



The Five ‘Ps’ of Marketing *It’s Much More Than Sales and Promotion*

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Those who once believed in “build it and they will come” have often found that their creations resulted in a pipe dream rather than a field of dreams. Marketing is the main ingredient that determines whether products will succeed or fail.

The marketing process, when it’s conducted properly, orchestrates the generation of profit from new and emerging technologies. To succeed in developing marketing strategies and programs for new and emerging technologies, it’s essential that marketers and technologists work in concert with each other. This collaboration is mandatory for maximizing the quantity and profitability of products sold, because marketing should be the first step in the creation of a new product or service.

Marketers and technologists often have felt the same culture clash – albeit unspoken—that marketing and manufacturing divisions have lived with since the industrial age, when manufacturing began to flourish. Marketing divisions wanted products that pushed the limits of reality at a cost that only the Messiah could achieve. Manufacturing divisions wanted their most ingenious ideas to be sold immediately, regardless of whether there was anyone willing to pay for the product produced from that idea.

True marketing is an art that few have mastered. Many think sales and marketing are synonymous. Actually, nothing could be further

from the truth. Simply, sales are the result of the successful implementation of sound marketing strategies and programs.

Marketing Principles 101

Marketing is the art of developing and identifying ideas that can be turned into a product or service that, when sold, delivers a measurable return to the business entity that is greater than the cost of capital. A successful marketer puts in place all of the components that are necessary to equip all sales channels to present benefits to prospective customers and ultimately to close the sale. Marketing is the engine that uses a company’s assets to create a profit. A common misconception is that marketing is a skill set that is easily acquired. In reality, marketing is an art.

Let’s address the basics of marketing as they relate to a new, emerging segment of the wireless industry – the computing communications industry. There are many communications industries, including entertaining communications and informative communications. These represent cross sections of publishing, radio and television.



The computing communications industry represents the convergence of technologies, business operations and practices and other things in response to the demands of a more informed and educated public.

To understand marketing as it applies to the computing communications industry, it's best to start with the basics. Traditionally, marketers have focused on the 4 Ps of marketing – product, place, price and promotion. The consumer packaged goods industry has excelled at mastering these components.

For many years consumers have responded to new and improved products at lower prices that are available at the local grocer. The computing communications industry brings a new dimension to the marketing basics. As technologies have advanced and product usage has become pervasive, the industry has given birth to a new P: packaging. The packaging of technical products offers marketing power that is beyond the realm of possibilities in the packaging of nontechnical products. The five basic components, or the 5 Ps, of high-tech marketing are **product, place, packaging, price** and **promotion**. The 5 Ps encompass every facet of the marketing process necessary to create the idea, develop a product or service and deliver it to the consumer.

Ideally, marketing should begin with the identification of a market's need or desire. Market can be defined in terms of common characteristics that describe a group of people who are willing to pay for a particular product or service. While many consumers do make purchases strictly based on their fascination and desire, the magnitude of the investment required to launch most high-tech products virtually mandates that the development and launch of a product is in direct response to a viable and identifiable market need. The need may be identified by customers, salespeople or engineers. Regardless of the source, the need

should be qualified before any development takes place.

Need qualification is much more than simply talking to a few prospective customers. Most importantly, before any development takes place, the source of need identification must be qualified. First, it requires conducting thorough research and testing to determine who is willing to purchase a product or service. Need qualification requires identifying the features demanded by the target markets, the benefits that are expected and how much the consumer is willing to pay. Despite the magnitude of the investment required to bring high-tech products to market, many companies undertake this process without proper need qualification. The market is littered with unsuccessful products that exhibit the marvels of technology: the Edsel, U.S.-manufactured televisions, Presentation Manager software and the Cray supercomputer are a few of the technically superior products that never realized their full market potential. The losses are sometimes staggering. Although tens of thousands or even millions of dollars have been spent on products that never sold enough to break even, it is virtually impossible to find even five percent of these funds attributable to need qualification.

The product, or service, is the first P of marketing. Product definition and development should be a direct result of need qualification. Not only must the product incorporate features that meet the customer's needs, it must be delivered at a cost that allows the company to generate an acceptable return. There must be an adequate margin between the cost and the market price. The market price should incorporate all reciprocal and drag-along revenue. If a profit is not possible, product development should be tabled unless the company wants to and can afford to incur the losses for some reason.



Also, the product's name should be readily associated with the value of the functionality and should be easy to remember. The name should allow the consumer to distinguish the product from its competition. Windows, ThinkPad, GlidePoint and RadioMail are examples of the names of products and services that readily describe their functionality. While vendors have become more creative in naming their products and services, many product names still reflect their underlying technology rather than what they can do for the consumer.

The means of distribution, or channel, is the *place* of the 5 Ps. Some people refer to the channel as any distribution conduit that is not owned by the company. Others refer to the channel as mass distributors. Marketing channels are all sources for selling products and services, including direct sales forces, distributors, retail stores and direct mailhouses. Our industry has blossomed and evolved to the point that the total process of attaining and caring for a customer is no longer contained under one roof. Astute marketers know how to manage all channels to maximize the profit realized from their product or service. The channels are their customer. They must be equipped to sell products and services successfully while competing on a fair and level playing field with their competitors.

Vendors do not maximize the power of packaging, the third P of marketing. Packaging determines the manner in which a product or service is visualized or experienced by the consumer generally, it is the user interface of an operating system or applications software. Packaging is the case that holds the computer. Packaging is also the physical boxes or envelopes in which products are delivered. Packaging should deliver a message. It should make the consumer glad that he or she has purchased the product. Packaging should appeal to the consumer's style, desires and emotions. It should clearly communicate what

it contains, how it will benefit the consumer and who provided the product.

Packaging can help a company differentiate its product from the competition's. It can even persuade a customer to pay a premium for the product. Apple Computer demonstrated this with its user interface and hardware casing design. When their customers praise the ease-of-use and functionality, they often describe the user interface. The time and resources that were spent designing the Macintosh resulted in some customers who proudly displayed their computer on their desks, while others sought to "conserve real estate" by hiding the CPU *under* their desk. Microsoft further strengthened its packaging with the introductions of Windows '95. The user interface facilitates delivery of the power of this operating system. Whether a vendor sells hardware, software, networks or services, packaging should make consumers confident that they spent money wisely. This may play a role in helping them to decide what product to purchase next.

Since the mid-1980s, system bundling by vendors a high-tech version of packaging, virtually has disappeared with the death of the BUNCH. In the early days of computing, the primary competition was between IBM and the BUNCH (which stands for Burroughs, Univac, NCR, Control Data and Honeywell). What a difference a decade makes. As with all industries, the computing communications industry grew as technologies converged and new companies excelled at delivering specific systems components and services. Stat-up companies like Microsoft, MCI and Novell grew to become major industry players. As the industry became fragmented, vendors began to focus on their area of expertise. Major vendors no longer manufactured or delivered every components of a system solution. System bundling is now commonly performed by value-added resellers and systems integrators. Distributors have begun to deliver bundled systems.



Bundling is usually mandatory to deliver an end-to-end solution to the consumer. The manner in which a system is bundled, or packaged, for the consumer is a major determinant of how well the products are received.

Price is the fourth P of marketing. Price is more than the amount a consumer pays for a product or service. It is also the manner in which payment is made. A competent marketer sets the price at the maximum level the market is willing to bear. The astute marketer structures the price to simplify the consumer's purchase decision.

In the early days of computing, most products were leased; they were simply too expensive for even the largest companies to afford. Paying for these products over a period of time is not ingenious. Coupons, group discounts and product bundling are just a few of the pricing techniques. There are many ways to structure pricing to maximize revenues realized from current and future consumer purchases. Remember, pricing structures are limited only by the creativity and intelligence of the person creating them. Pricing strategies should not be at the expense of the consumer. Rather, they should extend the expense by the consumer. The pricing structure should not reflect the way the system functions. It should be simple and flexible. Customers must be able to easily understand what they are being billed for, and they should be able to pay as their budget and cash flow permits. If this is not possible for the majority of customers in the targeted market, reassess the marketing plan.

The fifth P of marketing is *promotion*. This is the primary means by which vendors generate a desire by the consumer to purchase their products. Promotion includes advertising, trade shows, point-of-sale displays, contests, product demonstrations and mailings.

An astute marketer optimizes the 5 Ps of marketing to maximize the profit throughout the life cycle of the product. The nature and degree to which each of the 5 Ps is used should change throughout the product's life. The marketing mix must respond to the "signs of the times" as well as the plan for the product.

When a product is first introduced, heavy promotion is required to make prospective consumers aware that it exists and aware of why they should purchase it. As the product sells in greater quantities, channel management (i.e. place) is critical to maintain the productivity of all distribution channels. When a product reaches the end of its life cycle, upgrade strategies and use product design (i.e., product, packaging) and price to encourage customers to purchase the new model or version. Whether it is product, place, packaging, promotion or price, every element of the marketing mix must be continually adjusted to maximize the success of the product throughout its life cycle.

Striking a Balance

One of the arts of marketing is learning to strike the proper balance among all of the components so that the degree of employment reflects the character of the targeted market. Procter & Gamble, General Mills and other companies have created marketing empires through the successful allocation and employment of the marketing mix.

To achieve success, the marketer must listen to the market and periodically adjust the mix in response to the market's demands. For example, most personal computers offer comparable functions, and the market is very price sensitive. Packaging, place and promotion may provide a more effective means of differentiation than product and price. For example, Gateway 2000 initially grew its business through mail order (i.e. place) rather



than through conventional distribution channels. And Apple made substantial investments in promotion to create recognition and demand for its personal computers.

Each element of the marketing mix should be used to establish and maintain the product's position within each of its targeted markets. It is important to use the 5 Ps to extend the reach of all available resources. In most companies,

the marketing budget is limited. Selecting the right marketing mix enables the marketer to maximize the power of the available marketing budget.

Remember, marketing is much more than sales and promotion. The 5 Ps provide a framework for success.

Achieving Vertical & Horizontal Market Presence

Industry analysts predict remarkable growth rates for wireless computing. The Boston-based Yankee Group predicts growth rates in excess of 31 percent. As vendors strive to validate the phenomenal growth projections for wireless computing, efforts continue to identify and establish those markets that are ripe for these technologies.

However, the fundamentals of market segmentation and targeting for new technologies remain the same. First, the vendor must clearly define and demonstrate what the product can do and how it will benefit the consumer. Second, the vendor must expand that definition and promote initial product successes to attract the attention and purchasing dollars of all targeted markets. To grow the market for wireless computing, vendors must band together to proclaim the value of wireless data. No single vendor makes all of the components that are necessary to deliver an end-to-end wireless computing solution. For prospective customers to understand and embrace wireless data's value, vendors must clearly demonstrate that their products will work cohesively with each other. An integrated, end-to-end system provides only the foundation for explaining the value of wireless data. Customers must be able to recognize the application of the wireless computing system to their own business operations. It is the translation of the benefits of wireless computing as it applies to their unique operations process that allows prospective customers to understand the value of wireless data. This value is not merely faster access to information. It includes improved cash flow from a shorter billing cycle, lower costs achieved from automating operations; and the satisfied customer who continues to purchase due to immediate response. The real value of wireless data is achieved only with end-to-end wireless computing systems. Vendors cannot present this value to prospective customer unless they work together.

The essence of wireless and mobile computing is the production of mobile data. The benefits of wireless data generally fall into one of two categories: productivity and the time value of information. Productivity results from producing greater results with a given amount of resources. Wireless dispatch allows technicians to service more customers within their shift. The time value of information empowers one to improve his or her position by receiving information more quickly. Wireless package tracking systems allow companies to process bills immediately and collect money more quickly.

To drive wireless computing market expansion, companies must achieve and communicate success stories. For example, United Parcel Service and Federal Express have improved their service and



operations with wireless computing systems. Now that they've raised the customer expectation bar in their industry, their competitors are taking steps to maintain the pace. Having learned from the pioneers, companies in other industries are beginning to develop and roll out wireless computing systems. As is often the case in the computing communications industry, new systems that respond to the defined needs of selected customers help to establish a new market. Vertical markets play a major role in establishing new technologies.

Every industry has specific ways to use wireless computing systems. The use of wireless computing in a specific industry to perform a particular application is what defines a vertical market. The success of vertical markets demonstrates the value of new technologies to the general population. Word gets around when something new and different happens: people begin talking; journalists write articles; future customers begin to learn what others are doing and how they are benefiting from new technologies customers begin to envision how they too might benefit; new applications are sold and created. Vertical markets provide a showcase for the promotion of new technologies. Vertical applications that use wireless computing systems include field dispatch for elevator repair technicians, package tracking by delivery companies and patient monitoring by visiting nurses.

When a need is defined that crosses several industries and fulfills the requirements of multiple applications, you have identified a horizontal market. Horizontal markets for new technologies often fit a niche need. Demand for specific functionality that can be readily used by a broad group of consumers signifies the emergence of a horizontal market. Wireless e-mail, for example, is a horizontal market that has been embraced by many. The niche need is to extend the reach of e-mail to wireless consumers.

When the application of new technologies readily fits currently existing needs, a horizontal market is born. Obviously, the marketing mix (the 5 Ps) must deliver a product that people are willing to buy. The marketing components should strike a balance that allows prospective customers to understand, trust and embrace new technologies.

The Importance of Partnering

Companies must remain mindful that most customers are not willing to share in the cost of bringing a product to market. Therefore, vendors must successfully deliver complete, end-to-end solutions before their products and services can begin to establish themselves. Because no single company offers all of the products and services that are necessary to deliver an end-to-end wireless computing system, vendors must partner to deliver solutions.

The collaboration among vendors already has resulted in the creation of several end-to-end wireless computing solutions. Take, for example, Motorola's sales automation system, which includes its Marco Wireless Communicator, SalesMate software from KPMG Peat Marwick and the ARDIS network. FirstNet offers the AireTrans Transaction Air Connect System that includes products from Cincinnati Microwave and GTE and communicates over the Bell Atlantic NYNEX Mobile CDPD network. Newschannel 8 in Washington, D.C., and Physicians Sales and Service in Florida have each rolled out wireless computing systems within the past year. As the benefits of wireless computing become more widely understood, and end-to-end systems continue to emerge, the market will be poised to realize the growth that industry analysts have projected.



The marketing of new and emerging technologies is an art that is attracting the attention of an increasing number of marketers. High-tech companies are beginning to empower marketers to practice their craft. Intuit, among others, has pulled marketers from the consumer product industry, which has excelled at this art for many years. The computing communications industry market has unique characteristics and complex products, and [**simply launching a product**] is not enough.

Marketing strategies and programs must reflect the complexities and nuances of our industry. The constructive and abiding collaboration between technologists and marketers is essential to the successful launch and deployment of products and services that employ new and emerging technologies.

After all, marketing is not just sales and promotion. It's the entire process from identifying and defining a product or service, and delivering it to maximize market share and profit over the product life cycle.

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The 'Ps' of Marketing

by Veronica Williams, ACT Inc.

Marketing is much more than advertising, promotion and sales. It is a mindset that allow executives to run a business which delivers desired products and services to customers in a manner that produces a profit for the company.

This feat is not achieved easily. It requires identifying and understanding what people are willing to pay for, and being able to develop, produce and deliver that product or service at a cost that leaves a respectable margin in a reasonable amount of time.

The executive with marketing skills knows how to balance marketing components to build customers as well as profits. Philip Kotler, the father of modern marketing, identifies the four "Ps" of marketing—product, place, price and promotion.

Product or service—the first "P" of marketing for high-tech products—is the guts that makes a product function. It is the software code, the system circuitry or the network infrastructure that makes the product or service work.

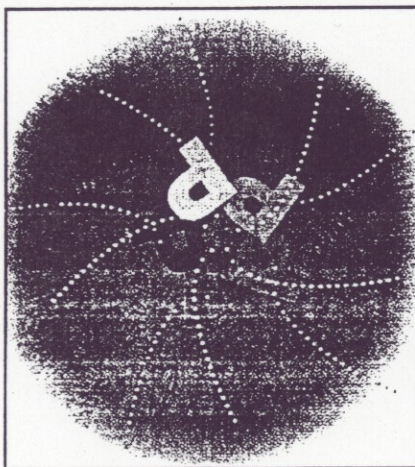
The means of distribution, or channel, is the "Place" in the four Ps of marketing. Marketing channels are all sources for selling products and services, including direct sales forces, distributors, retail stores and direct mail houses. The wireless industry has blossomed and evolved to the point that the total process of attaining and caring for a customer no longer is contained under one roof. The astute marketer knows how to manage all channels to maximize the profit realized from a product or service.

Price is more than the amount that a consumer pays for a product or service; it is the structure or the manner in which payment is made. The

level and structure of pricing together determine a customer's willingness to accept it.

Promotion

The fourth "P" of marketing is promotion. This is the primary means by which vendors generate a desire by the consumer to purchase their products or services. Promotion includes advertising, trade shows, point-of-sale displays, contests, product demonstrations and mailings.



The convergence of computing and communications has given rise to a fifth "P"—packaging. Packaging determines the experience that a product or service gives a consumer. It is the user interface of an operating system or applications software that provides access to the network. Packaging is the casing that contains the circuitry and components of a portable phone.

The packaging of technical products offers marketing power that is beyond the realm of possibilities in the packaging of non-technical products. The power of packaging can help a company to differentiate its product from the competition. It can even cause a customer to pay a premium for the product.

Packaging should needs to appeal to the consumer's style, desires and emotions. It should clearly communicate what is contained inside, how it will benefit the consumer and who provided the product.

Wireless carriers can use packaging to make it easier for consumers to purchase and use their services. A portable phone, for example, can be presented in an alluring box which, when paid for by credit card, automatically would sign the consumer up for a subscription to a wireless network. This package, a phone and subscription service in a box, could be sold through many retail outlets.

A wireless dispatch service could be presented by resellers as a bundled system for a flat, monthly rate. At a predictable annual cost, customers would receive a package that includes software, a portable computing device, a subscription to a wireless network and training and support.

In either case, the packaging governs what the customer will experience from the time he or she considers purchasing a product until he or she stops using it.

Because they are at different points in their life cycles, wireless voice and data may be packaged differently. The packaging differences primarily will be based on the markets targeted and the channels used.

Strategies

Marketing strategies must reflect the sign of the times. An effective strategy must reflect a marketing mix that changes as the product moves through its life cycle. This means constantly revising the use of each of the five "Ps" to augment implementation of the strategy at any point in time.

When a product first is introduced, heavy promotion is required to make prospective consumers aware that it exists and why they should purchase it. As the product sells in greater quantities, channel management (i.e. place) is critical to maintain the productivity of all distribution channels.

When a product reaches the end of its life cycle, upgrade strategies use product design (i.e. product, packaging) and price to encourage customers to purchase the new model or version.

Whether it is product, place, packaging, promotion or price, every element of the marketing mix must be continually adjusted to maximize the success of the product throughout its life cycle.

There are several ways to apply the five "Ps" to encourage businesses and consumers to subscribe to wireless communication networks. The product or service itself, and its packaging, can be altered to attract subscribers.

Carriers can design networks to incorporate more value-added services such as retrieving stock quotes or other time-critical information. Subscription services could be bundled with other products or services that complement wireless voice.

For example, PHH Corp., Hunt Valley, MD, a \$5 billion international provider of cost-effective vehicle and home-related services to corporations, offers cellular service to their customers. Cellular service is bundled with other services such as vehicle rental and maintenance.

Wireless voice can be packaged with wireless data to deliver a more comprehensive service under one subscription. As a matter of fact, many wireless networks already offer voice and data.

Price and place can be modified to increase wireless subscribers. Carriers must bundle software, hardware and service and support to deliver an end-to-end data solution. When customers ask for options, offer them pricing options. For example, pricing can be one monthly rate with a six-month, 12-month or 24-month commitment.

If pricing does not suffice, refer customers to alternate channels that cater to their specific needs. For example, a customer who wants a different software or hardware platform can be directed to a systems integrator or reseller who supports that platform.

Whether it is price, place or another element of the marketing mix, adjusting the options to respond to

customer requirements can help carriers to increase the use of wireless data while maintaining profit.

Wireless Data Advantages

With subscriber churn to wireless networks at 35 percent or higher, it behooves a carrier to offer options that help to reduce churn. Data is such an option. Once wireless computing systems have been implemented successfully, they likely will remain in place for five years or more. If the needs of the customer are met continually through good-quality service and product upgrades, the system life probably will be prolonged.



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A longer system life means reduced churn. The lack of software for wireless data is but one of the reasons for the slow adoption of wireless data.

Consumers must be taught the benefits of using wireless data—productivity and the time value of information. These benefits can be realized only by delivering a complete solution.

A solution includes tightly integrated applications and communications software, portable hardware and wireless network that delivers functionality to meet a given set of needs.

Many technology messages consume precious time explaining what their products do and how to use them, rather than why the consumer should care. Even if it seems

obvious, the consumer must hear: "What's in it for me."

Once consumers are readily able to identify and quantify benefits, they must be able to easily purchase and use wireless data systems.

Data is still a long way from maturity. Software, coverage, portable hardware and other components of the end-to-end solution still are emerging. Vertical markets provide a forum to build and refine end-to-end wireless data solutions.

As vendors "perfect" systems for one vertical market, they often can make minor modifications and sell it to new vertical markets that have similar requirements. These are the early steps of building a horizontal market.

Building the Data Market

As is the case with all products and services, wireless data must be positioned with potential subscribers. Carriers must accept what is required just to be in the game and separate that from what they use to differentiate their offerings.

Those things which are required to deliver wireless data—coverage, partnerships with software and hardware companies, end-user support and other components—are soft differentiators. They will soon be gone, as the industry delivers more and more complete solutions and wireless data matures.

Service and support can serve as strong differentiators. Carriers should decide upon a differentiating factor that they are willing to stay with. It can be more harmful to promote a feature and abandon it, than never to have offered it at all.

Whether it is wireless voice or data, carriers should package their service offerings to deliver an end-to-end solution for the customer. Those carriers which apply the five "Ps" of high-tech marketing to continually optimize the marketing mix will win and keep subscribers.



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The U.S. Mobile Data Marketplace: 1995, a study conducted by Washington, D.C.-based MTA-EMCI, found that only 4 percent of current mobile communications users, less than 1 percent of the work force and 0.5 percent of the total U.S. population use mobile data services.

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Photocollage: Alex Kim

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THE FIVE PS

the value of its functionality and should be easy to remember. The name should allow the consumer to distinguish the product from its competition: Windows, ThinkPad, GlidePoint and RadioMail are examples of the names of products and services that readily describe their functionality. While vendors have become more creative in naming their products and services, many product names still reflect their underlying technology rather than what they can do for the consumer.

The means of distribution, or channel, is the *place* of the 5 Ps. Some people refer to the channel as any distribution conduit that is not owned by the company. Others refer to the channel as mass distributors. Marketing channels are all

from the competition's. It can even persuade a customer to pay a premium for the product. Apple Computer demonstrated this with its user interface and hardware casing design. When their customers praise the ease-of-use and functionality, they often describe the user interface. The time and resources that were spent designing the Macintosh resulted in some customers who proudly displayed their computer on their desks, while others sought to "conserve real estate" by hiding the CPU *under* their desk. Microsoft further strengthened its packaging with the introduction of Windows '95. The user interface facilitates delivery of the power of this operating system. Whether a vendor sells hardware, software, net-

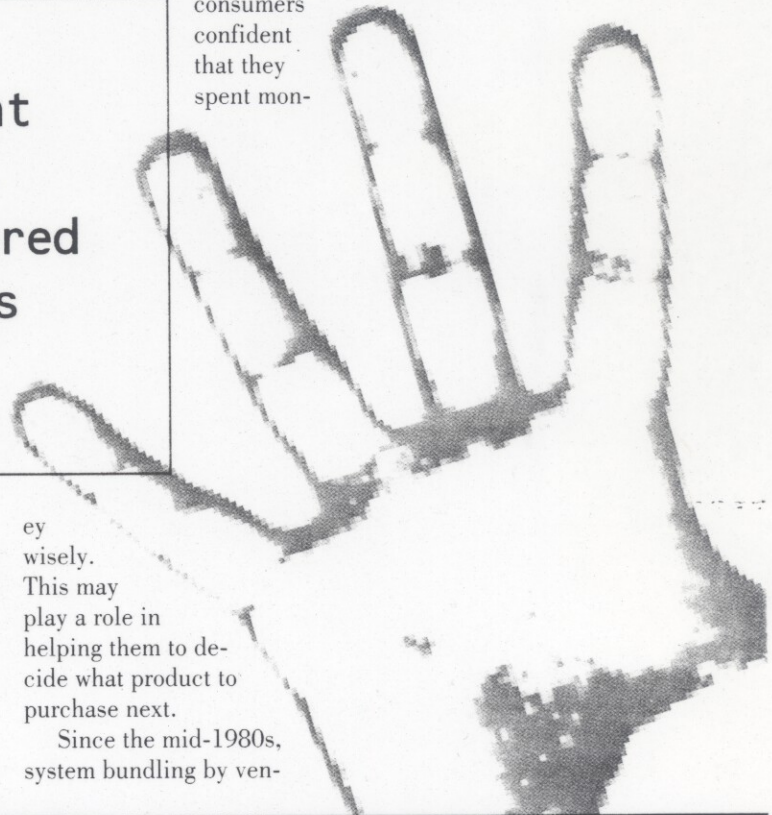
works or services, packaging should make consumers confident that they spent mon-

Not only must the product incorporate features that meet the customer's needs, it must be delivered at a cost that allows the company to generate an acceptable return.

sources for selling products and services, including direct sales forces, distributors, retail stores and direct mailhouses. Our industry has blossomed and evolved to the point that the total process of attaining and caring for a customer is no longer contained under one roof. Astute marketers know how to manage all channels to maximize the profit realized from their product or service. The channels are their customer. They must be equipped to sell products and services successfully while competing on a fair and level playing field

ey wisely. This may play a role in helping them to decide what product to purchase next.

Since the mid-1980s, system bundling by ven-



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MTA-EMCI's report, *The U.S. Mobile Data Marketplace: 1995*, says cellular/PCS and specialized mobile radio (SMR) services have the greatest market potential of any wireless data service, followed by dedicated networks and mobile satellite operators.

with their competitors.

Vendors do not maximize the power of *packaging*, the third P of marketing. Packaging determines the manner in which a product or service is visualized or experienced by the consumer; generally, it is the user interface of an operating system or applications software. Packaging is the case that holds the computer. Packaging is also the physical boxes or envelopes in which products are delivered. Packaging should deliver a message. It should make the consumer glad that he or she has purchased the product. Packaging should appeal to the consumer's style, desires and emotions. It should clearly communicate what it contains, how it will benefit the consumer and who provided the product.

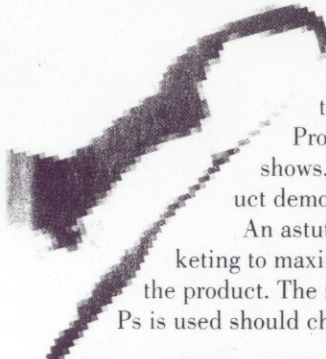
Packaging can help a company differentiate its product

dors, a high-tech version of packaging, virtually has disappeared with the death of the BUNCH. In the early days of computing, the primary competition was between IBM and the BUNCH (which stands for Burroughs, Univac, NCR, Control Data and Honeywell). What a difference a decade makes. As with all industries, the computing communications industry grew as technologies converged and new companies excelled at delivering specific systems components and services. Start-up companies like Microsoft, MCI and Novell grew to become major industry players. As the industry became fragmented, vendors began to focus on their area of expertise. Major vendors no longer manufactured or delivered every component of a system solution. System bundling is now commonly performed by value-added resellers and systems integrators. Dis-

tributors have begun to deliver bundled systems. Bundling is usually mandatory to deliver an end-to-end solution to the consumer. The manner in which a system is bundled, or packaged, for the consumer is a major determinant of how well the products are received.

Price is the fourth P of marketing. Price is more than the amount a consumer pays for a product or service. It is also the manner in which payment is made. A competent marketer sets the price at the maximum level the market is willing to bear. The astute marketer structures the price to simplify the consumer's purchase decision.

In the early days of computing, most products were leased; they were simply too expensive for even the largest companies to afford. Paying for these products over a period of time is not ingenious. Coupons, group discounts and product bundling are just a few of the pricing techniques. There are many ways to structure pricing to maximize revenues realized from current and future consumer purchases. Remember, pricing structures are limited only by the creativity and intelligence of the person creating them. Pricing strategies should not be at the expense of the consumer. Rather, they should extend the expense by the consumer. The pricing structure should not reflect the way the system functions. It should be simple and flexible. Customers must be able to easily understand what they are being billed for, and they should be able to pay as their budget and cash flow permits. If this is not possible for the majority of customers in the targeted market, reassess the marketing plan.



The fifth P of marketing is promotion. This is the primary means by which vendors generate a desire by the consumer to purchase their products. Promotion includes advertising, trade shows, point-of-sale displays, contests, product demonstrations and mailings.

An astute marketer optimizes the 5 Ps of marketing to maximize profit throughout the life cycle of the product. The nature and degree to which each of the 5 Ps is used should change throughout the product's life. The

sources. Wireless dispatch allows technicians to service more customers within their shift. The time value of information empowers one to improve his or her position by receiving information more quickly. Wireless package tracking systems allow companies to process bills immediately and collect money more quickly.

To drive wireless computing market expansion, companies must achieve and communicate success stories. For example, United Parcel Service and Federal Express have improved their service and operations with wireless computing systems. Now that they've raised the customer expectation bar in their industry, their competitors are taking steps to maintain the pace. Having learned from the pioneers, companies in other industries are beginning to develop and roll out wireless computing systems. As is often the case in the computing communications industry, new systems that respond to the defined needs of selected customers help to establish a new market. Vertical markets play a major role in establishing new technologies.

Every industry has specific ways to use wireless computing systems. The use of wireless computing in a specific industry to perform a particular application is what defines a vertical market. The success of vertical markets demonstrates the value of new technologies to the general population. Word gets around when something new and different happens: people begin talking; journalists write articles; future customers begin to learn what others are doing and how they are benefiting from new technologies; customers begin to envision how they too might benefit; new applications are sold and created. Vertical markets provide a showcase for the promotion of new technologies. Vertical applications that use wireless computing systems include field dispatch for elevator repair technicians, package tracking by delivery companies and

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MTA-EMCI believes that more than 13 million workers nationwide can be counted as potential users of mobile data services.

PCS PrimeCo will use Motorola's Cellular Infrastructure Group to provide code division multiple access (CDMA) equipment for its U.S. PCS network.

marketing mix must respond to the "signs of the times" as well as the plan for the product.

When a product is first introduced, heavy promotion is required to make prospective consumers aware that it exists and aware of why they should purchase it. As the product sells in greater quantities, channel management (i.e., place) is critical to maintain the productivity of all distribution channels. When a product reaches the end of its life cycle, upgrade strategies and use product design (i.e., product, packaging) and price to encourage customers to purchase the new model or version. Whether it is product, place, packaging, promotion or price, every element of the marketing mix must be continually adjusted to maximize the success of the product throughout its life cycle.

patient monitoring by visiting nurses.

When a need is defined that crosses several industries and fulfills the requirements of multiple applications, you have identified a horizontal market. Horizontal markets for new technologies often fit a niche need. Demand for specific functionality that can be readily used by a broad group of consumers signifies the emergence of a horizontal market. Wireless e-mail, for example, is a horizontal market that has been embraced by many. The niche need is to extend the reach of e-mail to wireless consumers.

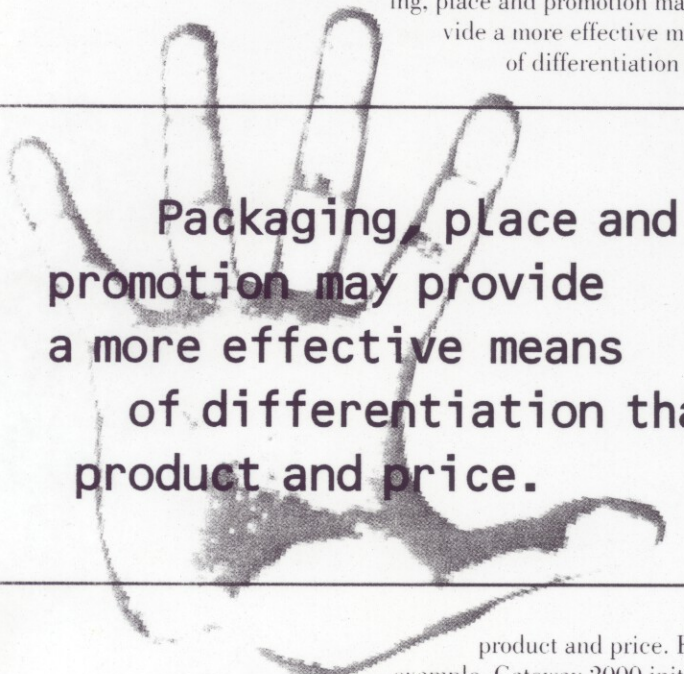
When the application of new technologies readily fits

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Striking a Balance

One of the arts of marketing is learning to strike the proper balance among all the components so that the degree of employment reflects the character of the targeted market. Procter & Gamble, General Mills and other companies have created marketing empires through the successful allocation and employment of the marketing mix.

To achieve success, the marketer must listen to the market and periodically adjust the mix in response to the market's demands. For example, most personal computers offer comparable functions, and the market is very price sensitive. Packaging, place and promotion may provide a more effective means of differentiation than



Packaging, place and promotion may provide a more effective means of differentiation than product and price.

product and price. For example, Gateway 2000 initially grew its business through mail order (i.e., place) rather than through conventional distribution channels. And Apple made substantial investments in promotion to create recognition and demand for its personal computers.

currently existing needs, a horizontal market is born. Obviously, the marketing mix (the 5 Ps) must deliver a product that people are willing to buy. The marketing components should strike a balance that allows prospective customers to understand, trust and embrace new technologies.

The Importance of Partnering

Companies must remain mindful that most customers are not willing to share in the cost of bringing a product to market. Therefore, vendors must successfully deliver complete, end-to-end solutions before their products and services can begin to establish themselves. Because no single company offers all of the products and services that are necessary to deliver an end-to-end wireless computing system, vendors must partner to deliver solutions.

The collaboration among vendors already has resulted in the creation of several end-to-end wireless computing solutions. Take, for example, Motorola's sales automation system, which includes its Marco Wireless Communicator, SalesMate software from KPMG Peat Marwick and the ARDIS network. FirstNet offers the AireTrans Transaction Air Connect System that includes products from Cincinnati Microwave and GTE and communicates over the Bell Atlantic Nynex Mobile CDPD network. Newschannel 8 in Washington, D.C., and Physicians Sales and Service in Florida have each rolled out wireless computing systems within the past year. As the benefits of wireless computing become more widely understood, and end-to-end systems continue to emerge, the market will be poised to realize the growth that industry analysts have projected.

The marketing of new and emerging technologies is an art that is attracting the attention of an increasing number of marketers. High-tech companies are beginning

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The Federal Communications Commission took the 4660 MHz to 4685 MHz band, which used to be designated for federal government use and created the General Wireless Communications Service (GWCS). The commission will license the spectrum via auctions to companies that will use it to create "innovative and efficient" applications that will address the needs of consumers.

Each element of the marketing mix should be used to establish and maintain the product's position within each of its targeted markets. It is important to use the 5 Ps to extend the reach of all available resources. In most companies, the marketing budget is limited. Selecting the right marketing mix enables the marketer to maximize the power of the available marketing budget. ■

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to empower marketers to practice their craft. Intuit, among others, has pulled marketers from the consumer products industry, which has excelled at this art for many years. The computing communications market has unique characteristics and complex products, and marketing is not enough.

Marketing strategies and programs must reflect the complexities and nuances of our industry. The constructive and abiding collaboration between technologists and marketers is essential to the successful launch and deployment of products and services that employ new and emerging technologies. ■