



Eli Lilly, 1998 (B): Emerging Global Organization

In achieving its dramatic success during the 1990s, Eli Lilly and Company introduced fundamental changes not only to its strategy for operating globally but also to its organization. Prior to the 1990s, most of the company's operations, resources, and power had been located within its domestic units, which were organized within a classic "functional-silo" structure. International operations were organized under Eli Lilly International Corporation, as outlined in **Exhibit 1**. Throughout the 1990s Lilly gradually altered this structure by introducing a focused matrix organization, with extensive use of cross-functional teams.

Lilly's organization reflected the complexity of the strategic challenges it faced within its dual focus on continual innovation and demand realization (see "Eli Lilly and Company 1998 (A): Strategic Challenges," HBS case No. 399-173). On one side, an effective innovation organization required the involvement of scientific units focused on therapeutic areas, research laboratories distributed globally, technical units providing support and services, functional units developing and maintaining leading-edge resources and standards and procedures, and national affiliates providing access to clinical researchers and medical opinion leaders throughout the world. On the demand realization side, Lilly required the coordination and integration of product units devoted to individual products, national affiliates focused on markets, and functional units developing and maintaining leading-edge resources and expertise. Traditional organizational structures were limited in their ability to integrate these required complementary roles.

An important challenge facing senior Lilly management throughout the 1990s had been designing and building an effective organization responding to these strategic requirements. The company had made dramatic progress in this effort. Lilly had redesigned its discovery and development organization around the innovation process. The new organization had demonstrated major improvements in newly introduced products, by both launching them in the global market significantly faster than in the past and developing post-launch product strategies. In late 1998, senior management was concentrating on how to manage its demand-realization process.

Organizationally, this challenge involved how to pursue two potentially conflicting objectives simultaneously. First, as the cost and time required to develop new products increased, Lilly needed to ensure maximization of global returns on each new product and therefore required a strong product focus and orientation. Second, because Lilly operated across diverse world markets, it needed to ensure maximization of global returns on its portfolio of products across these markets. The issue of how to balance these conflicting requirements was a major challenge facing Sidney Taurel and his senior management team. Taurel described this challenge as follows:

Professor Thomas W. Malnight of IMD International, Switzerland, and Professor Michael Y. Yoshino of the Harvard Business School prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

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The new battleground for strategic advantage within the industry will likely move beyond the laboratory, to points farther along the chain of innovation, to focus on the issue of demand realization. We have come to understand that a large part of the potential demand for medicine goes unrealized due to a variety of faulty connections along the chain. Patients may suffer symptoms for years without ever seeking treatment. Others may receive the wrong diagnosis or the wrong prescription or may fail to comply with the treatment their doctor prescribes. All this represents unfilled potential that we can no longer afford to ignore.

Organizing and Managing the Innovation Process

Lilly Research Laboratories (LRL) had overall responsibility for the discovery and development of drugs within the Lilly organization. LRL operated research and development facilities in Australia, Belgium, Canada, England, Germany, Japan, Singapore, Spain, and the United States, with clinical studies conducted in more than 30 countries worldwide. However, U.S. facilities accounted for about 80% of total discovery research expenditures and 65% of all clinical trials performed in the development process.

One senior LRL executive commented on how the company perceived the challenges associated with product innovation.

Any company aspiring to lead in this industry must deliver a constant stream of innovation, with a volume and flow rate such as no company in this industry has ever achieved before. Ironically, the biggest hurdle is not a shortage of good scientific ideas but an overabundance of them. Revolutionary technologies in biomedicine are churning out more intriguing hypotheses than the industry can pursue. The limiting factor is resource allocation and management, deciding how many researchers and how much of a finite R&D budget to allocate to which new compounds, choosing which of many promising drug candidates to enrich and accelerate in clinical trials and which to set aside.

Another executive commented:

Until recently, we tended to equate innovation in our business with the discovery of a new drug target and the invention of a new molecule to address it. As we've advanced, we've come to see that invention is the beginning, but not the whole, of the innovation process. In fact, innovation is not merely the process by which something gets invented but rather the entire process by which a new thing gets adopted and ultimately chosen by customers to replace whatever they currently are using. This paradigm allows us to see that every part of our organization plays a role in the innovation process, and we all share accountability for the entire chain.

Lilly's overall R&D strategy was incorporated within a QSV (Quality-Speed-Value) initiative (see "Eli Lilly and Company, 1998 (A): Strategic Challenges," HBS case No. 399-173). This initiative focused on launching a steadily increasing stream of innovative new products each year in two-thirds of the global marketplace, while simultaneously cutting in half the time and cost of discovery and development. In pursuing these objectives, LRL management built an "R&D machine" around the fundamental tasks of identifying disease targets; creating, selecting, testing, and developing the best possible medicines; and quickly and safely getting the resulting products to markets. One senior Lilly executive described the challenge of this process. "As you look at the operations for which our R&D organization has responsibility, it spans from highly speculative early-discovery operations to the highly deterministic late-phase development. In early discovery, we typically have about a 1 in 10,000 chance of producing a marketed product, whereas in Phase III development, we have an 8 in

10 chance of producing a marketed product.” LRL’s organization incorporated differences in mind-set, decision points, and goals across tasks in this overall discovery and development process, as portrayed in **Exhibit 2**.

At LRL, Richard DiMarchi, Ph.D., led early-discovery operations focusing on research technology and proteins discovery and development. At this stage of the innovation process, activities involved exploring promising areas of research by aggressively employing new technologies (e.g., combinatorial chemistry, high-throughput screening, bioinformatics) to increase the identification of high-potential compounds targeted at specific disease areas. One important strategy employed by Lilly in this stage involved a growing use of collaborative agreements to provide access to emerging technologies. In 1997, Lilly entered into more than 20 significant collaborative agreements with biotechnology firms, universities, and other research institutes to enable it to better identify disease targets and develop promising new leads to accelerate the flow of new compounds into the development pipeline.

Therapeutic-area discovery research and early-phase development, led by Steven Paul, M.D., was responsible for evaluating possible new drug candidates through the late-phase discovery and early-phase development. Historically, more than half of a company’s total R&D costs was associated with projects that ultimately failed. As a result, critical activities in this phase of the discovery/development process involved “pulling risks forward” or doing critical evaluative experiments as early as possible to enable timely go/no-go experiments. By speeding the timely evaluation of a potential product’s risks, faster decisions could be made for proceeding with promising candidates or terminating projects and redirecting resources.

Operationally, these activities were organized around program teams, formed at the time a development program was sanctioned. Program teams consisted of experts from preclinical, clinical, and development functions, with team members continuing to report primarily to their functional areas, but led by a single team leader for the specified program. In 1998, there were 34 program teams. For example, one team focused on oncology (associated with the treatment of cancer), evaluating development leads generated by prior screening of more than 100,000 compound candidates. Each team was expected to provide clearly defined goals, dedicated resources, cross-functional expertise, functional-area leadership, and direct accountability into the process of identifying and moving forward high-potential compounds for development and commercialization. Each team received approval by a Program Sanctions Committee for a plan detailing the scope of its activities, the timing and cost of its activities, as well as its strategy, working hypothesis, product profile, and critical success factors.

Late-phase development through regulatory approval and commercialization, led by John Lechleiter, Ph.D., was responsible, once a drug candidate had been approved, for development and commercialization—the so-called product decision. This approval was based on a drug candidate having established not only efficacy, but also a high probability of regulatory approval and the likelihood of commercial success.

Operationally, the development and commercialization process for each compound was organized around product t, which consisted of cross-functional staff from development, medical, and commercialization areas (e.g., manufacturing, marketing), with a majority of the members fully dedicated to the team and co-located. These teams were fully responsible and accountable throughout the commercialization process for shepherding molecules through the large-scale phase III clinical trials, global submissions, and launches, and they continued post-launch with responsibility to optimize a product’s full market potential throughout its life cycle. The teams established close linkages between and among research, development, manufacturing, marketing, and sales for the successful global commercialization of compounds, as well as continued efforts to maximize the value of each molecule emerging from the discovery pipeline. Product teams developed “contracts” with LRL senior management specifying deliverables associated with the

development and commercialization process, and controlled the budgets for all related expenses. As an example of their responsibilities, product teams formulated centralized development plans to enable the rapid and global launch of their product, including designing a global development plan to comply with regulatory requirements and then “subcontracting” actual clinical trials for their product across Lilly’s worldwide affiliate network. In 1997, Lilly had more than 10 product teams active in the late-stage development and commercialization of new products.

The success of the product team structure was demonstrated in the commercialization and launch of Zyprexa. LRL Vice President Gary Tollefson, MD., Ph.D., head of the Zyprexa team, commented on the role of product teams:

We developed a single global protocol that allowed us to perform clinical trials involving 2,000 patients across 17 countries. We also anticipated in our development plan design issues that were important within key worldwide markets. Given our long-term focus, we were also able to incorporate long-term maintenance trials from early in the process. Overall, we were able to globally launch Zyprexa 18 months ahead of our original schedule.

The advantage offered by the team structure is that it allows us to look at the overall development and launch process to understand what we need to do to create a rapid launch, early uptake, and constant growth in the markets for our products. Whereas, in the past, we had mainly focused on the product launch, today, we focus on how we can maximize the value of each molecule. In the process, we have eliminated functional hand-offs by involving the critical expertise from throughout our organization in the development and commercialization processes.

Pedro Granadillo, senior vice president of Human Resources, commented on the changing structure of the LRL organization:

Scientific innovation continues to be at the very heart of this industry. For Lilly to meet its objective of outgrowing our competitors through a constant stream of innovation, we must excel in two dimensions of our R&D organization. First is the knowledge area of science and second is the process by which we discover, develop, and bring innovations to the marketplace.

In terms of capabilities, our emphasis has been and will continue to be in acquiring, nurturing, and deploying these key capabilities, which will enable us to take advantage of this phenomenal revolution in the sciences today. This is the role of a “function” within the R&D organization. A related but very different issue is capacity management of our diverse innovation capabilities, where we have been focusing on improving our ability to deploy our assets to ensure the constant stream of innovation that is required to meet our goals.

In managing the flow of innovations, Lilly employs a team-based structure for product development. Not only has this enabled us to be much wiser in our deployment of critical capabilities and in making trade-off decisions but it has also enabled us to dramatically reduce the cycle time of development. The impact of this cycle-time reduction cannot be overstated, as it enables us to reduce the unit cost of development, positively affecting our capacity for development as well as advancing cash flow for new products.

Organizing and Managing the Demand-Realization Process

This section describes the roles and responsibilities of Lilly's operating units involved in the demand-realization process. These units include the traditional geographic affiliates and product teams and groups.

Geographic Affiliates

In 1998, Lilly operated national affiliates in 159 countries. These affiliates ranged in size from \$4.6 billion in revenue and more than 3,000 employees in the United States to less than \$1 million in revenue and 1 employee in Cameroon. The 1990s witnessed a significant change in the size and scope of many national affiliates, having an important impact on the roles they were expected to play in their markets. Traditionally, national affiliates had been operational in focus, being expected to sell all products developed by the company, often in line with marketing and promotion programs developed for the U.S. market. Reflecting their primary role in the organization, national affiliates were usually headed by executives with a sales background.

By 1998, the role of affiliates had moved beyond just selling products and toward building an appropriate position in each national market, given the company's local objectives. An important element of Lilly's demand-realization strategy was to identify and reflect differences in the company's strategies across affiliates. Peter Johnson described the process of determining strategies across national markets.

National market strategy development involves understanding the relative value of each of the national markets we can do business in. The question we are trying to answer is not if we should do business there, but how we want to invest in each market. To do this, we value markets across two dimensions: potential size and return profile. From this analysis, we can determine the size and structure of our investments. For example, in a large market with a high return we want to invest aggressively. This might involve creating a local structure that has several parts of the value chain—medical, manufacturing, marketing, and sales, perhaps. In contrast, in a smaller market with a low return profile, we would operate with minimal infrastructure and therefore a much smaller investment. Here, we might depend on third parties to do distribution and selling, for example.

The changing role of national affiliates reflected both changes in Lilly's strategic focus and a growing recognition of the vast mix of players that affected or influenced the supply and demand of pharmaceutical products within a market. **Exhibit 3** portrays a "Health Care Systems Model" developed by Lilly. The model highlights how markets were influenced by government regulators and health care reimbursement systems, insurance companies, pharmaceuticals manufacturers and distributors, multiple types of health care providers (doctor's offices, clinics, public hospitals, private hospitals, and pharmacies), as well as the patients themselves. Various combinations of these players affected what products were available, what access patients had to health care, what type of treatment channels were available, and how pharmaceutical products were delivered to the markets. In this regard, the "customers" that had to be served by pharmaceutical companies had expanded well beyond the traditional doctor and patient.

Recognizing these multiple-market actors required national affiliates to evolve beyond a sales focus to create a local organization with the resources, capabilities, and culture to operate within its market, yet in line with Lilly's strategy. This changing role also meant reflecting major corporate issues within its national market environment, as well as setting the tone and direction of local operations to ensure optimizing Lilly's overall opportunities within its market. This role put more emphasis on the national manager to manage local investments. According to Peter Johnson,

Affiliate general managers play a major role in determining how to spend money within their market. Primarily, local management makes these decisions. Our challenge is to provide each management team with analytical frameworks that allow them to analyze their markets in a way that will help them most appropriately target their investment dollars. Overall, the decisions on *where* to spend the money happen at the global level. The decision as to *how* to spend it within a market happens on a more local level.

Product Teams and Product Groups

In addition to geographic affiliates, product teams and product groups were active in the demand-realization process. The need for product strategies reflected a number of factors. First, although there were important differences across national health care markets, there was also a need to develop and leverage product knowledge and marketing expertise across all markets. This need, associated with managing products globally, involved maximizing the immediate sales opportunities across world markets, as well as identifying new therapeutic indications or performing additional studies to enhance the long-term value of each product. Opportunities for developing and leveraging product expertise also reflected the need to develop and coordinate strategies associated with market research, pricing, brand policy and management, marketing, and sales strategies.

The product teams active in demand realization were a continuation of the teams formed during the development stage, often with many of the same staff and leadership. The fully dedicated and cross-functional teams focused on individual products or molecules. Given that pharmaceuticals companies were incurring increasing costs of discovering and developing new products, the teams were focused on managing these products to ensure the highest global return on these investments. Each team was responsible for creating a comprehensive life plan for their molecule to identify the best opportunities for each molecule as early as possible. One product team leader commented on his role: "At the end of the day, Sidney (Taurel) will hold me responsible for the global performance of our product."

Product teams were then part of a larger product group under the direction of a product group president. In 1998, there were four product groups, for neuroscience products, diabetes care and growth and recovery products, skeletal products, and internal medicine products. Taurel explained the roles of the product groups and product teams as follows:

We expect our product groups and teams to bring a broad business perspective in the coordination and planning of our operations. Product groups are charged with looking beyond the individual products and national markets to consider if we are identifying and maximizing our opportunities within their business area. They are charged with helping us to coordinate our activities and manage our resources beyond individual products. These groups focus on our customers, making sure that we deliver the maximum value to meet their needs. Our product teams begin their role at the start of the development and commercialization processes, continuing through a product's life cycle. These teams control the actual budgets for their product and are responsible for managing resources and maximizing returns on their product.

Product groups were expected to represent the company's interests in their therapeutic area throughout the business cycle, providing input and direction in the discovery and development processes and serving as a "champion" in the demand-realization process. The need for this business-wide focus reflected fundamental changes taking place in the industry. With the growth of managed care, it was increasingly necessary to concentrate on disease management as opposed to product sales, with a growing emphasis on the patient and on finding which treatments--and at which point of intervention--achieved the best clinical and economic results. Working with medical

professionals and health care providers to analyze the entire continuum of care for a disease—from prevention to diagnosis to treatment to follow-up—was essential.

Group Product President Gino Santini characterized his role as follows:

The actual execution of the product strategies is the role of the Product Teams. The role of the Product Group Presidents is rather to be more outward looking, thinking strategically how we should position ourselves within our business area, as well as within the rest of our corporate product portfolio. Our job involves managing our portfolio of product teams to optimize their activities, to develop synergies across them, to support our business area at the corporate level to ensure we have all the resources we need, and to consider what additional opportunities may be available for us. In addition, we play an important role in facilitating optimal relations among the product teams, the geographic organizations, and the corporate functions.

One example of the importance of developing product expertise, particularly in an environment of increasing specialization, involved greater emphasis on understanding the overall process of the health care purchasing cycle. In 1997, Lilly's strategic planning unit introduced a "Health Care Transaction Model," characterizing this purchasing cycle and identifying where in the cycle demand "leakage" occurred. **Exhibit 4** outlines the model, and **Exhibit 5** presents a sample "Leakage Chart" for one sample product. The model highlights the need to move beyond the traditional emphasis on detailing products to doctors to that of managing the entire cycle.

Managing the Product Team/Affiliate Interaction

Bert van den Bergh, president of Eli Lilly Europe, commented on the challenges in coordinating product teams and national affiliates:

It has been easy in the past for some country heads to focus their efforts where they get the best short-term returns, and not necessarily focus on the longer-term opportunities that can require substantial investments to develop. As a company, we had left these choices to affiliate leadership, expecting them to maximize the value of our portfolio of products within their markets over the longer term, while measuring them on short-term results. Now, our ability to maximize the value of products has been enhanced with the global product teams. These teams serve as a catalyst to help our national operations learn about our products and share experiences, so that each affiliate doesn't have to repeat the learning process itself. They help steer our affiliates in regard to how they maximize the value of each product.

However, product teams can also be very strong in pushing their products, asking each affiliate to put major resources behind their products. If you added up the product plans from across the teams, the results would not be financially viable--given the infrastructure and growth-rate levels that we have set as a company. The real issue we face in having product teams work with geographic affiliates is determining who should decide what. We as an organization have to find a way to make the roles of our product teams and affiliates complementary, as opposed to arguing about who is right. We need to have product teams inform country management, while making sure that both sides operate within the priorities we have set as a corporation. We can't let either side take too much control over decisions. Rather, we need to make the inconvenience of working together an advantage for the company as opposed to an obstacle.

Andrew Hotchkiss, group brand leader of the U.S. affiliate, commented on his relations as an affiliate marketing staff member with the staff from the product teams.

My job is to maximize the potential for Lilly products within the U.S. market, influencing all aspects of our organization that can help me achieve this goal. I meet with staff of product teams about every other week to share information and discuss issues that arise. We also have more detailed planning meetings bringing together all staff involved in a product on a less frequent basis. The product teams make 'contracts' with the affiliate, specifying what deliverables they will provide us to help us succeed in promoting their specific products within our markets. Much of this contract represents the core marketing programs and platforms, which we can then adapt to meet our local requirements.

In the longer term, we need a clearer definition of the roles and responsibilities of each of the parties involved in the demand-realization process. We need to get away from the tendency to think about how each product and market is different, and instead focus on where they are the same so that we can leverage learning across all our affiliates. We further need to set up planning processes to manage the interactions among the different units, so that we all receive the support and information we require. Our national affiliates and product teams both play vital roles within our organization. If we can effectively define the systems needed to manage the interaction between them, our whole company will be stronger as a result.

However another headquarters marketing staff commented on the complexities of defining such a process.

There is no one organization model that we can apply across all of our products, as each product is at a different stage in its life cycle and faces different competitors and pressures. For example, when we are dealing with some of our older anti-infective products, we need a sales-driven strategy. For Prozac, we are focusing on how to differentiate our product in each market. For newer products, we need to focus on how to globally launch and maximize market acceptance.

The challenges managing relations between product teams and national affiliates extended beyond the demand-realization process. A similar tension existed during the development process. One senior affiliate clinical executive described the tension between the product teams and affiliate clinical staff.

As a corporation, an important challenge for us is to increase the overall efficiency of our worldwide clinical-development resources. This effort is being hampered by the product teams interference in our daily operations. When we had only a few product teams, each team had fully dedicated staff who wrote their own detailed protocols and development plans and independently managed their clinical trails. But when we expanded this structure across the organization, we could not have dedicated staff on each team. Instead, each team draws on the resources of the geographic affiliates. In the United States we now have 40 product teams active in clinical trials. This is where the tension begins.

The product team's job is ensuring the registration of products in two-thirds of the world's markets. They write development protocols, define a development plan, oversee the implementation of the development plan, and support the overall registration process. The teams choose the countries that will do studies based on their evaluation of which countries have the capacity and resources needed, as well

as other criteria they establish. The teams then enter agreements with affiliates specifying how many clinical-trial patients they will deliver for the studies, by when, and for how much cost. But the actual development work is performed by affiliates, who simultaneously support many teams.

It should then be up to the affiliates to deliver on the agreements with each team. However, this is where the system breaks down. On a daily basis, product team staff try to get involved in the detailed management of their trials. They try to work directly with our staff and our clinical investigators. They try to influence the detailed decisions that we make. They try to influence our resource-allocation decisions. All of this ends up making our lives very complicated and hurting the efficiency of our operations. Many teams just don't realize where their responsibility stops.

Pedro Granadillo described how senior corporate management viewed the organizational challenges associated with the demand-realization process.

During the past six years, we have fundamentally altered our discovery and development organization, focusing on ensuring a continual flow of innovative new products. Now, we are thinking about how to organize our marketing and sales operations to ensure we maximize the value of these products. A fundamental issue we have to think about is: are we maximizing the value of our overall product portfolio or are we optimizing operations within individual geographic markets?

The role of our affiliate general managers is to maximize the total value of our product portfolio within their territory. The role of our product teams is to ensure that Lilly maximizes the value of the product for which the team is responsible. The third dimension we have focused on is enhancing our marketing capabilities. In this area, we have reestablished a center of excellence at the global headquarters. The role of this group is to ensure that we have world-class capabilities in all aspects of how our products are marketed around the world. This group will also be the catalyst for sharing learning on best practices across the organization.

As we have with the R&D pipeline, we recognized the need to have a process by which to make trade-off decisions between and among the product teams and the geographic areas in which our products are marketed. As a result, we have a portfolio-review process and decision-making framework to do this work.

Taurel commented on how he perceived Lilly's overall organizational challenges:

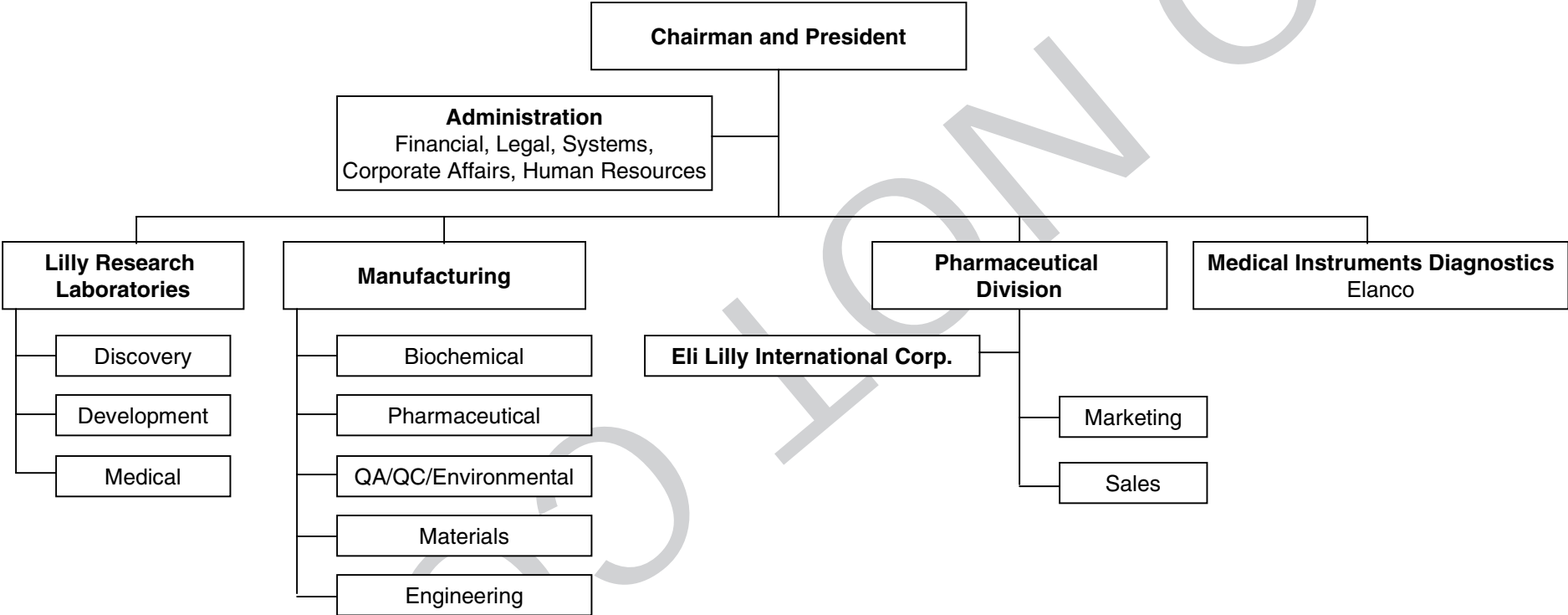
In the early days, when we operated only a few product teams, we didn't face many problems. We created these teams outside of our normal organization and gave them all of the resources and freedom they needed to succeed. And they did succeed, demonstrating major benefits in the timely development and launch of new products. Now we are in the process of expanding our use of teams for all of our products, and this is putting new pressures on our organization. We are now addressing the issue of what it will take to be organized around product teams—while continuing to rely on our national affiliates to provide the local presence, resources, and know-how that we need to succeed within each national market.

Overall, Lilly has put a new organization in place. That was the easy part. The difficult challenge lies ahead of us: making the organization work the way we want it to. The organizational changes are causing people to work together in new

ways. At one level, it is frustrating for people--the new ways seem more difficult, less efficient. But at a deeper level, the changes are allowing us to bring to surface conflicts and inefficiencies that we didn't even know about before. This is part of the process of becoming a more effective, more adaptable organization.

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Exhibit 1 Pre-1990 Organization



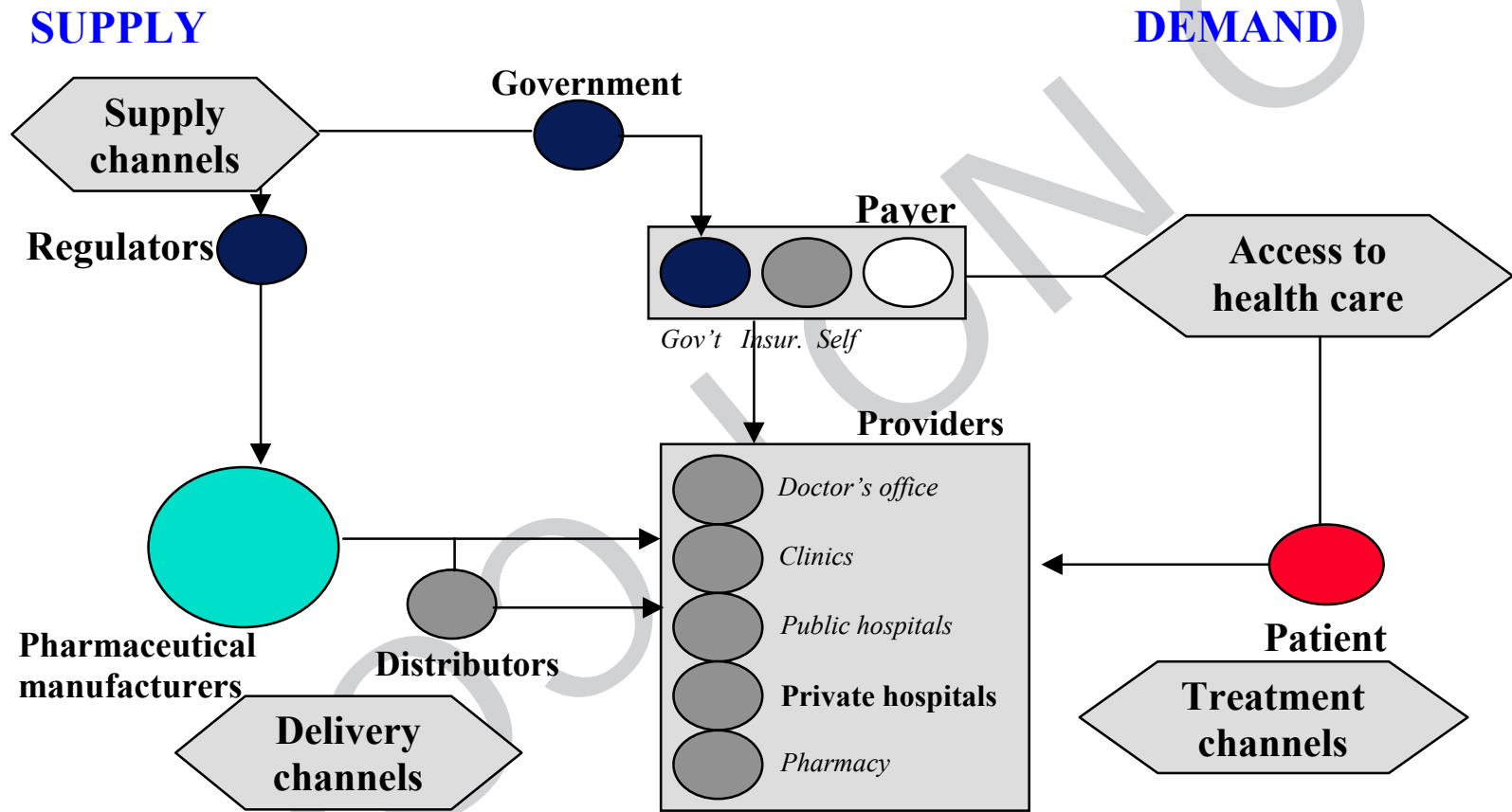
Source: Company documents

Exhibit 2 Eli Lilly Discovery and Development Organization

Stage	Focus	Team Roles
Early-discovery research	Identifying high-potential compounds focused on targeted disease areas, aggressively employing new technologies (e.g., combinatorial chemistry, high-throughput screening, bioinformatics).	
Therapeutic-area discovery research and early-phase development	Evaluating new drug candidates through the late-phase discovery and early-phase development.	Program Teams consisted of experts from preclinical, clinical, and development functions. Members continued to report primarily to their functional areas. Teams provided clearly defined goals, dedicated resources, cross-functional expertise, functional-area leadership, and direct accountability to identify and move toward high-potential compounds.
Late-phase development, approval, and commercialization	Overseeing the regulatory approval, global launch, and successful commercialization of new products.	Product Teams consisted of cross-functional staff from development, medical and commercialization areas (e.g., manufacturing, marketing), with a majority of the members fully dedicated to the team and co-located. Teams were responsible throughout the commercialization process, including managing the large-scale Phase III clinical trials, global submissions and launches. Teams continued post-launch with responsibility to optimize a product's full market potential throughout its life cycle.

Source: Company documents

Exhibit 3 Health Care Systems Model



Source: Company documents

Exhibit 4 Health Care Transaction Model

Demand Issues

**Perception
Condition**

Will a person perceive that a problem exists and therefore enter the health care system?

**Seek Treatment/
Diagnosis**

Will a person seek treatment in the right place?

Treatment Plan A

What treatment plans are available and how involved are they?

Treatment Plan B

Will drug therapy be part of the treatment plan?

Delivery

Once a treatment decision has been made, can that decision be changed?

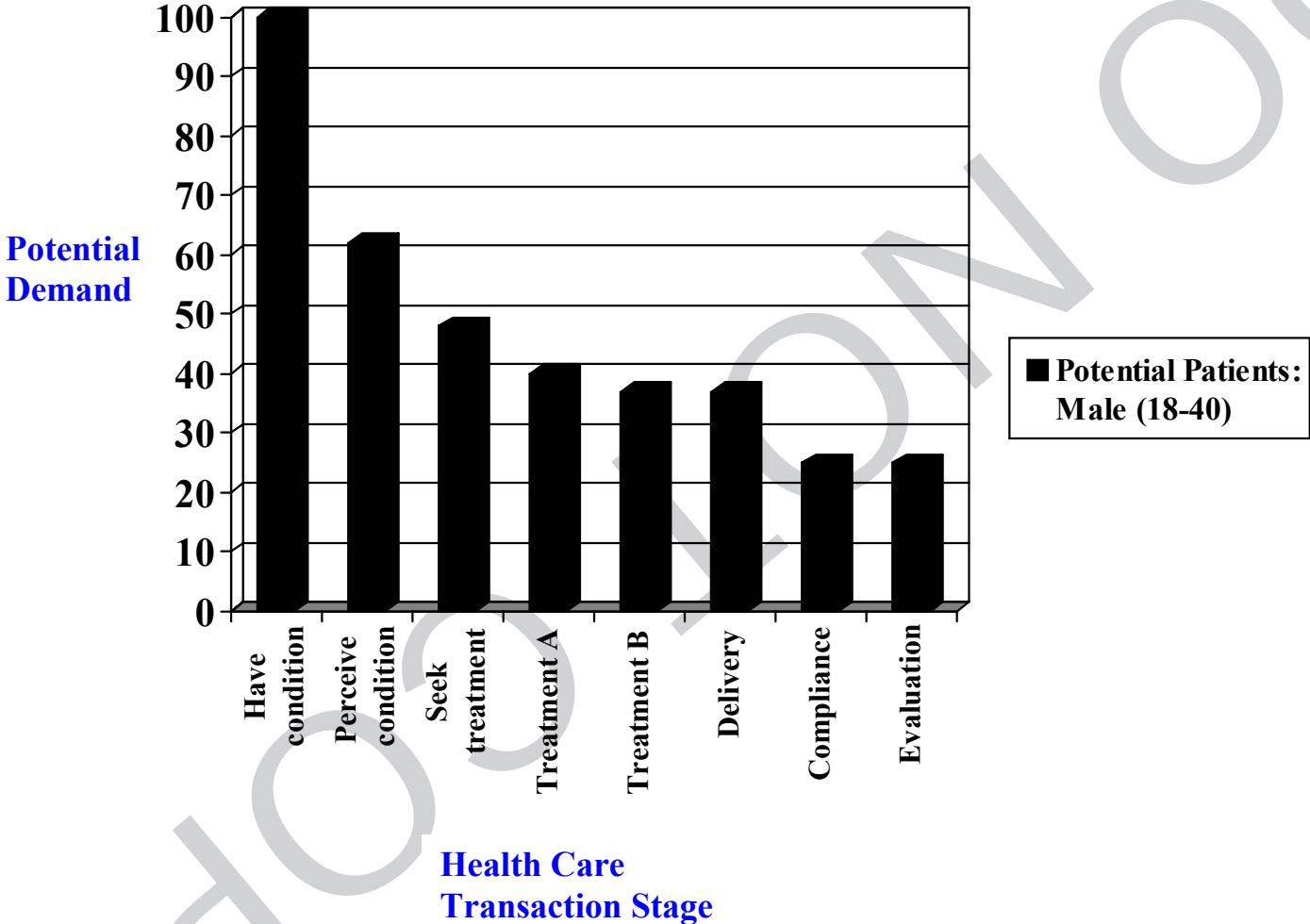
Compliance

Will the patient properly comply with the treatment plan?

Evaluation

Will the patient attribute success or failure to the solution?

Exhibit 5 Sample "Leakage" Chart



Source: Company documents