms with regards to unilateral economic behavior.

What many in America may miss is that the rest of the world will go on without us. Over the past thirty years, the key market for technology products was obviously the U.S. Startups in Europe, Israel, and Asia would develop their products at home, but quickly shift the focus to the U.S. when it came time for marketing and sales. This is no longer the case. In many instances, Europe and Asia are quickly becoming the enviable markets. What's more, as recently noted in the New York Times, "Foreign advances in basic science now often rival or even exceed America's, apparently with little public awareness of the trend or its implications for jobs..." If America closes its borders, intelligent and resourceful entrepreneurs in Europe and Asia will cheerfully step in and generate tomorrow's leading break-through companies.

*Benchmark Capital has an investment in Jamdat

Article 59: All Things IP: the Future of Communications in America

March 24, 2004:

"Gonna keep on tryin' Till I reach the highest ground" -Stevie Wonder, Higher Ground

Take a trip to Korea or Japan and you will immediately have a new appreciation for the definition of broadband. There, it is not uncommon for a consumer's Internet connection to breathe a blazingly fast 10 plus megabits per second. In Japan, Yahoo BB goes a step further, trumpeting a full 45 Mbps offering for a cool US\$37 per month. Still not amazed? Korea boasts a mind-boggling 80% broadband penetration rate, while the U.S. still ambles around half that. That said, even the U.S.'s 42% penetration rate is deceptive, as the U.S. version of broadband is a far cry from these Asian fire hoses.

What is most striking about the notion of a 45 megabit IP connection is the overwhelming universality of such an incredibly high-speed packet-based conduit. Into it melt all forms of media and communications – voice, data, video, and any other application or service you might imagine. There is no need to consider bringing multiple connections or service providers into your home, for this network can do everything you need and more. Early signs in Japan are consistent with this notion. Yahoo BB announced a stunning 80% attachment rate on its IP-based phone service. It is now promoting an IP-based set-top box for the ultimate in personalized television.

One cannot help but wonder if we are headed for a similar fate in the United States – a single super high-speed pipe into the home that carries all media forms over a simple standard IP connection. It certainly seems probable, although the path to such a reality is by no means a straight line. The key constituents (the cable companies and the RBOCs) each will make key business decisions over the next 5-10 years that will dictate the likeliness of such an outcome, and in doing so could simultaneously ensure their own leadership or obsolescence.

Here are seven key issues/questions that will shape the future of communications in the U.S.

1) Who is the leader today?

Make no mistake about it; the cable companies rule the broadband world in the U.S. While their networks are not currently "all-IP," their coax cables are the only communications transport capable of carrying voice, data, and video simultaneously. The satellite broadcasters are indeed gaining steam on the video side, and they have improved their data offerings, but voice is a real stretch due to latency. The RBOCs unfortunately sit in the worst position. Not only are the current copper wires quite feeble when compared to a coax cable, but the RBOCs are simultaneously hamstrung by excessive regulations, including the requirement that they share their networks. RBOC execs have claimed these rules are a disincentive to investment, however, as we will discuss later, it's the RBOCs that have everything to lose from under investment.

2) Will there be a long-term, stand-alone business for voice services?

It is a common macro-economic understanding that marginal pricing will eventually approach marginal cost, assuming a competitive environment. As long as there are "enough" providers of high-speed IP connections for each home, and assuming that the government does not impose regulations that hamper market forces, voice should one day be absolutely free. Already, any two broadband users anywhere in the world can make wonderfully free voice calls using the peer-to-peer client from Skype. Those that question the quality of these calls have obviously not used the product.

Now, while voice should be free, that doesn't mean that it will be free. The two conditions outlined above are nontrivial. First and foremost, it is not at all clear that we have enough competition in the U.S. broadband market. Innovations in the wireless market, particularly recent innovations around mesh architectures, have the opportunity to change this. As of right now, however, many users simply lack choice. Additionally, the many state municipalities around the country are eager to place their hands on VoIP. A poorly executed policy could in fact "increase" the long term pricing on voice services for all users (for example, would you really tax a free service?). The regulators are supposedly looking after the best interest of consumers, but it is hard for them not to look after their own longevity as well.

One huge irony in the marketplace is that the cable companies may actually control the near-term fate of the RBOCs. It would be quite easy for the cable companies to decide to make voice a free service over broadband. The marginal costs are simply not that high, especially if you assume an IP based phone solution such as Vonage or Skype. This type of offering would likely lead to an attachment rate similar to Yahoo BB's in Japan, which would in turn be devastating for the RBOCs. Yet there are two reasons why the cable companies may choose not to do this. First, they may have already fallen in love with the notion of charging for voice – they may view it

tactically rather than strategically. Alternatively, they may view it as a strategic move to prolong frightening the RBOCs into fiber deployment. The longer the RBOCs continue to believe there is a long-term future in voice services, the better off the cable providers may be. More on this later.

3) Was the offer for Disney driven by a vision of an all IP network?

It would be easy to dismiss the Comcast offer for Disney as just another example of the standard media strategy of bridging content and distribution. One could also point to the recent price hikes of cable must-haves ESPN and MTV to see why Comcast might want a few aces in the hole next time it has to barter. However, there may be one other reason for such a move: a keen awareness that in an all-IP world the power of distribution falls as all content providers can establish a direct relationship with their customers. A similar move played out in the travel industry last week when Hilton and many other hotels declared that in the future, the best rates would be found on their own web sites, not on Expedia or Travelocity.

Think about this. If you assume Brian Roberts and the team at Comcast are rational, then they would only consider such an offer if they believed that the market was overvaluing distribution relative to content. If they felt the power of distribution would rise in the future relative to content, it would be strategically inept to make such a move. The only reasonable assumption is that, based on current information and valuations, the company would love to trade distribution dollars for content dollars. In an all-IP world, Disney would certainly have more choices and alternatives than it does in a cable environment where its only negotiation options are for channel placement and bundling inclusion – factors that are both controlled by the cable company.

4) Will the cable providers "break" the IP network?

One of the most strategically interesting issues of the next ten years will be the cable companies desire to "break" the IP network in an effort to protect their video (and potentially voice) revenue streams. Make no mistake about it, no cable company relishes a vision of the future whereby it sells "X" megabits of IP connectivity and nothing more (i.e., a pure commodity access provider). Cable companies are much too accustomed to packaging, bundling, and upselling an array of offerings and choices. Additionally, they are seeing early success with VOD (video on demand) and believe it is their destiny to provide these services. An all-IP (pure, traditional IP) network threatens these core business assumptions.

So what's a cable company to do? It is quite easy for a cable company to insert a half second delay in its IP network. This delay will go unnoticed by standard web users but would quite negatively impact the quality of after market VoIP clients like Skype and Vonage. This would allow the cable company to "charge" for its own voice services. In other words, customers would pay extra to have their IP network back. On the video front, the cable companies have similar opportunities to offer priorities to "sanctioned" IP-video streams, and intentionally reduce the quality of streams to which the cable provider has no financial interest.

History would suggest these types of initiatives are continually being considered. Cable broadband providers once charged for VPN services, a similar "breaking" of the IP network to extract financial gain. What's more, over the past twelve months, Comcast has terminated the accounts of users who use more bandwidth than the company prefers. Lackluster support of the "open cable" initiative over the years offers another proof point that cable companies want as much control over the user experience as possible. Again, it seems too improbable to assume that the cable companies will quietly move towards a future as a commodity ISP.

The reality is, breaking the IP networks will elicit enormous waves of negative feedback from core Internet users. Early actions like those mentioned above have already been met with tremendous negative feedback across the Web. That said, if there are no reasonable alternatives for consumers for non-altered IP services, then the cable companies may very well get away with such action.

5) How will the RBOCs respond?

The RBOCs are unfortunately in a difficult position. Their current IP networks are simply too thin to provide the type of IP connection that can realistically carry video. Additionally, they are burdened with excess regulation, including one critical piece of regulation that requires they allow competitors access to their physical assets. Lastly, cellular phones and VoIP aggressively threaten their core revenue streams. While they could theoretically make an offer for a satellite video company such as DISH, this would require them to piece together an awkward multi-device consumer experience.

The only real alternative is to immediately begin investing in a separate high-speed all-IP network, either like those that have been built out in Korea and Japan or one that leverages recent innovation in wireless. It turns out that the RBOCs negotiated a regulatory carve-out whereby they are not required to share new assets that are not part of the current plant. More importantly, only by building a very high-speed IP network do the RBOCs have any chance of

slowing the onslaught of cable vis-à-vis voice. While cable is busy puncturing the voice market, the RBOCs can make an end run and puncture the traditional video market.

This will not be cheap, but waiting could be futile. While S&P has put several of the RBOCs credit on a ratings watch, Wall Street has not fully embraced the notion that wireline voice is under significant threat. As such, the RBOCs market capitalizations are large enough that they might be able to raise the capital necessary to upgrade their infrastructure. If they wait until the cable voice attachment rate approaches that of Yahoo BB in Japan (which really depends on the aggressiveness of cable VoIP pricing), a pessimistic Wall Street may not be willing to provide the capital needed to secure their future. Once more, that may be the scenario that cable executives favor.

6) Who is underestimated in this market evolution?

Believe it or not, Microsoft is the company that may be most underestimated in the all-IP network future. The company has done a magnificent job developing its WM9 codec and corresponding DRM (digital rights management) features and now appears to be the technology of choice for distributing video over IP. WM9 has a strong presence in both Korea and Japan. Hollywood appears to be satisfied with the DRM features and has released many popular movie titles over such Internet sites at Movielink and CinemaNow. Microsoft has also won a huge victory recently with respect to the next generation DVD format, which will also include support for WM9.

Why does the codec matter? With strong execution, Microsoft can use its position as a leader in codecs to back door its way into the operating system and potentially into a position to control the UI for most consumer electronics products. Until last summer, Microsoft only supported WM9 codecs on top of Windows operating systems. It has recently agreed to let others build WM9 codecs for Linux, but rest assured it will focus its support over time on Windows and WinCE. Controlling the UI (as it will unquestionably do in PCs) is a very strong position from which to aggregate, bundle, and extract rent from video over IP services.

7) Will there be a video over IP portal?

Who will make money from video over IP aggregation or distribution? As just mentioned, Microsoft is in a very compelling position from which to extract rent. You can already see a menu hierarchy within the media guide on Windows Media Player. Just last week Microsoft agreed to pay \$40MM to roll access to Major League Baseball video underneath its premium MSN services. That is direct proof that Microsoft sees itself as a key player in video over IP aggregation.

The cable companies also warrant consideration, especially if they are successful in altering the IP network to their benefit. Another key advantage they bring to the table is a pre-existing billing relationship with the customer. Any vendor that can authorize one-click ordering of video content will have a huge advantage over someone that requires full registration.

There are many others that will fight this battle over the next ten years. Companies like Netflix and Movielink have strong early leadership positions and have aggregated key content. The

networks and the movie studios likely fancy a vision whereby users will visit their sites directly to purchase digital content. Based on Yahoo's original vision when they purchased Broadcast.com, they might have an interest in this world, and Amazon must certainly be thinking about the implications of fatter and fatter IP pipes. Let's also not forget RealNetworks. If it is successful in its litigation with Microsoft, RealNetworks will likely have a very strong position in the market. Currently, it has major video distribution deals with NASCAR, the NBA, and CNN.

While an all-IP world may not happen immediately, you can rest assured that over the next ten years, our communications networks will very likely follow the lead of the aggressive rollouts in Korea and Japan. As IP engulfs everything else, many traditional industries and paradigms will be challenged. For the companies involved, the time to prepare for these challenges is today. Postponement will only increase the likelihood of failure.

Article 60: The Rise of Open-Standard Radio: Why 802.11 is Under-Hyped

February 2, 2004:

"To the lights and towns below, Faster than the speed of sound, Faster than we thought we'd go..." -Smashing Pumpkins, 1979

During the Internet bubble, John Doerr of Kleiner Perkins frequently decreed that the Internet was in fact "under-hyped." He argued that despite the wild speculation and runaway stock prices, people generally failed to appreciate the significance of the first globally interconnected

communications network. I am now prepared to make the same bold proclamation regarding the rise of the 802.11 communications standard, also known as WiFi. Despite all the press and the hype, I believe that 802.11 is remarkably under-hyped relative to the massive impact this seemingly simple standard will eventually have on the entire wireless communications sector.

One clear lesson in the history of technology and business is that once an open standard gains critical mass, it is extremely hard to derail. The x86 computing architecture and the Ethernet networking standard are two salient examples of this truism. Once a single interoperable standard gains the acceptance of multiple vendors in a marketplace, a consumer bias toward compatibility and scale economics create an increasing returns phenomenon that is nearly unassailable.

Open standards obtain a high "stickiness" factor with customers as a result of compatibility. Once customers invest in a standard, they are likely to purchase more and more supporting infrastructure. As their supporting infrastructure grows, their switching costs rise dramatically with respect to competitive alternate architectures. Customers are no longer tied simply to the core technology, but also to the numerous peripherals and applications on which they are now dependent. All of these things make challenging an accepted open standard a very difficult exercise.

Favorable scale economics result from two key characteristics of open-standard architectures. First, when several companies all support the same standard, the architecture benefits directly from the collective R&D efforts of all players in the marketplace. This applies both to direct innovation with the standard, as well as an ever-growing community that builds peripherals and applications that reinforce the standard. The second reason that open standards have a powerful economic advantage is that high volumes lead to lower prices. Lower prices then increase the market for said technology, which in turn drives even higher volumes. The cycle then repeats, driving even lower prices and ever increasing usage.

These dynamics were unquestionably present in the last quarter century evolution of the computing industry. When IBM introduced the x86-based personal computer in 1981, most analysts had very little idea as to the usefulness of such an expensive and seemingly limited personal computer. Moreover, no one could have ever estimated that the processor inside that device would become a near universal standard throughout the entire computing industry. And while many technologists would tell you that the x86 architecture is anything but elegant and certainly far from optimal, Intel recently shipped its billionth x86 processor. Along the way, many proprietary computing architectures have resultantly faced obsolescence. There have also been

many well-funded attempts to unseat the standard (remember PowerPC?) — all to date unsuccessful.

Founded in 1980 by Intel, DEC, and Xerox, Ethernet has enjoyed a similar success story in the networking industry. Prior to the 1980's, most computer makers followed a vertically integrated strategy, and as a result each had their own networking standard. However, as more and more vendors jumped on board the Ethernet bandwagon, each of those networking architectures slowly faded away. While it started as a LAN technology, today Ethernet is being used in the WAN (wide-area network) and even the MAN (metro-area network). What's more, it is now being used for voice and video, two applications that were never envisioned when the standard was introduced.

Simply put, 802.11 is to wireless communications what the x86 is to computing and what Ethernet is to networking. This "open-standard radio" is today supported by more than 115 vendors with more than 900 certified products. The collective R&D of Intel, Broadcom, Cisco, and Motorola as well the entire venture capital community will move this technology further and further along the price performance curve. Already in five short years, a backwardly compatible 802.11g chip offers about 25x the performance at about 1/20th of the price of the first generation radios in this market. As before, these low price points are leading to increased market opportunities and lower and lower prices. Currently 802.11 radios are a 50 million unit per year market, although history would suggest this is merely the beginning.

With some 802.11 radio chips approaching \$5 price points, WiFi will likely be embedded in every electronic product under the sun. This pervasiveness will impact the communications market in two remarkable ways. First, vendors that build supporting infrastructure and applications will come to assume that WiFi is on board, further entrenching the standard. Perhaps more importantly, as a client technology, 802.11 will increasingly be considered "free." In the wireless communications world, the cost of client technology (sometimes referred to as CPE for consumer premises equipment) typically has a huge impact on overall system economics and therefore adoption. With "free" CPE, 802.11 will have a distinct competitive economic advantage.

There are three patterns that emerged in previous open-standard architectures that are likely to play out in the open-standard radio market as well. First, numerous vendors underestimated the importance of backward compatibility. Second, vendors were amazed at the performance evolution of the key interoperable standard. Lastly, and as a result of the first two points,

everyone underestimated the scope and pervasiveness that the standard eventually encompassed.

Let's start with compatibility. It is quite clear today that one of the key advantages of the "Wintel" architecture is the huge investment that customers have made in terms of software applications as well as training and education on those applications. Switching costs are massive, and therefore projects such as OS/2 and PowerPC failed to gain real traction, despite arguable technical superiority. The same is true of competing networking standards such as Token Ring and FDDI. These technologies, while also potentially technically superior, are simply too expensive to implement when you consider total cost of ownership. 802.11b is already being used in more than 50 million devices, and by next year will be in 50 million more. That is a massive installed base of "free" clients that will represent a significant hurdle for any challenger. Ironically, this hurdle can even be an impediment for other open standards that lack customer momentum. Vendors pushing 802.11a and 802.16 will find this to be a significant challenge.

While 802.11b already enjoys quite impressive performance at 11Mbps, many companies building competitive offerings are quick to highlight the relative shortcomings of the technology. Cellular equipment providers will tell you that 802.11 cannot support mobility or voice. UWB (ultra wide band) chip manufacturers will tell you that 802.11 has "too much" range and not enough channels. 802.16 chip vendors will tell you that 802.11 has "too little" range. All of these vendors are hazardously ignoring the potent impact on innovation of collective R&D investment. 802.11 will not sit still. Before you know it, the performance gap (especially on a value per dollar basis) will quickly narrow. The x86 processor has increased its MIPS performance by 2x every 18 months. Ethernet performance has increased 10x every three years. The same will happen with open-standard radio, and those that promote the weaknesses of the standard are merely writing the feature list for future innovation on top of the standard.

As a result of compatibility and superior price/performance, experts will continually be surprised by the increasing scope and application of open-standard radio. Many suggested that Bluetooth would occupy many of the sockets now owned by 802.11. Likewise, many vendors now believe that a new standard, UWB, is needed for wireless communications in consumer electronics. However, system companies such as Linksys and chip companies such as ViXS are showing that these same applications can be tackled without abandoning the open-standard radio that already has momentum. Likewise, while some vendors will argue that 802.11 doesn't do enough to support roaming, mobility, voice, or range, engineers across the globe are hard at work improving the standard to do just those things. Vocera, TeleSym, and Meru have all provided value-add on top of open-standard radio and are now deploying compelling voice solutions.

Additionally, citywide networks deployed using Tropos'* open-standard WiFi cells already support roaming and mobility. From a performance standpoint, networks built using Tropos already support average download performance levels that are twice those of Verizon's EVDO beta deployments. Upload speeds are twenty times higher. What's more, these networks have significant advantages in cost of deployment and operation.

Make no mistake about it. 802.11, or one of its backwardly compatible descendants, will dominate the wireless communications sector over the next 10 years the same way that the x86 architecture dominates computing and that Ethernet dominates networking. There will be numerous doubters and numerous challengers, but they will all succumb to the inescapable power of the first true "open-standard radio." Resistance is futile. Moreover, 802.11 is indeed under-hyped.

*Benchmark Capital has an investment in Tropos Networks.

Article 61: Cleaning Up After the Ninth Circuit in an Attempt to Save the Internet

December 18, 2003:

In 1998, President Clinton noted "Information technology now accounts for over a third of our economic growth, and government should follow one guiding principle: First, do no harm." This phrase, which translates from the Latin phrase, *primum non nocere*, is a signal to pay just as much attention to the "means" as the "ends." Often in complex political systems, the objective of an action can be honorable, yet the impact of said action can be completely at odds with the objective. This is largely because the tools we use to encourage behavior in such systems are often crude and imprecise.

On October 6, 2003, the Ninth Circuit Court of Appeals issued an opinion in the case of *Brand X Internet vs. FCC* that has the potential to delay the progress of the Internet in the United States by certainly years and potentially decades. Through its actions, the Ninth Court has "invited" the fifty independent and natural bureaucratic state-based public utility commissions directly into the fold of the Internet.

How the Ninth Circuit accomplished this feat is both curious and confusing. The case in question deals with whether or not cable lines that deliver Internet service can be considered a "telecommunications service." This wording is critical because Congress and the FCC have made it clear that states can regulate "telecommunications services" but must keep their hands off "information services." In 1998, the same year Clinton made his declaration, the city of Portland mandated that AT&T Cable, as a requirement for approval of its acquisition of TCI, open up its broadband lines to competitive carriers. Ruling on this in 2000, the Ninth Circuit stated that the city of Portland could not mandate this behavior as its jurisdiction was over cable franchises, and these broadband connections did not technically represent a cable franchise. But the Ninth Circuit did not stop there; it made one more historical, but seemingly unnecessary step. It declared cable modem service a "telecommunications service."

The FCC was compelled to react to the Ninth Circuit Court's assertion, as it flew in the face of the FCC position on this matter, as well as the clear intent of Congress and the Executive Branch (both of whom had echoed their desire to keep the Internet unregulated). Therefore in 2002, in an effort to clarify and correct the decision in Portland, the FCC ruled that cable modem services are "interstate information services" and not "telecommunication services." Seven different petitions for review of the FCC's "information services" ruling were filed in the Third, Ninth and D.C. Circuits. Under the multi-circuit rules a judicial lottery was held, and the Ninth Circuit was ironically elected to rule on the FCC's ruling.

In its decision of October 6th, the Ninth Circuit noted that the Supreme Court had ruled in *Chevron* that agencies should be given the benefit of the doubt in interpreting the subtleties of their own provisions, particularly when consistent with the clear intent of Congress. Despite this, and without ever questioning the intent of Congress, the Ninth Circuit relied on two key precedents to escape this Supreme Court decision and rule against the FCC. Surprisingly (or perhaps not), these two key precedents were both previous actions by the Ninth Circuit – one being the Portland case. The argument, quite simply, is that the FCC had no business ruling on something that a prominent authority, none other than the Ninth Circuit itself, had already decided. Meanwhile, in a similar case across the country on October 16, a U.S. District Court in

Minnesota unequivocally noted that "State regulation would effectively decimate Congress's mandate that the Internet remain unfettered by regulation."

Not lacking in hubris, Ninth Circuit Judge O'Scannlain in concurring noted, "our adherence to stare decisis (the legal doctrine that courts are restricted by precedent), even in the face of subsequent agency interpretation contrary to our Portland decision, produces a result 'strikingly inconsistent with Chevron's underlying principles.'" He went on to note "adherence to stare decisis in the present case...appears to aggrandize, rather than limit our power over an admittedly complicated and highly technical area of telecommunications law." Judge O'Scannlain is right in that this certainly "appears" to be a jousting match of epic proportion between the Ninth Circuit and the FCC. The unsuspecting and unfortunate casualty in all of this is the Internet and everything it means to American society.

Who would benefit from increased regulation of cable modem services? The only clear answer is the fifty state public utility commissions. Perhaps fearing irrelevance as a result of the rise of the Internet, these agencies have quickly sided with the Ninth Circuit. It is not at all clear that the Internet "needs" regulation — in fact, quite the opposite. Therefore, in a day and age where everyone is fearful of rising deficits, our government should revel in the opportunity to downsize rather than increase outdated government programs.

Who would be harmed by increased regulation of the Internet? There are four constituents that are negatively impacted as a result of such action:

1) Consumers will be faced with higher prices for Internet services. Highly regulated industries typically have complex tax structures and consistently increasing prices. Competitive technology industries typically have low or no tax structures, and constantly falling prices. Apply regulation to the world of the Internet, and you lay the foundation for things such as email taxation, instant messenger taxation, VOIP taxation, per minute fees, bandwidth monitoring, and controlled pricing (once again, read "increased" pricing at something like 5% per year). Requiring Internet service companies to interact with fifty different state agencies every time they "tie their shoe" will undoubtedly add costs and complexities to their lives, which will in turn result in higher costs and slower innovation/deployment. California consumers, already accustomed to paying the highest gas prices in the country, will quickly enjoy the highest Internet fees as well.

2) The growth in information technology businesses will slow dramatically. The Ninth Circuit decision, if it stands, will have horrible consequences for Silicon Valley. The growth of the

Internet and the numerous resulting businesses and services are the unquestioned drivers of our current economy. Slow the penetration of broadband through the imposition of increased regulation and all of high tech will suffer. The Ninth Circuit decision pours concrete on the number one facilitator of technological growth in the U.S.

3) American competitiveness will suffer. Household broadband penetration in the U.S. is quickly falling behind innovative countries like Korea and Japan. While we are struggling to move beyond 20% broadband penetration, Korea is soaring past 60% on its way to 70%. Moreover, the connections in Korea are built around fiber optics and are resultantly many times faster than traditional U.S. broadband. These increases in Internet performance have resulted in increased usage of the Internet for such things as telecommuting and online education. As the U.S. faces the real loss of white-collar jobs to the hard working, but lower wage connected workers of Asia, one cannot help but wonder what political leader would aim to intentionally slow the roll-out of the Internet inside the U.S. Additionally, the key driver of the U.S. economy over the past twelve months has been productivity based. Why mess with the underlying network that is essential to this important metric?

4) Competitive RBOCs object as well. While one might assume that all of the entrenched Bell monopolies would be in favor of regulation for cable modem services, this would be an erroneous perspective. Verizon, one of the most competitive of all RBOCs, was quick to point out that it believes that cable modem services should be exempt from regulation. Make no mistake, it wants regulatory parity, but it wants it through decreased regulation on DSL not increased regulation on cable services. Likewise, a spokesman for BellSouth recently noted, "The Internet, and for that matter cellular service, has thrived because of limited regulation. Economic regulation is crippling this industry (telecommunication services)."

Some will argue, as does Judge Sidney Thomas of the Ninth Circuit, that opening the cable networks to competitive carriers will directly benefit consumers. The enormous problem with this argument is the prima facie evidence suggesting the opposite. Clearly stated in the Ninth Circuit opinion, 70% of all broadband users use cable modem services as compared with 30% for DSL. Cable companies, free to compete without the shackles of regulation, represent over two-thirds of all broadband users in the U.S. DSL, supposedly advantaged by its open connectivity and therefore supposed increased competitiveness, represents less than one-third. If regulated open-access is such a great thing, why are cable modems such a compelling value proposition for consumers? And why were the RBOCs slow to roll out DSL?

The bottom line is that we tried an experiment in DSL and it failed. Attempting to increase competition by mandating that a company invest in infrastructure and then share that infrastructure with competitors is simply not a market-based solution. Companies, naturally motivated to take market share, not give it away, are simply not effective at appropriately enabling competition. If you want to increase competition, add holistic competitors, not partial ones. This type of solution had a huge positive impact when PCS licenses created a third cellular alternative in most U.S. cities. Solutions such as cable overbuilding can accomplish this as well. Notably, a WISP in Cerritos, California recently announced an eight square mile 802.11 coverage zone based on Cellular-WiFi equipment from Tropos Networks*. This solution will offer ubiquitous broadband of greater than 1MB throughout the entire city. These solutions are the ones that will successfully advantage the customer while avoiding the overt dangers of increased regulation.

We should all know by now that rather than increasing competition, regulation typically reinforces monopolies and oligopolies. Startups will not and cannot prevail in heavily regulated industries. They lack the required resources and capital to manage fifty different utility commissions on a hundred different regulatory issues. For this same reason, you will never see a startup deliver an automobile in the U.S. as the regulatory red tape swamps all efforts. Increased regulation will do nothing more than ensure that new competitors and innovative solutions are permanently locked out of the market.

There are three ways to put an end to this potentially catastrophic problem. The first is for the Ninth Circuit to clean up its own mess in an upcoming large panel review known as an en banc review. The likelihood of success here is slim. The Ninth Circuit is well known for its reputation as the most over-turned appeals court in the nation, and it is doubtful it would pick now to jeopardize its record. Luckily, there are two more solutions that exist beyond the Ninth Circuit. For starters, the Supreme Court could once again correct the Ninth Circuit. But perhaps more appropriately, Congress should step in and legislate to ensure that this type of misunderstanding never happens again. As Clinton and many others have noted, the future of the Internet is simply too essential to our national interests to suffocate it with unnecessary regulation.

Judge O'Scannlain made a peculiarly ironic but accurate warning in the Ninth Circuit opinion. "Regardless of one's view of the wisdom of the FCC's declaratory ruling, it cannot be denied that our holding today effectively stops a vitally important policy debate in its tracks, at least until the Supreme Court reverses us or Congress decides to act." For those in Washington that do NOT want to (1) increase the likelihood of higher Internet access rates and increased costs for incremental services, (2) dampen the growth of Internet services and all the companies that

benefit from that revolution, and (3) negatively impact American competitiveness, we hope you heed his urgent call.

*Benchmark Capital has an investment in Tropos Networks.

Article 62: Beware the Digital Hand

October 7, 2003:

“We can’t rewind we’ve gone too far” –Buggles, Video Killed the Radio Star

In his famous 1776 work, *Wealth of Nations*, Adam Smith proffered that an economic “invisible hand” ensures that if companies act in their own self-interest, the good of the public or individual will also be optimized. An equally powerful and unavoidable force controls high technology markets today – the “digital hand.” Like Smith’s invisible hand, the digital hand is a true boon for the consumer, ensuring that fabulous products will be delivered in the most convenient way, and at ever lower prices. However, there is one big difference. The invisible hand suggests that both companies and customers can profit simultaneously. The digital hand is not nearly as charitable to the companies involved. In fact it can be downright brutal.

If you want proof, just ask the entertainment industry. The music industry claims that CD sales are down as much as 16% year over year, and clearly digital technology, not the quality of the music, is the key culprit. Not only can users easily share digital content anonymously over the web, but every single PC that rolls out of Best Buy or Wal-Mart is equipped with all the technology you need to mass-produce copies of your favorite CDs. Need blank discs? Wal-Mart has those too – 50 for \$15.00 or \$0.30 each. The ease of duplication doesn’t stop at just music. DVD writers are making their way into the market as well.

If the media industry blames the hardware industry for these evil consumer technology gadgets, then it can take solace in the fact that the digital hand's next strike will be against none other than the consumer electronics industry itself. Digitization is creeping its way across the entire consumer electronics industry, as we slowly remove analog media and components from our lives. While this is good news for consumers who benefit from the low prices that the digital hand ensures, the quid pro quo for businesses is brutal competition.

One clear indicator of this shift is the PC makers' recent entry into the consumer electronics industry. Last year, Gateway led the charge with its aggressive participation in the flat-panel TV market. This year, it followed with an innovative launch of a wireless, "connected" DVD player (which we understand has currently been backordered). Last week, Dell joined the parade, and HP scrambled to declare they had been at the parade all along. Many pundits cleverly noted that only a PC maker could covet the consumer electronics industry. But PC makers entering the market are merely symptoms of the bigger issue of digitization.

There are two critical dynamics occurring in the consumer electronics industry as a result of digitization, and both unfortunately lead to commoditization. The first is that semi-conductors are increasingly incorporating the majority of the features and functionalities by which any manufacturer would differentiate their product. If you want to become a consumer electronics manufacturer, simply call LSI, Zoran, ESS, and more recently MediaTek, and they will immediately deliver the goods you need. Don't know how to integrate chips? No problem, a reference design is on its way. Be it DVD's, HDTVs, or digital cameras, the barriers to entry for hardware providers are quickly approaching zero.

The second key dynamic mirrors the binary code that underlies all digital goods. The cold fact of the matter is that most digital goods either work or they don't. You lose the subtle continuum of quality that exists in an analog world. The reason relates to the first dynamic, in that most of the value-add is now at the semiconductor level. The complicated motors and servomechanisms that inherently led to quality differentiation are slowly going away. Traditional TV tubes, which through tuning offered a path to differentiation, are also on their way out, being replaced by semiconductor "brains" like TI's DLP chip (consumers will see a rush of DLP-based TV's this Christmas, offering Plasma quality at a fourth the price). Eventually even the rotor under the CD/DVD is likely to be replaced with solid-state electronics or a hard drive (and no CE vendor is likely to enter the hard drive business).

Even more serious for the consumer electronics industry than pressure from PC makers is that from Chinese importers such as Apex Digital. Wal-Mart currently advertises an APEX DVD Player for \$43.86. It plays DVDs, CDs, and MP3's. It can decode Dolby Digital and Dolby DTS, and supports S-Video output. This product works and it works well. So do all price-leading products that APEX sells. After all, they use the same semiconductors as all the other manufacturers. And, at forty-three bucks, consumers will start to view these devices as disposable, a nice trade off for the obsolescence that is an inherent part of any digitized industry. Remarkably, APEX has quietly leapt to the top of the US DVD market.

With product differentiation on the wane, distribution will play a greater role. Gateway has already leveraged its direct model with early success. This could bode resultantly well for Dell. Furthermore, do not be surprised if retailers like Wal-Mart and Best Buy create in-store brands similar to what Wal-Mart already does in every other line it sells. Best Buy is already doing this in PCs, and it should be even easier in electronics due to lower support costs. Perhaps the best proof point of distribution's strength is the way that EchoStar (owner of the DISH network) catapulted from nowhere to lead the PVR (personal video recorder) market. A satellite service provider now has the market-share lead in the most compelling new product category in consumer electronics.

As we look towards the future of the consumer electronics industry, the digital hand will ensure two realities. First, consumers will be blown away by the incredible products they are able to buy at shockingly low prices. Second, companies will be blown away by how incredibly hard they have to work in a shockingly competitive industry. Never forget that the undisputed leader of the PC industry has a supply chain and distribution advantage, not a technological one.

Article 63: Much Ado About Options

August 21, 2003:

d“And I know what’s been on your mind, You’re afraid it’s all been wasted time” -The Eagles, Wasted Time

Although it has been more than three years since the now infamous economic bubble burst, regulators, congressmen, and press remain remarkably insistent on identifying a blame agent for the excesses of the late 1990s. This is despite the fact that economic bubbles exist precisely because everyone is caught up in the game: the SEC approved every S-1 filed in the late 1990s; congressmen welcomed the tax income from excessive capital gains (and even planned for it indefinitely); and the press as you know, hailed Enron’s rise as much as its demise.

The latest target of this well-intentioned group is stock options. It seems that stock option instruments, as opposed to human greed, malfeasance, and corruption, were so dangerously alluring that they encouraged otherwise ethical men and women to commit fraud on our economic system. It seems that options offer way too much upside for executives without the appropriate downside exposure, encouraging them to take unnatural risks as leaders of corporate America.

The first strike in the war against stock options is the insistence that they be expensed on a company’s income statement. The argument is that options represent a grant of value from the corporation to the employee and therefore should be expensed on a GAAP accounting basis. While companies are not currently required to expense options, they are required to disclose the exact nature of all option grants in their financial statements. Many believe that the FASB will require the expensing of stock options in the future.

The second strike against options came on July 15, when Microsoft Corporation announced that it would forgo all future stock option grants in favor of restricted stock grants. Business Week heralded “Microsoft’s Bold New Pay Plan,” and many others speculated that this single action represented the beginning of the end for stock options. Newsweek even jumped in on the action, declaring “options have lost a lot of their allure.”

Despite these reactions, many questions lack succinct answers. Should stock options be expensed? What about restricted stock? Is restricted stock better for employees? Is restricted stock better for shareholders?

Stock options, like publicly traded call options, represent the right to buy a stock at some point in the future. They are typically granted “at the money,” which means that employees only make money if the stock goes up above its current price, and their economic gain per share is limited to the increase in stock price above the strike price. Restricted stock, on the other hand is an outright grant of a share of stock, with certain limitations on when that stock is “earned” and when it can be sold. Unlike stock options, restricted stock retains much of its value, even if the stock price of the company falls.

Should stock options or restricted stock be expensed? The answer to the question is an easy one: it doesn’t matter. Stock prices, just like any other financial asset, are valued according to the predicted future cash flows discounted back through time, as appropriate for risk. In fiscal 2003, Microsoft generated nearly \$16B in operating cash flow and will likely do more than that in fiscal 2004. Neither the choice of equity compensation nor any decision to recognize such offering as a GAAP expense will have any measurable impact on this cash flow. New grants of either options or restricted stock will represent future dilution, and the company will need to earn a return above and beyond that dilution in order to generate value for shareholders.

Mutual fund managers understand this; they have understood it for some time, and they adjust for it in their calculations. To suggest that a mathematical non-cash accounting change will affect future stock prices, especially when the exact numbers have been available to shareholders for many years, drastically underestimates the collective intelligence of the stock market. Smart investors have already accounted for this future dilution, regardless of the actions of the FASB, and therefore these future grants are already reflected in stock prices.

Recent events in the market support this claim. In the week following Microsoft’s restricted stock announcement, the stock barely moved. Perhaps more noteworthy, since Amazon announced it would begin expensing options on July 23, 2002, its stock is up 275%. Should we expense options on corporate income statements? Wall Street’s response is a collective and accurate yawn.

Are restricted stock grants better for employees? Overall, the likely answer is “yes,” but it is not a resounding one. If a stock falls below its granted price, restricted stock grants still have value, while options are worthless. However, an employee, who is granted the exact same economic value in terms of restricted stock will make less money on the upside as compared to someone granted the same economic value of stock options. Seemingly, this “extra upside” is that which tempts executives to behave badly.

One downside to restricted stock for employees is that taxes at ordinary income rates must be paid on the day that restricted stock grants are earned (i.e., the day that the shares are vested), despite the fact that the employee has not realized cash value for this grant. Said employee will be digging into his or her pocket to pay cash taxes on non-cash income. This can negatively impact employees without the cash flow to support such activity, and will likely encourage most employees to sell stock in order to raise money to pay the taxes.

Is restricted stock better for shareholders? This is the question that seems to go without much scrutiny. Compensation consultant Watson Wyatt Worldwide calculates that employees would be better off with stock options if a company's stock price went up more than 10-15% annually, and would be better off with restricted stock in the scenarios that range from negative 99% return up to a positive 10% return. As the historic return in the stock market is approximately 10-12%, it is hard to understand why investors would favor an incentive package that is more appealing to employees when the corporation underperforms the historic market. It seems to fly in the face of good sense.

In addition, restricted stock grants could encourage a form of widespread corporate conservatism. If an executive is granted \$2MM worth of stock, he or she might have incentive to help increase the price to say \$2.3MM, or 15%. That said, the incremental \$300K is peanuts when it comes to protecting the value of the \$2MM already on the table. There is a huge difference between corporate sustainability and corporate value creation. GM traded at \$38 per share in 1994, and since it is \$38 per share today, it has "sustained" value for the past nine years. Is this the type of behavior we hope to encourage?

Another frequently discussed benefit of restricted stock over stock options is that it has more value, and therefore employers can offer fewer grants. The conclusion is correct, but the premise that employers can reduce the financial impact of executive compensation is flawed. Employers are likely to offer fewer absolute shares, but the value in each share, because of the downside protection, will be much greater. At the end of the day, the financial value of the executive compensation remains unchanged.

This was certainly the case with Microsoft. After its initial announcement, the press broadly embraced the idea that Microsoft's 2004 restricted stock GAAP impact would be less than it had been using stock options. However, when Microsoft fully unveiled its plans for 2004 restricted

stock grants, it predicted the impact to be the exact same \$0.24 per share that it calculated for its option grants in fiscal 2003. In 2003, Microsoft gave out \$4B worth of stock options to employees. In fiscal 2004, Microsoft will give out \$4B in restricted stock to employees. This is another reason that Wall Street failed to react to this supposedly significant event. More yawns.

So why would Microsoft make such a decision if it is of little difference or even potentially negative for shareholders? While granting restricted stock is relatively common among more mature public companies, rest assured that this highly successful company spent many brain cycles on the issue. Also recognize that to classify Microsoft's decision as altruistic is to fail to appreciate the most competitive and properly self-interested company of the past 30 years. As it turns out, there are many reasons Microsoft would favor such a move, even at the sacrifice of enduring more conservatism in the future.

As a reward for its dominance, Microsoft currently enjoys remarkable operating margins of nearly 50%. These margins are not particularly supportive of the arguments made in anti-trust hearings that the company faces incredibly strong competition. As such, anything that helps reduce GAAP earnings could be deemed a positive. Secondly, and also relating to recent litigation events, it is certainly in the company's best interest to appease Washington. As congress is currently focused on these seemingly devilish things known as options, it would be in Microsoft's political interest to play to its concerns.

Most importantly, Microsoft is under enormous pressure from Wall Street to distribute its \$50B hoard of cash in the form of a dividend. With this cash position likely to grow by more than \$10B in fiscal 2004, this pressure is not likely to subside. With stock options, Microsoft employees who have not exercised their options would fail to participate in any large dividend (because Microsoft historically used non-quals instead of ISO's, which required taxes to be paid at ordinary income rates and not capital gains, it is unlikely that any employees had exercised their options). As many are speculating that the company may be pressured to undertake a one-time balloon dividend of up to \$25B, this is quite significant. This likely helps explain why Microsoft also arranged for J.P. Morgan to purchase all current employee options, instead of letting those options remain in place and simply granting restricted stock for future compensation.

For the most part, the arguments regarding stock options and restricted stock are indeed much ado about nothing. In either case, decisions to include them in GAAP accounting results will have little if any effect on stock prices. Additionally, they both represent equity claims on the corporation, and most companies are likely to encourage some form of equity participation by their employees. The one key difference, however, is that restricted stock will encourage

executives to become shepherds of corporate value protection – not creation. And that subtle difference flies in the face of the fiduciary duty of the board of directors to “enhance” shareholder value.

Article 64: The Comeback of the Mobile Internet

July 16, 2003:

Things are going great, and they're only getting better I'm doing all right, getting good grades
The future's so bright, I gotta wear shades -Timbuk 3, "The Future's So Bright"

It seems like just yesterday that the worldwide cellular industry was under attack from all sides. As the bubble burst, the outrageous sums that were coughed up for 3G licenses, coupled with the equally large cost of 3G deployment, stood out like two elephants crammed into a fish bowl. If swallowing 3G costs weren't enough, the media and analysts (including yours truly) began to espouse the benefits of open standard, unlicensed spectrum radios – also known as 802.11 or Wi-Fi. Not only that, but everywhere you turned someone wanted to discuss Wi-Fi's disruptive impact. It's hard to play offense when you are always on defense.

However, against this grim backdrop, something extremely exciting is emerging in the cellular world. In the past twelve months, the cellular phone began to prove what many of its hardcore supporters have voiced for years – that the cell phone can be a leading platform for interactive entertainment services. What's more, it could be much bigger than you realize, perhaps even bigger than the PC industry.

Recent Events

While these statements may seem like old news to Europeans, where SMS has been the bastion of electronic communication for years, success with non-voice cellular applications is a new phenomenon in the U.S. Since the fourth quarter of 2002, U.S. based carriers have begun to see a measurable increase in the usage of revenue-generating interactive services. In early June, Verizon Wireless announced that its interactive service, Get It Now, has achieved close to twelve million downloads of entertainment content since its launch in September of last year. Its phenomenal growth is accelerating. May downloads averaged 2.3 million, which equates to an annual run rate of more than 27 million applications.

More importantly, in April Verizon Wireless announced that active Get It Now customers showed a \$7.50 increase in Average Revenue Per User (ARPU). With ARPU declining steadily across the industry, any product or service that can increase ARPU is the nirvana of the cellular business model. Sprint and ATT Wireless have announced increased download and ARPU traction as well.

The key trend contributing to the recent blossoming of alternate cellular applications in the U.S. is the release of next generation cell phones. These "fat" phones come complete with huge color screens, large processors, plenty of memory, and sometimes even cameras. These phones, which began shipping in volume in the fourth quarter of 2002, are flying off the shelves, many at prices under \$100. No longer is the experience limited to text-based interfaces, such as the much-derided WAP interface. Qualcomm's BREW OS and Sun's J2ME are at the core of these next-generation phones, enabling numerous user interface, development, and deployment improvements. Two other contenders hoping to take market share are Microsoft's Windows-based Smartphone, and Nokia's Symbian-based Series 60 – including the much ballyhooed NGage product which is as much Gameboy as cell phone. If history is a guide, given natural replacement rates and attractive price points, it should not be long before these "fat" phones represent the majority of new phones being sold in the U.S.

Platform Advantage

As an alternative to other potential interactive platforms (game consoles, PCs, GameBoy), cell phones have some unique advantages. First and foremost, they are pervasive. The installed base of cell phones worldwide is around 1.3 billion. Second, most people carry them wherever they go – this is a real plus for interactive games as well as communication oriented features. Cell phone games can entertain during "stolen moments" – the times that would otherwise be wasted. Additionally, cell phone carriers have been much more adept than say Internet portals in

deploying billing or "wallet" like features. You can "buy on a click" much easier on your phone than the Internet – an example of the carrier leveraging its previously existing billing relationship. Lastly, because all current cell phones have both a global phone number and an IP address (with your carrier acting as the ISP) you already have a directory-enabling structure that allows any phone to easily link to another.

The Victors

Who will be the winners of this long expected revolution? Certainly the carriers will reap rewards. Verizon Wireless has been particularly aggressive promoting these features in the U.S. with Sprint and ATT Wireless following suit. New features like gaming and ring-tones can spur users to upgrade their phones, and hopefully their rate plans, helping carriers retain customers.

Since carriers don't actually make any content, they rely on independent publishers to produce interesting applications for subscribers. In order to encourage content development for cell phones, carriers share revenue from downloads. One critical element of carrier strategy is determining the optimal share. While a more carrier-friendly split may be good for the carrier's bottom line, it could drive content providers to more generous carriers, rendering the greedy carriers' offerings less attractive to users. Interestingly, one of the most successful content platforms, Japan's DoCoMo service, is built around an extremely generous 91%-9% split, which is more favorable than all U.S. and European carriers' current deals. The carriers are all walking a fine line between driving revenues and creating a viable ecosystem to encourage publishers to invest in content.

Handset vendors could also benefit from these new services, as they now have more opportunity to differentiate their various phones. This is offset by the OS vendors who are seeking to (1) create some form of cross-phone standardization and (2) move as much of the value add to software as possible. The most interesting development here is likely Qualcomm's BREW initiative. BREW, which integrates a handset OS with a unified billing and provisioning platform, was at first easy to ridicule as overly ambitious, but is doing amazingly well. Verizon, once again, is reaping the benefit as the only U.S. carrier to fully commit to CDMA and BREW.

Publishers are also establishing a critical role in the marketplace. The cell phone "platform" is, in reality, a complex patchwork of OSs, phone form factors, and carrier networks. The matrix is quite mind numbing, easily rocketing into hundreds of permutations. It is also difficult for cellular carriers to manage relationships with the thousands of small developers that hope to deliver

applications for this new medium. The group that simultaneously solves these two difficult problems is the publishers. While some publishers from existing platforms are sticking their toes in the water (like THQ), many of the publishers for this new platform are new companies. Leading the group is JAMDAT, a young company out of southern California. Out of Europe, Gameloft also has a compelling offer and a strong partnership with Ubi Soft.

The Numbers

The punch-line to this story is the law of large numbers – in this case the enormous numbers of cell phones deployed around the world. Consider this: analysts peg the worldwide installed base of active PCs to be between 500 and 750 million. However, the active installed base of cellular phone users is once again, approximately 1.3 billion. Looking forward, this gap is likely to increase. The IDC-reported number for annual PC sales is approximately 150 million. The current estimate for worldwide cellular sales is more than 400 million. Turn your eye to developing countries and the gap is even larger. In China, the installed base of cell phones, at 200 million, is already ten times the size of the installed base of PCs.

It is likely that these mind blowing user numbers are the key drivers behind Microsoft and Intel's bold commitment to 802.11. Widely available 802.11 signals bode well for PCs and PC variant platforms (such as PocketPC). On the other hand, if the cell phone infrastructure (including the physical plant, operating systems, handset characteristics, and more) matures ahead of broad scale 802.11 deployments, the cell phone industry could reap incremental rewards. The PC industry aims to make the Internet experience mobile, through products such as Centrino-powered laptops and Wi-Fi enabled PocketPCs. The cellular industry aims to make its voice-based platform more interactive, by driving next-generation phones, as well as 2.5G support deep into the installed base.

The potential "competition" between the PC platform and the cell phone platform are not lost on PC industry executives. In a July 14th New York Times article, Craig Barrett, Intel's CEO, noted that "there are now about 40 million Wi-Fi users and new access points are selling at the rate of about 15,000 a day, which makes Wi-Fi a much faster growing technology than cellular telephony." The cellular phone is clearly emerging as an interactive platform that deserves attention – perhaps everyone's attention.

Article 65: In Search of the Perfect Business Model: Increasing Marginal Utility

June 10, 2003:

"We're in this love together, And like berries on the vine, It gets sweeter all the time" -Al Jarreau, We're In This Love Together

As companies continue to slog through this muddy economy, many executives are looking deeper into customer metrics in an attempt to uncover some little nugget that might give them a competitive edge in the marketplace. Marketing managers are digging through piles of customer data, evaluating every little thing from the cost of customer acquisition to customer churn, share of wallet and frequency of customer engagement.

In thinking through metrics just like these, one might wonder, "What metric would highlight the ultimate in terms of sustainable competitive advantage?" It would need to be something that encompassed (1) a clear advantage relative to competition, and (2) something that increased the lead over time. In other words, the competitive advantage would constantly be improving. What if a company could generate a higher level of satisfaction with each incremental usage? What if a customer were more endeared to a vendor with each and every engagement? What if a company were always more likely to grab a customer's marginal consumption as the value continued to increase with each incremental purchase?

This may be the nirvana of capitalism – increased marginal customer utility. Imagine the customer finding more value with each incremental use. Some may suggest that this concept already exists in the form of volume discounts. However, this offers a vendor no real competitive advantage, as all of its competitors are likely to offer the same discount to large purchasers. Others may feel this is just a buffed-up version of "high switching costs." On the contrary, increased marginal customer utility preempts the need to impose switching costs, which can be

seen as "trapping" or "tricking" the customer. Instead, the customer who abandons increasing marginal customer utility would experience "switching loss."

This is arguably the advantage that Amazon has compared to many of its online rivals. Customers that have signed up for "one-click" ordering experience a dramatic increase in convenience during the checkout process vis-à-vis a new retailer. More interestingly, Amazon attempts to learn about you with each and every purchase, as well as with each and every browsing episode. As such, the company can offer you suggestions that a new retailer could never anticipate.

An even more powerful example exists at another web powerhouse, eBay. Frequent eBay shoppers may have noticed how fanatical eBay sellers are regarding their online eBay reputations. Less than five seconds after winning an auction, you may find yourself under assault (email assault that is) from the eBay seller requesting that you immediately leave "positive feedback" about the experience. Why do these vendors care so much? Because they believe that the vendor with the best reputation will close more transactions and likely receive higher prices for their auctions. In other words, these sellers are experiencing increasing marginal utility as they incrementally engage with eBay.

Sometimes a negative example does as much to explain an idea as a positive example. U.S. cellular carriers appear to have boxed themselves into a corner, whereby customers receive increased marginal utility if they switch vendors, as opposed to remaining loyal to their current service provider (decreasing marginal utility). In an effort to acquire new customers, carriers have made it a common practice to subsidize the costs of a new phone. This strategy works well, as many new cell phone customers are quite interested in owning the latest and greatest piece of hardware. The problem is, however, that when a current customer wants a new phone, the carrier quotes a full price (minus the subsidy – after all, the customer is already acquired). Therefore, the cheapest way to obtain a new phone is to be disloyal and switch carriers.

Two other companies in which Benchmark Capital has invested are also attempting to create increasing marginal customer advantage. As the leading provider of "network neutral data centers," Equinix encouraged carriers and ISPs to build facilities within their data centers to offer bandwidth. The more connections Equinix brought in, the more carriers wanted to be in the data center to peer with one another. The more carriers that you could peer with transit-free, the more content providers wanted to be there as well. Ironically, many of these providers can completely eliminate certain bandwidth charges by bypassing the Internet and directly connecting (via wire connections in the ceiling of the data center) to other content providers

who are their business partners. As more and more carriers and content providers host here, the value to each new customer increases.

OpenTable, which might be best understood as the Expedia for restaurants, recently implemented a program known as OpenTable VIP. For its most active consumer customers, OpenTable alerts its 1,500 restaurant partners that a particular customer is an "OpenTable VIP." As these restaurants understand that these customers are high-frequency (and likely high-margin) diners, they typically make a special effort to impress these customers. As these customers enjoy being impressed, they are then encouraged to book through OpenTable in the future which will lead them to be treated well again and again, –increasing marginal utility.

The Internet appears to be a fertile ground for programs that offer increasing marginal utility. As most Internet businesses revolve around the creation of a network, the utility of the marginal customer may be influenced by the size and scope of the customer base itself. Also, the ability to aggregate a tremendous amount of customer data increases the likelihood that one could satisfy customers in some type of increasing fashion. Lastly, as the Internet matures, and companies become more reliant on revenue from current customers, we will likely see a rise in attempts to lock-in customer loyalty. Just recently, USA Interactive, Barry Diller's Internet conglomerate, announced plans for a cross-property membership rewards program. This concept should not be limited to the Internet. All companies would serve themselves well to uncover some form of increasing marginal customer utility. Make them love you more and more each day.

Article 66: It's Time to Put a Stop to Spam

April 3, 2002:

"One likes to believe in the freedom of music, But glittering prizes and endless compromises
Shatter the illusion of integrity." –Rush, The Spirit of Radio

Between 5:00 PM Friday afternoon and 8:00 AM Monday morning I received 151 pieces of spam – email “junk mail” – in my corporate inbox. As you might guess, my email address is completely, and I fear permanently, polluted. What I once considered to be just a mild nuisance is now a genuine drain on daily productivity. I probably spend twenty to thirty minutes a day evading spam, and this is up from maybe one or two minutes a year ago.

Spam is fast becoming an epidemic. Brightmail, one of the leading providers of spam-fighting technology systems, estimates that the percentage of incoming emails considered junk has more than doubled since September to well over 15% of all email. Research house Gartner estimates that spam increased at least five-fold in 2001. Left unchecked, spam will undoubtedly cost corporations billions of dollars in lost productivity and squandered IT resources. Overzealous and overly clever electronic marketers are desperately compromising this highly efficient new corporate communication medium of email.

Why is spam such a problem? The most relevant answer to that question is pure economics. The cost to send an incremental email is fast approaching \$0.00. With no variable costs, the e-marketer is encouraged to send as many solicitations as it possibly can – there is no diminishing marginal return as you might experience in direct mail or telemarketing. Moreover, email lists can be replicated with mind-numbing simplicity, and as a result, there are several places on the web where you can buy a CD of over 10 million email addresses for under \$200. Lastly, thousands and thousands of email servers are unknowingly being used as hosts for spam assaults due to a problem known as “open relays”. By bouncing their offers off these ill-programmed hosts, parasitic solicitors simultaneously reduce their costs as well as their likelihood of being caught.

The first and most common spam prevention advice is to educate employees with regards to proper email user behavior. This is like telling someone that learning to swim will be helpful in the event of a tsunami. For starters, if your email address has ever been posted anywhere on the web you likely already have a significant spam problem. Web “spiders” electronically crawl the web and assemble email address lists that are fast included on the above-mentioned CDs. Other spammers simply “guess” as to what your email address might be, by appending a common name to a popular domain. I would hate to see how much spam has to comb through. Another common trick is to include in a spam solicitation instructions for “unsubscribing” from a list. When users do unsubscribe, the spammer knows this is a live address – now your address is sold for a premium to direct marketers. Remember, it only takes

one misstep for your address to be completely compromised, due to the ease of electronic replication.

Once you realize the futility of the “user behavior” defense, you or your corporation will likely seek out a technical solution to this problem. Several companies sell email filter technologies which help identify unwanted emails by recognizing key phrases, or by helping you manage a list of perpetrators. With these mundane solutions it is impossible to keep up with the spammers – it’s like cutting the lawn with nail clippers. More sophisticated solutions run large data-centers and analyze messages sent to a large number of locations on the Internet. With this global knowledge, these companies are better suited to recognize spammers using large lists across several ISPs and domains. Brightmail is generally considered the leader in this category.

While these technology solutions can help reduce the problem, I am not convinced that they can solve the problem outright. The reason is something known as a “false positive.” These non-deterministic solutions are built to make a best guess as to whether or not an email is indeed spam. The problem with this educated guessing is that eventually you make a mistake. If one or two pieces of spam are allowed to pass, no real harm is done. However, if you mistakenly identify a “real” email as spam and delete it, you have a major problem in the corporate world. Imagine what happens when your company misses a key sales opportunity because the SpamNoMore software guessed incorrectly. The software is removed that’s what happens. This zero false-positive hurdle creates a real dilemma, and any company that can solve it will likely make millions.

With legislation as a possible solution, one could wonder why we even need a technology solution. Consider that our government could depend on each and every company to protect itself from murder and theft by requiring them to defend all of their locations with armed guards. It is simply more efficient to make these things illegal and rely on our public police for enforcement. The same is true for spam. With the exponential rise of spam, its obvious impact on corporate productivity, and its relative uselessness within the corporate setting – the members of the senate and congress should act swiftly and vigorously to put an end to spam. There are proposed bills in front of the house and the senate, but they all fall short of what is truly needed. Ironically, most government officials have moved to web-based contact forms on their web sites instead of disclosed email addresses. Clearly they “know of” the problem – let’s just see if they have the guts to take care of it.

Of course legislation is just the first step with enforcement being the second. The government must not only pass desperately needed legislation, but also simultaneously and ruthlessly

prosecute offenders. Additionally, as spam is a global problem, not a U.S. problem, our government will need to work with other countries to completely stop the abuses. Email is fast becoming the preferred communication medium for many corporations. Moreover, email is also the baseline for many new cross-company workflow applications. We simply cannot allow a bunch of Viagra ads to put a dent in the evolution of the global economy.

For more information on stopping spam, please see the following resources:
<http://spam.abuse.net/> <http://www.cauce.org/>

Article 67: When It Comes to Pricing Software, the Greener Grass Is Hard to Find

October 29, 2001:

“Round and round What comes around goes around.” –Ratt, Round and Round

Despite the fact that the software industry is careening towards its fiftieth birthday, in many ways it looks like an industry that has not quite matured – one that is still finding its way in terms of business model and pricing. While Microsoft seeks to move corporate users to a subscription model for Microsoft Office, many ASPs (Application Service Providers), are working frantically to return to a pricing model where more cash is collected up-front – i.e., “away” from the subscription model. How can an industry so old have such schizophrenia about something as simple as a pricing model?

From the beginning, the software industry has had one key distinguishing characteristic from all other businesses – variable costs are at or near zero. Economic theory suggests that in order to maximize profits, you want to pick a price whereby marginal revenue equals marginal costs. However, with marginal costs always equal to zero, this formula obviously breaks down.

Different types of software companies have used different approaches and theories. At the high end, enterprise- software strategists say to price as “high as you can” to reap the maximum profit, and to help offset direct sales costs. On the other hand, companies like Microsoft favor entering the market at a low price with the objective of taking a huge portion of market share. If your R & D dollars are spread across the most customers, no one else can afford to keep up.

Prior to 1995, most enterprise-software companies followed a pretty consistent pricing strategy. Charge as much up-front as you can for the software. Typically a number north of at least \$250K is needed to justify direct sales costs, if this is the chosen sales model. On top of this, the customer is asked to pay about 18% of the original purchase price in “maintenance” which basically covers customer support and access to minor upgrades of the product. Then, every three of four years, the vendor will release a “major upgrade” which requires all customers to revisit the big-ticket investment again.

In the mid-1990’s, this model started to show signs of wear, and most enterprise-software companies found themselves in an awkward position. Each quarter, the company’s sales force would work as hard as they could to close as many customers as possible in these mega-software sales that were fast approaching \$1 million per deal. However, when the quarter ended, the company had to start again from ground zero, and the entire game began again. As customers caught wind of the game, many began delaying purchasing until the exact end-of-quarter, when the vendor was most eager to close a deal. As such, the monthly allocation of revenue in a typical enterprise-software company across a quarter could be as lop-sided as 10%, 10%, 80%, with the majority of revenue being closed in the last two-weeks of the quarter.

This model is not for the faint of heart, and as such, many stressed-out CEOs began to search for a new model that might alleviate the end-of-quarter rush and the ridiculous amount of uncertainty inherent in such a model. About this same time, the rise of the Internet gave birth to the idea of an ASP – a model where software would be delivered as a service over the web, and customers would “subscribe” to the software. Analysts raved at the genius of the idea. With this model, the customer would pay an incremental fee each month, therefore eliminating the “start from zero” sales game inherent in the software model. Assuming no loss of customers, the revenue from last quarter is already booked for this quarter – all new sales theoretically represent incremental growth.

Alas, the grass is indeed greener on the other side. For all the theoretical advantages of the subscription model, one key challenge makes it extremely difficult to execute. Let's assume I have a small software company that sells enterprise-software the old-fashioned way for \$1MM base license and 18% maintenance. With this model, the company will book and collect cash flow for \$1MM in year one. Now let's take the amount this customer would spend over 3 years (\$1.36MM) and spread it over 36 months in a subscription model. If the company closes 10 accounts in year one, spread evenly across the year, the recorded revenue and collected cash flow for year one will only be \$2.26MM, compared with \$10MM in the old model. This is why many ASP players backed off their original pitch and are attempting to sell traditional licenses.

The problem, you see, is capital availability. If you ever make it to break-even, then the subscription model is clearly preferred. However, the capital needed to grow such a model is tremendous, as the customer payments have been pushed out – i.e., the startup is providing vendor financing. When the ASP model began to buzz, many of the enterprise-software vendors did this math, and criticized the model as “unobtainable.”

Ironically, the difficult economy has created a situation where the customer seems to prefer the subscription model. Capital budgets have been cut, and everyone would prefer to buy by the drink instead of in one up-front lump payment. This has caused even the licensed software vendors to enter into financing agreements whereby the customer pays out over a period of time instead of up-front. Once again, schizophrenia is the only consistent theme.

So what's the best model? Perhaps it's a blend of the two. Recognize revenue on a subscription basis, but try to collect as much of the cash flow up-front as possible. This will give you a conservative brace from the trials and tribulations of the license model, but at the same time will not leave you starved for capital to run the business along the way. Of course, this model will require enormous patience to reach accounting profitability, but in the long run (forgive me Mr. Keynes), you will be much better off.

October 1, 2001:

“Don’t believe what I saw. A hundred million bottles washed up on the shore.” – The Police

In the weeks following the World Trade Center tragedy, many government officials were actively lobbying for increased Internet surveillance as a method of restricting terrorist activity. This is likely the direct result of numerous reports that Osama Bin Laden and his many supporters are heavy users of the Internet for organizational and informational purposes. From the floor of the senate, Senator Judd Gregg of New Hampshire called for “a global prohibition on encryption products without backdoors for government surveillance”. Also, many large ISPs, including AOL, Earthlink, and @Home, have reported that the FBI approached them after the tragedy and served them with Federal Intelligence Surveillance Act (FISA) orders to search for possible communications that may have aided the attacks in New York and Washington.

Protection of Freedom? This type of activity sends shivers down the spines of many pro-privacy technology activists. It should be noted however, that these outspoken and knowledgeable people are not pro-terrorist. In fact, many are terribly disturbed by the terrorist action. That said, they do not believe that you can protect freedom through the process of restricting or destroying it. As ammunition, they are quick to quote Constitutional contributor Benjamin Franklin — “They that give up essential liberty to obtain temporary safety, deserve neither liberty nor safety.”

Disregarding these strong-minded, civil liberties based perspectives; a closer look at Internet surveillance uncovers many problems in both implementation and potential effectiveness. For starters, there is a huge predicament with just how much of the genie is already out of the bottle. So called “strong” encryption techniques (those that are nearly impossible to decipher), are broadly available on the Internet. Moreover, these “programs” are cataloged and archived in many forms – software executables, source code listings, and simple algorithms that describe the general concepts. Also importantly, many of these algorithms have been developed outside the United States.

Another perhaps disturbing but real development is the increased use and availability of Steganography. Steganography is the act of embedding or hiding a message in another transport. Several programs on the Internet, many that are shareware and free to download, make it easy for you to embed one file in another. Typically the transport file (that which hides) is a large dense file type such as a JPEG photo or an MP3 file. Interestingly, these encoding techniques are so slick that the resulting file is indistinguishable to the human eye (JPEG) or ear (MP3). As a result of this “conversion,” a covert communication may appear as innocent as two parties sharing a Britney Spears song over the Internet. USA Today has reported that Osama Bin Laden and his followers are heavy users of Steganography.

As mentioned earlier Senator Gregg has suggested that we implement a “global prohibition on encryption products without backdoors for government surveillance”. This type of proposition has many difficulties once you look under the covers:

Whom do we trust? We can’t get a majority of leading countries to join a coalition against terrorism, and we think we can line everyone up in an organized assault on encryption? Many countries have much stronger perspectives on personal privacy and are therefore unlikely to participate. Other less industrialized countries are going to have a hard time considering this a relevant priority. More importantly, how will we implement the dissemination of government keys? Do we trust all governments that join the effort? Who gets to see cross border communication?

Outlaw a t-shirt? Many in the scientific community have pointed out the silliness in outlawing an algorithm (basically a flow chart of how the code works). First, any good programmer can convert a detailed algorithm into software code, and as such the algorithm (or formula) is the tersest representation of the offending material. Second, these algorithms are everywhere. They’re on the Internet, they’re on hard drives all over the world, they’re in books, and they have even been printed on t-shirts to highlight the free speech implications of such an attempted prohibition. There is absolutely no way to reign in all the copies of these ideas, or to restrict their trade amongst those determined to do so. It’s like trying to outlaw the story of “The Three Bears” – too many people already know it at this point.

A sauna in the desert. Once again, Senator Gregg wants encryption software makers to implement government backdoors in their products. The only people I know that actually use encryption products are those that hate, loathe, or at the very least mistrust the government. Government issued encryption programs will see about as much use as a sauna in the desert.

They might as well put a sticker on the box that says “don’t buy me”. This would be a colossal waste of time.

Not so intelligent. Many have suggested that the terrorists are “more intelligent than you think” due to their clever use of these technologies. Another Senator, Jon Kyl of Arizona has commented frequently on the “sophistication” of the terrorists for this very reason. This presumed intelligence might be more a factor of their accusers own ignorance rather than their own aptitude. This stuff is ridiculously easy to obtain. Go to www.google.com, type “Steganography program,” and start downloading. You will be able to put an email message into a family photograph within five minutes. You must know the magnitude of the problem you are trying to solve.

“Your hands can’t hit what your eyes can’t see.” Muhammad Ali used this quote to refer to his lightening fast hands, but the same statement is true for message embedded using Steganography. How will the government identify potentially hazardous communications if every photo, music, and video file on the Internet is an unidentifiable transport? And even if you found the transport and decoded it, the message could still be encrypted using “strong encryption.” Seems impossible. It probably is.

One “big” haystack. There are an increasing number of ways to move files on the Internet. To name a few — email, ftp, instant messenger, chat, file lockers, Napster, and Gnutella. In the next few years, the number of emails and instant messages sent each year will be measured in the trillions (for each). Peer-to-peer file transfers will easily number in the billions. How do you monitor all of this? Where could you even store the log data? The pin is small, the haystack is large, and astute cryptographers can use Steganography to increase the size of the haystack.

The government should not give up on computer surveillance. In fact, as a tool that is used to track down a particular offender after isolation and identification, these technologies can be extremely effective. However, we should not be unrealistic about what type of “magic” spy technologies are at our disposal. We are only going to spend a lot of money, waste a lot of time, and create a false sense of security.

Article 69: Bye, Bye, Bluetooth

August 13, 2001:

“It’s just a fact of life That no ones cares to mention She wasn’t good But she had good intentions.” -Lyle Lovett

For those of you who don’t know, Bluetooth is a three-year effort by the tech industry to create a standard for allowing PCs to talk to PDAs to talk to cell phones, MP3 players, or to whatever other digital devices comes down the road. It’s essentially a wireless replacement for cable. The major cell-phone providers and many computer companies are also marketing Bluetooth as a broader solution to connect devices to printers and to serve as a complete wireless Internet connection. And several startups are working on voice-based paging systems—next-generation walkie-talkies—built around Bluetooth.

But I come to bury Bluetooth, not to praise it. The odds are stacked heavily against this well-meaning standard. And while many Bluetooth loyalists are likely screaming something similar to the old man’s line in Monty Python’s Holy Grail—“I’m not dead yet!”—it is time to begin penning the eulogy.

One should not be too surprised to see Bluetooth fail. There’s little history of well-organized and heavily marketed standards taking over the world. In fact, more often than not, the standards that really change the world sneak up on us from the outside. Something like TCP/IP (a 20-year sneak!) became the foundation of the information superhighway, while the cable industry strung together proprietary networks in Orlando. And remember Taligent, the attempt by IBM, Motorola and Apple to create an operating system that would topple Microsoft’s?

Okay, mentioning Taligent may be a cheap shot. The real problem with Bluetooth is the rising stardom of the 802.11b wireless Ethernet standard, which also goes by the more prosaic name of Wi-Fi. Not originally planned as a competitor to Bluetooth, Wi-Fi is progressing at such a frantic pace that it is leaving others in its wake. As a wireless standard, Wi-Fi has two key technical advantages over Bluetooth: it is ten times faster, and it has about ten times the distance range. Yet it costs about the same, on a per-unit basis. And it is already on an upward spiral of increasing returns. As volumes skyrocket, costs decline. As costs decline, the number of applications the technology can serve increases. As this potential application universe expands, other solutions meet with an untimely early grave. Such will be the case with Bluetooth.

Search technical trade journals for recent articles on Bluetooth and you will notice a common theme: defensiveness. Headlines read “Don’t Write Off Bluetooth” and “Wireless Ethernet: Neither Bitten Nor Blue.” You see, the Bluetooth community is already off-balance, and it’s hard to play offense when you are constantly playing defense. When Microsoft announced a few months back that it was dropping Bluetooth support from Windows XP, the Bluetooth contingent must have felt like it was standing in quicksand.

Even without competition from Wi-Fi, Bluetooth would have major challenges. That’s because the very concept of a cable replacement like Bluetooth is flawed. In a world where every device is connected to a single network (read: Internet), there is no need to connect individual devices on an ad hoc basis. Consider this – a walkie-talkie is a device that supports communication directly between two nodes. A cell phone is a device that supports communications between “any” two nodes because they are all connected to a common network and they all have unique addresses. Bluetooth is to a walkie-talkie whereas 802.11 connected to the Internet is more analogous to the cell-phone model.

This “connected” model is much more elegant than just letting a single device talk to another. For starters, if you store data in a network rather than on a single device, you are much better prepared to deal with the failure of that device. There is always an archive on the network. Second, if colleagues need access to the same data, having a centralized copy that everyone can retrieve makes much more sense. With Blackberry, your assistant can update a calendar change on the fly, and your PDA is updated in real time. Of course, if you insist on a direct desktop-to-PDA update, you can do it across the local-area network through Wi-Fi (or even directly, with the right software change).

Last week, Motorola released the Timeport 270c, a Bluetooth-compatible phone. However, if you wish to connect this phone wirelessly to your desktop, you need to purchase the \$299

Bluetooth connectivity kit with Bluetooth Smart Module (to plug into the phone) and a Bluetooth PC card (for the notebook). Seems like a lot of work to replace a cable.

Article 70: The Smartest Price War Ever

June 25, 2001:

“War! What is it good for?” -Edwin Starr

The recent titles on PC industry trade articles speak volumes with regard to the current state of the industry. “Dog Watch,” “Will PCs Rebound? Doubt it,” and “A PC Pessimist” are three examples that highlight the current view—the PC industry is in a tough spot. Worldwide growth is slowing from the once-guaranteed 20%+ a year to somewhere closer to the 10%-15% range a year, while U.S. growth is barely up and could easily decline. And while the current state of the economy is always mentioned as a contributor, analysts seem worried about something greater: saturation.

If this were not enough, Dell Computer, the investment community’s perennial favorite, launched an aggressive price war in the fourth quarter, which continues unabated now six months later as we near the end of the second quarter. Referring to the current price battle in the May 11 issue of the Wall Street Journal, IBM’s Lou Gerstner noted, “Price wars in a commodity business are really dumb.” All of which begs the question, is this a commodity business?, or has Michael Dell become smitten with a strategy that, in Lou’s words, is less than smart.

In a business context, commodity is typically used to describe a product or service where differential advantage is difficult to achieve, and as such pricing is typically the sole determinant

in terms of the customer's purchase decision. Interestingly, the issue with Mr. Gerstner's statement may not be in the adjective, but rather the object of that adjective. It would be hard to argue that the personal computer is not a commodity product. However, it is not at all clear that the PC industry is a commodity business.

If a commodity product is one where no one can establish a differential advantage, then it would follow that a commodity business is one where no participant can obtain a differentiated business advantage. However, even in tough times, Dell's business model stands head and shoulders above its competitors'. Dell's competitive advantage comes not from building better boxes per se, but from building them smarter and faster, and consuming fewer resources in the process.

Much has been written about Dell's direct model, which removes the middleman, along with his margin, from the sales process. And others have noted that Dell's incredible five days of inventory allow it to pass on component price declines faster than anyone else in the industry. But perhaps the unique aspect of Dell's business advantage is its negative cash conversion cycle. Because it keeps only five days of inventories, manages receivables to 30 days, and pushes payables out to 59 days, the Dell model will generate cash—even if the company were to report no profit whatsoever.

Dell is clearly the low-cost leader when it comes to looking solely at the income statement. The company has continued to generate a substantial profit margin even as other vendors struggle. For instance, IBM's personal-systems division lost \$58 million on revenues of \$3.17 billion in the first quarter. However, Dell's balance-sheet advantage is the added kicker here. Even in an environment where a price war eliminates all profitability—including that of Dell—the company will remain cash-flow positive. No wonder then that Dell would be willing to start a price war, and no wonder that IBM would find it "dumb."

Dell's "price war" timing is particularly clever. First, the tough economic environment leaves stocks depressed and investors more forgiving of lower expectations. Why try to hit home-run numbers when you are not likely to get much credit for it? Second, with most customers eyeing their own bottom line, they are much more likely to be influenced by the low-price sales pitch. Lastly, the weak economic environment makes it even more difficult for Dell's competitors to fight back—which is exactly what Dell is counting on.

By pushing for market-share gains through a price war mechanism, Dell has presented its competitors with a true lose-lose dilemma. On one hand, you can try to maintain market share by pricing alongside Dell. The problem is that because of its business model advantage, Dell can stand in the deep end of the pool forever. If you wade down there with them, you are likely to run out of oxygen before too long. Currently, Gateway is the only player that has followed this path, and understandably so. As the only other large player with a completely direct strategy, Gateway is best equipped to ride out the war.

The other possible response, and the one that has been chosen by IBM and HP, is to declare the price war “irrational.” The problem here is that along the way you lose market share, and Dell continues its tear that led it to become the number one maker of PCs in the world in the first quarter of 2001. Sitting out the war is equally as dangerous as entering it, which is precisely why Dell’s decision to push the pedal during these tough times is so remarkably shrewd.

There is another reason that makes the timing of this assault astute. While Dell’s competitors are well aware of the advantages it has, they have yet to “catch up” in terms of operating efficiency. As such, it certainly makes sense to go for the knockout punch now while the size of the advantage is so obvious. Waiting will only give the others time to study the relative advantages and mimic them.

There is a real risk that Dell’s price-war moves will permanently raise the bar in terms of the business model needed to be competitive in the PC industry. In the past, every down tick in gross margin has indeed been permanent, and the rest of the income statement has adjusted accordingly. In this light, the decision by some to sit out the war may in fact be the first step towards sitting out the industry. The screws are turning deeper, and Mr. Dell is asking everyone to put up or shut up—hoping that they choose the latter, and hoping that they eventually exit the business.

February 19, 2001:

“Turn the clock to zero boss The rivers wide we’ll swim across We’re starting up a brand new day”
-Sting, Brand New Day

It must be difficult for tech investors to keep their heads up these days. Amidst the reset in the NASDAQ, the concerns over corporate IT spending, the reduction in telecommunication capital expenditures, and the economic difficulties surrounding the enormous 3G license fees, optimism is likely a fleeting endeavor. But perhaps all we need is a new hero – some innovation to point to that is changing the world; a technology that is about to explode in terms of unit growth; a new beacon of hope.

One seemingly unlikely candidate for just such a task is a wireless LAN technology that goes by the cryptic name of 802.11b. Also called Wi-Fi by the industry standard group promoting interoperability, 802.11b is the next big thing. Wi-Fi provides for wireless Ethernet transmission primarily between laptops and local access nodes that attach to your standard corporate LAN. Originally a second class citizen in terms of transfer speeds, today’s 802.11 products, which transmit in the unlicensed spectrum at 2.5 Ghz, are capable of speeds of up to 11 Mbps—more than enough speed to keep up with the average Internet connection.

A few years back, wireless LANs appeared to be more research than development. Several scientists wanted to prove “that it could be done,” but with transmission speeds many times slower than with wires, it was hard to see why there would be much value. As the technology evolved, corporate users who prefer laptops found it quite convenient to be able to move around the office (or campus) without the need for a physical LAN connection (Dell laptops now ship with Wi-Fi embedded). Later, facilities personnel began to realize the huge benefit of removing the need for wires when provisioning a new office or even adding a new user.

Universities also became huge consumers of Wi-Fi technology. With thousands of students all clamoring to get on the Internet, no provost could be thrilled with the notion of retrofitting thousands and thousands of CAT5 wires throughout century-old facilities. Wouldn’t it be much simpler if every student could access the Internet from almost any spot on campus, including the common spaces outside the buildings? The answer is unquestionably yes, and some of the

largest active Wi-Fi networks are now installed at campuses such as Stanford, MIT, and Carnegie-Mellon.

Like other dislocating technologies, Wi-Fi is now working its way from the office into the home. While home networks are still in their infancy, the benefits of a wireless architecture may be even higher than at the office. Who has the capability to rewire their whole house? And although less obvious, the interest in aesthetics at home heightens the benefit of not stringing wires halfway across the room. Also, as we integrate the home entertainment center with the PC, a wireless link is particularly appropriate. Lastly, what if I could carry my laptop home from work, lay it on the kitchen counter and be online instantly? You can today with Wi-Fi.

From the home we move to public access spaces. Working with companies like Wayport, MobileStar, and Airwave, hundreds and hundreds of airports, hotels, and even restaurants are rolling out Wi-Fi access throughout their facilities. On January 3rd, Starbucks and Microsoft announced that in early spring, each coffee house would begin offering Wi-Fi access for their patrons. Soon, Wi-Fi access may be like VISA: “anywhere you want to be.” Once again, the compelling issue is the portability. You can carry one computer from work to home to the airport and even to Starbucks and always reach your data.

Some startups have an even broader ambition to rollout carrier class Wi-Fi access by installing access points along rooftops in major metropolitan areas. This type of implementation would stress the limits of today’s technology, and business models for this type of access program are specious at best. However, downtown Palo Alto is not much different from the Stanford campus when it comes to size and geography. And with the opportunity to be part of the “next big thing,” I am sure many ventures will attempt to solve the business model problem.

In terms of market size, Frost and Sullivan forecast Wi-Fi manufacturer’s revenue of \$884M by the year 2002, and Cahners In-Stat Group suggests that more than 10 million Wi-Fi products will be installed by the end of this year. I will go out on a limb and say that a 200 million-unit market in 10-15 years is not unrealistic, primarily due to the pervasiveness of the technology and the ability to provide access at almost every physical destination in the world. Perhaps cellular carriers should be concerned about the impact on the need for 3G services if Wi-Fi access is pervasive.

Skeptics point to many challenges, including the recently announced security breach in WEP, the encryption protocol associated with 802.11b. Other issues include congestion, interference, and

a lack of billing or roaming infrastructure. Still others will point to the emergence of Bluetooth, or the existence of other home LAN protocols with superior technologies. Don't be fooled. The history of technology has proven again and again that if a certain open architecture gains escape velocity there is no turning back. The cost declines brought on by ramping unit volumes alone are enough to thwart any competitive threat.

Wi-Fi has all the makings of a disruptive and explosive technology: huge growth, a strong value proposition, multiple and expanding uses, industry standardization, and global standardization. There are flaws, but none are insurmountable, and none are nearly large enough to be anything more than a speed bump with respect to the billions of dollars of R&D already pointed into this space. Lastly and most importantly, there is plenty of running room as we move from the corporation to the home to the campus to the airport to the hotel and potentially to a carrier class level. This truly is the next big thing.

Article 72: The End of CPM

July 10, 2000:

If you're sad then it's time you spoke up too -"Out of My Head," Fastball

It is easy to be disgusted by writers who make a point of mentioning something they predicted in the past in an effort to seemingly prove they have above-average prediction skills. So rather than suggest that I have been right in the past, and am somehow more right now, let me simply say that I am belligerently persistent on this one issue: I strongly believe that the majority of Web-based advertising will eventually be performance-based. The most common yardstick of Internet advertising—CPM, which measures the cost of advertising for every 1,000 "impressions," or viewings—will be left behind.

In May of 1997, under the title "New Media Update: A Tech Guy's Perspective," I wrote, "we predict 'per-click' and 'per-sale' ads will proliferate broadly on the fragmented Web." I reiterated the point in April and October of 1998 with "How to Succeed in Advertising." And if you think I haven't been insistent enough already, I can now say that I am shockingly confident that performance-based advertising will eventually dominate, not because I believe it, but because I see it happening in the marketplace every day.

After each of those articles, I received numerous flame mails from advertising and media company executives bemoaning my ignorance and complete lack of understanding of their market. They will likely do the same this time. The arguments are simple: "This is not the way things are done in our world...You just don't understand." However, rather than write to me, they should consider consulting the executives at Encyclopaedia Britannica and asking them how it felt when technology developments completely changed their market. Denial was an ineffective strategy.

Of course, one of the rationales for buying impression-based ads is the "branding," or "awareness," effect. If your advertising agency recommends creating an awareness study after you run the ads, you can rest assured you're being pulled down this path. The quest for "awareness" is fast losing support in Internet land. As Intuit founder Scott Cook eloquently put it at a recent conference, "Great brands are earned, not bought." Customer experience is where brand is built, not in the marketing budget.

The prevailing reason that companies will buy Internet advertising based on performance instead of impressions is because they have the data to make a more informed decision. Simply put, we can now acquire much more information in the advertising process than ever before. Companies such as DoubleClick, Personify, Coremetrics, Broadbase Software and many others are helping ad buyers rationalize their purchases. The first step is to use this data to analyze past behavior. The second step is to show the content sites what their ad space is really worth. Undoubtedly, we will have only more information in the future.

Of course, the biggest catalyst in the past 90 days has been the closing of the IPO market and the subsequent focus in the start-up world on profits and cost controls. This abrupt and refreshing change is a major accelerator that immediately tightens the belt of most Internet marketing departments and targets their spending on the most efficient forms of advertising they can find.

Gone are the days when companies indiscriminately bought the "anchor tenancy" on the favorite portal just as a branding event.

From the ground level of the Internet, it is apparent that dollars are aggressively shifting away from large CPM-based deals with tier-one portals. With capital no longer an unlimited resource, these deals are nearly impossible to justify, and many dot-coms are doing everything they can to unshackle the ball and chains from their ankles. So far, I get the sense they are being successful. I have no way of knowing whether these dollar shifts are large enough to affect the overall financial performance of these players, but I suspect that investors are asking a lot of questions.

So where are the dollars moving? While large impression-based deals are being canceled, "per click" and "per sale" deals are flourishing. Some of the second-tier portals and search sites are willing to do performance-based programs, and they are getting an increasingly larger percentage of the ad budgets as a result. More and more, our companies are finding strong ad partnerships with companies such as GoTo.com and iWon, two high-traffic sites that embrace these types of ads. In addition, there is a rise in CPC (cost per click) ad networks, and from what I hear, companies in this market (such as ValueClick) are doing extremely well.

The bottom line is this: If media companies want to have long-term, sustainable relationships with their customers, they need to establish win-win contracts. Otherwise, they will be stuck in a "churn and burn" mode where they constantly are in search of new ad dollars. One of our companies has successfully scaled down two impression-based portal deals and has simultaneously engaged in an exciting new performance-based deal with a third. Ironically, we are spending more money with the new partner than on either of the other CPM-based deals. Of course, the cost of acquiring a new customer through this form of advertising is less than 10 percent of what companies spend for customers through CPM. That's math that works for everybody, and a model for the future.

Some purists will suggest that because radio, television and most print are still sold on an impression basis, the same practice will continue for the Internet, too. The truth is that if we had perfect information in these markets, the ads would be performance-based as well. Others may suggest that the availability of information may not necessarily affect spending (the typical "brand" argument). This is similar to suggesting that the advent of the sextant wouldn't affect sailing.

Article 73: Like it or Not, Every Startup is Now Global

June 12, 2000:

“And I think to myself, what a wonderful world.” -Louis Armstrong

Ask 15 people where the best place on a planet to start a company is, and 14 are likely to respond: Silicon Valley. Despite this, entrepreneurship is gaining steam elsewhere, both across the United States and throughout the rest of the world. Historically, this has been limited to tech outposts in Israel or India, but today venture-back start-ups with overseas headquarters are popping up all over Europe and Asia. Entrepreneurism is inviting infrastructure—venture capitalists, attorneys, recruiters—that will help make the global start-up a permanent fixture instead of a temporary phenomenon. Ironically, it is the start-ups in good ol’ Silicon Valley that noticed this first, and they are the ones that will first experience the challenge of being a true global start-up.

According to IDC, this is the year that the number of Internet users outside of the United States will surpass the number inside the country. As you might expect, the gap is expected to widen. Online usage is dramatically rising in Europe, with 66 million people expected to go online this year, a 40 percent increase from 1999. In most of the Nordic countries, Internet penetration nears 30 percent of the population, which is comparable with that in the United States. In addition, many experts believe that the United States actually lags behind both Europe and Asia when it comes to wireless Internet access and usage.

Besides signs of increased Internet usage, there also have been several softer signs that reaffirm the evolution of a fertile start-up environment in Europe. Capital availability has increased at all stages along the company life cycle. Liquidity opportunities have increased with the success of tech-focused stock exchanges such as Germany’s Neuer Market, and within 12 months many expect the arrival of a Pan-European Nasdaq-like exchange. As capital increases, service firms

such as recruiters and attorneys are dedicating more resources to early-stage companies overseas. Lastly and most importantly, Europeans have a new respect for entrepreneurship—an important step in a culture that once favored job security well ahead of risk-taking.

Far away on the other side of the planet, California-based start-ups have slowly become aware of the rising overseas activity. The first signs were subtle. Shortly after launching a Web site and issuing a press release about their recent round of venture financing, unsuspecting young entrepreneurs may notice that the foreign versions of their URLs (.uk, .jp, etc.) have been registered by cybersquatters. Someone on the other side of the globe is paying attention to start-up financing news in Silicon Valley. Of course, we shouldn't be surprised. In addition to offering all of this opportunity, the Internet also offers instant information to anyone on the planet. The RedHerring has become an arbitrageur's tool for new-age global opportunists.

While URL squatting is bothersome, it is a paltry problem compared with a more aggressive form of imitation, which I will call "global cloning." Several Silicon Valley start-ups have been shocked to find that overseas companies have launched mirror-image versions of their Web sites targeted at the local community. One notable site is likely Germany's Alando, a version of eBay's popular auction site (eBay acquired Alando in June 1999). This is only the tip of the iceberg, however. One company I work with encountered not one, not two, but three venture-backed German start-ups "borrowing" the look and feel of the original. Unfortunately, look and feel was not all that was borrowed. As HTML files can be copied directly off a start-up's servers, these new sites frequently include exact copies of source from the originator.

Though cloning innocent start-ups may or may not be ethical, it is happening, and I wouldn't count on any international organization stopping the practice anytime soon. In fact, I have heard rumors that European venture capitalists encouraging cloning as the modus operandi. This presents an interesting problem for the global start-up. Strong marketing and PR are standard elements of a successful launch and can attract employees, financiers and business partners. But these same announcements attract unwanted imitation activity overseas. U.S.-based start-ups traditionally wait until they reach a certain level of stability before expanding overseas. With a fertile international start-up market, however, companies are in a quandary.

The new global start-up is faced with difficult decisions. One option is to move quickly and enter as many markets as possible, potentially (and likely) well before it is ready. Rapid expansion before a company has stabilized its domestic business is extremely risky, though, and it may suffer a fate similar to that of Boo.com, which tried to launch in several markets simultaneously. Regrettably, the opposite scenario doesn't work well either. If a company acts conservatively,

others may leverage its hard work and experience and quickly and easily take market share that you may feel is rightfully yours.

As is true in most cases, a compromise is probably the optimal solution. As a first principle, a start-up should never look overseas until it has achieved at least some minimal level of progress at home, likely measured in terms of revenues, customers or profitability. Once that is achieved, there are three ways to enter a new market: through a joint venture, through an acquisition, or by building a business from the ground up. If a company does not have a good understanding of the local market and culture, it should heavily consider the joint venture route, as it could use the perspective of a local partner. If it has some understanding of the market, an acquisition may be in order, but the company is still in charge at the end of the day.

The three Internet leaders—Amazon.com, eBay and Yahoo—offer some interesting lessons for charting the global frontier. Amazon, clearly a successful international organization, with 24 percent of first-quarter sales coming from overseas, used acquisitions to get ahead in both the United Kingdom and Germany (becoming the No. 1 e-commerce site in both countries). Surprisingly, these are Amazon's only two subsidiaries; the company has no presence in France, Asia or South America. eBay acquired Alando in Germany and launched its own site in the United Kingdom and Canada. It is noteworthy that eBay originally launched a Japanese site on its own but shortly thereafter brought in NEC as a joint venture partner to better compete with Yahoo Japan Auctions.

Even Yahoo, the king of all Internet companies, used joint ventures to get traction early in foreign markets. Yahoo owns 34 percent of Yahoo Japan; 70 percent in the United Kingdom, France and Germany; and 60 percent in Korea. Only recently—once it had established itself as a global profitable company—did Yahoo begin launching 100 percent-owned subsidiaries. I suspect that the build-it-yourself scenario, which was the typical model for companies five to 10 years ago, will be limited to such international powerhouses as Yahoo. With a global start-up infrastructure, it is simply too difficult to organically grow in multiple countries simultaneously.

Though it may not seem obvious, the presence of start-up infrastructure overseas actually poses new challenges for local start-ups that have visions of global greatness. Ironically, the same courage that leads a start-up to look overseas could cause failure if the company moves too quickly and aggressively or assumes it can get by without local partners. When considering such alternatives, it is important to keep one fact in mind: 50 percent of something is worth a lot more than 100 percent of nothing.

Article 74: A Return to Demand-driven Capital

May 15, 2000:

"Look up, look down Keep your ear to the Ground Keep your ear to the Ground" -Heather Nova

As a venture capitalist and writer, I am often asked to comment on the state of the venture capital market and the outlook for start-ups in general. The recent pullback in Internet stocks has increased the frequency of such questioning, and it is safe to say that in general, Silicon Valley is abuzz with prognostications. Although I am generally bullish about the amazing opportunities for innovation, as well as the overall outlook for Internet start-ups, there is one issue that causes me to pause: something I will call "supply-driven capitalism."

One way to think about the state of the venture capital and start-up markets is to contrast the demand for start-ups with the supply of start-ups. Start-up demand is driven by the problems of consumers and businesses that are left unsolved by current corporations, or when technology or innovation allows those needs to be serviced better, faster or cheaper. The Internet is an extremely disruptive technology that allows for many of these opportunities in virtually every market. As such, the demand for start-ups is quite high.

The supply of start-ups is driven by a combination of entrepreneurial interest and capital availability. It would be hard to characterize entrepreneurial interest as anything but extremely high, with many students from "Top 10" MBA programs forgoing \$150,000-a-year careers in investment banking and consulting firms to enjoy the thankless, low-salary, yet-highly-rewarding career of a start-up founder. Equally robust is the growth in venture capital availability. Venture

capitalists invested a record \$22.7 billion in 1,557 U.S. companies during the first quarter of this year, according to a report from the National Venture Capital Association.

With start-up demand and supply both at all-time highs, it is difficult to determine whether there might be an imbalance in the current market. Higher prices for venture deals may reflect movement between the supply of venture capital relative to the supply of entrepreneurial interest, but it does not necessarily reflect on the actual demand for start-ups. How much innovation is needed, and do we have enough companies providing it?

One way to gauge this is to look at the marginal start-up (or perhaps a large group of them) and try to understand the primary incentive for the creation of the business. On average, today's start-ups are far too often "supply-driven" as opposed to "demand-driven." In other words, the ideas for the start-up are born purely in the mind of the entrepreneur; they do not attack, identify or leverage a real problem or opportunity in the marketplace. Although this is almost impossible to definitively measure, such a signal would be a strong indicator of risk in relation to a match between start-up demand and supply.

To shed more light on this concept, let's look back several years to a time when there were fewer start-ups and when new companies received less exposure. Frequently, the idea to start a new company would be born by an obvious need identified by the entrepreneur. Many times this need was discovered by the work being done in the entrepreneur's existing job. Take, for instance, a systems integrator who develops an application for a customer and then finds that two or three other companies all have an interest in the product. Eventually the systems integrator realizes there is more value in the application business and shifts direction. You might think of this as a pull or demand-driven start-up.

Many successful companies over the years have started with this demand-side bias. Cisco Systems was started when several people at Stanford University noticed the need to integrate heterogeneous computer networks. They had demand for the product right there at Stanford. Soon others wanted the product, and before you knew it, a company was born. Likewise, Michael Dell began offering direct sales and support of branded PC products in Austin, Texas. The PC was complex, difficult to purchase and hard to use, and people appreciated the hands-on relationship. When Dell became supply-limited with regard to branded PCs, he began to build his own. The customer valued the relationship more than the brand.

There are many more examples such as these, and all have a similar theme. The market began to emerge along with the supply of a product. There are numerous stories of venture capitalists attending sales calls and receiving a bird's-eye view of the intensity and breadth of the demand for the new product. In other words, there was some certainty of demand before the formation of the start-up.

Today, more entrepreneurs are starting companies with more of a gut feel that someone will eventually need or want their product or service. This form of "ivory tower" capitalism is dangerous, primarily because the start-up may be left with the enormous burden of establishing a market rather than participating in one. To use a sports analogy, it is much easier to surf a wave than to create one.

A second risk to the supply-driven start-up is the relatively low barriers to entry that typically exist with such a concept. Let's face it: If you can think up a company in your head, there are likely five other people who can do the same. And with a growing infrastructure for start-ups, you can bet your bottom dollar that you will be one of many as opposed to one of few. This is the problem that emerged in the oft-cited example of the pet e-tailing market, as well as in many vertically specific business-to-business exchanges. At last count, there were something like six venture-backed seafood exchanges. I doubt that the canneries are crying out for that much innovation just yet.

I suspect what's at work is that Plato-esque idea that creation is much more intellectually appealing than combing the earth for steadfast problems to solve. But keep this in mind: Even a sexy Internet company like eBay was born of demand instead of supply. Founder Pierre Omidyar's girlfriend wanted a place to trade Pez dispensers online. The company rose after the market voted. I suspect that entrepreneurs and venture capitalists alike would be well-served to return to the boring, but perhaps more successful, world of demand-driven capitalism.

Article 75: Can Napster Be Stopped? NO!

April 17, 2000:

“Now people get ready, there’s a train a’comin. Don’t need no baggage, you just get on board.” –Curtis Mayfield

As a columnist, I typically aspire to write about ideas or concepts that are unexplored, aiming to offer a new viewpoint or fresh perspective. Occasionally, however, well-covered ideas can still be underappreciated. The rise of a software application known as Napster, which has been much discussed in many national publications, is just such a phenomenon. The music industry is about to undergo a change that is, at the very least, 10 times more important than the launch of the compact disc. Everything will change. And if that’s not enough, once the bandwidth is available, the movie and book industries will be next.

To be comprehensive, let me start with a brief description of Napster. As we all know, the Internet basically connects together all of the computers in the world. To date, this has manifested itself in a Web server-client relationship, in which we use browsers on PCs to access large Web sites. Napster is different in two big ways. First, Napster is a software application that uses the Internet—there is no browser. More interestingly, Napster allows its users to share information among PCs rather than between a big Web server and a PC. People tell Napster where music files (mostly MP3 format) are located on their local hard drives, and then Napster shares this information with the world.

The result is that each user of Napster can share music files with any other Napster user. Download the software, type the name of a song you’re looking for, and Napster will show whether the song is available. Double-click the song you want, and you are now transferring it to your PC. This activity bothers the music industry for two key reasons. First, in addition to exchanging music that is intended to be freely traded, people also can transfer any and all music that can be "ripped" to a digital file. For what it’s worth, this includes all 50 billion CDs in circulation. The second reason the industry is concerned is that Napster has achieved the remarkable milestone of 9 million users in just six months. For perspective, it took AOL 12 years to reach 9 million members.

Despite the hype, it is not at all clear that the music industry, as well as the broader press, understands the enormity of this movement. In the future, we will all listen to music via

computer files—either on MP3 players or on hard drives. In his Fortune column six weeks ago, Stewart Alsop highlighted two new MP3 players that use hard drives rather than flash RAM; each holds 80 hours of music and fits in your pocket. The CD, which in many ways still seems so new, is actually on its way out the door. And here's the biggest issue: On the Internet, files are easily copied and shared, whereas physical CDs can only be borrowed or traded. And with 9 million people electronically connected through a centralized directory, the sharing is mighty easy.

Remember that the amount of bits it takes to represent high-quality audio is finite. Until the past few years, the amount of space on a hard drive, as well as the bandwidth required to transfer an MP3 file, was prohibitive for widespread usage. However, both bandwidth and storage space are susceptible to Moore's Law. This means that within six years, the amount of drive space or bandwidth needed to trade high-quality music will be unnoticeably negligible. Emailing an entire album of music to a friend will be no different than forwarding a Microsoft Word document today.

The obvious question is, Can anything be done to stop the free trade of music on the Internet? To the amazement of many, the answer is likely to be no. The first reason for this is that the cat is out of the bag. Every multimedia PC in existence is capable of converting a music CD to a digital MP3 file. This means that more than 100 million encoding devices already exist that can convert the more than 50 billion CDs floating around the world into digital files. It's unlikely that we will recall either the PCs or the CDs. Could we produce new CDs that are "un-rippable"? This is unlikely if you want them to work in the more than 200 million CD players that already are on the market.

Could we create a new type of CD or encrypted file type that couldn't be copied? The potential certainly exists to do this. One fundamental irony exists, however. As long as you can listen to the music, it will be extremely easy for someone to rerecord it into a digital file—no ifs, ands or buts. People seem generally circumspect of technology until they want to solve a particular challenge. In this case, the music industry and the public still believe a Holy Grail exists that can save the day. They assume that a technological solution is imminent. But the wait for a white knight will be a long one.

Could litigation and legislation stop Napster? The Recording Industry Association of America (RIAA) has sued the software maker in an attempt to shut it down. Napster claims that, just like Betamax and the Rio MP3 player, the service has appropriate uses and therefore should not be liable just because customers use the product for illegal purposes. I doubt that legislation can stop this movement. Even if the RIAA were to injoin Napster, there are five or six more

companies that already have launched similar products. Make these illegal, and someone will launch one from another country. America Online's Nullsoft division temporarily launched a product called Gnutella that uses a distributed directory rather than a centralized one. Shutting this down would require the Internet equivalent of wiretapping, which would send privacy advocates into a frenzy.

Another barrier that will make Napster a difficult craze to stop is community. Napster's 9 million users are passionate about this product and are not afraid to make their feelings known. Universities attempting to shut down Napster to combat heavy traffic on their networks have faced active protests. Although it may not seem as noble a cause as the Vietnam War, today's college students are quite serious about their freedom to transfer digital files, whatever the content of those files may be. Stewart Brand's famous quote that "Information Wants to Be Free" has become a rallying cry of this fervent young community.

The world will eventually settle into a new equilibrium some years in the future, and it will look very different from today. Musical artists may make more money from appearances, sponsorships, and product licensing than from the sale of the actual music. Advertising may play a role, as may new business models such as subscriptions to electronic distributions. We may even find that artists can deal directly with consumers via the Internet, bypassing the need for the large record companies. Innovative industry leaders will embrace the new models and increase their chance for survivability and success. Others will fight and increase the odds of failure. And all through this, only one thing will remain certain — dramatic and fundamental change.

Article 76: The Most Powerful Internet Metric of All

March 6, 2000:

If you are running a Web business and can only focus on one metric, what should it be? By a landslide, the answer is conversion rate.

“Once in a while

You get shown the light

In the strangest of places

If you look at it right”

— Grateful Dead

If Archimedes were alive today, he likely would be working for an Internet company (isn't everyone?) and be focused on finding a highly leveraged way to do things better. For those of you who don't know, Archimedes was a Greek inventor born in 287 B.C. who is accredited with inventing the lever and the pulley. The reason these tools are relevant is that both give the user the ability to multiply the force exerted through the tool to the object to be moved. Using a lever, for example, a human can move a boulder or lift a car engine; both would be impossible without the leverage of the tool.

When analyzing an Internet business, there is a single metric, or tool, that represents a leveraged power similar to that of the lever or pulley. This metric, conversion rate, measures the number of visitors who come to a particular Web site within a particular period divided into the number of people who take action on that site (purchase, register and so on). Though this number may seem rudimentary or simplistic, a deeper analysis will reveal that conversion rate measures many aspects of a Web site, and that a strong conversion rate offers true leverage to the site owner. Archimedes would be proud.

Let's begin with some basic math to highlight the power of conversion rate. To give a broad sense of perspective, average conversion rates are in the 3 percent to 5 percent range; below 2 percent is considered poor; and 10 percent and above is awesome. This means that if one in 10 visitors to your site ends up transacting, you are doing an amazing job. Let's assume you spend \$10,000 to drive 5,000 people to your site, and your conversion rate is 2 percent. This means that 100 transactions cost you \$10,000, or \$100 per transaction. Now let's assume your conversion rate rises to 4 percent. The same \$10,000 buys you 200 transactions at a cost of \$50 per transaction. An 8 percent rate gives you 400 transactions at a cost of \$25 per transaction. As

conversion rate goes up, revenue rises while marketing costs as a percentage of sales fall – that's leverage.

Yet there is more to the power of conversion rate than numbers. It also reflects the many qualitative aspects of a Web site. Consider these five important elements of an effective Web site, all of which affect conversion rate:

User Interface: Sites that are easy to use have high conversion rates. The contrast is also true: Sites that are confusing, where it's not obvious to the user how to proceed, have horrible conversion rates. If your site requires a how-to manual, you have failed on this one, as users will simply give up.

Performance: Sites that are extremely slow, or those that exhibit errors or time-outs, will always have low conversion rates. No magic here—customers simply will not tolerate poorly performing or buggy sites. This leads to abandonment, which leads to lower conversion rates.

Convenience: Some users want to get in and out as fast as possible. These frequent users value convenient sites, and frequent users drive up conversion rates. Perhaps the best example of a convenience feature is Amazon's "one-click" service, in which a user finds a book or product, presses one button, and waits for the order. All other information (username, address, credit card) is automatically filled in from a previous registration. Convenience unquestionably enhances conversion rate.

Effective Advertising: It is one thing to have clever advertising and another to have effective advertising. People will click on clever ads but may not have an incentive to purchase or interest in buying once they arrive at your site. Visitors driven by these ads will have high click-through rates (CTRs) but low conversion rates. Conversely, ads that properly identify and entice customers in the right demographic that are poised to purchase will have extremely high conversion rates. The goal is to purchase, not to distract.

Word of Mouth: Almost everyone will agree that word of mouth advertising, where one customer tells another about a site or product, is the most powerful and cheapest form of advertising. Such referred customers have a high conversion rate, and therefore the blended conversion rate rises as word of mouth awareness rises. Recognizing further leverage, sites with

good user interfaces that are fast, convenient and have great customer service are much more likely to capture one's attention and therefore be mentioned via word of mouth. Success begets success.

No other single metric captures so many aspects of a high-quality Web site in a single number. Some people focus on advertising CTRs, or cost-per-lead, but these numbers are inconclusive. As they say, you can bring a horse to water, but you can't make it drink. It's easier to advertise effectively for a Web site with a great conversion rate than to effectively convert a customer who happens to have viewed an interesting ad. This is because conversion rate incorporates the total user experience, and advertising metrics alone do not.

Are there any problems with conversion rates? There are a few, but nothing that should preclude you from making this the No. 1 metric in your company. First, keep in mind that conversion rates for new customers are different than those for returning customers (which are much higher). Watch them both, as well as the blended rate. Second, remember that seasonality affects conversion. Most retailers saw conversion rates double during the Christmas season as determined shoppers went online. Lastly, keep an eye on profitability. Anyone can drive conversion by cutting price, but this customer relationship is temporary (also known as renting customers).

Any serious company on the Internet should have an absolute awareness of conversion rate. Small gains on low conversion rates can have unbelievably powerful effects on a company's performance. What's more, focusing on conversion rate will help improve all elements of a company's business, including performance, convenience, customer service, advertising effectiveness and word of mouth advertising as a percentage of sales. Always be afraid of one thing: employees who fail to embrace this powerful measure.

October 18, 1999:

“One shaft of light that shows the way

No mortal man can win this day

It’s a kind of magic”

— Queen

I once had the unique opportunity to hear Bill Gates, certainly one of the smartest and most successful men alive, describe other people he admired. Topping the list was his Seattle friend Craig McCaw. When asked to describe why, Gates pointed out that McCaw had convinced investors in not one, but two industries to pay attention to proxy valuations as opposed to traditional valuation metrics. In other words, McCaw convinced analysts and investors alike that valuation tools such as price-earnings and price-cash flow were flawed when evaluating early-stage infrastructure plays. As alternatives, he offered up new metrics such as “homes passed” and “POPs.” Don’t look at this, look at that.

Why is instituting proxy valuations a stroke of genius? As early stage infrastructure companies use tons of capital, investors would have a hard time awarding high valuations to companies with huge losses based solely on earnings-based investment metrics. Rather than settle for second best, the early executives in both of these industries created new metrics based on more measurable data by which to judge the valuation of these companies. So even though these companies may have been hemorrhaging cash, investors could now take comfort that a cable franchise was worth \$2,000 per home passed, or that a wireless company was worth \$30 per POP (percentage of population).

Most people view investment consideration as a bilateral relationship in which the investor gathers as much data as he or she can about a particular investment and then judges that data to make an investment decision. In this simple framework, investors look at data, and executives try to deliver better data—i.e., increase earnings, revenue, and cash flow. However, this simple model ignores the fact that the executive could instead choose to change the investor's consideration process. Once again, don't look here, look over there. Why worry about earnings when you could instead convince the world to value your company based on the number of people that live in your service area?

Historically, proxy valuations have helped investors become overly optimistic. Consider the following quote from a 1997 speech by then chairman of the Federal Communications Commission, Reed Hundt: "As the wireless industry goes far beyond its current dimensions, Wall Street analysts are going to have to think about valuation methods. The 'per POP' system served its purposes during the salad days of cellular, when we were green of years. But it's not how Wall Street generally values firms in markets that have the competition coming in to wireless. And I think the per-POP valuation may already be dragging down wireless stocks."

So are proxies good or bad? The answer to this question depends on who you are. From a societal view, one could argue that they are good, as they facilitate the acquisition of capital that is necessary to build capital-intensive infrastructures like wireless stations and cable plants. That said, there are certainly investors who invested at the height of the proxy usage who have ill feelings about such notions. And there are others who invested early that perhaps bailed as they saw the proxy begin to strain.

The notion that an executive could influence the investment decision process as opposed to simply the performance of his particular company is particularly fitting when looking at today's highly valued Internet stocks. As most companies are losing money, traditional valuation tools have been rendered useless. In addition, the public markets are quite eager to accept companies at an earlier and earlier stage in terms of both revenue and earnings. The average time from venture capital investment to the year of an IPO has dropped from 6.5 years in 1995 to about 2.5 years in 1999. We even have begun to see an increase in Internet companies going public with little or no revenues (Stamps.com, for example). It's hard to have even a proxy when your company has no revenues or customers.

As public market investors begin to evaluate younger and younger companies, their valuation tools become limited to subjective notions such as quality of the team and the uniqueness and boldness of the idea. In other words, if there isn't enough proof that a business already exists,

then they must make a judgment as to whether one will. This typically boils down to the executive's ability to convince the investor community that (1) the opportunity exists, and (2) his or her company will execute against this opportunity. Like it or not, the skill we are talking about here is storytelling, and just as with proxy valuations, the executive is now trying to influence the consideration of the investor.

In today's unique Internet business environment, the art of storytelling has taken on increasing importance. Because of "network effect" and "increasing return" phenomena, many people believe that first movers (or at least companies that are first to reach a significant scale) will most likely take the lion's share of an Internet market. So far, in portals, auctions, and book and toy e-tailers, this has proven to be the case. The company that is most likely to move first is most likely the one with the most money, and the company with the most money is the one that has had the proper ability to sell its story to the investment community.

This notion that the ability to tell a good story is a critical aspect of success is likely troubling to many, especially if you replace the term "storytelling" with the more derogatory term "hype." To keep things in perspective, however, you must recognize the enormous likelihood for self-fulfilling prophecies. Whoever grabs early mind share typically secures strong financing. Strong financing adds to the story, which then may help enable a killer partnership—once again adding to the story. The press writes about the partnership, which adds even more fuel to an already increasing leadership position. Finally, consumers read about this unique leadership company and are influenced to use the product or service.

Consider the case of Priceline.com. When the company first filed to go public, it reported 1998 sales of \$35 million with \$115 million in losses and negative gross margins. It's difficult to make that up in volume. What Priceline did have was an extremely convincing spokesman, Jay Walker, who fundamentally believed that his new idea would bear fruit as soon as the company hit its stride. Fast-forward to Q2 of 1999, when the company reported \$111 million in revenue with \$10 million in gross profit and only \$15 million in losses (a \$60 million annual loss run rate). While the company is far from profitable, it has made significant progress relative to 1998, which supports the notion that as the model grows, it will have scale advantages.

Will Priceline ever be profitable? It is hard to say, but Q2 numbers seem to imply that things are moving in the right direction. What is more important is recognizing that the ability of management to convince others (including investors) to come along, even against a backdrop of huge losses, has been critical to the company's progress. As the company raised money and gained influence, it signed up more airline partners. As the partners came on board, investors

were more excited, which made capital-raising easier. As the company's stock soared, the press commented, and consumers gained more awareness of the model, leading to more business.

As another example, let's take a closer look at Healtheon. The first line of the prospectus summary for Healtheon's IPO stated, "Healtheon is pioneering the use of the Internet to simplify workflow, decrease costs, and improve the quality of patient care throughout the health care industry." That's a big idea. Health care is unbelievable bureaucratic and paper-laden, and any company that could solve this problem would be unquestionably valuable. However, buried in the same prospectus was the following note: "Healtheon's limited revenue to date has been derived primarily from proprietary non-Internet network services..." The story involved the Internet—the company's revenue did not. To focus on this detail, however, is to ignore the importance of storytelling. Healtheon did not go public based on what it was, but based on what it would become.

It is important to note that these ideas are not new. Books like Richard Brodie's *Virus of the Mind* and Robert Cialdini's *Influence* do a great job of highlighting the importance of information warfare in corporate success (interestingly, Brodie used to work for Bill Gates). Despite this precedent, I still find people are uncomfortable at the notion that good storytelling, the ability to influence and convince through the written and spoken word, is a critical component of start-up success. Rest assured that venture capitalists are hot in pursuit of an entrepreneur or CEO with a thespian bent.

This does not mean to imply that other business principles are not important. Great management, good execution, strategic decision-making, and sound business models—all these things still matter in a big way. However, with the public market acting more and more like venture capitalists, the art of storytelling takes on increasing importance on a relative scale. Pay attention to the man behind the curtain.

July 12, 1999:

“You say you got a real solution Well you know We’d all love to see the plan You ask me for a contribution Well you know We’re doing what we can” -Revolution, The Beatles

Perhaps the most powerful movement in the software industry today is the continuing rise of “open-source” development—producing such successful applications such as the Linux OS and the Apache Web Server. Open source is a seemingly impossible development methodology where source code is developed and debugged by not one company or even one group of individuals, but rather by a fragmented and distributed workforce simultaneously working toward a common goal. Believe it or not, these individuals are likely to have never met in person, and provide most of their efforts on a volunteer basis. Lastly, one caveat of the open source movement is that source code must be freely distributed to all customers and competitors alike.

Can this be real? Is it a fad? Can distributed volunteer developers really produce code that is reliable? Can open source impact the software industry at large? How can business models exist if all the code is exposed for free? Could open source impact my business? The answers to these questions may be surprising to you. What’s more, understanding the open-source movement may be important to all business executives, as the lessons learned may have applicability for every industry, particularly as we move toward an increasingly bit-driven economy. With that as a backdrop, we will now introduce six things that every business person should know about open source.

Open source works. If it seems unreasonable to believe that distributed volunteers can produce robust and complex software applications, then get over it. Open source works, and there is an increasing base of users for all types of open-source code—from operating systems to compilers to applications. This movement, which began many years ago, thrives on leverage. By distributing a task across a large group of “users,” the project as a whole can move faster than if the project were controlled by a single entity. Most successful open-source software projects rely more on distributed testers and debuggers than actual developers, but the result is nonetheless amazing. Previous “top-down” attempts to organize a group of like-minded engineers (such as Taligent or the PowerPC microprocessor) have a stigma of failure. However, the loosely affiliated, bottoms-up, organic model of open source appears to be working. Last October, a leaked internal Microsoft document (now known broadly as the “Halloween”

document) outlined the strengths of open-source model and offered indirect credibility to the movement.

Open-source development can produce business-quality code. The most obvious testament to the business success of open-source code is the unwavering dominance of the Apache Web Server. According to Netcraft, Apache runs on more than 57% of the world's Web sites, and has gained consistent market share, even during Microsoft's aggressive attack on Netscape. The leading open-source operating system, Linux, is also gaining steam. According to Red Hat Software, there were 12 million Linux users at the end of 1998. Perhaps more importantly, IDC believes that Linux is now running on 17% of all servers, most impressive as the server market is considered more technically complex than the desktop market. Open-source adherents believe that distributed testing actually leads to more reliable code than could ever be achieved within a single organization. Search the Internet for articles on Linux, and you will find many users that believe that open-source code is in fact "more reliable" than Microsoft's Windows NT. And while Microsoft will vehemently disagree with this view, the fact that the argument exists at all is a testament to the obvious legitimacy of open-source code.

Open-source business models are emerging. Believe it or not, it turns out that you can make money of freely available software code. Perhaps the best example of this is Red Hat Software, a company that packages, distributes, supports, and more importantly brands a version of the Linux OS. As with any software product, users value consistency and trust, and Red Hat has done a wonderful job of packaging and distributing the Linux OS. Sure, you can download the code for free, but for many users, \$50 is a reasonable fee for code that is easy to install, comes complete with documentation, and comes with the support guarantee of Red Hat. As a testament to the importance of Linux, Compaq, Oracle, Novell, and Dell all recently invested in Red Hat, and each company entered into an agreement to either distribute or build upon the Red Hat OS. Efforts are now underway to "commercialize" other open-source software code such as the Sendmail, Inc's move into open source email server space.

Open source is a tough competitor. Competing with open source is a bit like fighting the invisible swordsman. For instance, in the case of Apache, there is no company as the code is maintained by a not-for-profit organization known as the Apache Group. What's more, the software is available for free, which eliminates price as a competitive weapon. The pricing tricks used by Microsoft to attack Netscape are less effective against an already free solution. And while Microsoft has now begun to attack Linux as well as the legitimacy of the open-source model, they have painted themselves in a contradictory corner by holding up the success of Linux as a competitive threat to be considered by the DOJ. As variants of the open source model

proliferate, more companies will be forced to adapt to this faceless and distributed competitive force.

Open-source models are emerging for content. While the open-source elitist will disagree with the specifics of the analogy, we are now seeing open-source models emerge for content in addition to software. Unquestionably, the most successful example is Netscape's "Open Directory" initiative. Once dubbed NewHoo, this competitive directory listing to Yahoo is built by an army of distributed volunteers, much in the same way that Apache is built by distributed programmers. Additionally, the results of the directory are freely available on the Web for anyone to use, just as with open-source code. Open Directory proponents argue that no one company's staff will be able to compete with its distributed volunteer base. In addition, the more sites that actually use the directory the more volunteer "editors" that will likely be sucked into the project. It is highly likely that the distributed open-source content model will be replicated in other fields, and as with open-source software, it may prove to be an agile competitor.

Open source as a defensive weapon. At the end of the day, open source may prove to be more of a defensive weapon than an offensive one. Consider the example of Netscape's Open Directory project. By organizing and freely distributing the directory data, Netscape may have neutralized the directory as a competitive differentiator for portal sites. We may, in fact, see more and more companies "donate" certain intellectual property to the open-source community in an effort to commoditize a particular aspect of competition. As another example, it may be in AOL's best interest to make sure that Netscape's browser code is fully embraced and absorbed by the open-source movement. No single company is likely to challenge Microsoft's increasingly dominant market share in browsers; however, a freely available browser that can be customized by ISPs, software vendors, and portals alike may actually gain momentum. With the rising awareness of the potential for Microsoft to use the client as a control point for access to the Internet, a true open-source browser initiative may be just what the doctor ordered.

Open source as a production model should be appreciated in the same light as Henry Ford's assembly line or Demming's Just-In-Time manufacturing process. By taking advantage of the electronic communication medium of the Internet as well as the distributed skills of its volunteers, the open-source community has uncovered a leveraged development methodology that is faster and produces more reliable code than traditional internal development. You can pan it, doubt it, or ignore it, but you are unlikely to stop it. Open source is here to stay.

Article 79: The Continued Evolution of Advertising or How To Succeed in Advertising Part II

October 16, 1998:

"You know I don't believe you when you say that you don't need me." -Human League, Don't You Want Me?

Six months ago, I penned an article titled "How to Succeed in Advertising," where I argued that the Internet was going to have a major impact on how advertisements are bought and sold. I argued that the Internet would lead to a shift to performance based advertising, as each advertiser could measure the actual performance of each and every ad. On the Internet, advertisers can measure not only click-through ratios (the number of people that click on an ad divided by the number of impressions) but also sell-through (actual customers divided by the number of impressions). The supposition was that if an advertiser could measure the exact response to an ad, why would they settle for under-performance?

This article generated a completely bi-polar response. The "content" providers lashed out with a fiery tongue. The standard response, which was elegant in its simplicity, was "you couldn't be more wrong." These artisans were quick to point out that brand, or image, advertising could not be measured using these overly analytical direct marketing techniques. Furthermore, they insisted, the public needs both *Sienfeld* and the Superbowl. And it's brand advertising that allows them to exist.

On the other pole, the people that actually pay for the ads bombarded me with praise. "We knew this day would come," they chanted, "why should we pay for something that doesn't work!" The buyers of ads are much more supportive of this increased scrutiny than the sellers of ads. Looking towards the future, my analytical mind favors the argument of the buyers. It's not simply that they control the dollars, or that they were more supportive of my viewpoint. Rather,

it's because the continued evolution of technology puts tremendous pressure on traditional impression based advertising.

Internet ad buyers are learning at a tremendous pace. Six-months ago, they began cross-checking their ad expenditures by analyzing simple click-through ratios. During renegotiations with ad-based sites they would point out that dollars per impressions did not matter, but rather dollars per click-through. Some sites might have many impressions, but few viewers that bothered to actually respond to the ad. On the other hand, some sites with specific context have much higher click-through rates. Ad buyers call these sites "performers," and any smart ad buyer can recite their performers and non-performers off the tip of their tongue.

Of course, being the adaptive creatures that they are, many sites tried to game the system. They would artificially inflate their impressions using technology that "spidered" the sites at night. And as the game shifted to click-throughs, the mythical consumers began to click on the ads. However, the buyers continue to evolve as well, and now they are looking beyond the click-through and analyzing the life time behavior of customers that click over from a particular site. These e-merchants can now tell you not only which advertisers produce click-throughs, but also whether those customers actually buy, how much they buy, and what are the margins on the things they buy. This is surely information an ad sales representative never wanted to see.

Many Silicon Valley based companies are jumping in to help arm these ad buyers with detailed analytical software. Companies such as AdKnowledge, Personify, and Epiphany are developing market analysis packages, which help marketers rationalize their ad expenditures across not only the Internet, but across other media as well. This technology will result in much more rational behavior on the part of ad buyer. Privacy advocates and ad sales reps will be equally displeased with the depth of information in these customer-by-customer reports.

More radical shifts are also underway. Over the next sixth-months, ReplayTV and Tivo will hit the market with a brand new consumer electronics device that puts the control of television in the hands of the user. These "digital VCRs" consist of a few integrated circuits, a power supply, and a massive multi-gigabyte hard drive. Advances in hard drive technology, which adhere to Moore's law, now allow us to store hours and hours of high-quality video on a device that costs less than \$1000. Two or three years out, these devices may hold 100 hours or more, and cost less than today's tape-based VCRs.

The Digital VCR will render the traditional VCRs obsolete. It will be much easier to use, and will record shows proactively that it anticipates the user wants to see. If you are a San Francisco Giants fan, the device will proactively record every Giants game. Then you can come home and watch it when it makes sense for you. And you can even skip straight to the 9th inning, if that's how you get your kicks. Type into the device a list of your favorite actors and directors, and magically over time, the Digital VCR will become a repository of your favorite films. Pick your favorite weekly shows, and watch them all on a roll on the weekend – no problem.

Of course, you could theoretically do this today with VCR tapes, but these things are hard to use and hard to program. This will not be the case with these new devices. They will have access to data about the programs that you want to watch and will likely suggest a few that you didn't know about. Over time, excess cable and satellite bandwidth (such as in the middle of the night) will be used to push programs down to the device for later viewing. The concept of limitless channels will finally be a reality.

Why does this affect advertising? Television advertisers are used to a world of synchronous viewing. Shows belong in time slots, and people watch what is on at that particular time. The digital VCR allows us to watch things on our own time, in other words, asynchronously. Ad sales are typically based on Nielsen ratings, which measure how many people are watching a show at one particular time. Today's stellar Nielsen ratings were once considered questionable, and there is no reason why this trend will not continue. The one-to-one world of the Internet will soon find its way to television.

Some people respond to this by suggesting that ad sales will simply shift to something known as an interstitial. This is an ad that is "inserted" in the asynchronous program that will be watched on the viewer's own time. While this is possible, it ignores the fact that the viewer now has a choice, and that these devices will allow the content provider to push content directly to the end-user, potentially on a pay-per-view basis. If the consumer is willing to pay \$5 to watch *Sienfeld* commercial free, why should they be denied?

Pay-per-views limited success to date has been caused by the lack of an easy to use interface, and not by a lack of demand. Consider what is happening on DirecTV, a wonderful product with a great user interface and four million raving customers. Pay-per-view is wildly successful on DirecTV, and we are not talking just about movies. The NFL, NBA, and NHL all have packages that they can sell directly to the consumer. Why should the leagues involve the networks if they can get directly to the consumer? Why pay for the overhead?

There is a more interesting example found on DirecTV's channel 199. The popular soap opera, *Days of Our Lives*, is shown twenty-four hours a day, seven days a week. It costs \$1.50 per episode, it is quite successful, and best of all — it's commercial free. This is the future of television, and not everyone is pleased. You can start with the local NBC affiliates who see their best content slipping out the door beneath them. But the advertisers can't be pleased either. The soap opera was created to sell products, and something's not right in Clarksville.

This apocalyptic viewpoint is clearly overstated. Network television will continue to thrive for years to come, and it will likely be some time before we see a commercial-free Superbowl. Moreover, consumer products companies will continue to pay millions of dollars to hawk goods on national television. However, underneath it all, a shift is happening. Consumers are increasingly getting what they want, advertisers are beginning to calculate what they want, and the companies that make a living wasting your time may need to find a new gig.

Article 80: Internet Investors: Beware of the Proxy Valuation

August 17, 1998:

"If you can't be with the one you love, honey, love the one you're with." —Stephen Stills, *Love the One You're With*

As the market begins to grapple with the lingering effects of a seven year bull market, the financial crisis in Asia, and the undeniable shortfall in second quarter earnings, the ground underneath our feet just doesn't seem as strong as it once did. For those of you investing in Internet stocks, gauging the solidity of the earth below is even more difficult given the daunting distance from the bottom of your shoes to the actual surface of the earth. Perhaps everything is

fine...At presstime, the Internet stocks are in fact acting quite resilient. However, if recent market skittishness has caused you to reassess, make sure that you're not overly exposed to the risks of the "proxy" valuation.

Any financial academician will tell you that the only proper way to value a stock is to predict the long-term cash flows of a company, discount those cash flows back to the future, and then divide by the number of shares. As this is much easier said than done, many practitioners often shortcut the process using tools that serve as a "good enough" proxy for cash flow. One good example is the price to earnings ratio. It's not a perfect measure of cash flow, and there are many loopholes between the two, but as John Maynard Keynes said "I would rather be vaguely right, than precisely wrong."

In certain emerging markets, particularly ones that are capital intensive, the cost of market entry is so high that even market leaders lose money for several years before eventually turning profitable. This presents a bit of a dilemma for the typical market investor as his/her standard proxy tools are irrelevant due to the fact that the variables used for computing valuation — earnings, earnings growth, cash flow per share — may all be nonexistent. Rather than throw in the towel, innovative investors must turn to new proxies based upon variables that are indeed measurable. Simply make some assumptions that tie the proxy back to standard valuation tools and you are on your way.

The cable television and cellular telephone industries owe a great deal to the proxy valuation. The cash flow required to build these communication infrastructures was so high that most of the market players performed quite poorly when evaluated using standard valuation tools. However, many optimistic investors "knew" that these companies would eventually reach economies of scale that would then lead to profitability. Therefore, with no earnings to measure, these investors grabbed hold of any variable they could.

In the cable television era, the variable that was most commonly used was "homes passed". Divide the market value of the average cable company by the average number of homes who could potentially subscribe to the service to calculate the value per home-passed. This proved to be a useful tool for valuing cable franchises, and you could always rationalize the value by calculating a rough estimate of what the lifetime value of a single customer should actually be. Other variables that proved popular in both cable and cellular were "price-per-sub (subscriber)" and Earnings before Interest, Taxes, Depreciation, and Amortization — also known as EBITDA (more on this later).

The Internet is currently going through a similar stage. Investors, who are rightfully optimistic about the future and potential of the Internet, are anxious to invest in companies who are clearly many years away from profitability (perhaps many, many years). Not to be shut-out for lack of a valuation tool, these investors have also created proxies that are tied to the variables that we happen to be able to measure. Some popular ones include market capitalization per subscriber, market cap-to-subscriber, market cap-per-unique visitor, market cap-to-page view, and the most popular of all — market cap-to-revenues.

While abstract proxy valuation tools are indeed risky, there is no reason to belittle those that use them. Keep in mind that while these tools are inaccurate, they still offer a distinct advantage over the alternative of holding one's finger in the air. Additionally, the advanced risk that is apparent in these situations is typically offset by a greater potential upside. Columbus would have never discovered America if he had waited around for someone to invent the Global Positioning Satellite. Many investors in both the cable and cellular industries were handsomely rewarded for betting big and betting early, and the same reality has already been proven true on the Internet.

However, as emerging markets begin to mature, the dangers of proxy valuation become more apparent. These proxy risks can take several forms. First consider symmetry risk which flows from the fact that not all "variables" are created equal. When you base your valuation on cash flows, it is safe to assume that a dollar of cash at one company is equal to a dollar of cash at another. However, as we move down the proxy continuum to earnings, and subscribers, and visitors, and page views, the likelihood that we are still comparing apples to apples diminishes. Is an E-Trade customer worth the same as a CDNow customer? Does a page view on Yahoo equal a page view on GeoCities? It's hard to say.

A second risk is assumption risk. After proxy valuations begin to stick, we begin to treat them as fact. For instance, we might divide companies' market capitalization by its customer base and decide that a customer is worth \$X. However, we should really take a look at the cash flows that are likely to come from that customer and then determine if the overall valuation makes sense. Becoming too comfortable with the proxy and its assumptions can be dangerous. For many years, cable investors were convinced that EBITDA was a great proxy valuation and that cable companies should be worth as much as 15-20 times EBITDA. Unfortunately, it turned out that ignoring depreciation was a major mistake, since cable systems need constant upgrades. The proxy was poor, and those that came to believe in it eventually suffered.

Another reason to be skeptical of proxy valuations is arbitrage. If Wall Street comes to believe that customers, or visitors, or page views, or even revenues are uniquely valuable (regardless of profitability), then entrepreneurs are likely to rush to market with companies that can achieve these targets quite handily, but may have little chance at producing real value in terms of cash flow. With no focus on costs, it is easy to reach non-financial targets. This is the great thing about cash flow-based valuation, it's hard to sweep costs under the rug.

To highlight this point, consider the absurd example of a Web-based company whose core service is to sell dollars for \$0.85 each. This company could obviously achieve record visitors and page views at its Web Site. Revenue growth would easily set records, and it is quite conceivable that sales could reach into the billions within the first few quarters of operation. Apply even the most conservative Internet price-to-revenue multiple to this franchise and we are talking about a multi-billion dollar market cap. Perhaps you are questioning how this high-flying company will ever turn profitable? You are obviously forgetting that with traffic like this, the potential for advertising and targeting will be tremendous!

Clearly, there are a few Internet companies that do not deserve this type of ridicule. Yahoo and E-Trade have already proven profitability, and many investors are quite confident that Amazon can achieve similar results over time. Additionally, even younger companies such as Ebay, a San Jose auction house, are achieving record revenue growth without compromising profitability. However, these are the exceptions. Investors should increasingly evaluate the potential long-term profitability of Internet businesses before they invest. If the market continues to slip, optimism will be replaced with skepticism, and the companies that are most dependent on proxies will be the ones that fall furthest.

On the margin, it certainly appears that arbitrage is in full swing. We are witnessing an increase in companies that file for IPO's with losses that are as large as (if not larger than) revenues. Recognize that this means that expenses are over twice that of revenues—economics that are actually worse than my company that sells dollars at a discount. Additionally, it is rumored that certain Internet CFOs are pushing investor's to look at EBITDAM. The M represents marketing, and is an attempt to get Wall Street to ignore what has become the single biggest expenditure for Internet startups. This only makes sense if you truly believe that marketing costs will one day go away, which should be considered unlikely. Perhaps we should make it easier and skip straight to EBE (Earnings Before Expenses)... but that looks suspiciously similar to price-to-revenues, doesn't it?

Article 81: Standards: Open For Business

May 25, 1998:

“He’s different and he don’t care who knows it. Somethin’ about him not the same. He’s different and that’s how it goes. And he’s not gonna play your gosh darn game.” —Randy Newman, “I’m Different”

If you pay attention to high-technology business markets, you have undoubtedly noticed the frequent usage of “open standards” as not only a product strategy, but also as a marketing message and political mantra. Leading high-tech executives such as Andy Grove, John Chambers, Jim Barksdale, Larry Ellison, and Scott McNealy all wax poetic about their “support for” and “adherence to” open standards.

Of course, they are not the only supporters. Executives of small start-ups, magazine columnists, industry analysts, and even customers such as CIOs and MIS managers express their “loyalty to” and fundamental “belief in” open standards. With all this support, adherence, loyalty, and belief, you might think that discussing open standards would be a short-lived exercise—kind of like discussing the force of gravity or a human’s need for oxygen.

We all know that this is not the case. While everyone voices support for “openness,” time and again we see executives and analysts quibbling over the true definition of “open” and whether this company or that company is really adhering to the standard. If we all agree that standards are a good thing, why is there so much dissent? When I hear executives announce support for open standards, I am left with an innate empty feeling. It’s not that I don’t trust these people; it’s just that I believe supporting openness as a fundamental philosophy runs directly counter to the basic objective of most businesses: differentiation.

How do you differentiate your product if your core mission is to ensure that your product operates exactly as your competition? The bottom line is that you don't, and this paradox is behind most of the confusion and rhetoric regarding open standards.

Principle 1: Open standards are a good thing.

Make no mistake about it, open standards have a huge positive influence on technology markets. First, they speed market evolution. Since there is a high need for interoperability, guaranteeing that every printer works with every PC seriously reduces the R&D tasks for both the printer company and the PC maker. This allows both companies to get products to market faster, and reduces costs. With standard, or open, interfaces, the design requirements for a printer or PC are greatly reduced. The customer also benefits through greater flexibility. If you buy a printer from one vendor, and then upgrade your PC, it is nice to know ahead of time that you won't also need to buy a new printer. This flexibility also helps protect the customer from becoming overly reliant on a single brand. If you buy a cellular phone from one network service provider, you can feel safe that the phone will work on its competitor's network, such that you are not "locked in" to a single solution.

Principle 2: Openness is a product-specific interoperability strategy.

It is important to recognize open standards for what they are. Companies choose to support open standards on a product-by-product basis. When it makes sense for a company to embrace openness they will; when it does not, they won't. This may sound trite, but many people try to position openness as a religion, business strategy, or corporate mission. This is going too far. It would be virtually impossible for a company to adhere to a policy of openness in everything it does. Would you consult a standards committee every time you made a corporate decision? Would you post the design plans for your next significant product on the Internet for all to see, including your competitors? Do you invite outsiders to your internal meetings to ensure compliance? Sure, Sony lost a great deal of money when the proprietary Betamax failed to gain market share against the open VHS. However, other companies have grabbed significant share and market capitalization by achieving success with proprietary design. Sometimes it makes sense, and sometimes it doesn't. Intel supports open standards on high-speed xDSL technology but works diligently to patent-protect its microprocessor spin-out. Is Intel open?

Principle 3: The “open” buzzword is overused.

Undoubtedly, many high-tech executives are guilty of abusing the “open” term, either to position their company or to discredit their competition. We need to recognize that openness is really a position along a continuum and not an absolute way of life. We can choose to be completely open, or completely proprietary, but there is a huge gray area in between. You likely have heard the phrase, “We will support open standards, but innovate on top of them.” Is this open? It’s hard to say. The fact of the matter is that open is non-definitive, and therefore its use serves more to confuse than to clarify. I think executives should be limited to stating support for specific standards, and should be dissuaded from stating that a product or product category is inherently “open” in and of itself. “This product supports standard PCMCIA interfaces” is a more sincere statement than “this product is open.”

Principle 4: We must recognize that companies need to differentiate.

In a very real sense, open is a euphemism for commodity. Companies continually seek to differentiate their products, and it is hard to differentiate a product that is supposed to behave exactly like the competition’s. There are, in fact, markets that are close to 100 percent open, such as DRAMs and PCs. But in these more commodity-like fields, companies differentiate themselves more with production or distribution prowess and less with innovation. In markets that are fundamentally based on intellectual property, like software, production and distribution are almost entirely frictionless. Theoretically, you could have a better sales force or better service and support, but these are not typically assets that small innovative companies possess. This means that competing with a completely “open” strategy would offer very little room for differentiation, and there is almost a necessity to have some closed proprietary advantage. It is difficult to criticize companies for trying to innovate in a proprietary manner. After all, survival is instinctive.

Principle 5: It is very difficult to have open standards for complex products.

For extremely complex products, it is simply too hard to coordinate activities across multiple providers and to ensure that all of the products will behave precisely as expected. This is really just a problem of numbers. As you add individual standards to a particular product, the number of potential permutations, or “states,” that the product could exhibit rises exponentially. Therefore, it is very difficult to have an open standard for operating systems or microprocessors or Java virtual machines or even browsers. This is why most Webmasters have to write browser-

specific code to ensure that their sites behave as expected in every environment. It is easy to have open standards for a PC mouse. It is difficult to have open standards for an electron microscope. This is not a political statement, but a fundamental reality.

Principle 6: Open standards favor larger companies.

It is almost ironic that the start-up community in Silicon Valley was the primary catalyst for the current “whirlwind” surrounding open standards. This is because open standards primarily favor the large company with entrenched market share. The prevailing wisdom was that, by persuading the market to support open standards, the smaller company could be certain that no company could obtain market ownership based on proprietary technology. However, the tragic flaw in this theory was the failure to recognize that large incumbents could use open standards to protect themselves from smaller innovative competitors. If a small company gains market share with a new proprietary product, the incumbent can simply argue that, with a product this important, the industry should really have an open standard. Once the start-up gives in and supports a standard (with the only other choice being losing the support of an important market leader), the company must then differentiate based on sales, marketing, service, and support. Yet, these are the assets of the larger entrenched companies. Open standards allow large entrenched companies to mitigate the innovation and market share leads of hot young start-ups and easily move into their markets. Silicon Valley created a sword that is most often used on itself.

Principle 7: In an open world, new companies need new strategies.

Recognizing the true realities of an open world, smaller companies must seek new strategies if they want to succeed. Unfortunately, the precedent of patent protection in the information technology world is quite weak, which serves to aggravate the new open paradox. Companies must now offer broader and richer product portfolios that are packaged as complete solutions instead of simple “protocols” or technologies. Let me give an example: I am very interested in investing in a company that leverages the Internet to change the education market. There is no shortage of companies that fit this bill, but most focus on the technological problem of distance learning, such as one-to-many streaming multimedia. The problem is that the protocols for this underlying technology are likely to be standardized and included in the underlying platform. Therefore, the education company that will most likely win is not the one with the best streaming technology, but rather the one that ignored this aspect of the problem and focused on something else. The trick is to find added value beyond the open protocol, such as

implementation of class-administration or enrollment features. The problem is that solving these problems is not as technically sexy, and that is a hard lesson for the entrepreneur to understand.

Article 82: How to Succeed in Advertising

April 20, 1998:

“If you’re makin’ me wait, if you’re leadin’ me on, I need to know” -Tom Petty, I Need to Know

Over the next few years, there is likely to be a huge rise in performance-based advertising on the Internet. Historically, Internet ads have been sold on an impression-based metric known as “CPM”. CPM, which stands for cost per thousand, represents how much an advertiser will pay to get in front of a thousand individual eyeballs. Some have suggested that price per click-through is a better model, but why stop there? The proper model is performance-based advertising. In this world, an advertiser will only pay for an ad when and if the referral leads to an actual customer sale. Not impressions, not click-throughs, but honest to goodness revenues.

To be sure, this idea is not new. Businesses already accustomed to “origination fees” have already flourished on the Web. This includes everything from long distance, to credit cards, to mortgages. In each of these cases, content-based sites help customers identify a personally appropriate credit card or mortgage, and the matchmaker is then paid a certain bounty for finding a customer. GetSmart (www.getsmart.com) is a great example of a business built around this concept. Affiliate programs are another form of success-based advertising. Amazon.com has no less than 35,000 affiliate sites that receive approximately 15% of sales on book sales that are directed to Amazon.

Another form of success-based ad models are pay-for-performance banner ads. Internet advertising service DoubleClick believes in this market and has launched an interesting initiative known as DoubleClick Direct. However, the general new media community has shied away from this market, with many executives dismissing the likelihood of adoption. I think the problem is that success based programs fall way too close to direct marketing on the marketing continuum. For most media types, comparing traditional impression based advertising to direct marketing is quite a bit like comparing Paris to Las Vegas. Performance based advertising would seemingly jeopardize the essence of the experience.

Despite this snobbish reluctance, I see four reasons why success based ads will flourish on the Web. The first and primary reason is that customers want it. With success based advertising, the advertiser can assure that his/her advertising programs are economically sound. You simply add the “bounty” fee to the cost of goods sold and you can predict the margin on each sale. This is simply not the case with traditional advertising. The model shifts the burden of evaluating the quality of each ad program to the content company. If an ad doesn’t have good responsiveness, the seller loses nothing, although the content company has used up inventory. Therefore, it is up to the content company to determine exactly which ads are likely to produce results. This shift of responsibility is quite palatable to the advertisers, and let us not forget the age old adage — the customer is always right.

The second reason to believe in this emergence can be found in the evolution of the last media revolution – cable television. If you watch one of the less popular shows on cable you will begin to notice an overwhelming amount of 1-800 ads. This is because these programs have excess inventory and the best way to maximize the revenue with respect to these programs is success-based ad programs. Want a Topsy Tail? Need a citrus slicer? Want to add Super-Hits of the Seventies to your music collection? Ever notice the plethora of 1-800 ads on the financial news network CNBC? And to highlight the issue of ad choice responsibility have you noticed how often CNBC plugs Evita Nelson’s MoneyLetter? That thing must be selling like hotcakes!

The third reason these programs will flourish is the rising quantity of unsold ad space on the Internet. In its most recent quarter, Internet bellwether Yahoo reported record revenues and earnings. Interestingly enough, page views actually grew faster than revenues. This results in lower and lower average revenue per page view, which is also known as the effective CPM. Internet advertising continues to grow at a healthy rate, however, an increasing number of pages remain unused with respect to advertising. Some suggest this inventory glut will lead to price erosion. I think that there is another cure in performance-based advertising. What better way to bring economic equilibrium to the ad market than to fill the marginal page view with a performance-based ad?

One unique aspect of success-based advertising is the opportunity for marketers and financiers to conduct a more thorough quantitative analysis. How much should you pay for a referenced customer? You might think this is an easy question. Simply treat the bounty-fee as an outsourced marketing expense. In this case you would be willing to pay the same percentage as your sales and marketing expense ratio. If you normally expect to spend 12% of sales on marketing then you would be willing to pay a 12% “sales-charge” to anyone that brings you a guaranteed sale. However, life on the Internet is not this simple, and many Internet retailers are willing to pay much more than this for a lead.

In markets like telecom, cable, and credit cards, where customers sign up to subscription services and churn is measurable, many companies treat such costs as “customer acquisition costs.” These expenditures, which are sometimes called origination fees, are compared not to the imminent sale price, but rather the lifetime value of the customer. The lifetime value of the customer is equal to the future cash flows (not revenue!) expected over the life cycle of the customer, discounted back by a reasonable discount rate. What we are really doing is treating the customer acquisition as an investment and the lifetime cash flows of the customer as the yield on that investment.

If you expect the customer to stay forever, you can simply treat the cash flow as perpetuity and divide the periodic cash flow by the discount rate to arrive at customer value. So let’s say that a telephone company expects to earn \$40 a month in revenue from a customer and \$6 a month in cash flow. If they can keep this customer for life, the value of that customer will be equal to \$72 divided by the discount rate. If we use 15% this equals \$480. Therefore, this telco might be interested in spending up to \$480 to acquire this customer, as any amount below this would be considered a value-creating investment.

Many Internet retailers are using this formula to justify expenditures on the Web. This may make sense, but you must be very careful with your math. In the above example we assumed 0% churn, which may not make sense for a CD store on the Web. You must also account for churn in the following way. Let’s say you expect to lose 5% of your customer base a year. With this model, the average life of a customer equals $1/0.05$ or 20 years. In this case, instead of using a perpetuity model you discount the life costs back over 20 years. For very low churns this has little effect (at 5% the \$480 above only falls to \$450). However, the value of the customer decreases exponentially as churn increases. At 10% churn this figure falls to \$361 and at 25% churn all the way to \$205. Internet retailers with little track record will have a hard time calculating churn, but a mistake could be quite costly.

Another problem presented to Internet retailers is that of repeat customers. Currently most affiliate programs pay for all customer leads, yet only new leads really make sense with the above model. In order to compensate for this, it is important to discount the approximated customer value by the percentage of new customers vis-à-vis old ones. For instance, a \$300 customer is only worth \$210 if 30% of the referrals are from repeat customers. As the Web matures, this percentage is likely to rise, which should push down the amount people are willing to pay for customer acquisition. One last concern may be efficiency of the Web itself. Price comparisons are very easy on the Web, which could lead to increasing competitiveness and lower profitability in the future.

I have heard stories that CD retailers are paying as much as \$40 for a customer lead. If we assume that the average consumer spends \$100 a year on CDs (at a given retailer), has a modest 10% churn, and produces a 10% cash flow margin, then this customer is worth about \$50. Of course this assumes that there are no repeat buyers. Throw in 25% repeat buyers and this falls to \$37.50 and below the magical \$40. So while the current success-based advertising expenditures may not be totally out of line, they are dangerously close to the edge.

Of course, one could even proclaim these fees as acceptable. If an Internet retailer can attract enough viewers, than they themselves may be able to become bounty hunters. Consider Amazon.com. With 2.5 million users and a firm understanding of user interests, Amazon is in a good position to produce leads for others. Looking for a book on surfing? Don't be surprised if Amazon offers to send you to a site that will sell you a surfboard or book a trip to Hawaii. Now what if Amazon can generate 5% of sales for each trip and surfboard sold. In this case, they might be willing to treat books as a loss leader and make it up on 100% gross margin referrals. Think about what affect this could have on the book business.

There is no question in my mind that success-based models will eventually rule on the Web. This is not to say that impression ads will go away, but this remarkably efficient advertising will increasingly serve a larger and larger portion of this powerful new medium. Every industry from product sales to complicated service providers (such as doctors and lawyers) will eventually use ad programs such as this on the Web. What's more, these programs could have very interesting affects on the competitiveness of each industry and potentially neighboring industries. Of course, if you extrapolate this vision forward you see a world that looks more like a flea market than Hollywood. Have you ever stepped onto a public beach outside a Mexican vacation resort? How do you say no dinero in Web speak?

Article 83: Backhoes Don't Obey Moore's Law: A Story of Convergence

October 21, 1996:

"I need you; like the flowers need the rain, you know, I need you, I need you." -America, I Need You

We would like to propose a theory that you may find either obvious or unimportant or both. This theory, which is actually borrowed from a friend at Teledesic, is that backhoes don't obey Moore's Law. Before we explain why this is important, let us first make sure everyone is on the same page.

Moore's Law was first noticed in 1965, when Intel's chairman (Gordon Moore) noted that the price/performance of memory chips was increasing by a factor of two every eighteen months. Moore's Law has been the lifeblood of the computer industry. This consistent increase in processing power at a given price is a clear contributor to the insatiable demand for personal computers. As long as Moore's Law continues, we will likely witness continual price-elasticity.

The backhoe is a piece of construction equipment that is used by several industries for general productivity. One industry that has been particularly active in the backhoe purchasing market is telecommunications. You see, backhoes are used to dig trenches, in which telephony companies lay cable – historically copper, but more recently fiber optic.

Just in case you are uncertain as to whether or not backhoes obey Moore's Law, we have done some research. This January, John Deere (DE, 43 7/8) will release an upgrade to its 310 series of backhoes, the first such upgrade in about six-years. We aggregated the improvement along six different metrics and came up with an improvement of 13.5% over approximately six years.

Admittedly on one feature, the allowable weight in the dipper stick at maximum height, has increased 29.7%. However, this represents an annual improvement of 4.4%, which falls well short of Moore's Law equivalent (59.7%).

By now you may be wondering where this is going. You hear a great deal about convergence – how the computer industry has collided with telecommunications to deliver this great medium we know of as the Internet. What you do not hear about is the downside of convergence. Convergence creates dependency. Hopefully you have followed the hints we are giving. The computer industry is now dependent on the telecom industry which is dependent on backhoes which don't obey Moore's Law.

Backhoe dependency is really just the simple side of our message. It is our impression that the majority of the players in the computer industry bring a "computer centric viewpoint" (CCV) when analyzing the issues that exist with the Internet. This computer-centric view could prove hazardous. Not only will it lead to disappointed expectations, but it may also lead to a less than accurate vision of the future.

We would now like to walk through five separate Internet issues, where we believe that the computer centric viewpoint is misleading. It is our goal to inform, provide a new way of thinking about some of these issues, and hopefully improve the accuracy of the general outlook. As financial analysts, we are extremely sensitive to the perils of unmet expectations.

HOW SMART IS THE INTERNET? We suspect that many of you have heard that the Internet is this wonderfully flexible network that was built to withstand a nuclear war. You have also likely heard that the information that traverses the Internet is divided up into little packets that each travel along independent optimal paths. While we are not in a position to comment on nuclear wars, we will submit that packets on the Internet typically travel along the exact same path. As a result, the standard way of improving network performance is not through network optimization, but rather by providing raw bandwidth.

This has interesting implications in terms of how you measure Internet usage. Some people will tell you that there is no bandwidth crunch coming, based on the belief that only 10-20% of the Internet infrastructure is being used. The problem with this argument is that there is no way to effectively allocate this excess capacity to the areas of the Internet where the bottlenecks do exist.

THE VALUE OF INTERNET TELEPHONY It seems to us that the majority of the players in the computer industry believe that Internet telephony is cheaper because it is digital rather than analog and because it bypasses the bureaucratic telecommunications companies. In case anyone has not told you this yet, Internet telephony is an arbitrage play. During long distance calls, the long distance provider is required to pay each RBOC involved 3.25 cents per minute. That accounts for 65% of the \$0.10 per minute that Candice Bergen likes to promote. **EVERYTHING OVER IP** One thing that you continually read about in financial journals is that one-day all media types will traverse on a single network which will be some descendent of what we now know of as the Internet. This would offer the best of both worlds, the efficiency of a packet based network with the reliability and functionality of a circuit based network.

If something sounds too good to be true, it likely is, and we have no reason to believe that this case is any different. Different data types require different back-end networks. The satellite is great for broadcasting video, voice, and even data, but it is horrible at two-way communications. The telephone network is phenomenal at two-way communication, but it is horrible for video and Internet traffic is currently stretching the limits of the central office switch. Then there is the Internet. It is great for asynchronous communication. But then again, that is what it was designed to do. Force feeding synchronous connections over an asynchronous network will likely jeopardize the intended benefits of the IP network.

We envision a world where a single device connects our LAN or home to several best-of-breed back-end networks and allocates the data according to media type. We like this idea for two reasons. First, it fits with the generally accepted theory that intelligence should reside at the edge of the network. Additionally, it fits with reality. Ascend (ASND, 62) and Shiva (SHVA, 42 3/8) are separately working to deliver products that strip data traffic from telephony lines before it clogs the central office switch.

UNLIMITED-USE PRICING We have run into several people that believe that unlimited use pricing is good for the Internet and good for the computer industry. We disagree whole-heartedly. When you allow unlimited use of a limited resource you suffer the "Tragedy of the Commons." Freeloaders will use more than their fair share and actually decrease the overall value of the resource. If we really want this thing to go forward, we should put the use of the network in the hands of those who would find it most profitable.

We are certain that some people will find the theory of a move to usage-base pricing as inflammatory. Yet, all we are really talking about here is capitalism — using price to properly allocate resources. Unlimited pricing, on the other hand, is socialistic. And history seems to suggest that socialistic policies have not had a positive impact on infrastructure development.

MINING FOR GOLD Over the past eighteen months, many financial analysts (including ourselves!) argued that the way to make money on the Internet was to invest in the equipment companies, not the ISPs. This theory was based on the lesson that the real profits during the gold rush came from selling pick axes, pans, and blue jeans to the miners. The problem with this theory is that it requires that there be at least some gold in the mountain.

The companies that we are counting on to build out the infrastructure all face issues that could potentially limit their ability to deploy capital. The ISPs are experiencing significantly negative cash flows and have limited access to capital. The RBOCs may lose up to 40% of their operating profits as a result of access charge reform, came out on the short-end of the stick with respect to the Telecommunications Act of 1996, and their investors, unrealistically perhaps, expect a dividend. The cable companies are overly leveraged, have a poor service reputation, and are under assault in their core business from the satellite vendors. Lastly, the odds-on favorites, the long-distance companies, may be surprised when the fax, an inherently asynchronous data type, goes to the Internet. Fax may account for as much as 25% of their profitability.

We recently attended a conference where web masters were advised to acquire as many T1 lines as possible, based on the theory that there may be a local-loop T1 shortage in front of us. Now T1-hoarding seems a little drastic. After all, we can always lay more lines. But then again, laying lines requires backhoes, and backhoes don't obey Moore's Law.