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MICHAEL J. MAUBOUSSIN

mmauboussin@lmfunds.com

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The Economics of Customer Businesses

Very few companies can *measure* lifetime customer value, making it virtually impossible to *manage* customer lifetime value. The barriers have to do with the way companies are organized, make decisions and track information.

Uta Werner
Getting Real About Customer Lifetime Value [1]

Generally accepted accounting principles actually hide the value of a loyal customer, an impressive feat of concealment given what loyalty can do for the great majority of companies.

Frederick F. Reichheld
The Loyalty Effect [2]
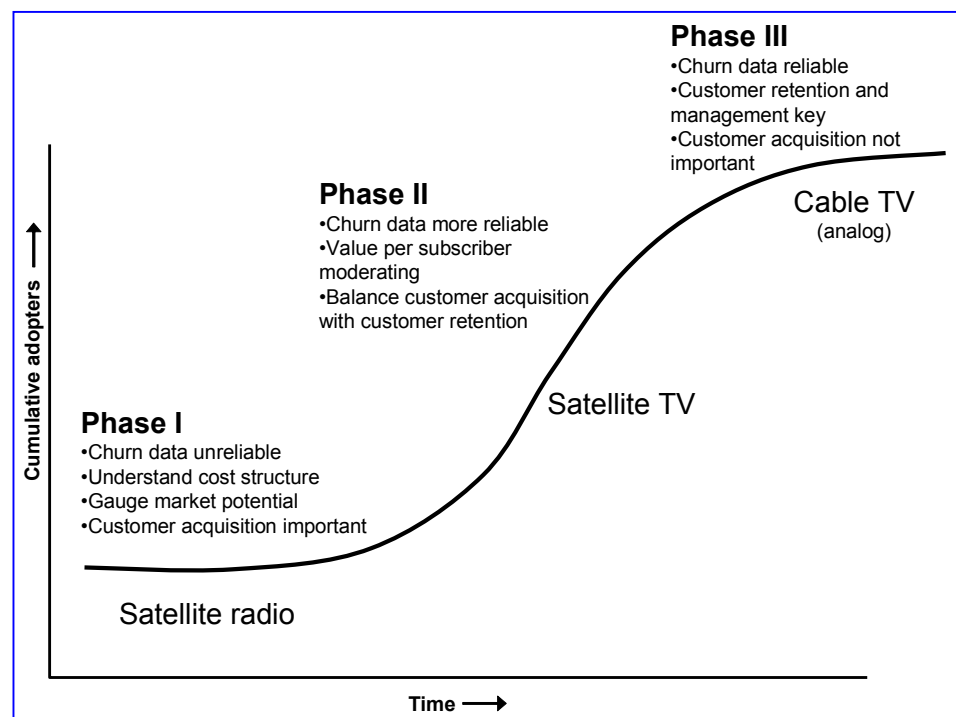
- **One of the keys to successfully analyzing a consumer-oriented business is to get to the most basic unit of economic analysis: the customer.**
- **Customer net present value is the difference between the lifetime customer cash flows and acquisition costs.**
- **Customer loyalty—or low churn—is an important value driver for many consumer businesses.**
- **Diffusion models offer insight about likely market size and adoption rates.**
- **Managing the customer base becomes important as an industry matures.**

Introduction: The Customer as the Basic Unit of Analysis

One of the keys to successfully analyzing a business is getting down to the most basic unit of economic analysis. For many consumer-oriented companies, and especially those that rely on a subscription model, the basic unit of analysis is the customer. Investors need to determine whether or not current and prospective customers add value. The only way to understand customer economics is to break down the analysis into its prime components. Call them the leading indicators of customer value, which ultimately drive shareholder value.

Unfortunately, very few companies—even subscription companies—measure customer value well, and the metrics they do calculate and share don't always tell the whole story. As a result, the necessary analytical inputs are not always readily available. Further, the current accounting system does a very poor job of revealing the difference between a good and bad customer.

For example, consider two companies with the same number of customers, revenue per customer, expected net customer growth, and customer acquisition costs. Which company is more valuable?

Most businesspeople intuitively assume these companies have the same value. In fact, the businesses may have radically different values based on the customer lifecycle at each firm. In general, research shows that companies that have significant customer loyalty are generally more profitable, and hence more valuable, than companies that do not. [3]

This customer-focused approach leads us to the following definition of value:

Value of a business = value per customer x number of current and future customers

In different words, business value is a function of customer economics and the current and future users (market size). This equation is simple, but unpacking the essential elements is not.

Further, companies often create incentives that encourage employees to behave in ways that diminish aggregate customer value. For example, a company might pay sales representatives based on how many new customers they sign up without considering the quality of those customers (i.e., likelihood to leave the service, creditworthiness, etc.). The company could inadvertently take on net present value negative customers.

This report offers a framework to analyze businesses through the customer-value lens. In particular, we will cover four areas. First we discuss in detail the drivers of value per customer, including customer cash flows, loyalty, and acquisition costs. Next we look at ways to size the potential market. We then look at the issues in managing the current customer base. Finally, we point to some deficiencies in our accounting system for evaluating customer-based businesses.

Exhibit 1 shows a partial list of businesses where analysis of customer economics is important.

Exhibit 1: Customer Economics Businesses
Wireless communications
Satellite radio
Satellite television
Cable television (analog and digital)
Broadband communications
Credit cards
Home security
Magazines
Life insurance
Internet retailers
Online brokerage
Gaming
Video rental
Source: LMCM analysis.

I. Drivers of Customer Value: It's All about NPV

First principles in finance suggest we use the net present value (NPV) rule to analyze a customer—the same rule we use to judge any financial investment. Customer value is the difference between the present value of the cash flows a customer generates over his or her lifetime and the cost to acquire the customer. For instance, a company that expects $500 in lifetime cash flow from a customer who cost $300 to acquire adds $200 to its value.[4]

Customer NPV = PV of lifetime customer cash flows – acquisition costs

Though conceptually very straightforward, the devil of customer value is truly in the details. The realities that lurk behind high level terms that the financial community freely slings around—churn, gross adds, net adds, and average revenue per user—are often quite complex. We'll start by considering the factors that determine customer cash flows.

We can disaggregate the present value of lifetime customer cash flows into two main parts: how *much* cash a customer pays per period and how *many* periods a customer pays. Customer longevity is often associated with loyalty.

PV of lifetime cash flows = cash flow per period x number of periods

Let's start with cash flow per period.

Cash Flow per Period

Generally, the ability to assess the regularity of customer cash flows is a function of the type of relationship. A predetermined billing arrangement with the customer—examples include cable, satellite TV, utilities, credit cards—often creates steadier and more predictable cash flow streams.[5] This effect is most pronounced with subscription agreements. In addition, companies that charge monthly often have good data on customer behavior patterns because of the relatively short feedback loop.

In contrast, predicting customer cash flows is much more difficult for transaction-oriented businesses like catalog and Internet retailers. These businesses typically comprise a mix of few active customers and many inactive customers. Determining customer value for a non-subscription transaction business is inherently more difficult than for businesses with more formal or regular customer interaction.[6]

When investors think of customer cash flow per period, they generally focus on revenue. But cash flow is the difference between revenues and costs (including investments). As a result, a company's cost structure can determine the attractiveness of an incremental customer.

Some industries have a relatively high upfront, or preproduction, costs, which are costs (or investments) a company must bear before it can go to market. For example, a company offering satellite television must launch satellites in advance of signing up any customers. Businesses with large preproduction costs tend to have substantial operating leverage. That is, beyond a "breakeven" number, incremental customers tend to be very profitable.[7]

High preproduction cost businesses often have a lumpy pattern of investment spending: they need to make periodic, large investments to keep up with demand or to remain technologically competitive. In contrast, some industries have relatively low preproduction costs, which mean that the economics tend to be consistent across the customer base.

Another important issue in judging customer lifetime cash flow is a consideration of the additional goods or services a business can offer as it matures. One example is bundling, where a single provider offers additional services. Bundling also lowers churn. For example, cable television companies started with analog cable and in recent years added digital cable, broadband, and telephony. According to a cable industry spokesperson, "Bundles are where cable's priorities are."[8]

Likewise, Amazon.com expanded offerings from books to a multitude of different stores. Indeed, the company's electronics sales recently eclipsed its book sales for the first time. Option theory offers one way to consider and value a company's ability to extend its offerings to existing customers.

Naturally, we cannot model future customer cash flows in a void; we must recognize the role of competition. The number of competitors and how they compete are two important variables. Lots of competition generally drives returns on capital toward the cost of capital; lower customer prices often drive this economic parity.

The nature of competition also affects customer economics. More cooperative industries allow for attractive customer lifetime values and industry-wide returns. Concepts from game theory help judge industry cooperation.

How the Demand-Side Affects Cash Flow

While competition focuses on how effectively companies can supply a good or service, analysts must also consider the demand side of the equation: How well does a good or service satisfy the customer? There are two dynamics at play.

The first is network effects, which exist when the value of a good or service increases as more people use that good or service. An excellent current example is eBay. As the site draws more buyers and sellers, its value increases for current and prospective buyers and sellers. Strong network effects increase a customer's willingness-to-pay, and hence can help drive customer lifetime value. [9]

Nextel's push-to-talk technology provides a good illustration of network effects and is an important source of differentiation for the company. Though not among the three largest wireless providers, Nextel has the highest average revenue per user in the industry (see Exhibit 2).

Exhibit 2: Average Revenue per User for Wireless Telephones

Company	ARPU
Nextel	$ 69
Sprint PCS	62
T-Mobile	55
Verizon	52
Cingular	50

Source: Company published data.

Second is the idea of overshot markets. According to Professor Clayton Christensen, products and services tend to improve along a trajectory that has a steeper slope than that of customer needs. Eventually, the product becomes too good for the mainstream market—it overshoots. You know a product has overshot the market when customers stop paying for additional features or when customers only use a fraction of the features available. Per-customer revenues are unlikely to grow in overshot markets. [10]

Furthermore, overshot markets become susceptible to disruptive innovations—new products that are typically cheaper, inferior, and easier to use. When a consumer-based business gets disrupted, customer lifetime values tend to plummet. One example in recent years is the airline industry, where value migrated from large, full service carriers to low-cost, no-frills carriers.

Now let's turn to number of periods, which reflects customer longevity. Related concepts include retention rate, churn rate, and customer loyalty.

The Principles of Churn

Increasingly, companies release churn statistics. A churn rate represents how many customers a company loses within a given period. If a company with 100 customers loses 15 during a period, it has 15 percent churn. Exhibit 3 shows recent monthly churn statistics for various companies. The lower a company's churn, the higher its customer retention and longer its average customer tenure. Customer loyalty normally results in low churn rates.[11]

Exhibit 3: Churn Statistics for Selected Companies

(Monthly churn for the quarter ended 6/30/04)

Company	Churn
XM Satellite Radio	1.1 %
DirecTV	1.4
Verizon Wireless	1.4
Nextel Communications	1.6
Echostar	1.7
Sirius Radio	2.1
Sprint	2.3
Cox (basic video)	2.6
Cox (digital video)	4.4
Netflix	5.6

Source: Company published data.

Here's an example of how loyalty can add value. Assume a company has a $100 average acquisition cost, $50 of average annual cash flow, and an 8 percent cost of capital. These assumptions allow us to examine the path of a customer's NPV over time. Exhibit 4 shows that an average customer reaches NPV neutral after about 2 ½ years. All else equal, loyalty adds value.

Exhibit 4: The Value of Loyalty

Source: LMCM analysis.

In fact, loyalty can have a profound impact on business. In his seminal book, *The Loyalty Effect*, Fred Reichheld shows that a 5 percentage point improvement in retention rate (a reduction in churn) increases customer NPVs more than 75 percent for a host of industries including advertising agencies, auto insurance, credit cards, life insurance, and publishing. [12]

Reichheld argues that at least two forces significantly boost value. First, companies that retain customers at a higher rate either spend less money acquiring new customers than other companies with similar customer growth, or grow faster than other companies with comparable customer acquisition spending but higher churn. For this reason, two companies with the same net subscriber growth, revenue per subscriber, and subscriber acquisition costs can have radically different values.

He calls the second force the "profit-per-customer effect." [13] He argues that the profits from a customer often grow as they stay with the company. Drivers of these enhanced profits include:

- *Higher revenues*. In many industries, customer spending tends to increase over time. This growth reflects a greater appreciation of the product line, increased customer buying power, and comfort with the purchasing format. The cable companies and Internet retailers are examples.
- *Cost savings*. As customers learn about a business, they require less and less help. This is particularly true for industries that rely on technology to deliver their goods or services. Expense tends to decline as customers understand how the technology works, what products the company offers, and how to get the information they need efficiently.
- *Price premium.* Loyal customers often pay higher prices for goods or services. This is because new customers often come in with price promotion. Also, established customers greatly value the service and may be willing to pay a higher price.

Reichheld's recent work suggests one metric as the best proxy for customer loyalty and growth: the number of "net promoters." According to Reichheld, "the percentage of customers who were enthusiastic enough to refer a friend or colleague—perhaps the strongest sign of customer loyalty—correlated directly with differences in growth rates among competitors." [14] He provides empirical support for this statement from the airline, Internet service provider, and car rental industries.

Disaggregating Customer Behavior

What factors shape customer churn? A good place to start is customer lock-in and the associated switching costs. Lock-in creates costs that customers must bear in order to switch to a competing offering. Exhibit 5 shows various forms of lock-in and their associated switching costs.

Exhibit 5: Lock-in and Associated Switching Costs

Type of Lock-In	Switching Cost
Contractual commitments	Compensatory or liquidated damages
Brand-specific training	Learning a new system
Search costs	Combined buyer and seller search costs
Loyalty programs	Any lost benefits from incumbent supplier
Network effects	Reduced interaction with network members
Monopoly	Non-consumption
Product bundles	More bills, higher price
Low cost offering	Higher price

Source: Carl Shapiro and Hal R. Varian, *Information Rules* (Boston, MA: Harvard Business School Press, 1999), 117 and LMCM analysis. Copyrighted material, used by permission.

A recent illustrative case in churn analysis is the introduction of wireless number portability (WNP) in November 2003. For years, wireless carriers fought against WNP, concerned that it would increase churn. In fact, churn did not go up for the national carriers following WNP. A couple of the possible explanations, proactive customer service initiatives and pricing, are mild forms of lock-in (better prices elsewhere remains the number one reason

people switch carriers). Other factors relate directly to lock-in, including the greater use of bundling and more and longer contracts. [15]

Commitment to everyday low prices, which derives from a company's business model, offers another powerful form of lock-in. For example, over the years Wal•Mart has consistently passed on some of its scale advantage to its customers in the form of lower prices. The company's motto, "*Always low prices. Always.*" effectively communicates the low-cost pledge. Other companies employing this strategy include Home Depot and Amazon.com. The cost advantage lock-in we describe must be for goods and services familiar to consumers.

Segmenting Spenders

As Reichheld's analysis suggests, customers tend to spend more the longer they stick with a good or service. Naturally, however, customers do not behave uniformly. In an attempt to better understand customer behavior, McKinsey researchers studied how the spending patterns of customers change. They argue "many more customers change their behavior than defect, so the former typically account for larger changes in value." In fact, the cost to save a current customer is often substantially less than the cost to acquire a new one. [16]

To quantify these effects, researchers developed two broad customer segments: loyalists, who maintain or increase their spending and downward migrators, who spend less over time for a host of reasons. They further refine the segments into sub-segments (e.g., emotive loyalists, lifestyle downward migrators). While the vast majority of customers are considered loyalists, consistent with Reichheld's argument, the ratio of loyalists to downward migrators varies by industry. Understanding of a company's customer loyalty profile can indicate which tactics will most likely create value and how a company should prioritize its resources.

Taking Churn with a Grain of Salt

Today, more companies report churn data than ever before. Still, comparing churn rates across industries, and often within industries, can be tricky. There are a few reasons for this:

- *Average versus actual cohort behavior*. Churn statistics are averages, which often belie the pattern of cohort behavior. Specifically, for most customer-oriented businesses churn in the initial periods tends to be much higher than the lifetime average. (See Exhibit 6.) As a result, customer half-lives are generally much shorter than the average churn numbers suggest. Reichheld estimates that the *pattern* of churn can change estimates of cohort customer value by as much as 40 percent. [17]
- *Young businesses*. A related point is that investors should judge the churn of emerging business very cautiously. With a very high ratio of new subscribers to established subscribers, churn numbers will reflect higher-than-average churn rates. In order to get a good sense of churn for an industry, you must follow a sufficient number of cohort groups over time.
- *Customer quality*. Companies have, and pursue, customers of varying quality. Quality includes creditworthiness, use of resources, and spending patterns. Gross customer additions and churn statistics rarely offer insight into the quality of the customers moving in and out of the portfolio. Not all customers are created equal.

Exhibit 6: Constant versus Actual Cohort Defection Patterns
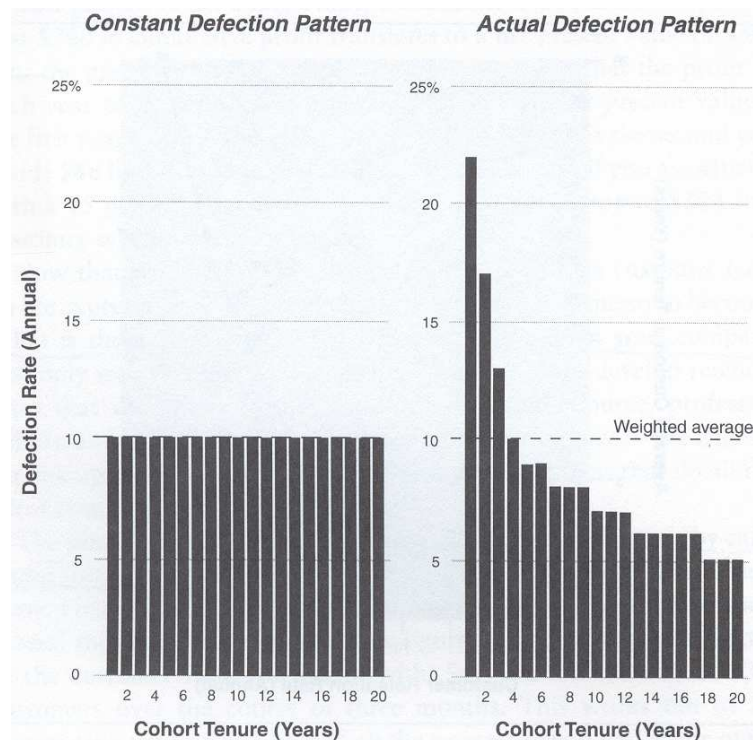
Source: Frederick F. Reichheld, *The Loyalty Effect* (Boston, MA: Harvard Business School Press, 1996), 54. Copyrighted material, used by permission.

Elasticity and Churn

One final thought on the present value of cash flows: relatively stable cost per user and acquisition costs—valid assumptions for businesses with mostly variable costs—create a tradeoff between revenue per period and churn. Specifically, the higher the per-period revenue a company enjoys, the higher the churn it can withstand, all else equal. This tradeoff allows companies to understand customer elasticities and provides opportunities to maximize value through the price/churn tradeoff.

Here's an example (the numbers are similar to those of a real company). Say a company has a $36 subscriber acquisition cost, charges $20 a month, has roughly $12 dollars in monthly per-customer costs, and keeps its customers for 12 months on average. This business has an average customer NPV of $60. [18]

$60 = [($20-12)*12] - $36

We can now look at the tradeoffs between monthly revenue and churn that maintain the $60 customer NPV (see Exhibit 7). The company should seek to price the product where it optimizes the tradeoff between revenue and churn.

Exhibit 7: Tradeoffs Between Revenue and Churn

Revenue per Month	Number of Months
$18	16.0
19	13.7
20	12.0
21	10.7
22	9.6

Source: LMCM analysis.

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Nextel Communications provides a real-world example. While the company's customers that work in government have lower-than-company-average revenue per user and higher-than-average acquisition costs, very low churn allows them to rank among the company's most profitable customers on a NPV basis.

Now lets take a look at the second part of our customer NPV equation, acquisition costs.

Acquisition Costs

Companies incur costs to acquire a new customer. Most of the costs are fairly visible—advertising, hardware subsidies, installation costs, commissions, and sales force costs. Other less obvious costs might include new store opening costs and senior management time.

Early on, measuring acquisition costs tends to be reasonably straightforward. For example, the ratio of marketing costs to new subscribers might provide a reasonable proxy for per customer acquisition costs. Investors should not evaluate acquisition costs in isolation, but rather in close conjunction with estimates of lifetime cash flows. Customer NPV ultimately drives value.

A comparison between cable and satellite television service—rough substitutes for one another—illustrates this point. Companies must incur three basic costs to deliver these services to customers: central office costs, the connection to the home, and the equipment on the customer's premises. While central office costs are comparable, cable companies centralize their network intelligence, and hence their central offices have more intelligence than those of satellite. Connection to the home costs much more for the cable company, as laying cable is more onerous than beaming a signal. Finally, the equipment on the customer premises is a larger cost for the satellite company. However, the satellite equipment provides more intelligence.

While competitors, these businesses are very different. Because net property, plant and equipment per subscriber costs are greater for cable than satellite, the satellite companies have a much higher fixed-to-variable cost ratio. However, the cable plant, while expensive, offers substantial optionality. Cable companies can effectively offer multiple services—analog cable, digital cable, broadband, telephony—while satellite offerings will be more limited.

Although customer acquisition costs are much higher for satellite companies than cable companies, their average revenue per user is comparable; incremental costs are less for new subscribers, and churn is measurably lower than that for cable. Higher satellite acquisition costs are an artifact of network design, which investors must consider in judging customer value. Today, these variables lead the market to place a higher value per subscriber on cable companies than for their satellite competitors.

Acquisition Cost Trends

Absolute acquisition costs are clearly important, but also critical is the trend in these costs. Generally speaking, there are two countervailing forces.

First, acquisition costs tend to rise as an industry matures and companies compete for late adopters. Since the spending patterns of later adopters are often not as good as earlier adopters, companies must make diligent spending decisions when the industry reaches maturity.

On the other hand, if a customer business benefits from network effects, it can actually see acquisition costs decline as it gains share. (See Exhibit 8.) Typically, multiple networks compete for customer attention, but once one company gets ahead, customers want to join that network precisely because others already have.

A powerful example is eBay. As CEO Meg Whitman told *The Wall Street Journal*, "you see that we're spending less than $10 to acquire each new customer. The reason is that we are being driven by word of mouth." [19] Network effects drive customer NPV by increasing revenue while lowering acquisition costs.

Exhibit 8: Network Effects and Declining Acquisition Costs
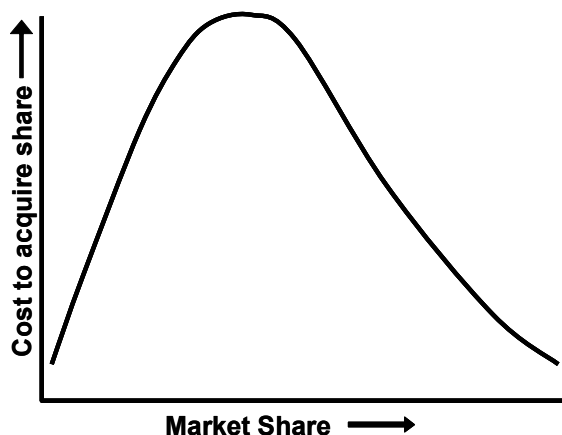
Source: Jeffrey Williams, *Renewable Advantage* (New York: Free Press, 1999), 94. Copyrighted material, used by permission.

A final thought. If M&A deals are close to NPV zero on average, then the value of a deal in a mature industry is a reasonable proxy for value per subscriber.

II. Market Size: How Many Customers?

Now that we've addressed the drivers of customer net present value, we turn to the second determinant of business value: the number of customers. A thoughtful valuation model requires a useful framework to evaluate *how many* customers a good or service will likely attract and *how quickly* the customers will accept the offering.

Get a job

Research suggests that the vast majority of new products fail. One reason for the high failure rate is that marketers typically segment markets by product type, price point, or demographics. The attributes that define these delineations, according to Christensen and co-author Michael Raynor, do not get to the real reason customers purchase a good or service. Customers, they argue, "hire" a product to do a specific "job." When customers perceive a job that they need done, they look around for a product that they can hire. Christensen and Raynor argue that "the functional, emotional, and social dimensions of the jobs that customers need to get done constitute the circumstances in which they buy." [20]

Therefore the circumstances, or jobs, customers face are the proper unit of analysis in this model. Most companies do not think this way and certainly do not collect data this way. Christensen and Raynor argue that the likelihood of new product success tumbles when a company assumes that the customer structures the world in the same way that the company aggregates data at corporate headquarters.

Investors should judge a new product or service's likelihood of success based on a detailed assessment of whether customers will hire it to do the job.

Quantifying diffusion patterns: the Bass model

Substantial empirical evidence shows that new products or services tend to diffuse following S-curve pattern. (See Exhibit 9.) In the late 1960s Professor Frank Bass introduced a diffusion model that assumes that two types of communication channels influence a potential adopter: mass media and word of mouth. [21] Early in the diffusion process, mass media plays a relatively important role, but word of mouth takes on much more relative significance during the bulk of the adoption process.

Exhibit 9: New Product Diffusion Often Follows an S-Curve
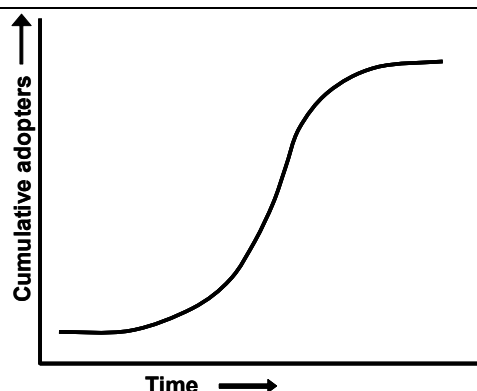
Source: LMCM.

The simple version of the Bass model relies on three parameters: the coefficient of innovation, which captures mass-market influence (p); the coefficient of imitation, which captures interpersonal influence (q); and an estimate of the number of eventual adopters (m). [22] Studies of many industries show that the coefficient of imitation is significantly larger than the coefficient of innovation.

The Bass model proves reasonably robust in tests. For example, the model generated high correlations in predicted and actual numbers of new adopters during the diffusion period. It also provided accurate estimates of the number of peak adoptions. Finally, the model shows good ability to predict long-term diffusion patterns. [23]

Investors can use the model in a couple of ways. One approach is to estimate product potential based on actual parameters from past diffusions. For instance, an investor who estimates that digital video recorders are likely to diffuse in a similar way as DVD players can use DVD diffusion parameters.

Alternatively, investors can start with a company's stock price and some sense of the customer NPVs and determine the subscriber number and pace of subscriber growth the market anticipates. An investor can then compare the imputed parameters with empirical results to judge the likelihood of achieving the parameters.

Bass offers a satellite television case study that shows the first approach. [24] In 1992 Bass forecasted the number of satellite television subscribers for 1999 using management guidance. In the model he assumed that (m), the number of eventual adopters, was 16 percent of homes with television sets and (p) and (q) coefficients similar to cable television in the 1980s (roughly .10 and .06, respectively). The model predicted 9.4 million adopters in 1999; in fact, the actual number was just under 10.0 million. (See Exhibit 10.)

Exhibit 10: Bass Model Predictions of Satellite TV Subscribers

Year	Forecasted Subscribers	Actual Subscribers
1995	0.875	1.150
1996	2.269	3.076
1997	4.275	5.076
1998	6.775	7.358
1999	9.391	9.989

Source: Frank M. Bass, "DirecTV: A Case History of Forecasting," 1999. Copyrighted material, used by permission.

For a simple version of the model and a host of examples, see http://www.andorraweb.com/bass/. Software and other valuable resources are available at http://www.basseconomics.com/BE/Modules/About/Research.aspx.

Once an industry reaches full penetration, the value per customer that the stock price embeds and the lifetime customer value should converge.

III. Managing the Customer Base: Considering the 80/20 Rule

So far we dwelled mostly on customer acquisition issues. What about more mature industries, where companies already have lots of customers? For these companies, managing the customer base is key.

A customer-based business's value is simply the present value of cash flows from current and future customers. While an average value per customer calculation is straightforward (e.g., market capitalization/subscriber) and widely used, it doesn't reflect that today's customers typically have a wide range of attractiveness—from great value-creating customers to value-destroying customers. (See Exhibit 11.) Often, companies do not know which customers create or destroy value. Too often a company's perceived best customers turn out to destroy the most value. [25]

Exhibit 11: Customer Profitability Chart
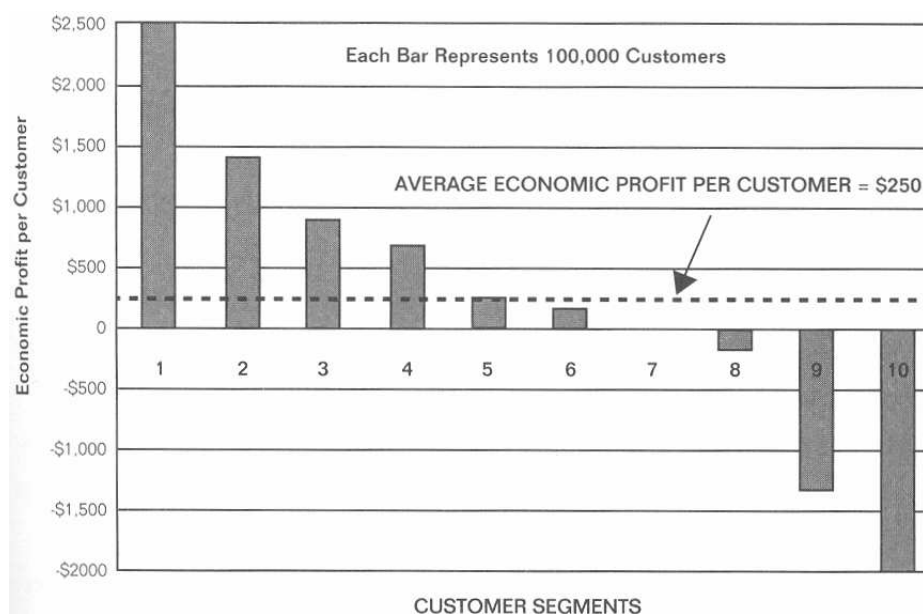
Source: Larry Selden and Geoffrey Colvin, *Angel Customers & Demon Customers* (New York: Portfolio Books, 2003), 57. Copyrighted material, used by permission.

To disaggregate the averages companies must look at the economic profit of each of their customers or customer segments. Economic profit compares the customer's cash flows to the cost of servicing the customer. While most companies have a firm grasp on aggregate customer cash flows, they have only a vague sense of the fully allocated customer costs.

When companies properly calculate customer economics they often find a variation of the 80/20 rule applies: 20 percent of the customers generate 80 percent of the economic profit. In many cases, the numbers are much more extreme. In their book, *Angel Customers & Demon Customers*, Larry Selden and Geoff Colvin note a retail bank found that 17 percent of its customers accounted for 93 percent of the profits and that a major software maker determined that only 2 percent of its customers were profitable. [26]

Some companies use customer profitability data to more aggressively manage their customers. This means treating unattractive customers differently (e.g., like raising prices or refusing service) and paying more attention to attractive customers. The most difficult part of this process is reorienting customer value propositions to simultaneously satisfy customers and improve profitability. Most companies cannot overcome organizational hurdles to implement such changes.

However, some industries are early on in the process, including some credit card companies and retail banks. Here are some other examples:

- Wireless phone service providers like Verizon Wireless and Nextel Communications have active programs to improve customer profitability. Tools include churn prediction models that allow the companies to determine when a customer is likely to leave and models to identify which customers are likely to take offers. These models allow wireless companies opportunities to communicate with customers at key times, hence reducing churn and increasing value. [27]

- Consumer electronics retailer Best Buy estimates up to 20 percent of its customers are unprofitable. As a result, the company identified profitable customers (they have nicknames for some groups—the suburban mothers are "Jills" and the upper-income men are "Barrys"), trained its sales staff, and reconfigured roughly fifteen percent of its stores to better tailor to their needs. According to Best Buy CEO Brad Anderson, the pilot stores are "clobbering" the conventional stores, with twice the rate of same-store sales and higher close rates. Best Buy expects to roll out the customization program to the rest of their stores over the next three years. [28]

- Since joining Harrah's Entertainment, former Harvard Business School professor and current CEO Gary Loveman has driven to use customer data to better manage the business. With a transactional data base over 300 gigabytes large, Harrah's can now trace over three-quarters of its revenues to specific gamblers. One of the early surprises was that 26 percent of the gamblers that visited Harrah's generated over 80 percent of the revenues. The casino found that high rollers, historically coveted, are often unattractive customers. Harrah's now calculates customer value broadly and proactively encourages its best customers to come back while disincentivizing unattractive gamblers. [29]

We expect to see more and more companies use customer NPV techniques to manage their businesses. Success will bring higher cash flows and ultimately a higher stock price. But most companies are not organized to measure or manage customer lifetime value today, and one reason for that is our current accounting system.

IV. Accounting for Customer Value

In the mid 1990s, the Securities and Exchange Commission (SEC) charged that America Online, Inc. (AOL) violated generally accepted accounting principles by amortizing instead of expensing membership acquisition costs. According to the SEC, AOL's fiscal 1995 loss would have been $98 million instead of the reported $21 million loss and fiscal 1996's $62 million in earnings would have been a $175 million loss. [30]

By amortizing membership acquisition costs (over a 24-month period in fiscal 1996), AOL definitely changed its accounting results. But how the company accounted for its marketing outlays *did not* affect the basic unit of analysis—customer NPV. [31] The central question for AOL shareholders has not changed: is the present value of customer lifetime cash flows greater than the cost to acquire the customer? If so, grow.

The goal of an investor is to find stocks where the stock market is likely to revise the embedded expectations for future financial performance. For long-term oriented shareholders, the expectations that matter surround the present value of a company's free cash flows. For customer-centric businesses a firm grasp of customer economics—the basic unit of analysis—is essential to maximizing the likelihood of successfully anticipating an expectations revision.

In summary, customer NPVs are rarely static:

- Customer revenues may vary based on the type of business
- Levels of customer service (and hence cost) differ from customer-to-customer
- There are trade-offs between churn and revenue
- A company's cost structure (level or preproduction costs) can shape the value of an incremental customer

- Acquisition costs can rise or fall given a business's maturity and the degree to which network effects exist
- Churn is an unreliable measure for young companies because the ratio of new customers to current customers is too high
- Judging the potential market size and how rapidly an industry will saturate the market is tricky

In order to facilitate analysis, analysts can think of three phases of a customer-based business lifecycle (see Exhibit 12) based on where the industry is in the diffusion process:

- *Phase I*. In the early stages of industry development, churn data are not very reliable but gauging the market potential and the industry's cost structure (i.e., preproduction costs and the ratio of fixed to variable costs) is critical. Customer retention and managing the customer base are of little importance. Satellite radio is a good example of a phase I industry.
- *Phase II*. In the middle phase, churn data become more reliable, value per subscriber figures to moderate, and companies must strike a balance between customer acquisition and customer retention/management. Satellite television is now in phase II.
- *Phase III*. Once the industry matures, churn data are reasonably reliable and customer retention and management becomes paramount. Here companies must understand the value of the customer base and tailor offerings to maximize value. Customer acquisition issues become less relevant to value. Basic cable television is in this phase.

Exhibit 12: The Analytical Focus for Customer Businesses
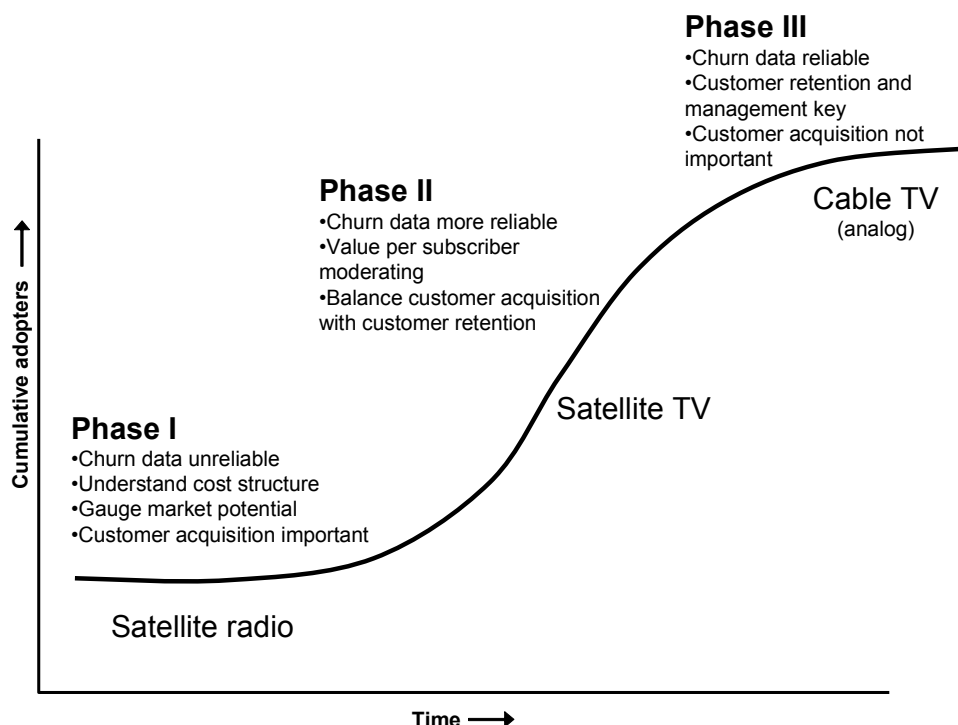
Source: LMCM analysis.

That customer NPVs are not clear-cut does not mean an investor should abdicate responsibility for understanding and assessing the key drivers. Very little in business is clear, and what is clear is rarely a source of excess returns for an investor.

Conversations with Legg Mason Capital Management analysts were especially helpful in guiding this analysis. Special thanks goes to Randy Befumo, Scot Labin, Brian Lund, Mark Niemann, and Dale Wettlaufer.

Endnotes

[1] Uta Werner, "Getting Real About Customer Lifetime Value," *Marakon Associates Opinion*, December 8, 2003. See http://www.marakon.com/ideas_pdf/id_031208_werner.pdf.

[2] Frederick F. Reichheld, *The Loyalty Effect* (Boston, MA: Harvard Business School Press, 1996), 35.

[3] Ibid., vii.

[4] See http://hbswk.hbs.edu/pubcontent/lifetimevalue.xls for a customer lifetime model.

[5] The most visible revenues are with businesses that have positive customer float—that is, the customer pays for the good or service before they receive it. Travelers checks and magazine subscriptions are two examples.

[6] Werner J. Reinartz and V. Kumar, "On the Profitability of Long-Life Customers in a Noncontractual Setting: An Empirical Investigation and Implications for Marketing," *Journal of Marketing*, Vol. 64, October 2000, 17-35.

[7] Alfred Rappaport and Michael J. Mauboussin, *Expectations Investing* (Boston, MA: Harvard Business School Press, 2001), 42-43.

[8] Ken Belson, "Cable's Rivals Lure Customers With Packages," *The New York Times*, November 22, 2004. We can further distinguish between price bundling and functionality bundling. Price bundling is simply offering a host of services at a lower aggregate cost than each of the services would cost individually. Functionality bundling *integrates* services and makes them work together. An example of price bundling would be a lower rate for a subscription of wireline and wireless phone service. An example of functionality bundling is the integration of the two services so that calls to a wireline number would be seamlessly forwarded to a wireless phone and vice versa. We believe functionality bundling will have a more profound impact on churn than service bundling.

[9] Michael J. Mauboussin, "Exploring Network Economics," *Mauboussin on Strategy*, October 11, 2004. See http://www.leggmasoncapmgmt.com/pdf/ExploringNetworkEconomicsRevised.pdf

[10] Clayton M. Christensen, *The Innovator's Dilemma* (Boston, MA: Harvard Business School Press, 1997).

[11] Companies represent churn in different ways. Some companies divide lost customers by the average number of customers during the period (churn = customers lost ÷ beginning customers + ending customers/2). Others divide lost customers by the beginning numbers of customers during the period (churn = customers lost ÷ beginning customers). Further, companies disclose churn over different time periods (e.g., monthly, quarterly, annually).

[12] Op. Cit., 36.

[13] Ibid., 37-50.

[14] Frederick F. Reichheld, "The One Number You Need to Grow," *Harvard Business Review*, December 2003, 46-54. Also, John E. Horgan, Katherine N. Lemon, and Barak Libai, "What Is the True Value of a Lost Customer?" *Journal of Service Research*, Vol. 5, 3, February 2003, 196-208.

[15] "Churn Hasn't Risen Despite Number Portability," *eMarketer*, November 9, 2004. See http://www.emarketer.com/Article.aspx?1003128.

[16] Stephanie Coyles and Timothy C. Gokey, "Customer Retention is Not Enough," *McKinsey Quarterly*, No. 2, 2002, 81-89.

[17] Reichheld, 50-57. Not all businesses see higher-than-average churn followed by lower-than-average churn. For example, consumer loans tend to follow the opposite path.

[18] We set aside discounting for this simple illustration.

[19] Frederick F. Reichheld and Phil Schefter, "E-Loyalty: Your Secret Weapon on the Web," *Harvard Business Review*, July-August 2000, 107.

[20] Clayton M. Christensen and Michael E. Raynor, *The Innovator's Solution* (Boston, MA: Harvard Business School Press, 2003), 74-75.

[21] Frank M. Bass, "A New Product Growth For Model Consumer Durables," *Management Science*, Vol. 15, 5, January 1969, 215-227. See http://www.basseconomics.com/BE/Downloads/Papers/Bass%201969.pdf.

A simplified version of the Bass model is:

$$x(t) = [p + q (X(t-1)/m)] [m – X(t-1)],$$ where

$x(t)$	=	number of adoptions during period t
$x(t-1)$	=	cumulative adopters before period t
p	=	coefficient of innovation, which captures mass market influence
q	=	coefficient of imitation, which captures interpersonal influence
m	=	number of eventual adopters

[22] Gary L. Lilien, Arvind Rangaswamy, and Christophe Van den Bulte, "Diffusion Models: Managerial Applications and Software," *Working Paper*, May 20, 1999. See http://www.ebusiness.xerox.com/isbm/dscgi/ds.py/Get/File-89/7-1999.pdf.

[23] Malcolm Wright and Don Charlett, "New Product Diffusion Models in Marketing: An Assessment of Two Approaches," *Marketing Bulletin*, 6, 1995, 32-41.
See http://marketing-bulletin.massey.ac.nz/article6/V6Article4.pdf.

[24] See http://www.utdallas.edu/~mzjb/Directv.ppt.

[25] Larry Selden and Geoffrey Colvin, *Angel Customers & Demon Customers* (New York: Portfolio Books, 2003).

[26] Op. Cit., 54-55. Also, James M. McTaggart, Peter W. Kontes, and Michael C. Mankins, *The Value Imperative* (New York: Free Press, 1994), 164-168.

[27] Adam Braff, William J. Passmore and Michael Simpson, "Going the Distance With Telecom Customers," *McKinsey Quarterly*, No. 4, 2003. Also, Mamuni Das, "How Verizon Cut Customer Churn By 0.5 Per Cent," *Financial Express*, October 8, 2003.

[28] Gary McWilliams, "Analyzing Customers, Best Buy Decides Not All Are Welcome," *The Wall Street Journal*, November 8, 2004.
Also, see http://media.corporate-ir.net/media_files/irol/83/83192/presentations/bby_040503.pdf.

[29] Gary Loveman, "Diamonds in the Data Mine," *Harvard Business Review*, May 2003, 109-113. Also, Christina Binkley, "Taking Retailers' Cues, Harrah's Taps Into Science of Gambling," *The Wall Street Journal*, November 22, 2004.

[30] See http://www.sec.gov/litigation/admin/34-42781.htm.

[31] Arguably, amortizing versus expensing might hurt value if it pulls forward tax liabilities.

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