HARVARD | BUSINESS | SCHOOL

5-813-007
REV: MARCH 20, 2018

TEACHING PLAN

# Dropbox: "It Just Works"

This teaching plan is designed to be used in conjunction with the case "Dropbox: 'It Just Works'" (HBS No. 811-065) to help faculty deepen student comprehension of business issues and energize classroom discussion. It includes these sections:



## Synopsis

Founded in 2006, Dropbox is a venture-backed Silicon Valley startup providing online storage and backup services to millions of customers using a "freemium" (free + premium offers) business model. The case recounts Dropbox's trajectory through mid-2010, when founder/CEO Drew Houston must make strategic decisions about new product features, how to target enterprise customers, and whether to pursue distribution deals with smartphone manufacturers.

## Teaching Objectives

- Gain practice in analyzing attractiveness of a new venture's business model.
- Illustrate the application of "lean startup" management practices, including reliance on a "minimum viable product" (MVP) and A/B testing to optimize product design and marketing strategy.

This teaching plan was prepared by Professor Thomas R. Eisenmann with assistance from the Global Research Group for the sole purpose of aiding classroom instructors in the use of "Dropbox: It Just Works," HBS No. 811-065.

# Assignment Questions

1. Dropbox is a late mover in a crowded space. What opportunity did Houston see? Specifically, what are the key elements of Dropbox's current business model?
2. Is Dropbox profitable as of June 2010? Are you optimistic about its prospects? How does your estimate of Dropbox's current profitability influence your evaluation of the venture's prospects?
3. When he applied to Y Combinator (see case **Exhibit 2**), what hypotheses did Houston hold about key elements of Dropbox's business model? As of June 2010, which of these hypotheses have been confirmed, and which have been discarded? What is your assessment of the approach Houston used to test hypotheses? Did he waste time/resources or make notable mistakes? Can you imagine better ways to test key hypotheses?
4. Imagine that at the same time Dropbox was founded, Google decided to target the opportunity that Houston had identified. How would Google's approach to pursuing "G-Drive" have differed from the approach that Dropbox's team followed?
5. What should Houston do about the decision posed at the end of the case, i.e., creating a separate version for small and medium-sized business (SMB) customers? What process should he use to make this decision?

# Roadmap for Discussion

30 minutes ..... Business model analysis

10 minutes ..... Profit analysis

20 minutes ..... Evaluation of hypothesis testing approach

10 minutes [optional] ..... Comparison with counterfactual Google launch of "G-Drive"

10 minutes …….. SMB decision

# Discussion Plan

*Pasture 1: What are the key elements of Dropbox's current business model? (30 minutes)*

The goal of this pasture is to give students an opportunity to analyze the four key elements of a new venture's business model—its *customer value proposition, technology/operations management, go-to-market plan,* and *cash flow forumula.* (Please refer to the background note, "Business Model Analysis for Entrepreneurs," HBS No. 812-096.)

*Customer Value Proposition*

- **Customer Problem/Pain:** Dropbox meets the need for a single service that *integrates* three file management capabilities: backup, sharing, and synchronization (sync) across multiple devices. In particular, sync is growing with the proliferation of mobile devices. When Dropbox launched, leading incumbents that focused on backup (e.g., Mozy, Carbonite) did not yet offer sync capability, nor did they offer public/private file-sharing capabilities. Likewise, services that focused on file sync did not offer online backup solutions (e.g., Microsoft's Groove/Foldershare).

    - Ask: How big is the customer pain around backup, sharing, and sync? Answer: huge, for all three. If you are working on an important project without a backup, and your PC fails or is stolen, you must start again from scratch. If you collaborate on a document and someone updates an old version, confusion, wasted time, or embarrassment in front of a client ensues. If you need to work on the road and can't access a key file, you are stranded.

- **Differentiated Solution:** Dropbox is *easy-to-use* (implying fewer advanced features than rivals) and *extremely reliable.* It keeps a local copy and transmits only file changes to a cloud copy – thereby conserving bandwidth and limiting latency problems.

    - Keeping a local copy not only speeds the service, but it allows the user to access files when an Internet connection isn't available. This is a problem with rival services that provide file access *only* to a cloud copy.

    - Conversely, keeping *only* a local copy but no cloud copy (as with sync services like Foldershare) provides no backup protection in the event of PC theft or failure, and means a user cannot access their files when they lack access to a machine without a synchronized local copy—say, from an Internet café.

- **Target Customers:** Dropbox targets individuals—both businesspeople and consumers—rather than corporations or SMBs. Likewise, Dropbox targets both advanced users and mainstream or novice users. As discussed below under "Go-To-Market," the decision to target individuals is crucial to Dropbox's success formula, because individuals are more likely to share files in ways that drive viral growth than employees who use an employer-provided product.

    - **Crossing the Chasm.** Dropbox has made important decisions to forego features that would appeal to advanced users (in particular, syncing the PC's "My Documents" folder), in order to keep its service simple and easy to use. In this manner, Dropbox seems to have avoided "crossing the chasm" challenges (going from a small user base of advanced users to a larger user base of mainstream individuals) that tech firms often encounter when they launch buggy and often incomplete but powerfully radical new innovations to meet the needs of sophisticated early adopters (who can envision a payoff from the solution, and can cope with bugs and self-assemble the required complementary hardware, software, or services). (See Geoffrey Moore, *Crossing the Chasm: Marketing and Selling Disruptive Products to Mainstream Customers*, HarperBusiness, 2002).

  - We might speculate that Dropbox has been able to leapfrog the "early adopter" phase because it was working in a relatively mature category—one that is familiar to mainstream users, thanks to the marketing efforts of incumbents like Mozy and Carbonite. While Dropbox's product offered new capabilities and superb ease-of-use and reliability, the company was not offering a *radically* new solution, so the chasm problem should not be salient.

- **Pricing.** At $10/month for up to 50 GB of storage, Dropbox is more expensive than rival backup services offering unlimited storage for a single PC: Mozy charged $5/month; Carbonite charged $55/year. However, given that these rivals lack sync and file sharing capabilities, a premium for Dropbox seems warranted.

*Technology/Operations Management*

- **Amazon S3.** Houston's key decision here is outsourcing data center operations to Amazon Simple Storage Service (S3), a cloud storage platform. This gives Dropbox the ability to scale rapidly and to focus on its distinctive competence: design of robust software for managing data transfer.

  - The downside may be higher cost than vertical integration into data center operations, but the case does not comment on this point.

  - Another potential downside: Amazon and Dropbox could end up competing in providing cloud services directly to consumers, e.g., music lockers. In that scenario, Dropbox would be dependent on a rival for operations.

- **Proprietary IP.** There also is "secret sauce" here in the form of sophisticated engineering required to get Dropbox to work with different operating systems and network configurations (corporate firewalls, flaky wireless connections, etc.). The case does not discuss a patent strategy to protect this IP, but it is worth noting that this section of Houston's Y Combinator application is redacted.

*Go-To-Market Plan*

- **Viral Marketing.** After some trial and error (discussed below), Dropbox now relies entirely on viral marketing to acquire new customers. This is working very well. The case does not cite Dropbox's viral coefficient,[1] but we can infer that it is high, since 35% of new users originate from its referral program and 20% through shared folders (case p. 8). Furthermore, a portion of the remaining 45% are acquired through word-of-mouth—another viral marketing channel. Since Dropbox grew from one million users in June 2009 (p,. 7) to four million as of April 2010 without spending on paid marketing channels, and since a majority of new users are acquired through viral channels, it is evident that the firm's viral coefficient is greater than 1.0. As noted on p. 10 of the technical note, *Business Model Analysis for Entrepreneurs,* (which could be assigned with the Dropbox case), Dropbox: 1) harnessed a direct network effect when users employed the service to collaborate on documents; 2) benefited from word-of-mouth referrals

[1] Viral coefficient is the ratio of new customers solely through viral mechanisms in period t+1 to the total number of new customers acquired in period t. A coefficient greater than 1.0 is very powerful, because once a firm acquires an initial batch of customers, continued growth is assured. For more background on viral growth and viral coefficients, see pp. 9-10 of *Business Model Analysis for Entrepreneurs,* HBS 812-096.

from loyal customers; 3) acquired customers through casual contact when users emailed links that allowed recipients to download (without installing Dropbox) files stored in Dropbox by the sender; and 4) offered a two-way "user-get-user" incentive, that gave both the inviter and recipient an additional 250MB of free storage.

- **Avoiding Corporate Gatekeepers.** Houston's decision to target individuals rather than companies was also an important part of Dropbox's go-to-market strategy. Houston reasons that a corporate IT staff is a conservative gatekeeper that will impose a Catch-22 on a startup (i.e., vendors cannot get IT certification without prior sales, and cannot get sales without IT certification). He sees individuals—"rogue" users—who embrace the product without IT's blessing, as Trojan Horses who can get Dropbox into corporations (this was the penetration path for WiFi and other tech products, including iPhones). Once many employees demand the product and they have proved they can use it in a secure manner and without big IT maintenance requirements, IT will be forced to accommodate it.

- **The Value of Targeting Individuals.** The decision to target individuals also fuels Dropbox's virality. Individuals share files with friends and with colleagues in other organizations. Most products sold to corporations would tightly control extra-organizational sharing, due to security concerns. In fact, sophisticated early adopters not only become sales agents for Dropbox, they also provide outsourced customer support by answering "how-does-this-work" questions raised by novices to whom they have referred Dropbox.

*Cash Flow Formula*

- **Freemium Model.** With a "freemium" business model, Dropbox must: 1) convert a percent of free users to paying customers; 2) control the cost of supporting free users; 3) earn a profit from paying customers; and 4) limit user acquisition costs. Our analysis of profitability below suggests that so far, Dropbox's performance on this front is good, but not amazing.

- **Customer Acquisition Cost (CAC).** Dropbox spends nothing on marketing. As Houston says (case p. 8), "If you think of your free user cost as your marketing budget, then things begin to make more sense." CAC can thus be interpreted as the cost of supporting X free users for each paying customer (where X is determined by the free:paid conversion rate). Specifically, assuming that 2-3% of users convert to the paid product, there are 97.5%/2.5% = 39 free users for every paid user.

- **Fixed costs.** Fixed costs in the business are modest—they consist solely of the company's engineering-heavy staff of 25 (as of June 2010, case p. 9). A good rule of thumb for the cost of supporting a staff like this would be $150K per head for salary, office space, etc., so Dropbox's fixed costs are probably in the range of $3.75M per year (note that this excludes fees to Amazon S3, and that some employees are probably engaged in customer support and their salaries therefore should be considered variable costs).

    - The $150K figure is not provided in the case so the instructor might tell students that an entry-level Silicon Valley engineer with a strong pedigree earns about $80-120K, and as the case says, almost all of Dropbox's employees are engineers. But $80-120K does not include an allocation for rent, payments to lawyers, accountants, etc.

- **Variable Costs.** Variable costs consist mostly of Amazon S3 fees for storage and bandwidth.

- **Capital investment.** The company has not incurred much in the form of upfront investment: it owns no equipment or facilities (that's the magic of S3!). Investment takes the form of software development costs, which aren't very high because the company's staff is small. ROI could be very attractive with this model.

- **Working Capital.** Note another attractive attribute of a subscription business model: cash is received upfront, before the service is delivered, so working capital (WC) requirements tend to be low, and WC may even be negative, in which case a company will generate cash as it grows and require less outside capital. We lack information on when, on average, Dropbox users become paying customers. Some may sign up for a subscription immediately; others may be free users for many months before they convert to paying status.

- **Conversion Odds Increase With Time.** The latter possibility points to another nice attribute of Dropbox's model: a user's Dropbox folder will tend to grow over time as the user puts more files in it; when users approach the 2GB cap, they will feel pressure to convert to pay status. Likewise, dependence on the service and trust in the service's reliability will tend to increase with experience. Thus, conversion to paying status can happen smoothly and naturally with this pattern of use; the user isn't asked to commit to an expensive service that requires a big behavioral change upfront.

Some questions for this pasture:

- Dropbox is a late mover in this space. What does Houston think will set the service apart from established rivals? (A: integration of backup/share/sync in a single easy-to-use and reliable service).

- Who are Dropbox's rivals? (A: See case **Exhibit 1**. Most directly, Mozy, Carbonite, and a host of focused players compete with Dropbox. Also, cloud services from big companies like Apple, Microsoft, and Google. More broadly, email, thumbdrives, external hard drives).

- How does it work? (A: local + cloud copy; transmit only changes in files)

- Why did Houston see an opportunity that others neglected? (A: great hacker, programming since age 5, MIT, epiphany on the bus)

- Who is the customer? (A: Individuals. Advanced users were key early adopters, but from the outset Houston was building for his mom or sister, mainstream users).

- Is this a big, fast growing market? (A: yes, market for sync/backup services was $724M globally in 2009 and projected to grow 28% per year through 2014. But market is hard to size since many users still email files to themselves, thumbdrives, local external drives, etc.).

### *Pasture 2: Estimate current profitability for Dropbox (10 minutes)*

If you cover the elements of Dropbox's business model in the order listed above, this pasture on profitability should merge naturally with the discussion above of the company's profit formula.

The case's opening paragraph implies that the company is in great shape, with lots of capital on hand, strong growth, and a robust business model. As we probe deeper, we'll see that there is a lot

to like about Dropbox's prospects. The company has a differentiated value proposition and a powerful viral marketing engine.

The case does not present financials from Dropbox, but it offers analysis from third-party experts that we can use to estimate current profitability as follows:

- Annual revenue run in mid-2010 (Dropbox had 4 million users as of April 2010, see case p. 8) is given as $10M-15M on p. 9; we can also get to $12M by assuming: $10/month x 12 months x 4M users x 2.5% paid users.
    - The case does not specify the percentage of users that pay $100 annually and thus get a discount off the $10 monthly rate, nor does it specify the percentage that subscribe to the $20 per month/$200 per year 20GB service. A guess of $120 per year splits the difference.
- Variable cost for storage bandwidth is $9.0M: 4.0M users x (97.5% free x ($0.11/mo. x 12 months) + 2.5% paying x ($3.18/mo. x 12 months))
- Fixed cost is the cost of supporting 25 employees, equal to $3.75M if we use the $150K per employee assumption above.
- If we use $12.5M for revenue, Dropbox is running roughly at breakeven: $12.5M - $9.0M - $3.75M = $(0.25M)
- It is important to note that our conclusion is based on guesstimates provided in the case by industry analysts rather than Dropbox (specifically, for storage/bandwidth costs and the percentage of users who pay) along with some simplifying assumptions.
    - A November 2011 *Forbes* article matter-of-factly states (in ways that imply company confirmation) that 4% of 50M current Dropbox users are paying customers. So, the company's conversion rate seems to be improving even as it accelerates its user base growth.

Is it okay that the company is not yet earning a profit? Yes! It is earning a positive contribution from each paid customer that exceeds the cost of supporting 39 free users (ratio of free:paid users = 39:1). As long as this holds and the user base grows faster than fixed costs—which by their nature shouldn't grow very fast—the company will be profitable.

- If a paying customer pays $120/year and incurs $38.16 in storage/bandwidth costs ($3.18/mo x 12), then contribution per paying customer is $81.84.
- The cost of supporting 39 free users is $51.48: 39 x ($0.11/mo. x 12).
- Dropbox earns a surplus of $30.36 per paying customer, after covering the cost of free users.

**Scaling: How Fast is *Too* Fast?** A good question to ask once you have calculated surplus per paying customer is "Okay, they earn $30 per paying customer surplus, after covering the cost of free users. But what if our analysis had shown that the figure was $0? Would that mean the company is in trouble?"

- A technical note that could be assigned with Dropbox, *Scaling a Startup: Pacing Issues* (HBS 812-099), explores the circumstances under which it makes sense to race to acquire customers -- even if doing so increases customer acquisition cost to the point where it equals or exceeds customer lifetime value. In brief, racing makes sense when ***network effects*** are strong (they do exist here, but they don't seem extremely strong), ***customer switching costs*** are high (arguably true in this market, given the hassle of reconfiguring a new service; Carbonite's five year life for a consumer subscription service is quite high), and ***winner-take-all dynamics*** prevail (probably not true here, but it is wise to lock up customers before big rivals like Google and Apple enter the market). It also makes sense to invest aggressively to acquire customers if an entrepreneur sees ***opportunities to cross-sell*** them additional services in the future (a likely option for Dropbox). Note that Houston thinks he needs to "get big fast and lock in customers" (case p. 10) in anticipation of competition with Google.

**Lifetime Value (LTV) of a Customer.** Some students might try to calculate the lifetime value of a Dropbox customer. I suggest that you avoid asking for this calculation (which entails some twists and turns and thus invites instructor error). However, if a student volunteers a figure, you may wish to get them to describe their approach to the calculation—and be prepared to correct their errors. Here is how to think about LTV-CAC for Dropbox:

- Following the convention used by most tech entrepreneurs, **Appendix C** of the technical note *Business Model Analysis for Entrepreneurs* defines LTV as the discounted present value of variable contribution generated by the customer, and then compares LTV to CAC. (Note that in other courses, students may have been exposed to a definition of LTV that deducts the cost of acquiring a customer from the PV of variable contribution.)

- There are two tricks with calculating LTV for Dropbox: 1) figuring out the average life of a paying customer; and 2) realizing that *a paying customer must support 39 free users not only in year one, but for the entire life of the paying customer's relationship*. The latter point is confusing to students. They will think of a cohort of free and paying users all acquired at the same time, and posit that over time more members of that cohort will convert to paying status. True enough, but in the meantime, some new free customers will be acquired. If the free:paid ratio remains at 39:1 for the company overall, then we should assume that 39 free users must be supported at all points of a paid customer's tenure.

- The formula for calculating average customer life is simple: 1/x, where x = annual attrition rate, given as 20% for Carbonite in case **Exhibit 8**.

- LTV of a paying customer is thus $274.34, assuming a 5-year average customer life and discounting the $81.84 contribution per paying customer at 15%. Assuming that free customers also have an average 5-year life (which is equivalent to saying that the 39:1 free:paid ratio will remain constant over time), then CAC is $172.57 ($51.48 in annual expense of supporting 39 users, discounted at 15% over 5 years).

- A rule of thumb for a healthy online software-as-a-service (SaaS) business, not shared in the case (but mentioned in **Appendix C** of *Business Model Analysis for Entrepreneurs*,) is that LTV should be at least 3x CAC; otherwise, a firm may have trouble covering its fixed costs. Dropbox's ratio is 1.6x, but the firm's business model nevertheless seems to be robust because its fixed costs are low. A student with VC experience might make all of these connections, but I would be surprised if they come up.

**Carbonite LTV.** It is interesting to examine LTV – CAC for Carbonite, which has a very different business model than Dropbox (Carbonite relies on paid marketing to acquire customers and owns its data centers instead of using Amazon S3). Again, you should be prepared in case a student offers the analysis. Based on data in case **Exhibit 8**, Carbonite has a very narrow positive spread between LTV and CAC—probably too small for comfort.

- For the first half of 2010, VCM = $26.93, derived as: 1) $9,236,000 in gross profit for the first half of 2010; 2) divided by 686,000 average customers during that period (use beginning- and end-of-period subscribers of 590,000 and 782,000 and divide by 2); 3) multiplied by 2 to reflect annual rather than 6-month results.

- For the first half of 2010, CAC = $65.59, derived as: 1) $16,464,000 in sales & marketing spending; 2) divided by 251,000 customers acquired during period (calculated as 782K end-of-period subscribers *minus* 590K beginning-of-period subscribers *plus* replacement of 10% of those beginning subs, i.e., 59K, who attrite during the first half of 2010). Note that this conservatively assumes that 100% of S&M budget is spent on customer acquisition, rather than retention marketing and other priorities.

- Discounting the value of customer contribution of $26.93 for 5 years at 15% yields an LTV of $90.27, 1.4x CAC of $65.59 – not a healthy ratio for a SaaS company. Furthermore, Carbonite's CAC has increased from $56.81 in 2009. Trouble ahead for them?

*Pasture 3: What early hypotheses turned out to be wrong? Evaluate Houston's approach for testing hypotheses (20 minutes)*

There is a remarkably close fit between the business model described in Houston's April 2007 Y Combinator application and the model Dropbox is following in June 2010, with one important exception: the go-to-market strategy.

- The customer value proposition proposed in April 2007 corresponds almost exactly to the one used in June 2010. Houston does seem more sanguine about his ability to sell to SMBs in his Y Combinator application; soon afterward, he seems to have focused on marketing strictly to individuals. In explaining why, he notes that SMBs do not communicate with each other so it's difficult to generate word-of-mouth referrals from them (case p. 4).

- Likewise, the plan to rely on Amazon S3 worked out, as did use of a freemium pricing model—although pricing levels differ from those suggested in the Y Combinator application ($10/month for 50 GB instead of $5/month for 10 GB).

**Go-To-Market Assumptions.** Houston was pretty badly off-target with his hypotheses about Dropbox's go-to-market (GTM) strategy.

- **Search Engine Marketing (SEM).** He thought the company would rely on expensive SEM for its first 100,000 users, then shift to distribution deals with partners (e.g., anti-virus software vendors). SEM turned out to be prohibitively expensive, in part because rivals had bid up the price of keywords, and in part because consumers don't think to search for a solution to their problems with file backup/sharing/sync; they often improvise solutions with external media, emailing files, etc.

- **Business Development (BD) Deals.** Likewise, Houston discovered that potential corporate partners were happy to talk (and learn about Dropbox's technology), but were very slow to make decisions, and once they did, tended to renege on earlier promises about branding or make last-minute demands for customization, etc.

Fortunately, while Houston was learning that SEM and BD were not attractive options, customers were spreading Dropbox virally. He ***pivoted*** quickly to viral marketing, without wasting too much time and money on his flawed assumptions about SEM and BD. Houston had the foresight to dedicate engineering resources to understanding this behavior and to developing features and promotional offerings that would amplify it (e.g., shared folders, two-sided referral bonus).

- Ask students to define "pivot."

- Ask them if they can see better ways to test the original GTM assumptions. Options are not obvious to the case writers. Perhaps if Houston had asked entrepreneurs or investors who had experience with similar startups, they could have coached him to revise his hypothesis about business development opportunities before investing time in a "wild goose chase."

In launching Dropbox, Houston employed ***lean startup (LS) principles*** —summarized in a technical note which should be assigned with Dropbox, *Hypothesis-Driven Entrepreneurship: The Lean Startup* (HBS 812-095):

- As evidenced by the Y Combinator application, he formulated ***business model hypotheses***, often in terms that were falsifiable. Of course, it is impossible to say whether Houston would have done so without the discipline imposed by the excellent Y Combinator application.

- He tested demand with very ***clever MVPs*** (minimum viable products)—screencasts of product demos—that showcased the product's features, helped recruit beta testers, and solicited product feedback. Note that Houston did not follow the LS precept, ***"launch early and often."*** He made a considered judgment that when handling peoples' files, he had less latitude to launch a buggy, early version of his product, so he used the screencasts to get feedback from potential users.

    - It is important for students to understand that Houston was able to validate demand for his solution to a considerable extent with his video MVPs. To reinforce this point, ask: What would Houston conclude if very few people had viewed his video, and if the limited feedback he got was mostly negative ("Lame, dude. Been there, done that."). In that scenario it would be difficult to rule out a FALSE NEGATIVE. He'd have to wonder whether the poor feedback was due to a poor video or to the need to experience the product first, before assessing its value. Of course, there's also the chance that the enthusiastic response to the video represents a FALSE POSITIVE, but this seems less likely. People really do seem eager to try the product. The main risk here is that Hacker News and Digg are dominated by sophisticated early adopters, whose needs are not the same as those of mainstream users. Since Houston aspires to offer a product that appeals to mainstream users, the fact that the videos don't provide feedback from such users is salient. I strongly suggest you explore these risks – false negative, false positive – by discussing the video MVPs.

- The team also does a great job of harvesting ***user feedback*** from support forums and the "Votebox." They ran usability tests and tweaked product pricing and features based on rigorous analysis of customer behavior (e.g., number of GB offered with the free service; charging for unlimited "undo" history). Following the example of Facebook's "growth team," 30% of Dropbox's engineering resources were dedicated to optimizing the customer acquisition conversion funnel, in particular, through A/B testing.

    - Ask students if it is okay that Dropbox refuses to build the #1 most requested feature, syncing the "My Documents" folder. Be prepared for an abstract but interesting discussion about the true meaning of lean, and about the difference between vision-led versus user-led design.

Did Houston make any notable ***mistakes***? We do not see too many.

- His cofounder did warn him that pursuing BD deals would be a waste of time because corporations would be reluctant to deal with an unknown startup.

- Also, Houston acknowledges that the team lacked the know-how to generate mainstream PR.

- **Launch Delays.** Finally, Houston's estimate of the time required to create a product for public launch was wildly off target: it took 18 months, not two! We can speculate that these delays were exacerbated by the company's failure to hire a product manager to keep the team focused on deadlines and deliverables. It is worth noting that Dropbox was able to survive this long delay—despite having raised only $1.2 million in its seed round—by running lean.

***Where are the MBAs?*** If you want to have some fun in this pasture, ask students want they think of the fact that as of June 2010 when the case ends, Dropbox employed no MBAs.

### *Pasture 4: What would Google do? (optional 10 minutes)*

This pasture is optional. If you have a good head of steam with the earlier issues, skip it.

Both in his Y Combinator application and at the end of the case, Houston expresses concern about Google launching a "G-Drive" product (e.g., a free terabyte of online storage). *Contrasting the approach Google might take in doing so to the path followed to date by Dropbox gives a good sense for what entrepreneurship is all about.*

You can organize this pasture around the following topics:

- **Profit formula:** G-Drive would probably be free.

- **Customer Value Proposition**: G-Drive would probably be integrated with existing Google products, in particular, Android and Google Docs.

- **Go-To-Market Plan**: In marketing G-Drive, Google would benefit from near-universal recognition of its brand, and from close relationships with hundreds of millions of existing users of its various products.

- **Technology and Operations Management:** Google owns a huge collection of data centers; it has no need for Amazon S3.

- **Founder:** Google would probably assign an experienced product manager to lead the G-Drive development and launch effort. This individual would differ from Houston in important ways. He or she probably would not have originated the idea for the product, and almost certainly would not work on coding G-Drive.

- **Team:** Google has thousands of very talented engineers, and could quickly staff up a team to code G-Drive.

- **Investors:** Google would fund G-Drive from its huge cash hoard.

In short, Google is a big company with enormous advantages and relevant resources in this space. Its managers would launch a competing product with obsessive regard to resources under their control—at odds with Howard Stevenson's classic definition of entrepreneurship! (See, for example, Stevenson, "A Perspective on Entrepreneurship," HBS 384-131.)

*Pasture 5: Should Dropbox launch a version targeted to SMBs? (10 minutes)*

There is not enough detail in the case to fuel a rigorous debate over this question, and you'll probably run out of time before you can address it. So, I suggest that if you tackle it at all, you steer quickly away from the "yes/no" decision, and focus instead on how Dropbox management should make the decision.

- Carbonite's new pro offering points to some of the features SMB customers might value: no per PC charges, a dashboard offering controls to an IT manager, priority support.

- Many students can be expected to argue that Dropbox has enough challenges managing the explosive demand for its core product. These students will say that the company should continue to improve that product, optimize its conversion funnel, and resurrect BD discussions.

- Other students will argue that diversifying into new segments with new products is a natural step as Dropbox scales and matures.

- Consider asking these students how they would organize the effort to create a new product. Would it be headed by a product manager? How closely involved should the cofounders be? What should be the relative emphasis on: 1) adhering as closely as possible to the design philosophy of Dropbox's original product (e.g., simple, easy to use), versus 2) doing a thorough round of customer discovery research to understand the needs of potential customers and their satisfaction with current product offerings such as Carbonite's?

# Board Plan

**3. A Lean Approach**

- Business model hypotheses,
- Clever MVPs
- User feedback

**Mistakes?**

- Not many:
- SEM and BD costly
- No PR know-how
- Launch delays, likely caused by not hiring a product manager.

**1. Business Model Analysis**

**CVP**

- Integration of file management through backup, sharing and sync.
- Easy to use, and reliable.
- Targets individual of all skill levels users rather than corporations.

**TOM**

- Outsourced data center operations to Amazon S3, allowing it to focus on designing software and managing data.
- Has proprietary intellectual property.

**GTM**

- Relies exclusively on viral marketing for new customers.
- Targets individual adopters rather than going through corporations, speeding adoption.

**Profit Formula**

- "freemium" – need to convert some free users to paying users.
- Estimated $3.75 million in annual fixed costs.
- Variable costs from Amazon S3, and no capital investments.
- Low to negative working capital.

**2. Current Profitability: LTV/CAC Calculation**

- There are no marketing costs, so the cost to acquire customers comes to be 39 free users for every paying customer.
- Life time value of a customer comes to $274.34 (5 year average customer life with discounting VCM of $81.84 at 15%)

**5: Target SMBs?**

No: maintain focus
Yes: diversification as the business matures

Cf Carbonite's pro offering

**4: Google's Approach?**

- Free, integrated w/ Android, Google Docs?
- Owns data centers and has universal brand recognition
- Has engineers, cash & managers