



2006 VHA Research Series

The Power of Innovation

VHA Health Foundation 



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Introduction

Innovation, particularly in the diagnosis and treatment of human disease, is the hallmark of American health care. As the global leader for most of the last century we have seen the discovery of insulin, the complete mapping of the human genome, and the introduction of antibiotic therapy, open heart surgery, transplants of major organs, the use of artificial joints for hips and knee procedures, and reattachment of limbs. These breakthroughs did not come cheap. The United States spends more on health care-related research and development than any other country. In 2003, it was estimated that the Federal government alone spent over \$26 billion. Pharmaceutical companies, device manufacturers and other private companies invested over \$10 billion more. At its best the American health care system is capable of delivering care unsurpassed anywhere else in the world.

Yet, Americans are asking, “Why isn’t the health care system performing better?” A 1999 Institute of Medicine study estimated that as many as 98,000 Americans die each year from hospital-related medical errors. Twice that many lives might have been saved had hospitals implemented better intensive care unit procedures. A recent study by the Rand Corporation (a non-profit think tank) concluded that less than 50 percent of encounters with doctors and hospitals resulted in optimal, evidence-based treatment. Studies show that as many as 42 million Americans — almost 15 percent of the population — lack health care insurance. Surveys reveal that patients do not feel they have adequate information about their conditions, and that their experience with health care ranks below that of most other sectors, in fact below that of the post office. In the aggregate, the country is spending nearly \$2 trillion on health care, and yet our nation’s health care system does not meet acceptable thresholds for safety, quality, access or cost.

It would be easier to ask the old question: “Is the glass half full, or is it half empty?” Rather than spend too much time on the contents of the glass let us instead examine the glass itself. Three major stakeholders dominate the landscape: physicians, hospitals and health plans. And most of the innovations in these sectors over the last half century have been the result of tweaking aged and overtaxed models.

The American physician model is based largely on an 18th century tradition of professionalism. The last major reforms were early in the 20th century when medical education and professional certification were regulated as a result of the *Flexner Report*. The role of the doctor and the relationship with other major stakeholders were later reinforced through state regulations and the advocacy work of organizations like the American Medical Association. While huge strides in

science continued throughout the 20th century, doctors still pattern themselves after role models from the early 20th century like doctors William Osler, William Halstead and the Mayo brothers.

American hospitals are based largely on English designs that originated in the mid-19th century, the result of pioneers like Florence Nightingale. Nightingale and her contemporaries set the stage for hospital policies and procedures, the role of nurses and the relationship among doctors, nurses, other caregivers and their patients.

Models for American health insurance and managed care plans originated in the 1930s and 1940s with the development of Blue Cross/Blue Shield programs, organizations such as Kaiser Permanente and Group Health plans around the country. In its effort to supply health coverage to the aged and indigent, the federal government chose similar approaches when implementing Medicare and Medicaid in the 1960s and Health Maintenance Organization legislation in the 1970s.¹

The end result is a system of health services that, at the technical level, involves some of the most advanced science on the planet, but is based on business models and delivery systems that are decades, and even centuries old.

In 2005, VHA Health Foundation's board of directors sought to better understand the reasons behind this paradox. The foundation commissioned Larry Keeley and his associates at Doblin Inc. to apply the rigorous analytical methods that are used in their evaluation of other American industries and companies. The project set out to discover when, where and how innovation was taking place in health care. It also sought to identify organizations that were developing model innovation processes, and to explore where opportunities for successful innovation might lay.



Larry Keeley, Principal, Doblin Inc.

Larry Keeley is a strategist who has worked to develop more effective innovation methods since 1979. He and Jay Doblin created the Chicago-based innovation strategy firm, Doblin Inc. The firm has gained worldwide recognition for pioneering comprehensive innovation systems that materially improve innovation success rates.

Defining Innovation

About 150 years ago Ralph Waldo Emerson quipped, “Build a better mousetrap, and the world will beat a path to your door.” A snappy concept, but one that American organizations often find difficult to implement. Despite our country’s well-deserved reputation for innovation, only about 4 percent of new products and services succeed in the marketplace. Since the mid-1980s and the Total Quality Management revolution, most companies have invested much more in efforts to improve performance than in innovative products and services. Although the former represents a relatively low-risk extension of a successful business strategy, the latter represents a discontinuity that may, or may not, yield rewards.

Industries confronted with global competition are now finding they can no longer rely on superior technology or performance excellence as their market advantage; competitors are high performing organizations and have comparable technology or they would not be in the game. Increasingly organizations must seek innovative new products and services that will both distinguish them from their competition and result in a positive return on investment.

To understand the potential of implementing an innovation strategy it is important to understand that just because something is new does not mean it is an innovation. **For the purposes of this discussion we will limit the term innovation to those initiatives that can produce value through viable new business concepts.** Successful innovations strategies must:

- generate enough positive cash flow to warrant development
- meet or exceed internal performance expectations and targets
- occur fast enough to maintain a lead on the competition
- occur often enough to effectively refresh the brand

Evidence suggests that organizations that harness innovation prosper in the marketplace. When evaluating its 2006 “Top 25 Most Innovative Companies,” *BusinessWeek* noted these companies achieved profit margin growth of 3.4 percentage points annually since 1995, compared to 0.4 percent for the median Standard & Poor’s 1200 global company average.² The group’s stock price also grew at 3 percentage points per year higher over the decade than the S & P average.

Given these kinds of numbers it is no wonder that innovation and its link to business development is a topic of great importance to senior executives in more and more American industries. Health care is unique in that, aside from commercial sectors such as pharmaceuticals and device

manufacturers, few organizations invest in formalized development activities. Even fewer fund programs designated as “innovation,” or dedicate personnel to innovation activities.

Much of this is the result of confusion as to what innovation is and what it does. Clearly innovation is more than performance improvement. Futurist Leanne Kaiser Carlson has defined it as “the art and science of how we evolve ourselves for the future.” She goes on to say that to do it well, organizations need a systematic approach and synergistic culture. The innovation process requires looking both ahead as well as backward — exploring history to learn what has been tried before and understanding reasons for its success or failure.³

Serendipity plays a very small role. Successful innovators pursue multiple options and create a portfolio of short-term, long-range and potential high-risk/high-reward projects. By quickly researching feasibility and results, risk can be reduced and only the best concepts are moved forward. Just as a single lottery ticket is no solution for years of debt, innovation is not a remedy for inattention, fiscal mismanagement or reluctance to change. Responding to competitive threats solely by turning to innovation is a flawed strategy. Organizations deploying effective innovation strategies do so through disciplined, committed and ongoing efforts, much as preventive health practices preempt predictable illnesses.

Innovation Categories

Over the last two decades, researchers have begun to unravel the key elements of effective innovation strategies and how organizations and industry deploy them. Among those researchers is Larry Keeley, a strategist who has worked to develop more effective innovation methods since 1979. He and Jay Doblin created the Chicago-based innovation strategy firm, Doblin Inc. The firm has gained widespread recognition for its pioneering comprehensive innovation systems with companies such as American Express, Diageo, Apple, Citicorp, Aetna and Target. In its evaluations, Doblin characterizes innovation by category and type. Most innovations fall within one of these major categories:

1. *Sustaining innovations* can preserve existing offerings or extend the lifespan of products and services. This includes product improvements. Often this means pursuing efficiencies that lower costs or improve quality but that can be duplicated. A sustaining innovation introduced by one company quickly becomes an industry standard and the company loses its ability to differentiate itself from the competition. Online package tracking is an example in the logistics industry. Another is the introduction of frequent flier programs for airlines.
2. *Transformational innovations* involve more significant change and may include several operational elements such as products and services that combine to provide a more important differentiation

between competitors. Lasik surgery, done on an outpatient basis, is a transformational innovation that affected patients, optometrists, and eyeglass makers in addition to surgical ophthalmologists. Hybrid cars, along with the recent increase in gasoline prices, may well have a transformational effect on automobile design and construction.

3. *Disruptive innovations* occur at a still-higher level, affecting companies and entire industries. These innovations have such a profound impact on economics and customer preferences that they remake the competitive landscape. A sterling example of this in health care is the emergence of freestanding ambulatory diagnostic and surgical centers. Given the opportunity to receive services in these venues, patients not requiring hospitalization quickly migrated to more customer-friendly “focused factories.”

One notable signal of *disruptive innovation* is its effect on language, notes Larry Keeley. Not yet having adequate words to describe the new, people use a number of different ways to refer to it, trying to capture a suitable definition. Just as “icebox” was coined to explain the early refrigerator, phrases like “assisted living” or “senior living” merged existing terms to define integrated care centers as they evolved over the last decade. These care centers took years to be widely understood. But in hindsight, the companies that designed and built them had an impact on housing markets, health care delivery and hospitals, financial institutions, and local merchants.

Innovation Types

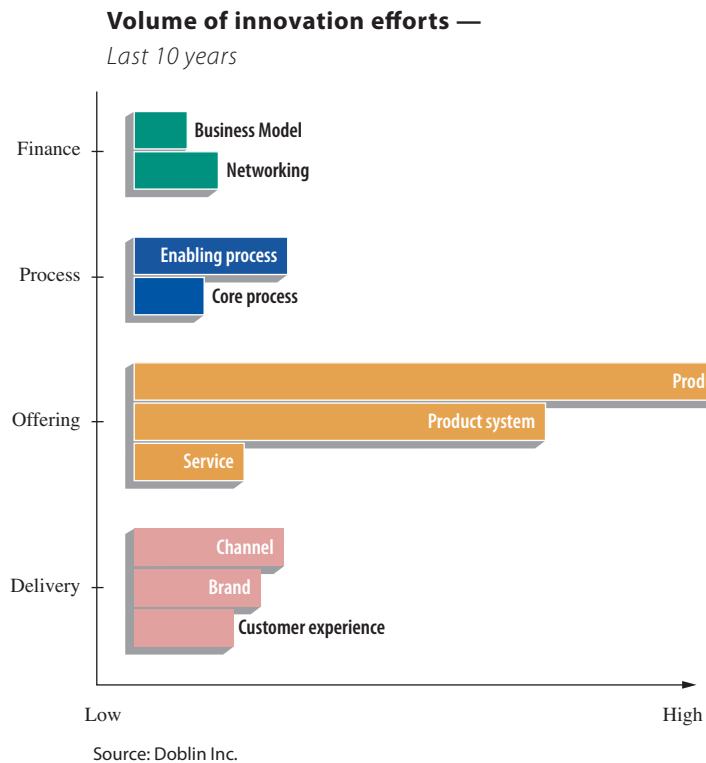
Innovations can also be evaluated by type. When most people think about innovation, they tend to envision a new product. An example would be a completely new invention such as the Segway™ personal transportation device. It could also be some combination of older elements that give unique value. The person who originated sliced bread invented neither bread nor slicing.

Elements of the Doblin Innovation Landscape

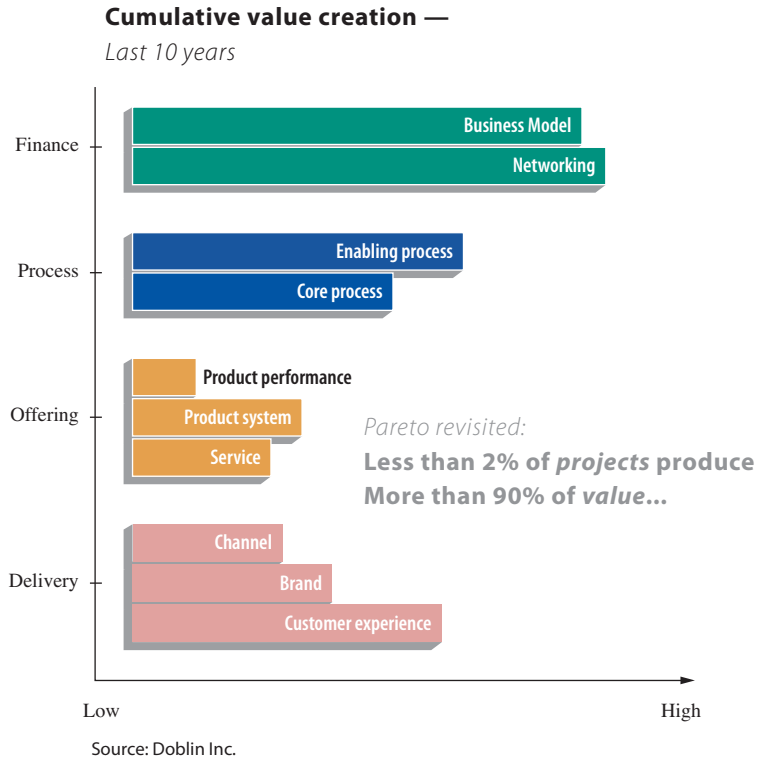
Business models	<i>How the organizations make money</i>
Networks/alliances	<i>How they join forces with others for mutual benefit</i>
Enabling processes	<i>How their core processes and workers are supported</i>
Core processes	<i>How they create and add value to offerings</i>
Product performance	<i>How they design core offerings</i>
Product systems	<i>How they link or provide a platform for multiple products</i>
Services	<i>How they provide value to customers beyond and around products</i>
Channels	<i>How they get offerings to market</i>
Brands	<i>How they communicate offerings</i>
Customer experience	<i>How customers feel when they interact with a company and its offerings</i>

While thousands of new products are introduced each year, they are just one type of innovation. As it turns out, there are a wide range of innovations that go beyond products or services. Consider how the automatic teller machine changed banking. From a business standpoint, it radically decreased the need for tellers and other manual workers. To be effective however, it required a broad network of financial organizations using the same standards and adding new supporting elements, such as technicians to maintain the systems and staff to refill the cash reservoirs. Today not only can customers have easy access to their funds, they can also move funds to different accounts, get account balances and many other functions. Services are available in virtually every country in the world and have completely changed what it means to have a banking relationship. Thus ATMs are more than a mechanical or electronic innovation. They also involve many other types of innovations.

Doblin’s research indicates that virtually all innovations can be sorted into 10 unique types. These types can exist alone or in combination to explain how and why changes occur, as well as their impact on companies and industries.



It is worth noting that most of the value created by sustaining innovations in the last decade has come from finance and delivery categories — activities that improve efficiencies in customer-facing operations. Organizations that rely on repeatable processes to pursue innovations have impressive success rates between 35 and 70 percent as compared to industry averages of only 4 percent for companies without structured innovation programs.



Innovation Landscapes

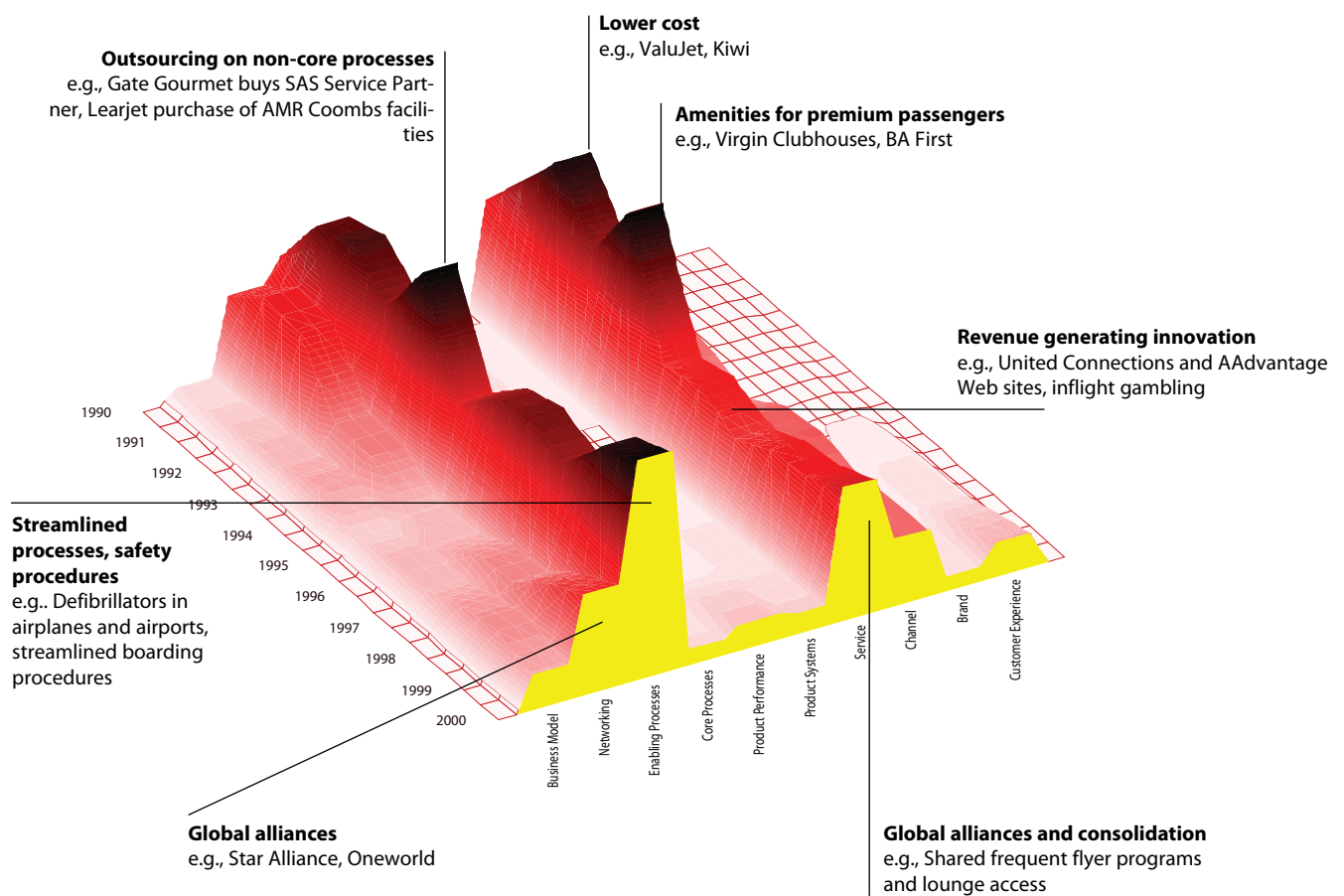
By viewing the 10 types over a decade-long timeframe, it is possible to build a visual representation — a depiction of change that Doblin calls an “innovation landscape.” This analysis can be applied to an economic sector, an industry within that sector or a single company. Analysis using innovation landscape begins with a search of popular, industry and financial press, looking for the appearance of certain words and phrases that Doblin has identified as markers for innovation.

Just as the Standard & Poor’s 500 Index can be an indicator of the stock market’s movement, a landscape diagram shows where innovation is occurring and where it is not. It can also account for the impact of innovation and how many other companies or technologies are leveraging those innovations. The historical pattern of competition and the magnitude of change are revealed through this view of data, trends and other information in a “big picture” context.

“Innovation landscapes” show the intensity of innovation by the height of the peaks, the diversity by the number of peaks, and the pace of change by how many new peaks form and by the change of their slopes. Taken together, these details help portray overall strategies and help identify opportunities for further action.

The following landscape depicts the airline industry's evolution over the past decade. While the basic service of transportation from one airport to another has not changed, there have been major shifts in airlines' cost structure, pricing, outsourcing, amenities and enabling processes. Although competition is fiercer than ever, 21st century airlines often use common reservation systems, link flights through code sharing, lease planes from the same financial organizations, purchase food from the same caterers and hire employees from the same unions. The landscape illustrates when those innovations occurred and their overall impact on performance.

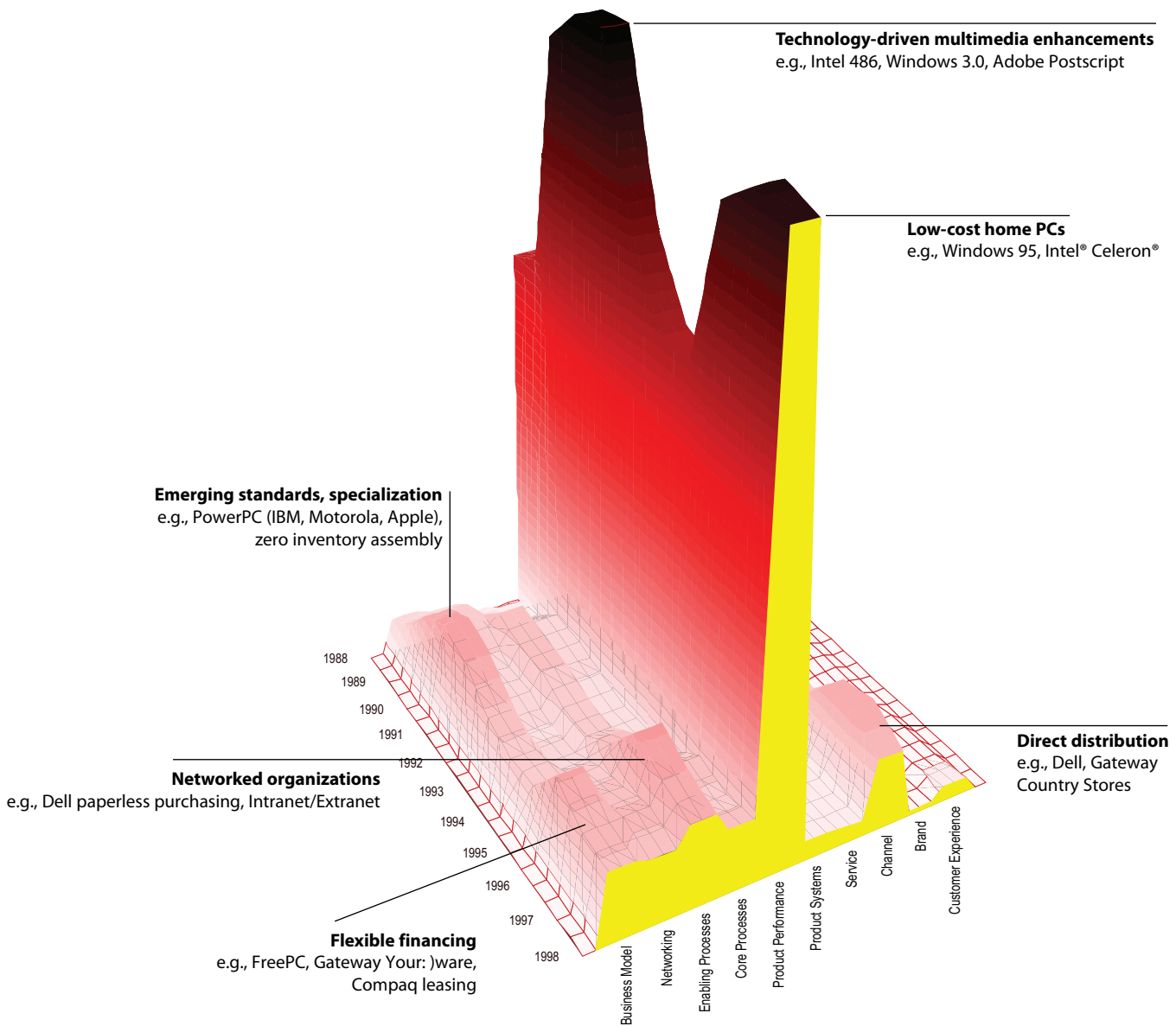
Passenger Airline Travel Landscape



Source: Dublin Inc.

The landscape below depicts the evolution of the manufacture and sales of computers and related products over the last 10 years. Note the tremendous activity in the product performance category. Early on, this resulted from the steady introduction of more powerful microprocessors. As the industry evolved and computer components became more of a commodity, product performance was enhanced by a significant decrease in costs. In 2005, consumers could buy a personal computer that was 100 times as fast and one-quarter the price of one purchased in 1995.

Computers and Peripheral Landscape

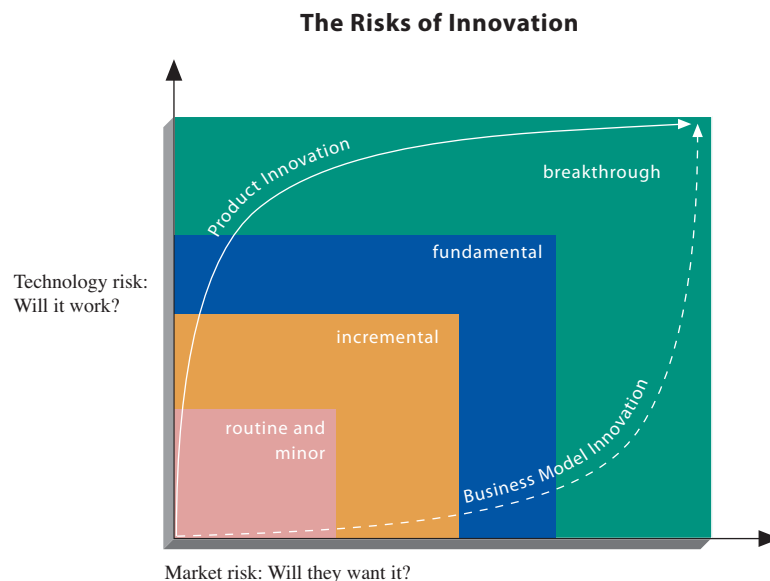


Source: Dublin Inc.

Innovation diagnostics such as these can be combined with other information specific to particular industries to produce a more complete picture. For example, technology companies might also look at the number of patents or research and development budgets of its competitors. A cautionary note: an absence of innovation does not necessarily indicate opportunity. There may be regulatory constraints or other reasons why organizations and industries have not taken action. One key to look for is a public benefit, since innovation for its own sake is never cost effective.

Business Risk

The brass ring successes that businesses strive for are transformational or disruptive innovations. Although dramatic when they occur, only 2 percent of successful projects are considered truly creative enough to “change the game.” Michael Treacy referred to a single-minded approach in the *Harvard Business Review* as “Innovation as a Last Resort.” He argues that the risk of betting solely on breakthroughs in business models or products almost always outweighs potential rewards.⁴



Understanding the potential risks of innovation to an organization’s core business is essential. Developing a dynamic new product can become an “air ball” exercise if customers are not ready to buy it. A small miscalculation in customer demand resulted in the failure of the Apple Newton handheld device. Yet when the Palm Pilot was introduced a few years later it was transformational. Other risks abound, including the ability of partners to deliver on their commitments, the proper funding and marketing, and business models that must be orchestrated and implemented effectively.

Identifying the Innovations

The most powerful innovations, disruptive and transformative, happen in Process and Offering categories and/or simultaneously in several categories. Innovative companies seek value through repeated small innovations, looking at every facet of their industry, and at every opportunity to seek out and satisfy a customer need. Product innovation often plays a role, but changes in these other aspects of the business make the difference between what is just new and what is revolutionary. Two recent examples of this multipronged approach are Google and the Apple iPod.

Google's search engine was developed by two Stanford University graduate students. Although innovative and attractive to users by itself, the engine offered a marginally improved business value. Competing sites such as Yahoo, Excite, AltaVista, and Ask Jeeves, were preexisting rivals, supported mainly by conventional advertising. Combining the search capacity with a business model in which sites rewarded Google for highlighting their Web pages each time their category was probed, Google generates significant additional revenue, which it has subsequently reinvested in still better technology and services.



Source: Doblin Inc.

The Apple iPod brought excellent design work to a device but with very little new technology. MP3 players were available from a number of manufacturers but had failed to compete effectively with CD players, the industry standard at the time. Apple provided more than a music player, by

creating an entire system including Apple Music, MP3 software, the devices themselves and a host of trendy accessories.



Source: Doblin Inc.

The transformative and disruptive innovations Doblin studied all involved this multifaceted approach. To make changes in multiple categories, organizations need to follow reliable and predictable processes, and to link divergent disciplines within them so they can converge around the introduction and support of major change. This approach requires not only processes for innovation, but a cultural environment that promotes and celebrates it.

“While we at IDEO used to spend the majority of our time in the world of product-based innovation, we have more recently come around to seeing innovation as a tool for transforming the entire culture of organizations. Sure, a great product can be one important element in the formula for business success, but companies that want to succeed today need much more. They need innovation at every point of the compass, in all aspects of the business and in every team member.”
 —Tom Kelley, the CEO of IDEO⁵

The decision to commit to innovation as a core strategy has major implications for organizations. Rather than betting the farm on the better mousetrap, successful innovative businesses are betting it on their staff’s ability to turn out a succession of better mousetraps, better mousetrap packaging, better mousetrap logistics, better mousetrap financing, better collaboration with outside sources of mousetrap components, and most importantly a better experience for the desperate consumer who is kept awake by scratching sounds in the night.

Innovation in Health Care

Given the billions of research and development dollars invested by the government and private sector, health care in America should be a shining example of innovation. What most interested observers find, however, is a profound dichotomy.

In the forefront, health sciences researchers are involved in projects that were unimaginable even a generation ago, as they explore the fundamentals of life and increase our understanding of human health and disease. These findings are steadily incorporated into new diagnostic, therapeutic and preventive devices and programs. Equipped now with a full map of the human genome, opportunities for further advances appear to be limited only by society's willingness to pursue them.

On the delivery side things are very different. If a doctor or nurse who practiced in the 1950s walked into a 2006 hospital ward or physician's office they would find that very little had changed. Notwithstanding 50 years of scientific advances, few innovations have reached the bedside. The 2001 Institute of Medicine report, "Crossing the Quality Chasm" estimated that it takes *30 years* for new scientific knowledge to become standardized in health care delivery.⁶ A 2006 *New England Journal of Medicine* study from the Rand Corporation revealed that only 50 percent of the health services provided to Americans is consistent with the prevailing standards of care.⁷ It is no wonder that in 2005, *Wired* magazine identified health care as the most dysfunctional industry and the one most primed for disruptive innovation.

Since 1998, the VHA Health Foundation has been committed to promoting and diffusing innovations in health and health care. On a programmatic level, the foundation has supported initiatives on:

- disaster relief
- community benefits of not-for-profit health care
- clinical improvement in critical care
- work force
- type 2 diabetes

The foundation has also explored and funded innovation grant proposals on a wide range of initiatives, including many of those described in this monograph. As the foundation's board of directors reviewed the work and progress against the goals, it became evident that a deeper understanding of the state of innovation in the industry was warranted.

In 2005, the VHA Health Foundation engaged Doblin Inc. to carry out a detailed analysis of innovation in the health care industry. As part of this project, researchers were asked to evaluate and create innovation landscapes for eight key health care sectors. Using the same approach previously applied to other industries, each of the following sectors was analyzed for innovation performance over the last decade:

- hospital systems
- physicians and surgeons
- complementary/alternative medicine
- home health care
- medical equipment
- medical appliances
- health insurance and managed care
- pharmaceuticals

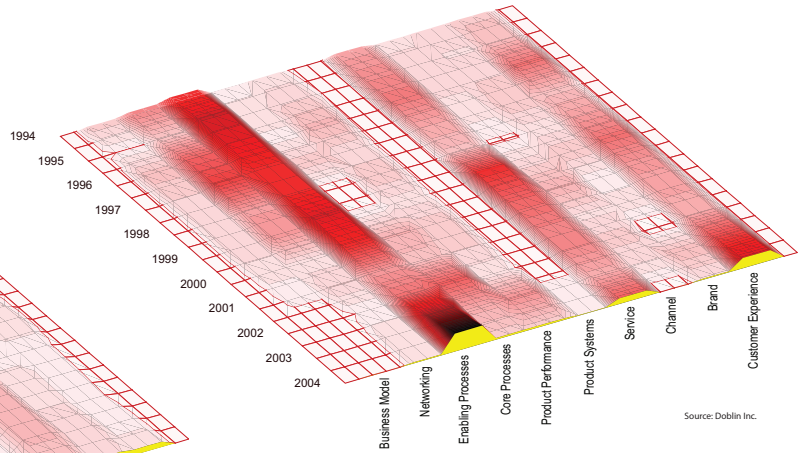
The results for the key sectors of physicians, hospitals and pharmaceuticals are explored in detail below. But it is also worth looking at the overall patterns. Compared to innovation in most of the other industries Doblin has evaluated, such as airlines and computers, landscapes for key health care segments appear featureless. The segments that have comprised the core of health care financing and delivery over the last 50 years — physicians, hospitals and health plans — show particularly little evidence of change. The notable exception is the pharmaceutical industry, which has made clear advances, particularly in the product category.

In essence, Doblin's analysis confirms observations and anecdotal evidence. The major investments Americans are making to build new and better ways to meet their health needs do not appear to be having significant impact on the delivery system. Given the hard work of thousands of committed professionals, it is hard to explain this on the basis of inadequate resources or commitment. It appears that despite consuming one-sixth of the gross domestic product, health care is confronting powerful barriers to continued improvement.

Significant innovation in this environment may be more difficult than it might be in other less restricted, less crowded industries. But in a \$2 trillion sector, even small changes have huge financial potential for organizations that implement them successfully.

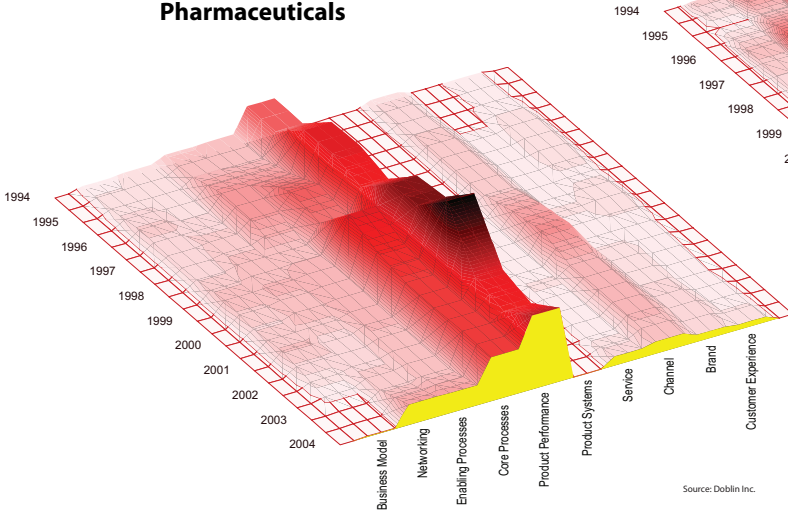
Health Care Innovation Landscapes

Physicians and Surgeons



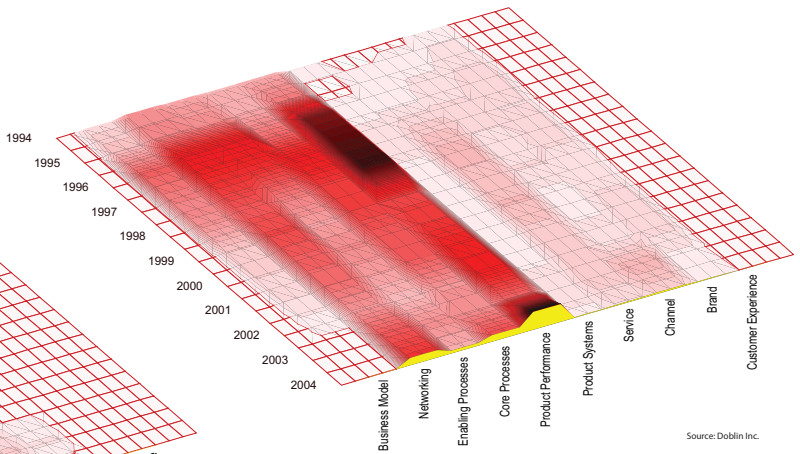
Source: Doblin Inc.

Pharmaceuticals



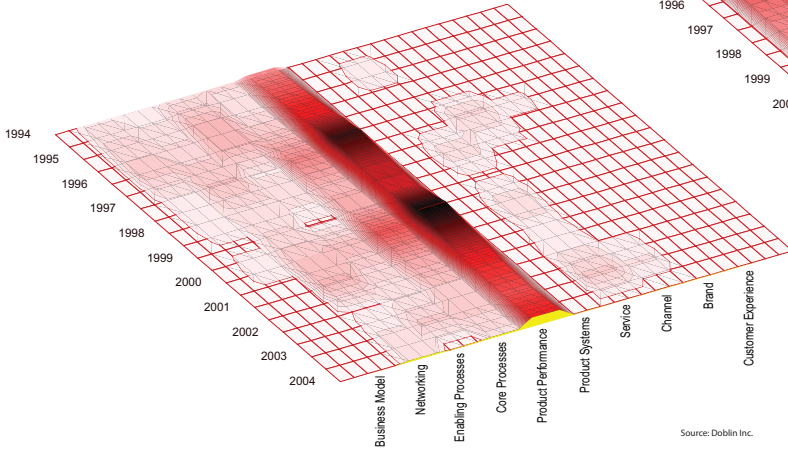
Source: Doblin Inc.

Medical Equipment



Source: Doblin Inc.

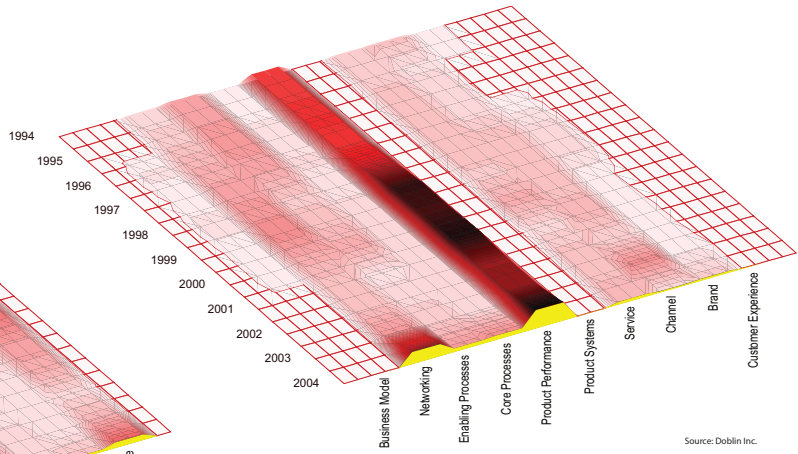
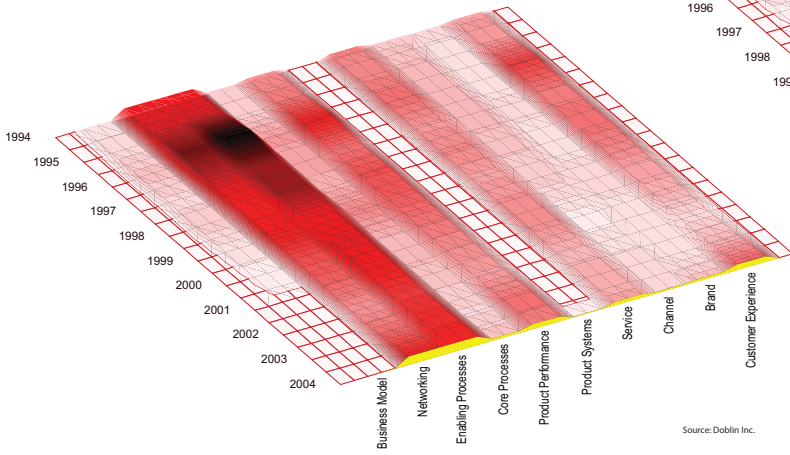
Medical Appliances



Source: Doblin Inc.

Complementary/Alternative Medicine

Physicians and Surgeons

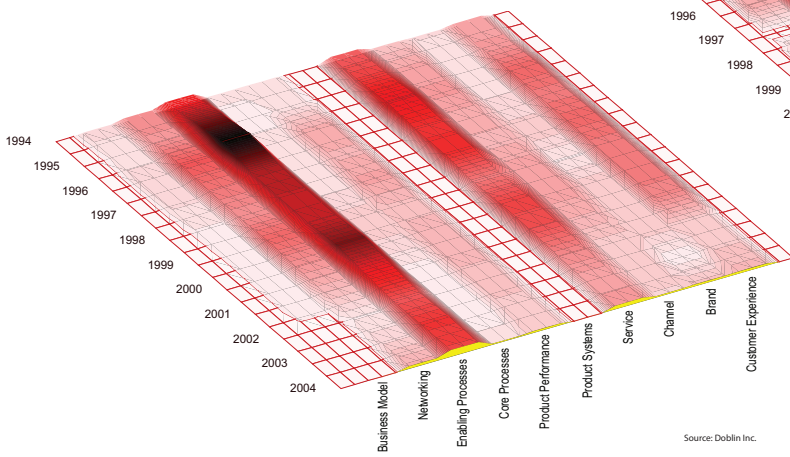


Source: Doblin Inc.

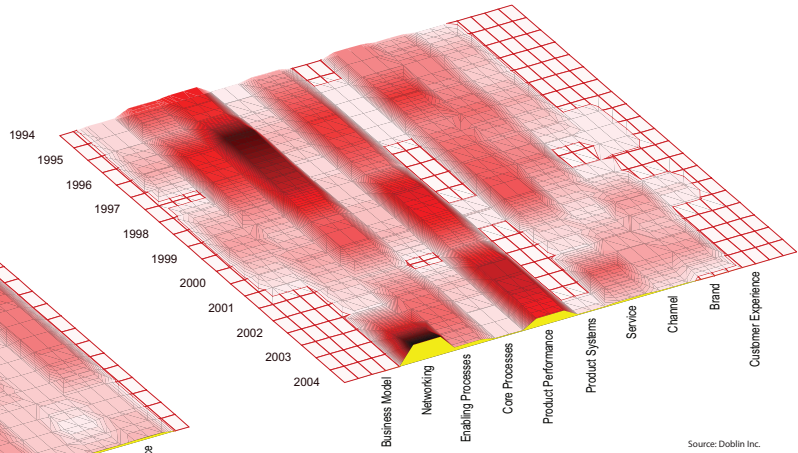
Source: Doblin Inc.

Home Health Care

Health Insurance Management



Source: Doblin Inc.



Source: Doblin Inc.

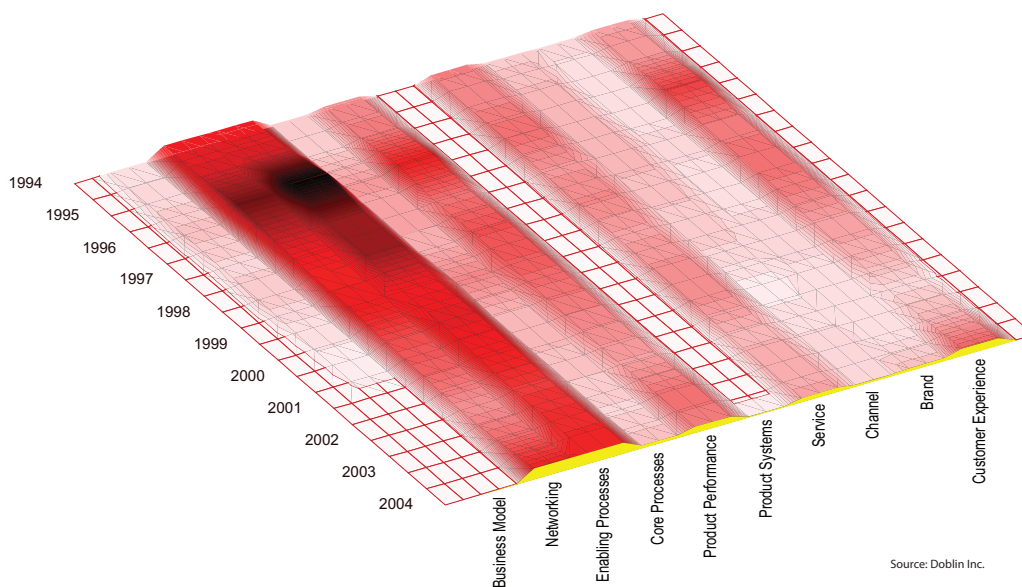
Hospital Landscape

Over the last decade the hospital industry has experienced a roller coaster ride. In the mid-1990s organizations were still developing responses to the Clinton-era health care program, even though it had failed in Congress. Horizontal and vertical integration came into vogue, as did the rise of for-profit hospital chains such as Columbia/HCA Healthcare Corporation and Tenet Healthcare Corporation. Many hospitals invested heavily in the purchase of physician practices and then discovered they lacked the skills to make them profitable. The complexity of operating single facilities was increased by the difficulty of operating large systems, often with reduced administrative resources.

More and more traditional hospital services migrated to outpatient venues such as freestanding surgery and imaging centers. Hospitals also found themselves competing anew with commercial niche providers such as HealthSouth Corporation for rehabilitation and sports medicine services. In some instances hospitals found themselves competing with their own physicians for what had traditionally been inpatient and/or outpatient services. Despite these challenges, hospitals failed to innovate their core business models.

Aside from some of the innovations in enabling processes in the mid-1990s, hospitals appeared to have been mainly reacting to initiatives from other health care sectors. This is reflected in the innovation landscapes for the two major competitors, pharmaceutical companies and physicians.

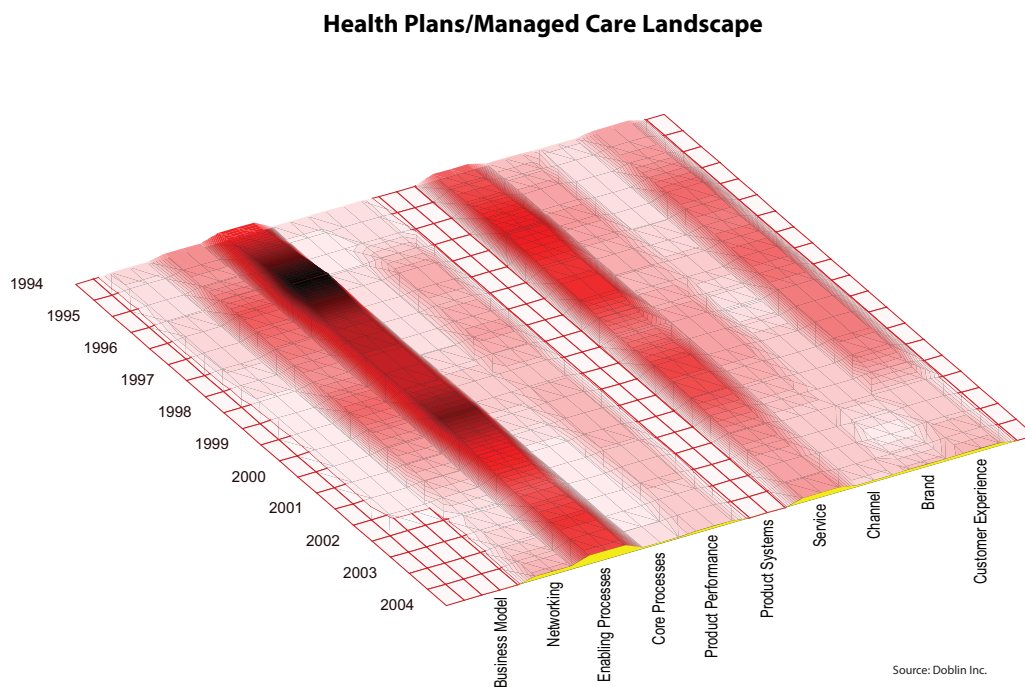
Hospital Landscape



Health Plans/Managed Care Landscape

By the mid-1990s most of the fundamental elements of managed care had been well integrated into the health insurance sector. Begun in the 1970s and maturing during the 1980s, plans were operating HMOs; carrying out aggressive contracting with physicians, hospitals and other providers; sharing risk through capitation and other arrangements; and operating cost containment programs such as precertification and mandatory second opinion; centers of excellence for high-cost procedures; and some case management. As with the hospital industry, the Clinton health initiative provided a wake-up call and health plans redoubled efforts to control costs to confirm their value to employers, their principal customers. The result was even more stringent management of patient care expenses, including limits on controversial therapies such as bone marrow transplants and same-day discharge for obstetrical cases — thus, the peaks in the enabling processes.

As negative outcomes were linked to stringent managed care, the industry first took a beating in the press and later in state and federal “patients’ rights” legislation. In the late 1990s the cost containment innovations were replaced by consolidation as the primary strategy.

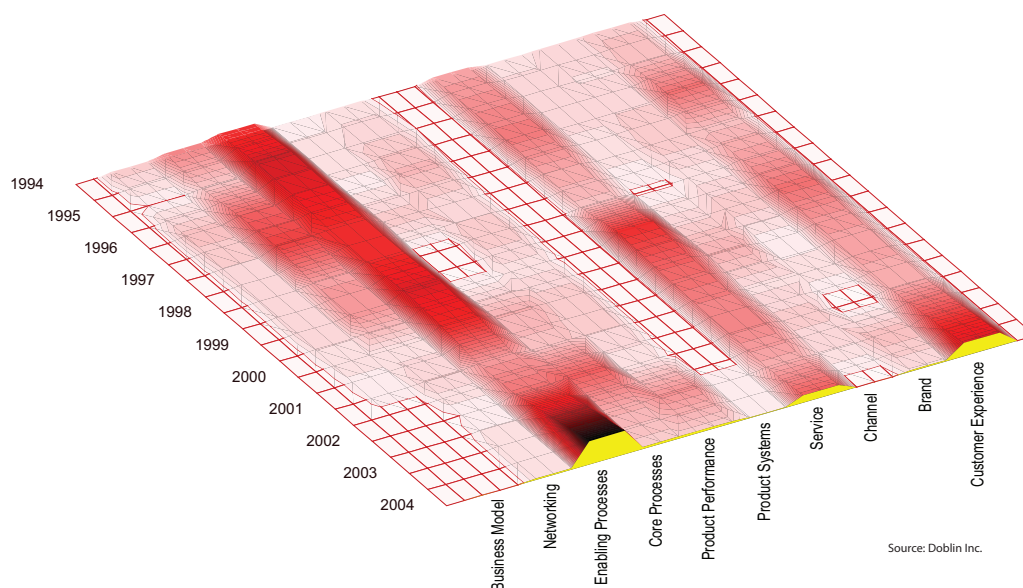


Physician Landscape

The 1990s were a difficult time for physicians. The industry was primarily composed of individual and small-group practices. As such, physicians had very limited power in their negotiations with both government and health plans. The introduction of Resource-Based Relative Value Scale reimbursement not only constrained revenue growth, it resulted in the gradual erosion of fees for many highly compensated procedures such as cardiology and orthopedics. A widespread strategy was consolidation of practices through mergers and the creation of physician hospital organizations and physician service organizations. These organizations enabled physicians to negotiate collectively and to take insurance risk.

As many of those arrangements proved unsuccessful, the rate of innovation of enabling processes leveled off and then declined until the early years of the new millennium. Then increasing numbers of specialists began investing in freestanding diagnostic and surgical facilities. These innovations showed up not only in enabling systems but also in improved service and customer satisfaction, as patients learned the advantages of facilities customized to their needs, and physicians learned that they could also be operated to better meet their needs.

Physician Landscape



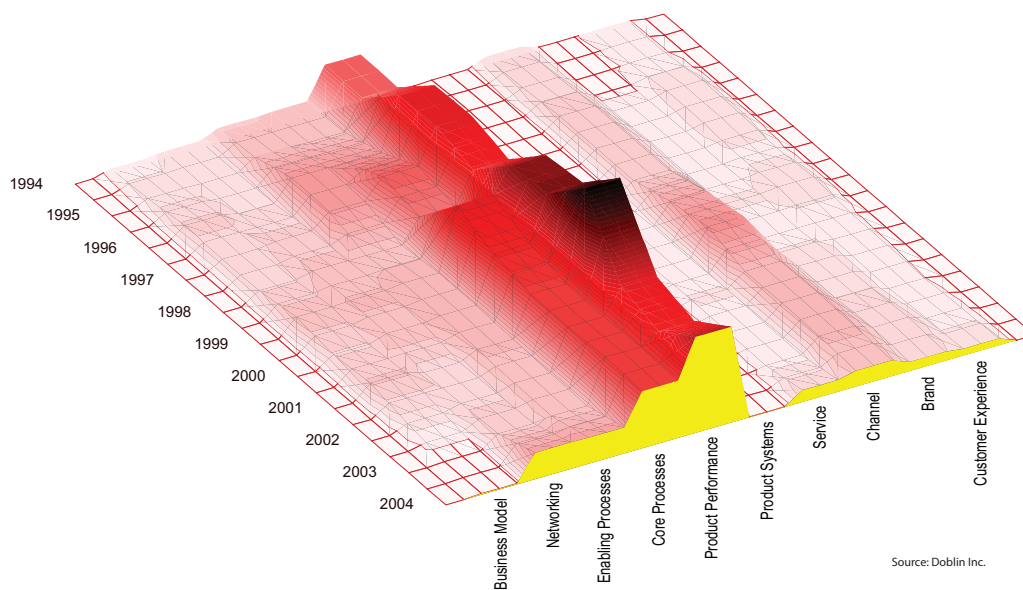
Pharmaceutical Landscape

In contrast to the physicians' experience, the pharmaceutical industry has enjoyed a golden era for the last decade. The landscape indicates significant innovation in many of the key categories. Most notable is the performance in product innovation, as products were introduced to address a number of chronic diseases that required ongoing therapy; cholesterol-lowering statins, anti-depressants, medications for gastro-esophageal reflux disease and a number of anti-inflammatory medications. Common antiviral medications came on line to battle the AIDS epidemic and finally a stream of anti-cancer medications was approved by the U. S. Food and Drug Administration.

The industry experienced significant consolidation, which lowered production, marketing and distribution costs, and by combining research efforts, ensured a strong pipeline for new products.

Pharmaceutical organizations found their ability to grow revenue hampered by health plans that used pharmacy benefit management organizations to process medication claims and supply mail-order medications. They were also highly reliant on detailing physicians in order to influence market share with patients. The manufacturers overcame those barriers by purchasing most of the major PBMs, and by shifting marketing dollars from physician detailing to direct-to-consumer advertising. The net result of these activities was an industry that was highly sophisticated, well-capitalized and innovating at a rate three to five times that of other major health care sectors.

Pharmaceutical Landscape



Where is the Innovation in Health Care?

In her article in the *Harvard Business Review*, Regina Herzlinger argues that innovations in health care are subject to six major challenges that can either make or break them:⁸

- 1. Players:** The terrain of health care is fully occupied by stakeholders who have been battling for position for decades. Because the industry requires the interdependencies of many of these stakeholders, it is essential that innovations find ways to increase the value of old alliances, and/or mitigate the impact on potential adversaries. A notable example is the rise of physician-owned diagnostic centers that move traditional hospital revenue to radiologists and gastroenterology groups. While lucrative, they risk a backlash from hospitals that may cancel contracts for inpatient services.
- 2. Funding:** In most industries it is the end customer who pays the tab. In health care, patients generally pay only a token amount for services that may total tens of thousands of dollars. Because providers are so reliant on third-party payments, they have little control over their own pricing and limited control over the range of services. To the extent Medicare and health plans deem an innovative treatment experimental or medically unnecessary, they exercise veto power over innovations.
- 3. Policy:** At the extreme, health care is about life and death decisions and outcomes. Whereas fraudulent or incompetent performance in many industries might result in significant financial damage, in health care it could result in permanent injury or death. As a result, health care industries are surrounded by a myriad of regulators who have significant influence on not only what services they can provide, but also the standards they must observe in doing so.
- 4. Technology:** Scientific advances have been the driving force behind Western medicine for the last 150 years. As we move forward in the new century it is becoming apparent that technology can both improve patient care and outcomes. It can also be responsible for significant injuries. Innovation in this area have tremendous potential, but even with thoughtful science and regulatory oversight we have seen the introduction of Cox-2 inhibitors, silicone implants and other technically innovative tragedies.
- 5. Customers:** Increasingly the individuals who seek health services seem to have little relation to the term “patients.” More and more are seeking preventive or educational services and are not “ill” or “sick” in the traditional sense. The new generation of health service consumers has unprecedented access to technical information and increasing access to comparative service information. Since many of them are in the “Baby Boom” generation, they carry with them a general skepticism for authority, and expectations of excellence for every aspect of their experience with providers.
- 6. Accountability:** More and more the major stakeholders in health care are looking for services that are not only safe and effective, but cost efficient as well. Given the pressure that health care costs have on the economy and the cost of domestic goods and services, there is growing belief that quality should be decreasing, not increasing costs.

Trailblazing — Innovators Making a Difference

In the last section we documented how the delivery sectors of the health care industry manifested little evidence of innovation over the last decade. Major research studies indicate that the current delivery and payment model does not adequately meet the needs of the American people, despite a per capita investment that is 150 percent of the next most expensive health care system. In 2000 the Institute of Medicine published the landmark study, “*Crossing the Quality Chasm*,” which laid down the challenge for 21st century health care. It called for a system that will be:

- *safe* — avoiding injuries to patients from the care that is intended to help them
- *effective* — providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit
- *patient-centered* — providing care that is respectful of and responsive to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions
- *timely* — reducing waits and sometimes harmful delays for both those who receive and those who give care
- *efficient* — avoiding waste, including waste of equipment, supplies, ideas and energy
- *equitable* — providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location and socioeconomic status

The VHA Health Foundation realized that achieving this bold vision would require major changes in the current system. To encourage change, the Foundation’s Board of Directors began a program to help identify local innovations, support individuals’ and organizations’ efforts to design and implement innovations, and act as a communication network in order to effectively diffuse innovators’ learnings and outcomes.


One part of this activity was the foundation’s grant-making process, which presented financial awards to a small number of individuals or health care organizations in 2004 and 2005 to provide direct financial assistance. In reviewing approximately 500 grant requests each year, and in subsequent due diligence, it became apparent that there was a vibrant undercurrent of innovation activity underway in health care.

As befits innovators and the strategies that drive them, the processes and tools used vary widely. By using Doblin’s key elements, however, it is possible to get a clearer picture of some of the emerging 21st century innovation landscapes. Please note that although we categorized these by one key innovation element, all the organizations we describe employ several innovation types.

Business Models

Nearly 45 million Americans have no health insurance, and yet, have incomes that make them ineligible for Medicaid coverage. As a result, they often forgo preventive services that would protect them from more serious problems later in life. These more serious problems pose not only a health risk for the individuals, they also create a serious financial burden for health care providers since the acute or emergent services they provide are usually uncompensated. While policymakers debate the issues, innovators are looking for financially sustainable solutions to the problem.

The Rapides Primary Health Care Center in Alexandria, La., is a federally qualified health care center formed to serve the community's health needs regardless of their ability to pay. The growing number of uninsured, estimated at more than 15,000 in the region, posed a particularly difficult problem. Most of these individuals were not indigent according to national criteria; they were either employed or had employed family members but had no access to health benefits. Without the needed financial support, they were forgoing preventive medical and dental services. Because they lacked access to basic outpatient services, many of them ended up in the emergency room or the hospital.



Help for the working uninsured

How does the plan work?

Traditional Insurance	Payroll Deduction Plan
<ul style="list-style-type: none"> ■ High Deductible ■ Premium deducted from paycheck ■ Expensive doctor and procedure bills ■ Waiting period for new employee coverage ■ Long waits for medical appointments 	<ul style="list-style-type: none"> ■ No Deductible ■ No Premium ■ Nominal Fee and Sliding Fee Scale ■ Immediate Coverage ■ Immediate access to both medical and dental

Louisiana Primary Care Association, Inc. (LPCA) LPCA is the private, nonprofit trade association of the federally Qualified Health Centers. In its 20+ years of existence, LPCA has promoted and supported Louisiana Health Centers and the populations they serve.

4850 North Boulevard, Suite 120 • Baton Rouge, Louisiana 70806
 Email: lpcal@lpcanet.net • Website: www.lpcanet.net • P: 225-927-7662 • F: 225-927-7668

The clinic responded by teaming with local business owners. Together they created a payroll deduction program that employees could use to fund their primary care needs. The clinic offers a menu of low-cost primary care and dental services for employees and their families. Ordinarily, employer-based plans relied on the involvement of an insurance company or health plan, which greatly added to the expense of employers, patients and health care providers. Because this program relied on payroll deductions similar to those used for charities such as the United Way, approval by the insurance commission was not required. The savings are passed directly back to employers, employees and their families. To make employees aware of the program, the clinic worked with local radio stations and billboard advertisers to create a local media campaign. These efforts have resulted in a steady growth of participating employers, employees and their families.

Networks/Alliances

Eastern Montana is characterized by small rural communities with limited health care resources. Doctors, nurses and other clinicians have few opportunities to leave their practices to update their clinical skills. This is one of the reasons the death rate for injuries and accidents in eastern Montana is 31 percent higher than national norms. Partially funded by a grant from the VHA Health Foundation, the Francis Mahon Deaconess Hospital in Glasgow, Mont., began the Montana Mobile Education Delivery and Learning program. Using a mobile class room, MEDLearn has been going on-site to rural health care providers to provide the most current medical techniques and procedures. In 2005 the program provided educational training for more than 700 doctors, nurse practitioners and emergency medicine technicians. Not only did this improve local skills, it also allowed health care providers from all over eastern Montana to communicate with each other, and MEDLearn to continually design educational content to meet their special needs.



Montana Health Network MEDLearn. Pictured from left to right: Michael J. Boyer, Simulation Technician and Driver; Elaine K. Schuchard, R.N., M.S.N., C.E.N., MEDLearn Program Coordinator, American Heart Association Training Coordinator.



Chris McCarthy, M.P.H., M.B.A., Director, and Maggie Hentschel, Project Analyst at the Garfield Innovation Center, Kaiser Permanente.

Kaiser Permanente is an integrated health system that provides care for more than eight million people in nine states. Supporting effective communications for an organization that has more than 30 hospitals and thousands of physicians has always been a challenge. As the organization began its conversion to an electronic health record, it sought ways to align organizations so that improvements in work flow and patient care could be shared across different sites. Supported in part by a grant from the VHA Health Foundation, Kaiser instituted the Innovation Learning Network. This program ties together 10 different health care organization innovators with the stated goal of sharing and disseminating innovations throughout the network and the country. The program is comprised of both a communication strategy (stakeholders in each facility converse through listservs and regularly scheduled calls), and an analytical strategy (each innovation is followed so that ILN can better understand the barriers and success factors and how they can accelerate the adoption of innovation).

Enabling Processes

Effective electronic health records have the potential to improve patient safety by reducing unnecessary variations in care, and also to significantly improve clinical outcomes while lowering costs. Unfortunately these advantages are not free. Hardware and software EHR installations can cost tens of millions of dollars in addition to health care organizations' internal investments of time and staff. This puts it outside the reach of most small- and medium-sized hospitals. To address these challenges, Midland Memorial Hospital, a 371-bed facility in Midland, Texas, formed the Creating Better Health Through Innovation program. Partially supported by a grant

from the VHA Health Foundation, the organization was able to secure access to and implement OpenVistA, an EHR based on the VistA system developed by the federal government for Veterans Administration hospitals. The initial implementation will involve integration of all of the processes involved in medication administration, including pharmacy, laboratory, bar code medication administration, computerized physician order entry, document scanning and dietary. The system will also include a comprehensive EHR supporting clinical alerts and reminders, physician order entry, radiology and pathology reports, vital signs, and physician and nursing documentation. By using open source software, Midland expects to keep costs low and using its own staff and partnerships with area physicians shortens development and implementation times. The result will be a comprehensive, affordable electronic solution that will benefit patients, caregivers and the entire Midland community as well as the health care industry at large.

Core Processes

Sentara Healthcare is located in Norfolk, Va., and has more than 70 sites of care including seven hospitals, 265 employed physicians and a variety of other health care facilities serving southeastern Virginia and northeastern North Carolina. Sentara also owns Optima Health Plan which has more than 350,000 members. The organization has a long history of innovation and a reputation for being the first health system in the country with new approaches to both clinical and administrative practices.

In 1999, Sentara began looking at clinical outcomes from the critical care units in both its teaching and community hospitals. Researchers had published studies showing that ICUs with full-time intensivist coverage had lower mortalities and shorter lengths of stay than those without coverage. The Leapfrog Group had endorsed 24/7 intensivist access as one of their initial hospital quality indicators. While coverage was feasible in the main teaching hospital, it was cost-prohibitive in the smaller community hospitals.

Sentara worked with a newly formed company called VISICU, that features remote monitoring and management of ICU patients using Web-based telemetry and television cameras in each patient room. With this approach, a single intensivist in a central location can follow patients in multiple units at the same time. Working with the ICU staff, the program was implemented across the Sentara system with stunning results. The units saw a 25 percent reduction in mortality in all of the involved units, a 17 percent reduction in length of stay and a 150 percent return on investment from the program. The program not only exceeded the expectations of clinicians and administrators, it further advanced the Sentara brand as the premier source of high quality care in the region.

Product Performance

It has been said that the Mayo Clinic is the only true national brand in U.S. health care. Throughout the 20th century the Rochester, Minn.-based system has been at the forefront of science, education and customer service. As it moves into the 21st century, however, the clinic elected to take a more disciplined approach to development. Confronted with the unusual problem of having too many good ideas and no systematic way to evaluate and prioritize them, the clinic chose to draw on its longstanding commitment to research experience. Mayo created the See, Plan, Act, Refine and Communicate program. SPARC is designed to provide a systematic project management approach to translate creative ideas into business practices.



Mayo Clinic Team, SPARC Innovation Program. Front row, left to right: Michael D. Brennan, Associate Chair, Department of Medicine; Jennifer Dusso, Program Coordinator; Nicole Blegen, Systems and Procedures; Alan K. Duncan, M.D., Medical Director; Back row, left to right: Ryan Armbruster, Director of Operations and Design; Beth Kreofsky, Clinical Assistant; Julie Koch, Project Manager; Susan Kline, Project Manager; Michael Schyver, Administrator, Office of Access Management; Maggie Breslin, Designer/Researcher.

Using a dedicated team and assigned space that would allow it the opportunity of prototyping and testing new ideas, the team follows the principles of product design gleaned from other industries. These include product design, creating the concept of how a product should work; interaction design, exploring how the product would work in the context of a larger environment or system; and service design, discovering how a particular service can be delivered most effectively and efficiently.

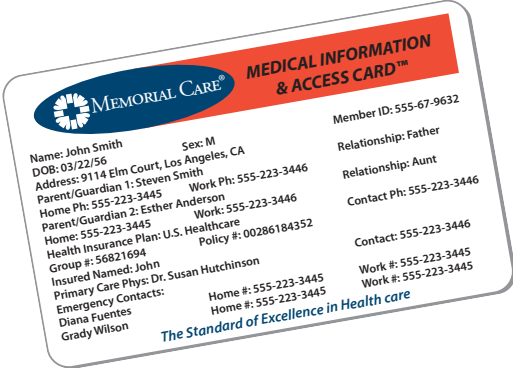
Supported in part by a grant from the VHA Health Foundation, the Mayo SPARC program created a “live laboratory” devoted to exploring ways to improve outpatient care in the United States. Examples include the prototyping of a kiosk for patient self check-in and various patient decision-aid tools.

Product Systems

The Memorial Health Care System in Southern California operates major hospitals in Anaheim, Long Beach, San Clemente and Laguna Hills. While these hospitals and physician staff are widely admired for clinical excellence and customer service, senior executives felt that they might have an even greater impact if they could work more effectively as a system. The organization created “MemorialCare,” a program designed to improve patient access and customer service, as well as to create a competitive advantage for the hospitals and participating physicians.

MemorialCare patients are given an information card, similar to a credit card, that can be used in any MemorialCare facility or physician office. By using special card readers, patients can automatically update demographic information, confirm insurance eligibility and benefits, and provide easy access to their medical history and current medications. Not only is this a convenience for patients, it also saves time for doctors and hospital staff since they need not enter information that already resides somewhere else in the system. It also ensures completeness and consistency, since all relevant information is automatically updated and immediately available to other caregivers. Between visits, patients have access to the information and can update personal information such as addresses and phone numbers on the Internet.

The result has been a unique set of patient-centered services that MemorialCare hospitals and physicians have been able to combine with their well-earned reputation for clinical quality. A well-crafted marketing program, based on the MemorialCare brand, has given the system a unique advantage in one of the most competitive health care markets in the country.



MEMORIAL CARE MEDICAL INFORMATION & ACCESS CARD™

Name: John Smith Sex: M Member ID: 555-67-9632
DOB: 03/22/56 Address: 9114 Elm Court, Los Angeles, CA Relationship: Father
Parent/Guardian 1: Steven Smith Work Ph: 555-223-3446 Relationship: Aunt
Home Ph: 555-223-3445 Work: 555-223-3446 Contact Ph: 555-223-3446
Parent/Guardian 2: Esther Anderson
Home: 555-223-3445 Work: 555-223-3446 Contact: 555-223-3446
Health Insurance Plan: U.S. Healthcare Policy #: 00286184352
Group #: 56821694 Insured Named: John
Primary Care Phys: Dr. Susan Hutchinson Work #: 555-223-3445
Emergency Contacts: Home #: 555-223-3445 Work #: 555-223-3445
Diana Fuentes Home #: 555-223-3445
Grady Wilson

The Standard of Excellence in Health care

What fits in the palm of your hand and puts your personal medical data right at your fingertips?

The Medical Information & Access Card.
It makes getting health care easier.

Services

Mount Sinai Health System is located at the northeast corner of New York City's Central Park. Just to the south is the Upper East Side, which includes some of the wealthiest neighborhoods in the country. And to the north is Harlem, which contains some of the poorest. As a referral and tertiary care center, Mount Sinai looks to physicians in these communities to provide most outpatient care. The organization found that it was treating an increasing number of congestive heart failure patients. This is a condition that is best treated with careful monitoring and intervention by patients and primary care physicians. Most readmissions result from failures of outpatient treatment. Not only did this represent poor care for these patients, it also created a problem for the hospital because these patients tied up beds needed for other seriously ill patients. The staff at Mount Sinai investigated the problem and discovered that many CHF patients were unable to find physicians because of low Medicaid reimbursement. Mount Sinai negotiated with the director of the New York Medicaid program to fund an aggressive program that would work closely with CHF patients, including daily phone calls to check on their status, home visits, and educational programs for patients and their families. The result was a dramatic drop in readmissions, savings to the state Medicaid program and additional patient capacity for the hospital.⁹

Channels

Memorial Hermann Healthcare System in Houston, Texas, also has been working to address the uninsured problem. In this area, nearly 30 percent of the population is without health insurance. In order to relieve the financial burden on the community and the impact of uncompensated care on doctors and hospitals, Memorial Hermann created a cash-only community health center. The center is staffed primarily with nurse practitioners who are overseen by physicians and provide a wide range of primary care and preventive services. It is situated in a secure, easily accessible, well-lit strip shopping mall and is open early in the morning, late in the evening and on weekends to accommodate the needs of working families. The clinic accepts only cash, checks and credit cards for services, thus saving the overhead that would be needed to accommodate health insurance claims. The savings are made available to patients in the form of prices that are at or below many health plan copayments. The program's success led to a second site that was opened in May 2006.

Brands

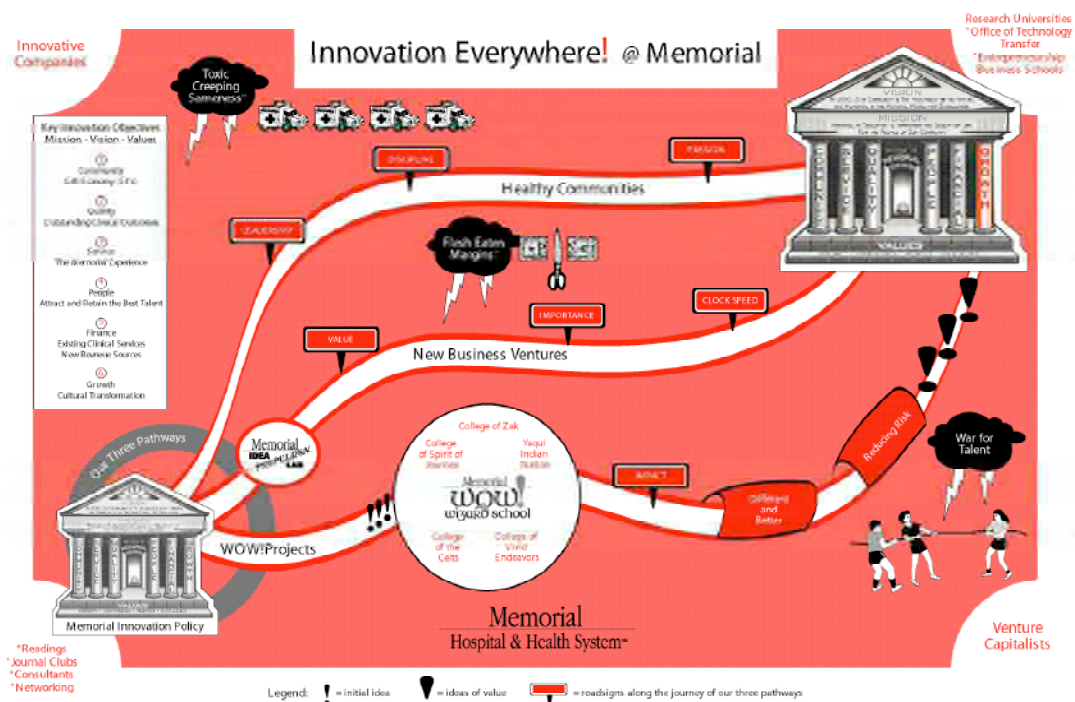
Named for a 19th century medical researcher, the William Beaumont Hospital opened in Royal Oak, a suburb of Detroit, in 1955. It has grown to be the nation's largest inpatient hospital, with more than 1,000 beds and a highly regarded tertiary care, teaching, research and referral center.

Together with its sister hospital in Troy, Mich., William Beaumont Hospital had been successful in marketing the Beaumont brand in southeastern Michigan. However, administrators became

convinced that the hospitals could be no more successful than the physicians who staffed them. The majority of the physicians were in private practice with no business ties to the health care system. Beaumont created a win-win by highlighting the physicians' membership on the Beaumont's medical staff. A branding public relations campaign was developed around the question, "Do you have a Beaumont Doctor?" This showed up on billboards and in media advertisements throughout the metropolitan area. By using the hospital-sponsored referral services, patients can find doctors in their area with the necessary professional qualifications who accept their insurance. The physicians benefit from the free marketing. The hospital generated an even more loyal medical staff and increased patients' expectations that they will be seen by other Beaumont doctors or at a Beaumont hospital.

Customer Experience

Memorial Hospital of South Bend, Ind., is a 526-bed community hospital recognized by Solucient as one of the Top 100 Hospitals in the U.S. Beyond its reputation of providing high quality clinical care and patient satisfaction, the organization has been deeply committed to a strategy of continuous innovation as a way of differentiating itself in the marketplace. Memorial's vision is that by nourishing a culture of innovation it can attain a world-class leadership position in service delivery; attract and retain the best employees and partners; improve its financial position; and ensure the best possible care for patients and the physicians who care for them. The strategy can be defined simply as "Innovation Everywhere!"



At the root of this strategy is creating experiences for patients that are so positive that they can only be described as “WOW.” Thus began an organizationwide project devoted to creating the WOW experience. Memorial enlisted the assistance of the Tom Peters Group, and IDEO, the California-based design group, to help develop the processes and skills needed to carry out this work. One step was the creation of the WOW Wizard training program that provides skills training to more than 700 staff members each year. Another feature was the development of a prototyping facility used to design the new Memorial Leighton Heart and Vascular Center, now recognized as a national model of innovative design and excellence in care.

Lessons Learned

At the core of all these initiatives is the conviction that innovation is driven by customer needs and the belief that a superior customer experience is the basis for competitive advantage. The organizations that fostered innovation illustrate that while the health care system is rife with challenges, it is also ripe with opportunities. By finding innovative solutions they ensure better health care for their patients and communities, and at the same time, an enduring role for themselves.

Pursuing Effective Innovation

It appears that most American health care organizations and companies are poorly positioned to innovate effectively. While many have made major investments in performance improvement infrastructure, those resources do not equate to effective research and development. Doblin Inc.'s analysis shows that aside from pharmaceuticals, very little has changed in health services over the last decade and there is scant promise of significant change in the near future. If there is one big conclusion from this study, it is that effective innovation requires mastery of many lessons and that those do not come cheap or easily.

What is at stake for hospitals, physicians and the rest of the industry is not just future market share but future relevance. Innovation is not an end itself; it is the means that health care organizations will need to stay in the game. Those who doubt that an industry so large could become a victim of competitive forces might consider the fates of American steel and automobile manufacturing.

Ultimately, innovation is about translating ideas into products, processes and business practices that create value for customers and positive cash flow for their owners. In the United States, this threshold limits the average number of successful innovations to about 4 percent of those attempted. However, some companies are successful much more often, in the range of 35 percent to 70 percent. What is it about those organizations that make their performance so much better?

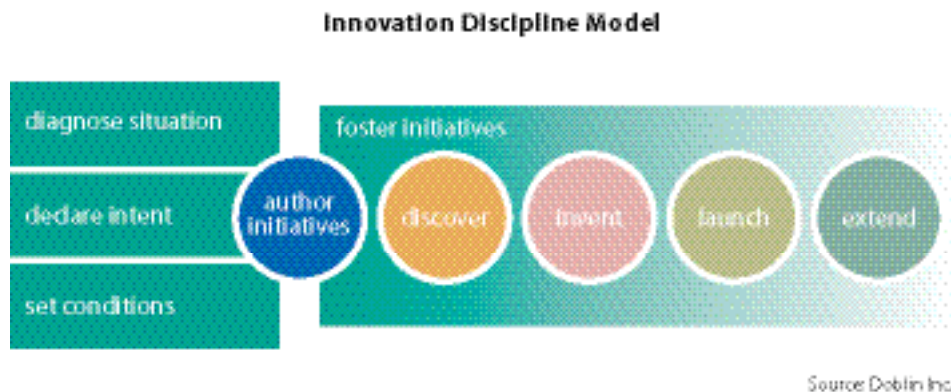
"Boundaries between industries are breaking down," says Larry Keeley. "And there is a convergence of brands, uses and the customer experience. The coming era is one of platforms, not industries or companies. We've seen new business models such as online communities of people who share information. That's a powerful force — whether it comes from a pharmaceutical company or an activist group seeking drug development. Innovation may succeed only rarely — but it's more necessary than ever before."

Although health care's overall record of innovation may be underwhelming, there have been notable successes that serve as platforms for learning. As was the case with the diffusion of innovation a decade ago, more and more is understood about how organizations and companies are able to innovate effectively.

Doblin's research shows that companies with successful programs follow a logical, disciplined model. Companies first diagnose the market opportunity. With this information they select a customer need and segment. Management then sets the financial and operational conditions for

the program. Only then do staff members design innovations based on a deep understanding of the value they could bring to customers.

Because traditional companies' cost allocations make it very difficult for new initiatives to show a profit, many have pursued their innovation strategies through separate units or subsidiaries. Clayton Christensen, the Harvard professor who drew attention to disruptive innovation, noted that successful companies typically sought products or markets that were underserved or even unwanted that were not too far from organizations' core businesses. They looked for opportunities to substitute features like convenience, size or low cost for functionality. Finally they were relentless in forcing the new units to show a positive cash flow in the early years.



As staff approach these tasks it is useful to reconsider Doblin's research on the nature of innovation and the relevance of the 10 types:

- **1st Principle: Know and Use the 10 Types**

Virtually all projects can get stronger just by knowing the categories. Leaders should challenge project teams to add to the dimensions of customer experience, better business models and platforms that permit other firms to network and profit together. Innovations in products and technology should be de-emphasized since they are the easiest for competitors to copy.

- **2nd Principle: Use the Innovation Types That Matter Most**

Diagnostics such as the innovation landscape may be the key to understanding where the true opportunities lie and which types your organization can rely on for maximum effectiveness. Industry-level diagnostics should be augmented with thorough evaluation of competition both current and potential.

- **3rd Principle: Use Enough of the 10 Types to Make a Splash**

As a rule of thumb, the more types the greater the success rate. Innovations that involve three of four types changed simultaneously are disruptive.

In reviewing hundreds of companies across major American industries, Doblin noted that successful organizations subscribed to four common practices. To the extent they follow the processes, the hit rate of their innovations rose accordingly. These organizations:

- know the fundamentals
- have specific innovation goals
- build fewer, bolder concepts
- implement clearly and swiftly

Know the Fundamentals

Product innovation is only one of 10 types of innovation and the one least likely to provide value to end customers. When exploring customer opportunities, savvy organizations seek to develop the maximum number of innovations around the solution. The goal is not only to create greater value, but also to provide the organization with competitive advantage in the marketplace. The more types of innovations involved, the harder it is for competing organizations to copy. An example is the Apple iPod. By itself, it is a nicely designed piece of technical hardware, but by combining it with downloading software and the ease of purchasing and downloading iTunes online music store, Apple created an end-to-end solution. Although it was a relative latecomer in the MP3 player sector, this cluster of innovations brought Apple control of more than 70 percent of the market.

Several years ago, Community Health Network in central Indiana became aware of physicians' interest in investing in freestanding surgical facilities. Unlike many health care organizations that saw this as a threat to their core business, Community saw this as an opportunity to support its culture of being "pleased, but never satisfied." Community's core strategies:

- creating an exceptional patient and family experience
- creating an exceptional physician experience
- creating an exceptional employee experience

Working together with physicians, Community Health Network developed a management company called Visionary Enterprises, Inc. VEI and the physicians opened their first joint ventured surgical center in 1991. In addition to innovations in the delivery model and the business model, VEI also made a significant investment in the core processes. An anesthesiologist (the medical director) was hired to manage the facility with the philosophy of guaranteeing that a team would always be made available for the surgeons' needs. Because the surgeons had a stake in the profitability of the venture, they became partners in managing costs, including negotiating with manufacturers.

VEI's success made it a resource for non-competing hospitals to manage similar centers for them and their physicians. Still another business model was created in which the sponsoring hospital and local physicians each own 40 percent of the venture and VEI retains 20 percent. Using this model they have developed six surgery centers in Indiana and five in Michigan, and their growth is continuing.

Have an Innovation Goal

Perhaps no organization has had more influence on the information age than Xerox Corporation's Palo Alto Research Center. The organization is responsible for the invention of laser printing, the mouse, the graphic user interface, the Ethernet and distributed computing. Its inventions have been licensed by hundreds of companies and have resulted in the creation of more than 30 new companies. PARC has also made major contributions to the fields of linguistics, sociology and education. And yet all this began 36 years ago when PARC was created and commissioned to chart opportunities for Xerox's growth. The vast array of products and side products are now found in every element of Xerox's business and its' product licenses are some of the company's most valuable assets.

While Xerox is sometimes criticized because so many of PARC's inventions were exploited by other organizations, it turns out that this was consistent with Xerox's innovation strategy. From the company's perspective, innovation has several objectives. The first is to consolidate a leadership position in its core businesses. To that end, PARC's first responsibility has been to understand customer needs and product applications and continuously find better ways to match the two. The second objective is a defense against disruptive technologies. While that may sound counter-innovative, understanding how other business models and technical scenarios might disrupt the core business has tremendous value to the company. Another objective is products and applications that can prepare the company for success in new markets. It turns out however that while this last option is the most exciting, it also has the highest risk. It is the responsibility of management to oversee the innovation portfolio. Many new opportunities may not fit with other aspects of the business but are more valuable to the company if they are sold or licensed.

This combination of explicit goals and well-constructed processes can also be seen at Sentara Healthcare. The goal there is to link innovation back to the strategic plan. Sentara's modest goal is that through innovation it has the opportunity to transform American health care. From 2002 to 2005, the organization achieved 25 regional "firsts." Going forward, the areas of special interest include non-nursing/non-physician care delivery models; chronic disease management; transformation of med/surg care and developing a consulting practice that would help other health care systems accelerate the adoption of innovations.

To achieve this vision, Sentara's innovation agenda includes:

- Establish a culture of innovation. At present, the program is driven by a small but enthusiastic group of individuals. This energy needs to be spread throughout the organization, along with an understanding of the methods needed to achieve the vision and goals.
- Create a formal management process and structure. As the program grows, systems need to be in place to evaluate ideas, prioritize projects and analyze results.
- Define a funding protocol. Ultimately ideas must be supported through operational budgets; in the shorter term, however, pilot projects will be funded, either through an innovation budget or through discretionary executive accounts. As quickly as possible, these processes need to be formalized.

It would be tempting to believe that all the necessary innovation talent is available internally. Sentara has a long history of working with outside consultants and other like-minded health care organizations. Not only does this approach accelerate the innovation process, it draws ideas from other sectors, opens the door to new business opportunities and increases the credibility of new solutions. Like PARC, Sentara's strong vision and clear innovation intent multiplies the opportunities for success.

Build Fewer, Bolder Concepts

In complex businesses like health care, there is a constant demand for resources to address problems and opportunities. Proponents of innovation in many areas come forward with a sincere conviction that their problems and their solutions are of great value to the organization. The problem is that by tackling many small problems, resources are diluted and the impact of the program may fall below the standard for true innovation. To get to that level, new ideas must have both scope and scale.

Riverside Methodist Hospital in Columbus, Ohio, has always prided itself on the quality of medical education it provided medical students and house staff. The organization has been recognized as one of the more technically advanced community hospitals in the country. Several events occurred at the turn of the century that challenged medical educators to re-evaluate their training programs.

In 1999 the Accreditation Council for Graduate Medical Education established new guidelines on six competencies that residents must be taught. In addition, educational programs were required to demonstrate effective means to assess and measure these competencies in the areas of patient care, medical knowledge, practiced-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.



Riverside Team, first row left to right: Jim Heberling, Medical Simulation Technician/Surgical Technologist; Gina Ruffner, Medical Simulation Technician, EMT-P; Scott Winfield, Medical Simulation Technician; Ron Truax, Clinical Education Specialist (SimSuite). Second row left to right: Maria Yonamine, Project Coordinator; Pamela J. Boyers, Ph.D., Director, Center for Medical Education and Innovation and D.I.O.; Benjamin Stobbe, R.N., Clinical Manager; Joyce Willis, Administrative Assistant.

The Riverside Graduate Medical Education Council also recognized that active members of the medical staff were looking for opportunities and facilities to maintain professional credentials and learn new technical skills. The GMEC concluded that the traditional method of “See one; do one; teach one” was insufficient to meet the needs of 21st century residents and practicing physicians.

The GMEC, made up of physicians from a wide range of specialties, took a leadership role in shifting the paradigm of how physicians, nurses and other clinical staff might be trained. This new model would focus on training and evaluating specific clinical competencies including interpersonal and communication skills. It would broaden the effort to include the entire clinical team including nurses and other health professionals. Most importantly it would move from a passive to active learning environment using simulation technologies. It would also include facilities that allowed practicing physicians to stay abreast of emerging technologies using human patient simulators and other simulation models.

With the support of the OhioHealth Foundation, GMEC working with other Riverside professionals including nursing, designed constructed and equipped the Center for Medical Education + Innovation™. While focused on the education of house staff and practicing physicians, the intent of CME + I is to provide for the multidisciplinary training of medical professionals along the full continuum of care: paramedics, emergency technicians, residents, nurses and attending physicians.

The center, which occupies 20,000 square feet of the McConnell Heart Hospital at Riverside, features three distinct but adjoining components.

The first of these is a state-of-the-art educational facility, including classrooms specially designed to promote flexibility and active learning. The distance learning suite, breakout rooms, and classrooms are equipped with the latest computers, audio-visual and telecommunications capabilities. The second is a Virtual Care Unit™ that includes facsimiles of an ICU room, an operating room, a trauma unit, and a typical hospital patient room. These spaces are equipped with human patient simulators that are capable of replicating clinical scenarios that can be monitored and evaluated from a central control room. The third component is the Laboratory Skills Center. This facility has rooms for training in minimally-invasive and micro-vascular surgery; a catheterization laboratory for practicing placement of vascular catheters and stents; two examination rooms where trainees can work with actors to learn advanced doctor patient communication skills. The Skills Center is also a place where residents can perfect some of the more than 600 procedures they will need to master during their three to five years of house-staff training. Many of these can be practiced, before using them with patients.

Not only does CME + I provide a peerless learning facility, it has the potentials to provide learners and educators with the means to assess competencies and skill levels of trainees objectively and systematically. The teaching faculty in medical and nursing education can also receive feedback allowing for continuous improvement in their programs and practices. The vision is that CME + I will constitute a major educational resource not only for Riverside Methodist Hospital and the OhioHealth system, but for the entire region. The ultimate goal is to prepare health care professionals for the safest possible practices for them and their patients.

The collaboration has had a profound short-term and long-term benefits in areas ranging from effect on physician morale and on the hospital's image. The hospital has been recognized by various organizations as one of the nation's top cardiovascular, orthopedic and neurosciences hospitals. Riverside has received the Consumer Choice Award for most preferred health care services in Columbus for 10 years in a row, 1996 to 2005.

Implement Clearly and Swiftly

Doblin research shows that successful innovation strategies require that changes occur fast enough to stay ahead of competition and often enough to keep brands relevant. For organizations that have invested in the necessary culture and infrastructure, these capabilities allow them to take on the most difficult challenges and provide a competitive advantage.

Memorial Health System in South Bend, Ind., has been in the vanguard of innovative health care organizations with a program guided by its “Four Corners of Innovation.”

- Visit “cool” companies in order to gain insight into their research and development and product development processes
- Reach out to the offices of technology transfer at research universities to gain insight into growing business out of ideas and to develop competencies in writing grant proposals and business plans
- Meet with venture capital firms to gain insight into how they evaluate ideas and talent
- Conduct basic research, including reading, attending seminars, conducting site visits and doing the basic legwork required to gain insight into opportunities to fuel the vision

Memorial’s experience developing MedPoint Express illustrates the power of these concepts to facilitate rapid and iterative innovations.¹⁰ A Target store in Indiana opened an in-store medical facility. This model originated in the Minneapolis area around 2003 and clinics were situated in grocery stores, malls and some department stores. By the end of 2005, there were more than 145 such clinics nationwide. Mini-clinics are staffed by a nurse practitioner and designed to provide convenient health care services for a number of minor illnesses. Visits range in price from \$30 to \$60.

Several Memorial staff “mystery shopped” the clinic and decided that they could outperform it. The organization quickly developed a prototype, along with clinical protocols and guidelines. They then reached out to a potential business relationship with Wal-Mart, Target’s primary retail competitor. Memorial was given the go-ahead to open the first mini-clinic called MedPoint Express.

The model has been a success for Memorial because it helps build customer loyalty and generates a modest income flow. Wal-Mart found it increases traffic through its stores and links closely with pharmacy services. Patients love it, with 91 percent satisfied or very satisfied with their experience, and more than half have become repeat customers.



MedPoint Express clinic formed from a business relationship between Memorial Health System of South Bend, Ind., and Wal-Mart.

Wrapping Up

The organizations highlighted in this study demonstrate that effective innovation requires mastery of many lessons. It may appear that most American health care organizations are poorly positioned to innovate effectively compared with other industries. This is despite major investments in performance improvement infrastructure, resources, and expertise. Those ingredients alone will not produce successful research and development. However, they are a start.

There is a huge appetite for better health care solutions. Newspapers, magazines and television broadcasts regularly and loudly report that health care information is the most common search topic on the Internet. The gap between today's 'demand' and 'supply' cannot remain in imbalance. A nearly \$2 trillion industry is too big an opportunity to ignore. When current players fail to innovate, they open the door to new competition. For instance, after hospital radiologists decided they didn't want to work nights, Australian doctors offered to read X-rays using digital imaging via the Internet — a cheaper, more convenient and unexpected source of competition. Hospitals unable to find affordable medical transcription have contracted with firms in India and China. Innovation has always been a hallmark of American business, but there is no longer a geographic monopoly. Today's global marketplace means local service can be available anywhere, anytime and at a wide range of prices.

What characterizes the innovative organizations highlighted in this study is the level of commitment they make at all levels, and the willingness to invest resources for the long term. At the heart of each of these programs is a novel idea or approach. But what makes these innovations so successful is amplifying the value by surrounding the core with complementary advances in other key elements such as finance, communication, networking and the customer experience. These concepts may seem foreign in the mission driven, third-party paid, mainly not-for-profit world of American health care, yet Doblin's work shows compelling evidence of how understanding the nature of innovation has transformed other industries.

The innovation capabilities of organizations we described were built over a period of years, beginning with strong leadership at the board level, and an infusion of momentum for innovation into the organization's culture. These players may have a head start by getting into the game earlier, but new entrants have the opportunity to accelerate their own programs by learning from these experiences. No one does it alone. And considering the many and varied challenges confronting American health care, the story of the 21st century may well depend on how quickly, completely and effectively innovation skills take hold.

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