THE ENTERPRISE SALES LEARNING CURVE

A FRAMEWORK FOR BUILDING STARTUPS AND LAUNCHING NEW PRODUCTS

BY MARK LESLIE AND CHARLES A. HOLLOWAY

"It always takes longer and costs more" laments Don Valentine of Sequoia Capital, one of the most successful and respected venture capitalists today. This is consistent with our own extensive involvement in entrepreneurial companies over the past twenty-five years where it is the truly rare company that meets or exceeds its initial plans. The large majority miss the timing of their revenue ramp and require more capital than originally planned to achieve cash flow breakeven operations. When established companies release their first product in a new category (for them), they often face the same challenges.

Twenty-five years ago the principal risk in creating a new company (or for an established company launching a new product initiative) was in the feasibility of the new technology. Underlying this was the belief that "if we build it, they will come." Today, with much more robust development tools and many more sub-components available, the development of most new products is reasonably predictable. In a much more competitive world the risk has moved instead to the go-to-market stage, which typically begins upon the completion of the beta version of the product. The old assertion has become the new question: "When we build it, will anyone come?" Uncertainty surrounds decisions on the number and timing of resources to deploy and the resulting time and cost it will take to make it through this stage. It usually results in an overinvestment in sales, disappointing revenues and excessive consumption of cash.

When companies introduce new products they experience broad-based learning in the areas of product definition, market definition, and sales process. The Enterprise Sales Learning Curve (ESLC) relates this learning to the productivity of a fully effective, trained sales person, and describes how yields increase as learning occurs. This is illustrated in Figure 1 below. The ESLC provides a framework that can help managers and investors develop thoughtful strategies, plan more accurately, set more appropriate expectations and reduce the investment in time and money required to achieve profitable operations. Like all learning curves it captures the fact that processes and functions become more efficient over time. Failure to understand and take advantage of this can cost companies money, time and perhaps their existence. The problems companies face when the ESLC is not understood is that they have a revenue gap illustrated by the area between the assumed curve and the actual curve. The effect of not applying the ESLC is captured by Figure 2 below.
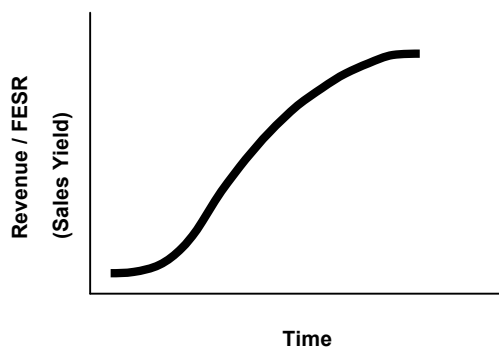

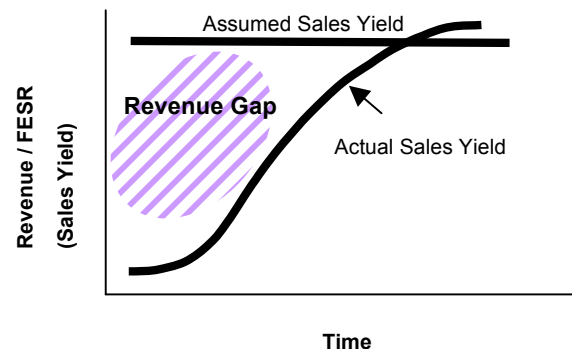**Figure 1: Enterprise Sales Learning Curve (ESLC)**

Figure 2: Assumed Sales Yield Revenue Gap

The uncertainties involved in the go-to-market stage that lead to an ESLC are illustrated by the cases of Scalix Corporation and Veritas Software.

EXPERIENCING THE ESLC IN A STARTUP COMPANY -- SCALIX CORPORATION

Scalix Corporation, a Linux-based email and calendaring software company, was founded in 2002. It focused on the rising costs, complexity and security vulnerabilities associated with email. Founders had concluded that the underlying infrastructure of the market leading email systems, most notably Exchange, were originally designed for workgroups and had not been improved to scale efficiently to support large organizations. It believed that the disruptive nature of Linux created a rare opportunity for a new supplier to enter the mature email marke. and provided a solution that was more secure, scaleable, reliable and lower cost.

Based on the enthusiasm of CIOs from initial interviews, Scalix developed a product using as its core HP's OpenMail system and jumped into the go-to-market stage. Scalix's initial strategy was simple: recruit a high-powered enterprise-sales veteran and sell direct to CIO's at large enterprises. They rapidly extended and expanded the enthusiasm and interest for the Scalix product at the CIO-level. Most alluring to these CIO's was that Scalix claimed it could provide a total cost of ownership (TCO) savings of between 40-50 percent of current costs.

As it moved deeper into the sales cycle at large enterprises, Scalix discovered a number of unanticipated problems. First, it became evident that the CIO was not the decision-maker for these companies' email vendor. In many cases, the operations team one level down from the CIO – the people who would be responsible for maintaining a service level agreement to keep mail up day-in and day-out – had rejected the Scalix bid because they did not want the headache of having to move their Windows-based Exchange administrators over to manage a Linux application.

Second, Scalix discovered that many large companies needed to get more comfortable with Linux before they would run email on it. While most organizations in Scalix's sales pipeline had a small group of people trained on Linux, those people were not working on email. The early adopters of Linux, Amazon and eBay for example, were running customer-facing applications on Linux.

Third, the Scalix product was not quite ready for primetime. The CEO explained:

> *"You come out, and you think you have a market-ready product. Then you discover that you really don't. You're 90 percent of the way there, but there's another 10 percent you have to iterate on with customers. From the time we came out and through all of 2003, we iteratively worked on pilots and trials with customers and learned the full extent of customer's requirements for enterprise class email."*

Scalix faced such an uphill battle selling direct to large enterprises that after a few successful sales to small public sector accounts, the company corrected its course. In mid 2004, it overhauled its go-to-market strategy to hit the Linux evangelist and early adopter community first, with a particular emphasis on smaller targets in the higher education and public sectors, segments where Linux adoption was strongest. To execute on this new strategy, Scalix hired two in-house "tele-sales" representatives to drum up leads and fuel the sales model. With lower priced salespeople and compressed sales cycles, the new "tele-sales" model offered vastly different economics for Scalix than direct sales.

These adjustments are typical of a company "learning" and changing as it interacts with real customers using the company's product to do real work. The new plan is working for Scalix – it has been named as one of the Red Herring 100 Private Companies of North America two years running.

EXPERIENCING THE ESLC IN A LARGE, MULTI-PRODUCT COMPANY – VERITAS SOFTWARE

Veritas Software, a large software company with three major product categories sells its products through an international sales force of over 2,000 field employees. It has had great success selling incremental versions of their existing products. However, new products have been more difficult and there is less certainty of achieving customer satisfaction quickly. The company's track record on new category products was very spotty.

In Late 2001 Veritas decided to launch a new class of products. Veritas' file and disk management software products offered the great majority of the features of disk subsystems sold by such vendors such as EMC Corporation and Network Appliances Corporation. Conversations with customers indicated that they had a strong preference for a complete hardware and software solution. Being a software company, Veritas' solution was to create a "Software Appliance" product -- a complete set of software pre-configured to run on hardware from such vendors as Dell, Compaq, HP and IBM. This solution would offer the cost advantages of buying commodity hardware from their existing vendors and a complete "plug and play" software package from Veritas.

Veritas' initial go-to-market strategy was to recruit an "overlap" sales force that would work closely with the regular sales force and to commission them both on the new product. Shortly after its launch a number of problems arose. Tthe company had expected the product to be mature and "ready for prime time", but in

actuality there were product stability and functionality issues that had to be dealt with. This caused frustration for sales people used to selling mature products. The commission structure exposed the regular sales force (used to selling mature products) to all of the early product issues without a significant additional revenue opportunity to compensate for this. Savvy experienced sales reps rebelled against the new product and commission structure. In addition, it caused concerns with the regular Veritas sales force that this new product would be seen as a threat to the hardware vendors and interfere with the field level cooperation with these vendors.

As a result of these problems the new product was abandoned a little over a year after its introduction because the revenue remained substantially below expectations.

In both these cases products were launched, resources allocated (sales forces hired, marketing materials created), capital raised and expectations set before the companies and products were ready to execute on the go-to-market strategy. These are the issues addressed by the Enterprise Sales Learning curve.

ENTERPRISE LEARNING AND LEARNING CURVES

Many activities within an organization show material and continuous improvement through a learning process. In manufacturing, the effect has been captured through "learning curves". These were identified as important for understanding product costs. In the 1970's, the Boston Consulting Group developed the concept into a strategic tool and based a large part of their practice on developing and exploiting cost advantage available to firms who were "down the learning curve." They raised the concept from one focused on a particular process to one attributable to an entire firm. The fundamental premise is that processes and firms become more efficient over time. In the case of the Manufacturing Learning Curve (MLC), the independent variable that most accurately predicts falling costs is the number of times a process has been run. Another type of learning (industry-wide in this case) is captured by Moore's Law a famous "learning curve" which articulates the improvements in semi-conductor density available as a factor of time. In both these cases the actual curves reflect the aggregation of many different activities that affect cost and density. Like the MLC and Moore's Law, an aggregate Enterprise Sales Learning Curve (ESLC) can capture the learning during the go-to market stage.

Figure 3 below shows the complementary nature of manufacturing learning and sales learning in a product-based company. Manufacturing learning is driven by a group of departments facing the Production Frontier and is captured by the Manufacturing Learning Curve (MLC). Sales learning is driven by a group of departments facing the Customer Frontier and captured by the ESLC. The data available for estimation of the curves are quite different. In the case of the MLC, a well-established field of cost accounting collects and disseminates the data required to plot the curve. This is possible partly because production processes generate substantial amounts of data. They are more repeatable and hence more predictable than revenue generation activities especially with new companies. But, the availability of data also is partly the result of a concerted effort to collect it.
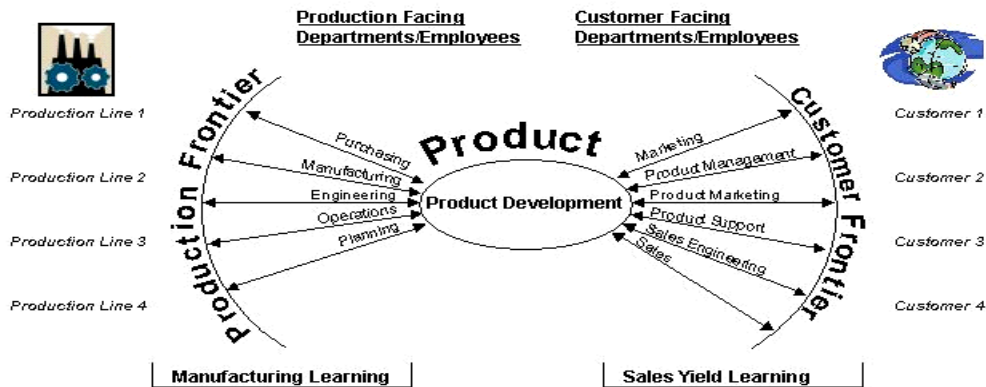
Figure 3: Learning in the Product-Centric Organization

FACTORS THAT INFLUENCE ENTERPRISE LEARNING

Every business goes through its own unique learning process, and each industry, company and product has a different set of drivers. As illustrated by the Scalix and Veritas examples above, the products did not have exactly the right features, did not work exactly the way they were supposed to work, and the sales and marketing processes were not focused correctly on the right customers.

For many companies, especially those involved with technology, Table 1 below defines some of the important factors that evolve through learning.

Product Development	Marketing	Sales
Completeness Features and Functions Interface to Existing Ecosystem Ease of Installation **Correctness** Value to Customers Reliability Serviceability **Fit** Ease of Use Suitability for Environment	**Positioning** Competitive Analysis Market Segmentation Marketing Messages Proof of Value Proposition (ROI) Packaging **Promotion** Collateral Materials Advertising, shows and PR Customer Success Cases **Pricing** Across Market Segments Across Channels	**Channels of Distribution** Number and Type Channel Support and Training **Sales Force** Sales Model Sales Pitch Training and Development Lead Generation Technical Support **Sales Stage** Learning Development Expansion

Table 1: Functional Areas Susceptible to ESLC Learning

THE ENTERPRISE SALES LEARNING CURVE

The ESLC is shown in Figure 4 below. The concept of a Fully Effective Sales Representative (FESR) as referred to in Figure 4 is defined as a sales representative who is capable of achieving a company's "standard" quota.[1]

The curve represents the increase in sales yield over time as enterprise learning takes place. As is the case with the MLC and Moore's Law, the learning represented in the ESLC does not take place without effort. In the ESLC the learning is stimulated principally by the company's various interactions with customers. Each of the factors in table 1 above may have a variety of activities that contribute to the learning.

The ESLC illustrated in Figure 4 below shows the learning captured by the product development, marketing and sales groups that results in a change in the sales per FESR (sales yield) as the firm goes through the go-to-market stage.[2]

The *actual* revenue generated in a company will depend on the positions on the productivity ramp of its individual sales reps, the ability and progress of the product development, marketing and sales organizations in stimulating the organization to learn, and, of course, the overall quantity of learning that is required to achieve market acceptance of its products. The latter two factors drive the shape of the ESLC. The shaded area around the curve in Figure 4 represents the uncertainty about these factors as well as the ultimate sales yield possible for the product.   It recognizes that the actual curve may take a longer time to reach steady state and also may reach a maximum short of the standard quota.   As discussed below, the degree of uncertainty surrounding the curve can influence the hiring strategy used by a firm.
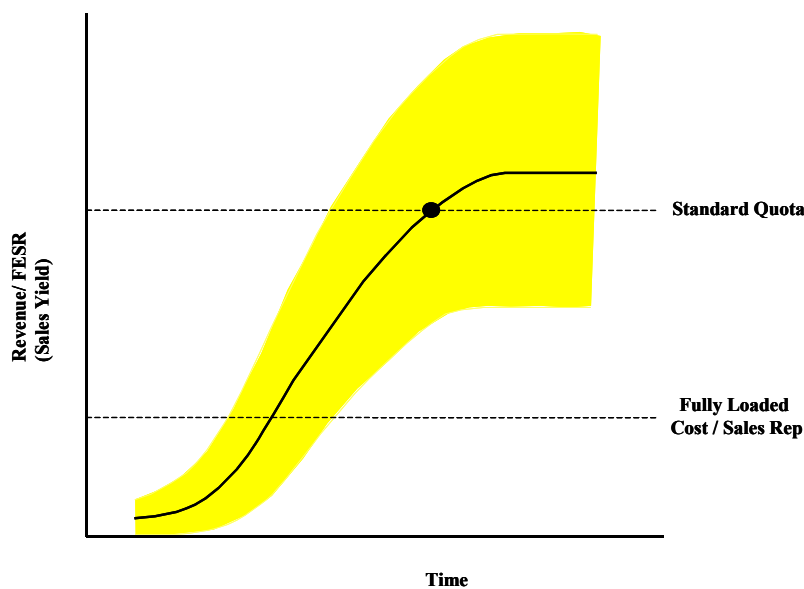

Figure 4: Enterprise Sales Learning Curve (ESLC)

The shape of the curve can vary with the product, the company and /or the industry. For example, in a more consumer oriented product characterized by a "faster, better, cheaper" strategy (i.e., Handspring coming after Palm), there may be substantially less learning required which would have the effect of sharply moving the whole curve to the left. On the other hand, a company developing truly new technology for new applications may have a very, very long learning curve.

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[1] When an individual sales rep moves to a new company or product space he/she reaches FESR status through an "individual" learning phase that typically lasts about six months. Typically the new employee yields 0% of an FESR in the first quarte, 50% in the second quarter, and 100% thereafter. This individual learning curve should not be confused with the enterprise-wide learning referred to in the ESLC concept.

[2] As noted above, the horizontal axis of time assumes that during this "time" enterprise learning occurs as a result of customer interactions and other stimuli.

WHY "IT ALWAYS TAKES LONGER AND COSTS MORE…"

At the time of successful beta test young companies are typically configured with a large fixed cost consisting of engineering and G & A personnel – all the cash flow is flowing out. The only way to get to a cash flow positive business is to generate revenues by deploying a sales function in the company.

The key question then becomes how many sales reps to hire and how quickly. Since we are trying to optimize on achieving cash flow breakeven the basic formula is to divide the total fixed costs by the marginal contribution of the sales rep (total revenue per rep less total cost per rep) to derive the total number of sales reps required.

The usual first step is to hire a VP of sales from a larger company in a related business who will generally employ a Capacity Planning Model (CPM) to help answer this staffing question. In that prior company the sales process was mature and the proper assumptions were established based on recent past experience. In this new company (or new category product) where there is no recent past experience the VP must establish his best "rational" assumptions. If in his prior company an FESR produced $2.5M the new VP, to be conservative, might set a standard quota at $1.5M. For calculating his corporate revenue he would typically reduce that by 20% to account for attrition and uneven performance expectations. With a gross margin on the revenues of 90% and the associated cost of that rep at $0.5M[3] that would give a marginal contribution of $580K per FESR. For a company with a fixed burn rate of $3M per quarter ($1 million per month) and the quarterly marginal contribution of $145K per rep (one quarter of annual rate) the company would have to hire 21 sales reps to break even in the third quarter (the first two quarters would be depressed by the individual learning curves of the new reps) and thereafter as shown in Figure 5: Hiring to Achieve Cash Flow Breakeven – "The Hope", below.
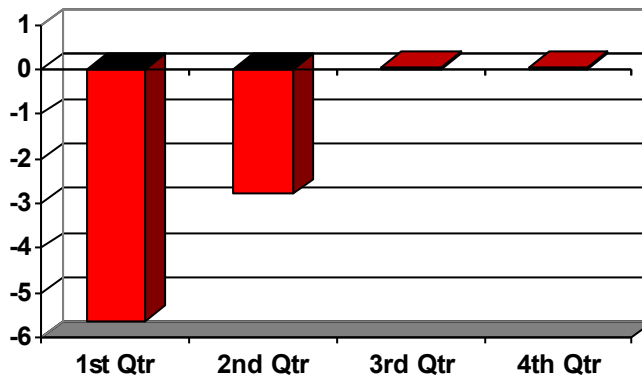

Figure 5: Hiring to Achieve Cash Flow Breakeven – "The Hope"

Unfortunately this model is profoundly flawed, as it does not take into consideration the ESLC. The root assumption in the capacity planning model is the projected productivity of the FESR. The newly hired VP, based on prior experiences in a mature, steady state company, sees the sales yield as a constant and estimates it for the new company based on some reasonable fraction of sales yield at their prior company. If we refer to the ESLC as described above and illustrated in Figure 2 then we can see that with a new product the productivity actually starts out very low and only rises as the company learns and fixes the problems which impede revenue production. The reality for these companies is all too often a result like that shown in Figure 6, which typically leads to a crisis in the company.

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[3] Total cost of SR = $500K: SR = $200K of base plus commission (or draw), + $80K salary, administrative and operating overheads + $50K of travel and entertainment expenses = $330K. Add sales support at 35% of SR cost = $120K and management at 15% of SR cost = $50K
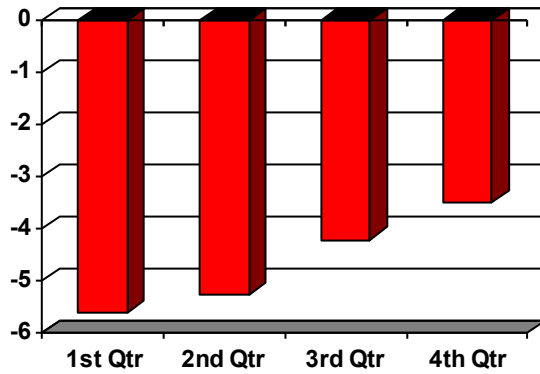
Figure 6: "The Reality"

APPLYING THE ESLC FRAMEWORK

The ESLC provides a framework for management planning and action across a wide variety of functions, the most prominent of which are described below:

Sales Force Staffing

In the implementation of the ESLC for sales force planning, it can be useful to consider three phases. The first, the Initiation Phase, is dominated by the learning discussed above and can be appropriately called Staffing for Learning. This phase begins at the start of the go-to-market phase and lasts until an FESR can reach a volume that covers the fully loaded costs of a sales rep and makes a positive contribution (see Figure 7.). As noted above the shape of the curve will be different for each situation. In this phase the curve will reflect the need to develop collateral materials, implement a marketing and sales strategy, and correct product feature sets and deficiencies before gaining traction. During this time typically few customers will be willing to consider buying the product and those who do will require significant incentives. Due to the economic inefficiency it is inadvisable to hire too many sales reps at this point, since without the learning that will be accomplished over this time period they are a net loss to the company, and the more you hire the greater the loss. It is a time for a "few good people".

As the company completes this work and a critical mass of customers is approached the curve accelerates and moves steeply up.
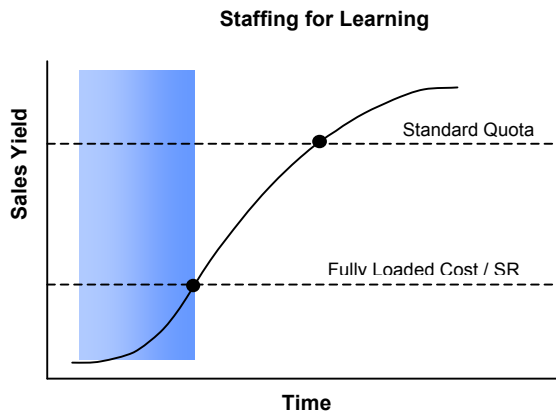

Figure 7: Initiation Phase

The second phase, the Transition Phase, lasts until the sales yield reaches a point where company management can see that the product will be successful. In some cases managers

may use 2X the fully loaded cost per sales rep as the end-point of the Transition Phase. It is during this phase that the company typically gains visibility into the ultimate sales yield level. At some point in the first or second phase the product reaches a critical mass of installations and the contagion effect that led to acceleration of the ESLC gives way to slower learning and a deceleration in the ESLC. This results in a convex curve asymptotically approaching a peak as the product reaches full penetration.
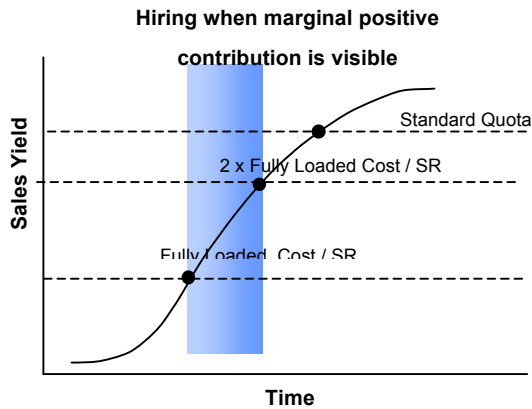
Hiring when marginal positive contribution is visible

Sales Yield

Standard Quota

2 x Fully Loaded Cost / SR

Fully Loaded Cost / SR

Time

Figure 8: Transition Phase

Once the ESLC reaches the point where visibility into the product's success is achieved the third phase or Execution Phase is reached. This will signal that a repeatable sales model has been developed. At this time sales reps can be hired as rapidly as possible given the company's management and financial constraints.
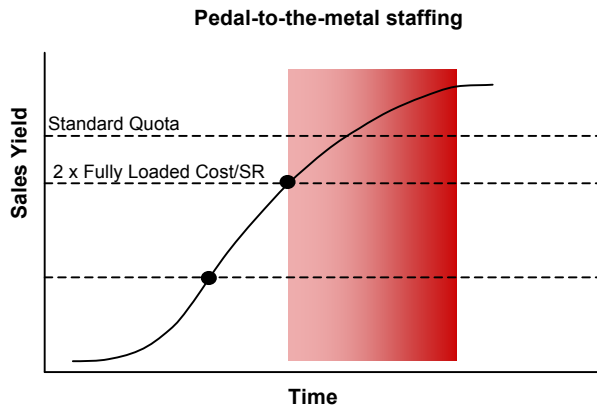
Pedal-to-the-metal staffing

Sales Yield

Standard Quota

2 x Fully Loaded Cost/SR

Time

Figure 9: Execution Phase

Sidebar on Hedging Strategy (last page) would go here…

THE RENAISSANCE SALES REP AND THE COIN OPERATED SALES REP

In addition to understanding the timing of hiring it is important to hire the right person at the right time.

The "Renaissance" Sales Rep: During the initiation phase we would like to hire an individual who is able to facilitate broad based learning by the enterprise. This individual likely has a deep interest in the technology and in bringing together various customer departments with the appropriate representatives of the company. The individual is extremely resourceful, able to develop his / her own sales model and collateral materials as needed.

The "Coin Operated" Sales Rep: In the execution phase, when the formula for success has been developed (a repeatable sales model) and all of the support requirements for sales reps are in place we want to hire a sales rep who is goal directed and able to efficiently apply the available resources. The Coin Operated sales rep may be characterized by: "Give me my territory, sales plan, price book and brochures and I will send you orders".

During the transition phase it is appropriate to hire to a blended model of the two types described above.

General Management Actions

Much like manufacturing organizations who drive their new product manufacturing organizations on the principles of the Manufacturing Learning Curve, it is appropriate for management of the start up company or the new category division to drive their new product go-to-market organizations on the principles of the ESLC. The whole organization should be focused on the customer frontier, as it is the source of learning. The organization should make a best estimate of their expectations of what their unique ESLC might look like. Personnel should be queried for the purpose of developing a list of learning opportunities that may be ordered by revenue impact, and updated as new information becomes available. Revenue and expense plans should be developed that take the ESLC into account (slower revenue ramp, more conservative sales hiring) such that expectations of investors, senior executives and employees can be appropriately set and managed.

To put in place an effort to accelerate the ESLC, it is imperative to mobilize the entire company to interface with the customers. In addition to the executive management team, the organizational units that will be involved include: Sales, Product Marketing, Marketing Communications, Engineering, and Finance. Each plays a role and has a set of levers that can be employed.

Sales Management Actions

During the early part of the learning phase the company should view the principle tasks of the sales organization as being the clearing-house for all learning, helping the startup team to interface with customers and improve the product, and developing marketing and sales strategies to be consistent with learned needs. Unlike the sales rep in the more mature company, this early stage sales rep must have tolerance for ambiguity and corporate learning. These "Renaissance" sales reps will be more technically competent and "textured", with a greater tolerance for ambiguity than the "Coin Operated" sales reps who come later to execute a sales model that has been demonstrated to be repeatable. It is unrealistic and potentially dysfunctional to assign large quotas to these initial sales reps. They should have incentives to focus on the early learning, as well as incentives to support engineering, product marketing and marketing communication as they perfect the product and the collateral material required to move up the ESLC. Expecting them to achieve their learning objectives by a heavily commission-based plan will not achieve the company's sales objectives. More importantly, it may also limit the rate of learning. During this phase, a small number of sales reps will not only limit costs, but a small force can actually be more effective in supporting the other groups. In addition to helping with the product development and marketing efforts, the sales organization will focus on selecting and training the channels of distribution; developing plans for the hiring and training of the sales force as the company moves up the curve; refining the sales model and sales pitch; establishing training and development programs; identifying lead generation mechanisms; developing technical support structure and organization; and building the sales force in ways to capture and institutionalize the learning processes from the earlier hires to the later hires. This requires a culture that encourages reps to convert mistakes and miscues into value-adds to the learning curve.

Marketing Management Actions

Learning about the product is the primary focus of product marketing during all phases of the ESLC. The product marketing group needs people who can bridge the gap between customers, sales reps and the engineering organization. They need to be knowledgeable about the product technology and also able to understand customers and their needs. In the early phase of a start-up the CEO and his top reports are deeply involved in getting the product right. Therefore, the product marketing group will also have to interface with them. Product marketing can be a major factor in accelerating learning associated with the ESLC. It is important that this new role in driving learning in the early stages of the ESLC is clear to the rest of the organization and that the product marketing organization holds the product to high standards on completeness, correctness and fit.

Once beta testing is complete, the company must decide when to launch a marketing campaign. There can be pressure to launch a marketing campaign early to support the sales effort. But, when the company is in the early stages of the ESLC, where the main focus is on learning, launching a marketing campaign can not only be an expensive use of scarce cash resources, but it can also distract the organization from its primary leaning goal and set false expectations among the sales and engineering groups. Perhaps even more importantly, it can set false expectations in the marketplace that will impact the company's ability to establish the correct longer-term market position. During this period, marketing communications should work on developing a flexible launch schedule and lining-up production capacity for collateral materials once they have been developed to support the final product and sales strategy.

Engineering Management Actions

After the beta is completed (and sometimes even before), the engineering organization faces pressure to turn to the next product. The rationale is that the initial product is complete and the company needs to begin work immediately on the next one. This is compounded by the fact that the best engineers always want to move on to the next challenge. Cleaning up and making sure that existing products are complete and correct, and have the right fit, are often not seen as the most interesting phase of product development. If companies allow those most intimately knowledgeable about the product to move on, it can significantly slow down the learning required to move up the ESLC. Not only will new engineers have to be trained, but even when they are trained, it will typically take them longer to make modifications.

If companies understand the imperatives of the ESLC, they may change their approach to product completion. Companies have long discussed manufacturing launch for physical products in terms of "time-to-volume". This same notion suggests that engineers should be focused on "time-to-sales-quota". To accelerate learning, management can choose to devote more knowledgeable engineers to the post-beta phase.

CONCLUSION

Over the years the concept of the Manufacturing Learning Curve has become totally entrenched into industries like high tech manufacturing, where companies "price on the learning curve" – that is, they deliberately set selling prices low on the early manufacturing runs to stimulate volume so that they can traverse the MLC and achieve lower cost, but ultimately attain a higher profit.

The Enterprise Sales Learning Curve should also be an important feature of a company's business strategy. Like the MLC it permits one to see all of the aspects of go-to-market activities through a new lens, and to plan appropriately. Applying the SLC as an intellectual construct allows management and investors to share a common language in understanding this unpredictable phase of the business. Managers can craft tools and systems to better observe and more importantly impact their company's development during this phase.

Successful application of the ESLC can reduce the failure rate of startups and new category product launches, and at the same time allow companies to reduce the time and cost of achieving cash flow breakeven operations.

Comparing an Aggressive Hiring Strategy to a Hedged Hiring Strategy

In general a hedged hiring strategy can trade off the cash required to breakeven with the time required. In this example cash is reduced without increasing time to breakeven.

The first two columns of results represent an aggressive hiring strategy extending over the first 4 quarters to build out the sales force to serve the potential market. The first column represents management's expectations assuming that all sales reps become productive based on their individual learning curve, i.e., that there is no ESLC effect on the enterprise. The second column, with the same staffing plan with an ESLC, shows how the actual result can vary. Instead of burning $12.5M to get to cash flow breakeven the company experiences disappointing results and requires $27M to get to cash flow breakeven.

If management considers the ESLC they would employ a hedged strategy, deploying a minimum number of sales reps to achieve learning and minimize cash burn until visibility into the ultimate success of the company is achieved. This is represented in the third column. It is interesting to note that cash flow breakeven is achieved on substantially less money, but in approximately the same time. This implies that the time required to reach cash flow breakeven is directly related to successfully traversing the ESLC.

	Aggressive Hiring Scenario		Hedged Scenario
Use of ESLC	**Assumed (No ESLC planned for)**	**Actual (ESLC in effect)**	**ESLC used**
Total cash required	$12.53M	$27.08.66M	$19.98M
Cash to visibility (at end of 4th Q)	N/A	$25.43M	$16.44M
Time to breakeven	Q5	Q6	Q6
Time to reach max revenue run rate	Q6	Q6	Q10

Cash Utilization for Hedged vs. Non-Hedged Hiring Strategies