

Operating Like a Business

Agencies across the federal government have resolved to operate more like a business. Reinventing government, total quality management, and now reengineering have been embraced in an attempt to gain efficiencies comparable to those enjoyed by successful American corporations. Defense laboratories, in particular, have been leaders in this change, due in part to a new-found awareness of competition. Most laboratories now realize that they can and will go out of business if they do not perform. In this environment of acknowledged competition the question arises, how far can a laboratory or any federal agency advance towards operating as a business without practicing marketing?

Marketing is a dominant character in American business practice. It is inherent to business practice, whether a company has a marketing office or not, because marketing is inherent to competing for customers. Marketing offices exist to give the marketing effort focus so that it can be constantly improved. Marketing efforts are also inherent in the practice of a Defense laboratory. Very few laboratories have established marketing offices, providing the effort no focus and, as a result, very little improvement. There are few marketing offices because very few laboratory leaders have accepted that laboratories *can* market.

The argument that Defense laboratories cannot market arises by confusing means with ends, or method with principle. Business schools have for decades developed methods and principles for private sector marketing. Although the current methods of marketing developed for corporate America have very limited applicability for a Defense laboratory, the principles of marketing are extremely applicable. The challenge is to develop new methods for Defense laboratories based on the same principles.

A Broader Concept

Marketing and advertising are not synonymous. Confusing the two is a carry-over from the Industrial Age when America's production capability did not match consumer demand. The seller's market reached a fevered pitch in the late 1950s, before German and Japanese corporations began exporting quality consumer goods. Every household demanded a car, a television, and a toaster, and they took what they could get. For a manufacturer, the challenge to making sales was increasing customer awareness—a golden age of advertising. As production eventually matched and many cases exceeded customer demands, the power within the market shifted from the seller to the buyer, from producer to customer. No longer did the household member line up for any toaster he or she heard about. The consumer could weigh the decision and choose the product that best suited his or her particular needs and expectations. The consumer became a customer.

MARKETING CONCEPTS FOR ARMY LABORATORIES

By Jeffrey M. Ricker

A watershed event in this shift from consumer to customer was Ford Motor Company's debut of the Edsel in 1957. According to *Business Week*, its launching was more costly than any other product in its time. Ford succeeded in gaining the attention of the entire American public, only to disappoint it. Sales, expected to meet 200,000 in the first 12 months alone, never reached 110,000 total before the line was discontinued in November 1959. Ford lost \$350 million (John Brooks, *Fate of the Edsel and Other Business Disasters*, 1964.)

American corporate leaders learned that the challenge to any business is to develop customer loyalties and satisfaction, and the key to this challenge is to focus on the customer's needs and expectations. Corporate America established a new, broader concept of marketing: to sensitively serve and satisfy customer needs (Phillip Kotler and Sidney J. Levy, "Broadening the Concept of Marketing," *Journal of Marketing*, January 1969.)

Defining Customers

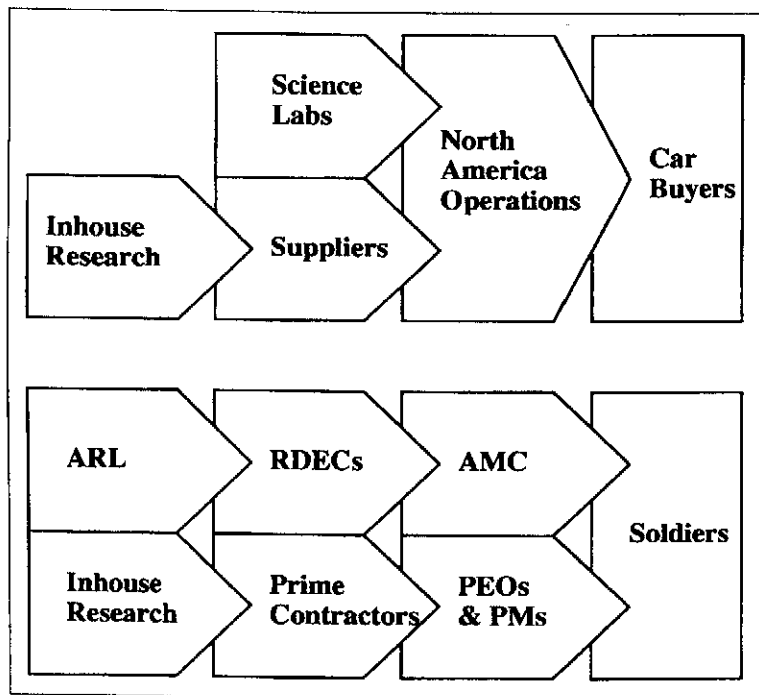
This broader concept of marketing begins with a fundamental question—who is the customer? Many Army Materiel Command organizations have struggled with this question while deploying their Total Quality Management programs. Discussions about identifying Army laboratory customers have become quite heated at times because the participants struggle to define *the* customer, where, in truth, a laboratory has many customers.

One concept used in the private sector to understand different customers is the product food chain. In very few cases does a product go directly from resource to consumer. Vendors and suppliers add value to a product in succession from resource to final consumer, with each value added affecting the consumer. For instance, green beans move from farm to canner to distributor to grocer before reaching the household. In Figure 1, a simplified technology food chain for an automobile manufacturer is compared to that of a program manager. Note that a food chain is defined by product and cash flow, not necessarily by organization. Army laboratories may have different food chains for different products.

Another, more essential concept for identifying customers is market sectoring. For sound marketing practice, customers are grouped according to buying behavior, which is defined by their priority of expectations. These groups are called market sectors. Customers are not grouped according to what is convenient to the corporate organization, such as geographic location or size. Conceivably, a marketing sector could be defined by customer location, but only if location dictated a different buying behavior. At the largest level, Army laboratories have four market sectors: soldiers, government leaders, other federal government organizations (such as program managers), and private industry. Each of these sectors can be divided into subsectors, but again, by buying behavior and not by simple convenience.

The soldier is a consumer, a final user of

Simplified technology "food chains" of an automobile manufacturer (top) and a program manager (bottom).



Customer superiority cannot be over stressed in the government leader market sector. The American people entrust elected representatives and the appointed officials they approve with the common Defense. The elected and appointed in turn allocate resources to Army laboratories to execute particular elements of the common Defense. It is the people's representatives who define a quality product, not the laboratory. If the product does not meet the expectations of the Congress or DOD appointed officials, it is discontinued. The customer is always right.

Customer Expectations

Army laboratories can no longer wait passively for soldiers to define their needs and expectations. Doing so simply is not focusing on the customer. No corporation could survive with the board of directors asking such questions as, "When is the American Society of Coffee Drinkers going to publish their requirements for a coffee maker? We need to get started on designing our next model line." It would be absurd. Yet, the engineers and scientists in the U.S. Army Materiel Command sit and wait for the captains and colonels of the U.S. Army Training and Doctrine Command (TRADOC) to publish a mission needs statement.

It is not the responsibility of the customer to define his or her requirements. It is the responsibility of the product development organization to assure it knows and understands the customer's needs and expectations. Assuming such responsibility is marketing, that is, sensitively serving and satisfying customer needs.

TRADOC claims to be the soldier's representative. In reality, design engineers never deal with TRADOC, but with assigned individuals within TRADOC. No single individual can represent the entire customer base. Would a manufacturer of washing machines rely on one housewife to define the requirements of a new model? The colonel or sergeant in one of TRADOC's combat development centers has only his own experiences, perspective, and knowledge to draw upon. How much experience does a colonel have in driving an M1A2 tank?

To truly represent customer needs, TRADOC would have to conduct market research just as any corporation would. It is illogical for an organization created to train soldiers to be conducting extensive product research. Market research should be a core competency of Army laboratories.

Army laboratories will need to conduct market research for each sector and subsector. The methods used will vary. The soldier market sector is very similar to a consumer market in the private sector, so methods used for consumer goods will generally apply. The other federal agency market sector, which includes program managers, is similar to business-to-business marketing, and methods have been developed which will be applicable.

the laboratory's product. Congress is also a consumer, the final source of all funding. In this way, Army laboratories face the same predicament as a toy manufacturer. One customer has the purchasing power, another customer is the actual user of the product, and the two may have very different expectations of what defines a good product. It is the toy manufacturer who must resolve the difference between the parent and the child's expectations if the company is to remain in business. How can an Army laboratory dismiss its responsibility of resolution and expect to receive missions and funding?

Establishing Customer Superiority

The concept that marketing is a process of sensitively serving customer needs is a corollary to the premise that organizations exist for customers. The culture of many Army laboratories is that organizations exist for the product. This is not a subtle difference or matter of semantics. This is a complete and vital shift in perspective. Customers are not a matter of coincidence to creating products, but rather the opposite, that is, the particular product one creates is only a matter of coincidence to fulfilling a customer need.

An Army researcher recently stated to me, "I don't need soldiers in here telling me how to design a tank." Such a perspective is preposterous and, I fear, prevalent. Establishing the perspective of customer superiority is especially difficult with engineers and scientists, not just in Army laboratories, but throughout industry as well. The difficulty must be overcome.

In reviewing the Edsel debacle, it is noted that customer surveys were never con-

sulted during the design phase. Rather than defer to the customer questions of aesthetics, answers were drawn from internal committees. This process is familiar to Army design teams. When a corporation's product developers do not satisfy customer expectations, such as the Edsel team, the corporation takes a loss. However, when military developers do not satisfy the soldiers' expectations, soldiers may die.

The American soldier is a professional and the recognized world expert in how to wage war conclusively with the least cost in human life. The U.S. Army, as Army Chief of Staff GEN Gordon R. Sullivan has stated, fights at the Ph.D. level of war. The soldier is the expert in design criteria, not the Army research engineer, because of a great disparity of experience with the product and its environment. This disparity is rare in the private sector. For instance, General Motor's Corvette design team is not composed of men and women who ride the bus to work. They drive automobiles everyday and are more than likely driving enthusiasts. Army scientists and engineers, on the other hand, do not operate M1 tanks or depend on SINCGARS radios to get to work every day. It is the soldier who has the experience to understand what is required of equipment, not the engineer. More critical than experience, however, is doctrine, and for this requirement there is no ready analogy from industry.

The Army's doctrine lies at the heart of its professional competence. It is a concise statement of how the Army intends to conduct war. Doctrine is the ends to which a certain technology is but one means of achieving. Customer superiority dictates that doctrine must drive technology.

The most challenging research will be the government leader sector, for there are no readily available similarities in the private sector. Researching the government leader sector, however, is essential to resolving the toy maker's dilemma. An Army laboratory must know and understand the government leaders' needs and expectations of its research efforts. Many of these expectations do not necessarily affect the soldier in the field, but the nation as a whole. These expectations include encouraging math and science in secondary schools, assisting historically Black colleges and universities, and transferring technology that can be turned into consumer products to small businesses.

Responsibility to Communicate

If one laboratory is chosen over another to accomplish a particular research or development project simply because the customer was unaware that the unchosen laboratory was capable of accomplishing the project, whose problem is it? It is certainly not the customer's loss; he or she will receive a product. It is the loss of the laboratory not chosen. Can the laboratory staff complain that "it isn't fair?" Well, can one running shoe manufacturer complain that "it isn't fair" that customers are buying another company's product based simply on name recognition?

Just as it is an organization's responsibility to assure it knows and understands its customers' expectations, it is also the organization's responsibility to assure its customers are aware that it can meet those expectations. An Army laboratory must communicate its capabilities and accomplishments to customers. It cannot assume its customers and potential customers know what it is doing and why. The responsibility to communicate extends to all market sectors—government leaders, soldiers, other government agencies, and private industry.

Responsibility to communicate stems from the inherent competition of research and development. Boundaries that are complete and consistent cannot be drawn between disciplines of technology because no discreet boundaries exist. All disciplines are interdependent within a product's development, as concurrent engineering purports. There will always be mission overlap amongst laboratories; it is unavoidable. For example, if the Army wishes to develop a ground robot controlled by radio, does the ground vehicle laboratory get the mission or the communications and electronics laboratory? As it turns out, the missile laboratory does because it has more effectively communicated its capabilities to the customer, that is, to the government leaders who make the decision.

There are 721 federal laboratories, each having several on-going projects that require funding. The Army alone has 199 such projects. Name another market in which 721 brand names are competing. Imagine 721 brands of laundry detergent competing for your pur-

chase. The communications challenge in the federal research community is one of the most daunting faced by any organization, and yet, the resources dedicated are among the lowest.

A Specific Concept of Marketing

American business schools have devoted considerable effort in creating mature concepts and practices for marketing in the private sector. No such attention has been given public sector marketing, nor can the public sector wait idly for the business school community to fill the challenge. The specific concept of market for Army laboratories proposed here is a simple one to be matured through discussion and shared experiences. At the concept's foundation are the premises already discussed:

- Laboratories exist because of and for customers, not products.

- It is the laboratory's responsibility to assure it understands the customer's expectations.

- It is the laboratory's responsibility to assure the customer understands the laboratory's capabilities.

Marketing is the process of sensitively serving and satisfying customer needs. From the perspective of a laboratory's marketing director, this process has three major actions:

- Find out what the customer wants (market research);

- Do what the customer wants; and

- Let the customer know you are doing what he wants (corporate communications).

The first and last actions are in essence communication and are the responsibility of the marketing director. The second action is normally the technical director's responsibility.

All effective processes have an end goal. In the private sector, the end goal of sensitively serving and satisfying the customer's expectations is to increase profits. The end goal for an Army laboratory's marketing efforts is to assure proper investment in its field of technologies. Some may dispute this as a sound goal on the basis that the natural inclination of any laboratory would be to ask for more investment than is proper. In truth, the goal works exactly because of that natural inclination.

Market forces and anti-trust laws counter any company's efforts to maximize profits, providing a balanced system that seeks efficiency. Similar forces counter a laboratory's efforts in maximizing investment, again creating a balanced system that seeks efficiency. The main counter force is that the laboratory does not allot the investment; Congress and government leaders do. Also, according to the above premises, the laboratory does not define the technology investment requirements, the soldier does. Just as a company cannot force or coerce a customer to buy its products (the essence to anti-trust), so also a laboratory cannot force or coerce investment into itself. A company can only make sales if it is able to convince customers

that they will benefit from the purchase, and it does so through effective communication. The same holds true for laboratories; they must convince government leaders that the Defense will benefit from the investment.

Through market research, a laboratory determines the soldiers' expectations. These expectations are considered along with capabilities and resources to define the laboratory's sales objectives, that is, what it considers proper investment. These sales objectives in turn define the laboratory's communication objectives. Laboratory or corporate communication is a cumulative effect across many media, among them advertising. If a laboratory does not meet its sales objectives, it can be for one of two reasons; either its calculation of proper investment was wrong or its communication with the customer was not completely effective.

The natural inclination of the laboratory to maximize investment and to use marketing to effect this inclination should lead to improved definition of customer expectations and improved communication with the customer. The result is a bottom-up improvement of the Army's research and development process. Soldiers receive products that more strongly match their expectations. Just as important, government leaders gain a better understanding of the Defense research capabilities through more effective communication on the laboratories' part. Better understanding affords sounder judgment, a vital necessity in this age of decreasing Defense resources and increasing Defense technological requirements.

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