

Fitting Your Technology Into Marketplace

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A screening process designed to emphasize the importance of identifying realistic market opportunities

More and more, today's companies are trying to capitalize on technology to gain sustainable competitive advantage. They realize that, in the face of technological change increases, their products and services must be more advanced, faster, better, and easier to use than their competitors' products and services. However, the question with which companies are often faced centers around how to convert their new products or technologies into business opportunities. They need a process to assess where the technology fits in the marketplace, to size the market, to see how fast the market will evolve, and to come up with the most effective market penetration strategy.

New technologies emerge from a number of places. Sometimes they are the result of a tightly focused R&D effort to find a solution to a specific set of customer needs. However, in a surprising number of instances, new technologies emerge as an unexpected by-product of R&D efforts. These are not limited to solving a specific set of marketplace needs. Rather, they appear to have a potential fit into markets and applications that are outside of the company's scope of business. Every large R&D laboratory has its list of unsolicited technologies, because technologists are rarely able to translate technology into business opportunities. This is true for several reasons:

1. New technologies are rarely one-for-one replacements of existing technologies; they usually add diagonally across more than one

2. Most technologists look to applications that optimize the technology. Often, the best marketplace fit is not the best technology fit.

3. Technologists want to put their technology into the largest market opportunity. Frequently, the best place to invest the technology is in niche-market applications where end users place high economic value on the technology.

4. Technologists think and talk in terms of how the technology works; marketplace think and talk in terms of functional needs.

The basic question that marketers typically want to answer is: Who needs this product or technology, and how do we convert it into a market opportunity? However, other key questions must be answered by analysis of the marketplace to thoroughly gauge market opportunity and develop an appropriate product strategy. For example, how quickly will the market adopt the product or technology? Can the manufacturer positively influence the adoption rate? How does the market talk about the competition? What value does the offering bring to the marketplace?

Because technologists cannot easily answer these questions, marketers and planners need to put tools and approaches in place to ensure a market-driven product strategy. They must get involved early in the product development process to help technologists and others in the company see the feasibility of a new product or technology from a marketplace perspective. They need to help management understand whether they should invest further in the technology and if so, how quickly and how much they should invest. They must continually collect and analyze market information to guide the technology development, forecast the business-

market opportunity and develop the strategy for market entry.

TECHNOLOGY SCREEN

A process called the Technology Screen is particularly valuable for companies that want to assess where a new technology "fits" into the marketplace. This is especially true in both of the following situations:

• When a product or technology has been developed and a company must identify its market, end-user groups possessing needs that the product or concept can satisfy at an acceptable cost.

• When a product or concept has entered R&D but is not yet fully defined and the company must clearly understand the needs of target end-user segments in order to effectively continue development and launch of the product.

The key variables that must be considered in both of these situations are buyer needs (current, projected buyers based on the product features and benefits they require), economic (use a "value analysis" to determine the buying segments for which it makes economic sense to adopt the new product or technology), and time (determine the most realistic adoption timetable for buying segments and gauge both short- and long-term market opportunity). Each of these variables should function as a "screen" to allow companies to further define their product launch strategy by answering questions such as: How big is the market? Where is my market? Who will my market develop? How do I reach my market?

Screening the market is an iterative

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Figure 1

five process (Figure 1). A nonlinear approach is especially valuable in the environment of ambiguity in which new product teams work. It allows them to learn as they go, sort out what is important and what is not, and adapt their approach during the process. Each screen may be applied and reapplied as the product or technology is modified and redefined. The outcome of prospects narrows as they enter each of the screens — Needs, Economics and Time.

Although the Needs Screen should always be applied first, the other screens may function as second or third steps. When a technology is truly "new" to the marketplace, the Three Screens should be applied second. This enables companies to identify the organizational changes buyers must go through. When the product or technology is not radically new and decisions are based on a high degree of cost justification, the Economics Screen functions best as a second step in the process.

After passing through all the screens, the target market is defined. Applications that fail to pass through any of the screens are not short-term market opportunities. In addition, approaches may be modified based on the knowledge of why certain buying groups did not pass through the screens.

These technology screens were successfully applied last year to a wireless radio-based microprogrammable control product developed by Proxim, Inc., a venture-funded company located in Mountain View, California. The company was developing a core technology of spread spectrum (voice transmis-

ing) wireless data communication, including software and protocols that could be commercially successful across a wide variety of vertical applications. The challenge Proxim management faced was understanding the market opportunities that existed for discrete products the company was considering as well as how Proxim could effectively link the markets to achieve higher levels of synergy. Other issues included:

- Which vertical application opportunities represent short-term opportunities, and which markets represent longer-term opportunity?

- What products should Proxim develop?

- What broad performance requirements does each application segment have?

- How do these requirements relate to system configuration and functionality?

- What is the variance in requirements across the application segments?

- Which channels should Proxim pursue in developing partner relationships?

The company's team of management, strategic marketing, engineering, and finance specialists believed they had a differentiated product. However, they were unsure of the best markets and opportunities to target and pursue with the product. They needed market-based information to develop the optimal "go-to-market" strategy.

The first decision Proxim's team needed to make was where to place the initial focus. Given a broad capability, it would have been very costly for Proxim to evaluate the total universe of product options and market segments. An initial series of brainstorming sessions was used to develop a "straw man" for Proxim's radio-based microprogrammable controller called the Nemat-Controller. Now, the group generated several hypotheses concerning where Nemat-Controller applications might exist. A series of "discovery" interviews were conducted with experts, end-users and reviews of competitive technologies to validate the hypotheses. As a result of the screening process, 18 application candidates were iden-

tified, who were further condensed into five application families, each with a set of distinctive characteristics on the functionality of the Nemat-Controller in the application, the type of solution offered and the benefit sought. Each screen — Needs, Economics and Time — revealed crucial information for Proxim's team.

NEEDS SCREEN

The Needs Screen examines the benefits of the product or technology from an end-user perspective. It enables buyers who need the benefits that the new product or technology provides. These benefits are revealed by discussing the potential buyers' response to issues such as:

- What needs the benefits of the new technology?

- What functional requirements of the target market does the new product or technology address?

- Do differences in these functional requirements define progressive buying segments?

Often, technologists must be willing to compromise their products to align them more closely with buyer requirements or needs. While IBM's interest lies in how the product works, buyers are most interested in what the product does and the benefits those functional parameters provide. For this reason, cross-functional teams undertake this screening process and begin by eliminating the "bells and whistles" mentality. Instead, they are forced to focus on unique things the technology allows end-users to do.

New discovery interviews or focus groups are conducted with prospective end-users. Ideally, these should be focused on people with some familiarity with the technology or the concepts behind it, such as beta sites, key customers, etc. If this is not possible, the researcher must be both neutral and adequately descriptive in order for respondents to fully grasp the product or technology and yet explain its perceived benefits without any prompting.

The interviewing process entails probing with end-users on:

- The perceived benefits of the

product or technology.

- How the product or technology is or could be used.
- Potential end-users' business characteristics.

Market information on these issues will point cross-functional teams to the major benefits or capabilities of the product or technology and those end-user groups with the greatest and the least need for each.

tion helps teams begin to chart a negotiation strategy and possible timing of short- and long-term market opportunity.

The Needs Screen often tells companies along the way that the functional parameters — what the product does — must be reinforced and tested again with buyers. At the same time, it helps them determine if what the product doesn't do

through interviews conducted with experts, end-users and possible competitors in the Needs screen that the market for its NanoController could be segmented into four application families.

The company learned that the product's functionality was a customer differentiating factor and that the cost savings offered by the technology would be viewed by the buyers as a major benefit. For some segments, the NanoController would be the only solution to an existing problem. For others, it would likely solve a expected future problem. For most, it would replace an existing technology.

NEEDS SCREEN

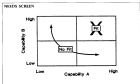


Figure 2

This information can be plotted on a matrix (as shown in Figure 2) to indicate those segments where the product or technology is or is not a "fit."

In analyzing the matrix, teams develop hypotheses by asking questions of themselves, such as: What common business characteristics within this group make them a "fit" and what common characteristics exist within the low-probability group? Eventually, discussions will point to some segmentation hypotheses. These hypotheses are confirmed by opening the interviewing process to include a larger portion of the universe within those perceived segments.

Screened end-users are then plotted on the matrix, confirming or denying previous segmentation hypotheses. Interviews are conducted with individuals who fall into the low-low-probability quadrant to determine what it would take to move them into the high-high-probability quadrant. The informa-

tion is a major obstacle. After completing the Needs Screen, companies can also determine how to communicate with buyers about the product to help the buyers will find meaningful. For instance, Proxim learned

ECONOMICS SCREEN

The Economics Screen examines only those prospective buying segments that the Needs Screen has identified as potential fits for the new product or technology. The next step is a value analysis to find out if the product or technology makes economic sense for these buyers. This is accomplished through additional interviews that reveal asking the market how they cost-justify the new product or technology.

The Economics Screen reveals economic issues by asking prospective end-users questions that help determine:

- How the need is being addressed today, and at what cost.

ECONOMICS SCREEN

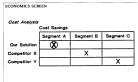


Figure 3

- What will happen to the cost of today's solution over time, and why?
- What the cost of adopting and using the new technology or product will be.
- What other value it will bring to the prospective buyer, and what form this value will take.
- If the new product or technology is economically advantageous for the prospective buying segment to adopt now or in the future.
- Where are any other technologies that impact the application and economics of this new technology.
- How the market defines the competition.

Once the market reveals these key-to-cost-justification, teams can define those segments for which the product or technology is the cost-effective, optimal solution. They can ask additional questions to gain a sense of adoption timing for each segment, an indication of how the product fits versus the competition's and how and why the product would be adopted. Possible questions include:

- Is the product or technology cost-justified as a totally new item?
- Is it cost-justified as a replacement of an existing product or technology?
- What justifies purchase of the product?
- Under what circumstances is this a more cost-effective alternative than the item being replaced?
- In what cases is the product or technology more cost-effective than various competing products?

Data gathered in the Economics Screen is plotted and analyzed by cross-functional teams using a simple matrix and brainstorming techniques (Figure 3). In Proxim's case, the Economics Screen identified where the NanoCommitter would be a cost-effective technology and how its value was cost-justified from the market's perspective. Cost-justification is important because if the product or technology doesn't have enough economic value to cause people to make a change and use it, the market won't develop because no one will take the risk of changing products or adopting new technologies.

TIME SCREEN



Figure 4

TIME SCREEN

The Time Screen looks at those buying segments that have passed through the Needs and Economics Screens because they are likely to adopt the new product or technology. The first two screens have confirmed that there is a business opportunity and enough economic value for the market to develop. The Time Screen defines the solution timeline for the new product or technology for each previously identified segment as it helps answer through additional interviews:

- Is the buyer actively trying to solve a problem that the product or technology can address?
- What organizational changes would have to take place in order to make adoption possible?
- Based on the answers to the first two questions, how long will it be before the prospective segment begins to adopt? How quickly will the segment be penetrated by the new product/technology?

The Time Screen research process allows teams to plot segments along a problem-solving continuum (Figure 4). This continuum includes those actively trying to solve the problem the product or technology addresses (action), those "shopping" for solutions (cognition) and those who may have a problem but do not recognize this for pre-cognition).

After plotting the segments along

this continuum, teams can then develop, test and confirm hypotheses related to:

- The barriers between each continuum phase.
- The percentage of each segment that falls within each phase.
- What it will take for each group to pass through the barriers and move along the continuum.

The Time Screen helps determine how fast the market will develop, how long it will take for elements of the product or technology to be adopted and the best way to plan a rollout strategy based on those factors. After completing the Time Screen, a company should develop a selling strategy for its new product or technology by identifying the buying process within each prospective buying segment, gauging the timing necessary for adoption, establishing the activities required, and determining key decision-makers.

Proxim's use of the Time Screen resulted in a clear view of the NanoCommitter's market opportunities and product requirements. A key question answered for Proxim was, "When should we enter the marketplace?" The Time Screen gave Proxim the short-term opportunities for product adoption. The company learned that factors such as prior experience with related cable technologies would facilitate product adoption.

Proxim also uncovered adoption

business, the NavisController would lose. The study helped persuade Proxim's strategy of introducing a family of spread spectrum radio products aimed at specific computer and medical equipment markets. Applications and original equipment manufacturers (OEM) relationships that would provide product migration paths were also identified.

Proxim has now successfully launched its products by targeting specific segments and staging the product introduction accordingly. The company has emerged over the past year as the leading supplier of wireless data communication products with shipments in excess of 11,000 units to OEM customers, including, SunFlow, Intermec, Evoms, Geis Systems, and NINEX. Guido DeCasperis, CEO of Proxim, commented that the screening approach contributed to the success of Proxim's overall market strategy and the effectiveness of its product introduction and rollout. It also provided support data that allowed the venture to successfully gain ongoing financing.

HOW TO USE THIS TOOL

The screening process should be used to define new products or technologies and the most effective launch strategies. Companies should build on this analysis to develop strategies that:

- Assess the viability of the new product or technology by buying segments and identify short- and long-term applications and opportunities.
- Identify the short-term market and estimate the migration of market growth.
- Establish benchmarks that must be met for estimated growth to occur.
- Identify priority market segments and reveal buying behavior.
- Define specific activities and support required for each segment during the buying process.
- Provide a model for resource allocation to the new product or technology launch.
- Profile target buying segments/ key characteristics and offer a screening methodology to continue to identify those high-probability

buyers.

- Identify other potential new product or technology opportunities based on current needs of buying segments.

- Create a data trail that can be used to adapt the product or accelerate adoption.

Clearly, if companies are to use technology as an advantage, they must adopt a sophisticated marketplace discovery process. As in Proxim's case, marketers and planners should take an active role in organizing a team to look critically at the problems and opportunities inherent in new products or technologies. It is crucial to involve a number of key players in the implications of new product development out across many functional areas without structure. Small and large companies can easily get bogged down in the details of planning a complex "go to market" strategy. If done well, the technology screening process leads to a product or technology that "fits" in the marketplace. It also helps companies decide the best way to get the product into the hands of that marketplace.