



CALIFORNIA  
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## **Going Big:** How Major Providers Scale Up Their Best Ideas

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# **Going Big: How Major Providers Scale Up Their Best Ideas**

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*by*

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### **About the Author**

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### **About the Foundation**

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## **Introduction**

The 30 million Americans who potentially will gain new access to care through health reform would add a heavy burden to a system that is already struggling with constrained resources, flawed economics, and rising costs. How can the system expand to meet this demand while preserving and enhancing quality?

The answer must be found in creativity and a willingness among health care institutions to experiment with innovative ideas and approaches to delivering care. In fact, the viability of the health care system will depend on a consistent stimulus of innovations.

Three types of innovations — technical advances, process improvements, and business model innovations — have significant applicability to health care. An example of a technical advance in health care would be a smaller, longer-lasting cardiovascular stent. A process improvement might be a redesigned workflow that cuts down the time necessary for pre-surgical preparation in an operating room. Online visits that enable a physician to deliver care to a patient via a cyber chat is an example of a business model innovation. In the current economic and political climate, innovations in any of these three forms that also show the potential to dramatically lower the cost of delivering care will be in especially high demand.

However, to have real impact, innovations must be successfully scaled beyond their pilot, or test, phase. In health systems, this means an innovation must be replicated with sufficient distribution to affect a meaningful target population, while still supporting a rational business case. Many promising innovations make it to a pilot phase only to languish there. This is partly because, similar to a pharmaceutical drug trial, the results of a pilot can mislead: Success in a controlled environment is not always indicative of outcomes in situations where many variables cannot be anticipated, much less controlled.

Despite the labor and capital that are devoted to creating new technologies, services, and business models, few innovations survive in the marketplace. Identifying those with the inherent characteristics

to succeed is difficult. Success or failure is often influenced by factors outside an entrepreneur's control, such as swings in the financial markets and changes in the cost of capital.

How can organizations identify and develop innovations with the characteristics to succeed in the market at scale? This report provides insights acquired through the innovation efforts of several established health care institutions — Mayo Clinic, Partners HealthCare, Kaiser Permanente, and Ascension Health. Over time, these dynamic organizations have established their own methods for successfully scaling innovative ideas and technologies.

The case studies that follow show how each institution has established its own set of criteria to identify the best projects and to systematically pursue them. A key principle adhered to by all of these institutions is that preparing an innovation for scale is not a distinct task to be undertaken after an idea has been successfully piloted. Instead, potential scalability must be assessed at the very beginning of the process, as a determinant of whether the innovation will be pursued in the first place. Ultimately, for an innovation to succeed, it must scale. Following are notable examples.

## **It's All About the Fit**

### **INNOVATING AT MAYO CLINIC**

Mayo Clinic of Rochester, Minnesota, has been innovating since its inception. When it opened as a community clinic for farmers in 1889, Mayo debuted a new business model — the first integrated group practice in America. Mayo now has 70 clinics and hospitals in three states, with 56,000 employees serving more than 1 million patients each year.

Mayo has built the capacity for innovation into its structure. It has at least four distinct operating units dedicated to converting its creativity into new tools, processes, and businesses. The most established

of these is its Division of Systems and Procedures (S&P), which functions as Mayo's in-house consulting unit and is responsible for designing and implementing large and small process improvements across the clinics. For example, S&P might amend an administrative process to reduce preventable errors in the operating room,<sup>1</sup> or redesign the surgical process itself to increase overall efficiency.<sup>2</sup>

A newer unit is Mayo's Center for Innovation. Founded in 2008, it operates more like an applied think tank, using the contemporary discipline known as "design thinking" to craft new modes of care delivery and improved patient experience. A third innovation unit is called Advanced Market Product Development, which functions like an incubator. Its staff identifies, prototypes, and tests new health and wellness product/service concepts — those that might have a commercialization horizon several years out. It launched in 2010.

This discussion focuses mainly on a fourth innovation entity, Mayo's Office of Business Development. Ronald G. Amodeo, a director in the unit, explained Mayo's decision to deploy several separate business units to pursue innovation: "We don't know yet how these things synergize, but what we do know is that you don't stick to just one strategy or one space where innovation happens. If you don't [pursue] innovation in several places, ideas tend to get stuck with one group, and then based on that group's perspective, live or die."

Mayo's innovation units could work together in the future. For example, Amodeo explained, if the Center for Innovation devised a new floor plan for an emergency room or surgical unit, and if a pilot project determined that it was more effective or more resource-efficient, then Mayo's Systems and Procedures unit might be deployed to "roll out" the new floor plan across ERs and surgeries throughout Mayo facilities. The innovation units "are definitely

complementary,” said Amodeo, “but it’s a work in progress.”

### Office of Business Development

The experience of Mayo’s Office of Business Development offers valuable lessons based on multiple types of trials over the past decades. The unit is tasked with finding emerging opportunities that can extend Mayo’s revenue streams beyond its integrated clinical practice, education, and research. Compared with incremental process improvements, innovations of this scope — entirely new businesses — are especially difficult to scale.

“Bottling innovation is a challenge — we’re on the fifth version of business development here,” said Amodeo. Over the past 18 months, Business Development implemented a new discipline for evaluating opportunities that come over the transom, as well as ideas that bubble up inside Mayo.

“Dozens of business ideas hit on a weekly basis here,” added Doug Hedlund, also a director in the unit. “Now we have a standard for putting all those ideas through one funnel, using our strategic fit criteria. For a given 100 ideas we can decide which 10 we want to evaluate more thoroughly, and which two we will put resources into for developing a business plan for commercialization.”

The consistency is important because it allows the institution to examine new ideas with the same language and approach each time. This increases the odds that the team will select opportunities that are both suitable to Mayo’s needs and replicable in multiple environments.

The Business Development discipline has four stages:

1. **The “fit” stage.** Projects are vetted for their alignment with Mayo’s mission and likelihood of success.
2. **The business planning stage.** A business case and financial model are drafted and put to a review board for approval.
3. **The execution stage.** A strategy is formulated for delivering the innovation to market.
4. **The performance stage.** A project pilot that is established is maintained, and then prepared for replication in other markets.

Amodeo noted that most people first think of operations when it comes to the actual work of scaling an innovation. For example, when a certain revenue, or number of patients, is reached, the innovation would be extended into an additional market or clinic. Tactical metrics such as these are helpful, Amodeo added, but waiting until phase four to strategize for scaling is a losing proposition. “The answer to the question *‘How do you scale innovation?’* is imbedded in our entire process.”

Hedlund elaborated. To take something from a pilot “to a commercialize-able business worth tens of millions of dollars, we need to have several things in place,” he said. “Will we be able to fill the leadership roles? Do we have the organizational structure and personnel to replicate it? Do we have the systems and processes and culture in place that will allow us to do it? You can have the best idea in the world, and a highly successful pilot, but your ability to build it into a successful business depends on those execution levers.”



Business Development's process evaluates a project for these "execution levers" from phase one. For students of innovation, the "fit" stage is the most helpful because it is a checklist for the components that are required to fulfill the three subsequent stages. The Business Development's "fit" criteria are represented in a series of yes/no questions (see box).

#### Mayo Clinic's 8-Point Test

1. Does the project align with Mayo's core values and strategic plans?
2. Does it add value to the Mayo brand?
3. Does it leverage core resources and capabilities?
4. Does it provide a competitive advantage?
5. Can Mayo mitigate the risks of failure?
6. Will it deliver good financial returns?
7. Will it deliver good educational returns?
8. Is it scalable?

#### Seeking Fit at the Mall

Business Development's current project at the Minneapolis Mall of America (MoA), 90 miles north of the Rochester campus, illustrates how the "fit" stage works. Presented with an opportunity to become an anchor tenant in MoA's future expansion, the Business Development team began investigating a variety of business concepts for Mayo's first experiment with a retail storefront, including onsite products and services as well as online offerings. Phase one of the project was launched in August 2011, a 3,500 square-foot space called *Create Your Mayo Clinic Health Experience*. The store's focus is to test new ideas and gather learnings quickly with minimal risk.

Consumers who enter the store find health education tools and they may purchase packaged products and services designed to address ambulatory areas of health, such as: sports and performance health, wellness, and fertility health. Customers can seek individual service from Mayo staff members, or use touch-screen computers and software applications to help themselves to the resources on hand. Not all tests run simultaneously, given the limited space. Any clinical care is directed to another smaller clinical facility located nearby (delivering such care is subject to health care certification and accreditation reviews).

Point by point, Amodeo explained how the Business Development team assessed the Mall of America Project against their stage one "fit" criteria.

#### 1. Does the project align with Mayo's core values and strategic plans?

*Yes.* Mayo's mission is "to inspire hope and contribute to health and well-being." In a larger context, the MoA initiative is about transforming the health care delivery process and making it more accessible to customers and patients. Mayo's vision is to "provide an unparalleled experience as the most trusted partner for health care" for a new population of patients, extending its reach and its brand. The MoA project fits squarely into this focus.

#### 2. Does it add value to the Mayo brand?

*Yes.* Mayo is associated with health care and treating the sick, and though its brand is known around the world, all of its physical locations are clinics or hospitals. This project extends the brand experience to new audiences, mall shoppers and people who are not sick. Perhaps for the first meaningful time with general consumers, Mayo's name is being associated with wellness, sports medicine, and retail.



**3. Does it leverage core resources and capabilities?**

*Uncertain.* In this context, resources typically mean personnel. Amodeo said it remains unclear whether Mayo's talent can translate into this new environment. Retail is notoriously fickle, with products and services rapidly appearing and disappearing, high staff turnover, a focus more often on efficiency and throughput rather than quality, and customers who usually control the relationship. Each of these characteristics represents the inverse of what is typically found in health care. "Imagine you're a physician at Mayo and familiar with prescribing a test that takes three days to answer a patient's question. In retail, three days is too long. Three hours may be too long. We need to develop different tests," he added.

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*"Keeping ventures simple and easy to measure is the fastest route to answering the scaling question."*

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**4. Does it provide a competitive advantage?**

*Possibly.* Since the barriers to entry in retail are low, Mayo can easily experiment with offerings and make some educated guesses about their long-term viability. At the same time, entering a new market mobilizes the competition to disrupt what appears in isolation to be a competitive advantage. The brand itself cannot be the sole differentiation. "Our internal research suggests that we have some services, including some in

fertility and breast imaging, where we are top of our class," said Amodeo. "We're going to find out if that's true in a setting completely foreign to us."

**5. Can Mayo mitigate the risks of failure?**

*Yes.* This question essentially asks whether your pilot is a sufficient test of the potential risks inherent to your project, said Amodeo. It is tempting in retail to go big, to get answers quickly, and to hedge your bets by offering more products and services rather than fewer. But it is easy for store openings to unravel into millions of dollars of statistical confusion, he explained. The data may not tell what you need to know — whether and how to proceed. So Mayo is starting small, with just 3,500 square feet, and a handful of services that will change over time. "Patience pays. There are risks to our brand and our people as we move into this industry. By doing this in a small-scale, limited way, we can learn what is transferable and what is not," Amodeo reasoned.

**6. Will it deliver good financial returns?**

*Uncertain.* Mayo is planning to offer new and innovative services, yet it is unclear if those services will generate the out-of-pocket or reimbursement revenue needed to offset costs. Some low-cost services require high traffic to be successful. Some high-cost services require good timing to discover an unsatisfied target market. Creating an aggregate model of all services may be far more difficult to build than merely offering services individually. "So we have some serious challenges regarding the financial models underlying the project, and we have much to learn," Amodeo said candidly.

**7. Will it deliver good educational returns?**

*Yes.* Mayo's ultimate goal is to improve patient care. This means that besides developing new

revenue streams, Business Development projects must bring knowledge back into the institution to advance the practice of care. (For example, one important finding will be whether MoA visitors will be comfortable with the mall as a venue for health care delivery.) A business opportunity with a promising financial upside, like consulting internationally to build a Mayo-like facility, would be rejected because, while lucrative, it is not likely to deliver the educational benefits that will make care consistently better.

Mayo expects the MoA project will teach them how to reach more people more often, and how to keep them well, rather than waiting to treat them when they become sick. This is knowledge that can be re-invested in its clinics to lower the cost of treatment as well as improve quality of care and quality of life.

#### 8. Is it scalable?

*If it works, Yes.* It's challenging to assess whether a project has the potential to scale. For new ventures, a thousand operational details will cloud the potential for scalability. Will people come? Can you deliver so they come back? Can you adapt to what the competition will try? Can you adapt to cultural and economic forces beyond what the business model predicts? Keeping ventures simple and easy to measure is the fastest route to answering the scaling question, concluded Amodeo.

Having a vision that exceeds the operation is critical. "We shouldn't do the mall project as a one-off," said Amodeo. "If it doesn't work, then okay. But if we can figure this out at the Mall of America, we should be able to do it in many places, perhaps even Times Square."

#### The Biggest Risk Is the Hand-off

The mall project scored positively against six of the eight "fit" criteria. This was good enough for Mayo to pursue it, even though there were two significant unanswered questions: (1) Will Mayo staff successfully adapt their work styles to a retail environment? (2) Will the store's revenues from out-of-pocket spending or reimbursement justify its existence?

The project progressed quickly, entering the stage-three "execution phase" when the storefront opened in August 2011.

Amodeo and Hedlund cautioned that there are many moments in the process when any project can fail. A partnership envisioned as part of the business case might fall through, or the conditions of the commercial market might change midway through the execution phase. Even if a project like the mall storefront successfully passes through to the execution stage, the biggest and least appreciated obstacle to successful scaling still remains: the transition from the startup team to the operating teams that would open new stores outside the pilot environment.

"The failure happens almost always during the hand-off," warned Amodeo. "Much of the knowledge for how a project works or fits into a big picture has not been expressed or understood, so 'project memory' gets lost."

In an ideal situation the members of the original team can stay on, seeing the scaling process through to completion, but this isn't common, said Hedlund. "You just don't see that. Most organizations don't know this. They take it this far, but there is no transition from development to the operations team."

Nevertheless, Hedlund and Amodeo are enthusiastic about prospects for the retail storefront project because it could allow Mayo to move into markets that are far less costly than its traditional

full-service clinics. Concluded Amodeo: “It will allow us to go into places we otherwise couldn’t go.”

## First Embed the Customer

### INNOVATING AT PARTNERS HEALTHCARE

Joseph C. Kvedar thinks big. He is director of the Center for Connected Health, the innovation division of Partners HealthCare, a nonprofit consortium with 12 hospitals and clinics in the Boston area including Massachusetts General Hospital and Brigham and Women’s. Kvedar founded the center in 1995 to promote technology-enabled innovations in the areas of telehealth, remote care, and disease management throughout the hospitals.

“Step one was asking ourselves, ‘What are the big problems that are out there?’ We figured if we design programs around big problems, policymakers would pay attention and support them.” This is crucial to the success of a health care innovation, Kvedar explained, because as the policy community goes, so goes the payer community. Support from the payer community means reimbursement, and reimbursement is synonymous with revenue. Therefore, finding innovations with the potential to solve big problems at scale is essential.

In the early days this meant looking at areas of medicine that were generating huge costs, such as heart failure, hypertension, and diabetes, Kvedar said. These three conditions were ripe for IT innovation because a lot could be accomplished with simple measurement tools like remote monitoring devices. “It was easy to do a back-of-the-envelope ROI on these three and map it back to the societal benefit and benefit for the payer,” he recalled.

But over the next decade, the innovation space grew cluttered, and the selection of projects to pursue required another filter. Other organizations had begun to focus on health information exchanges, electronic medical records, and decision-support

tools for physicians. Kvedar thought, “Why not go where no one else is going?” He decided to shift the center’s focus to tools and services that would lure consumers into using technology to improve their health.

“Plenty of people were doing those other things,” Kvedar said, “but no one was doing a good job of using a patient-centric model in health IT.” He explained that “sometimes people aren’t doing things because it doesn’t make sense. But sometimes they just haven’t seen the world the way that you do. We deliberately choose things that will get people’s attention.”

Years before the phrase “patient-centered care” took hold, the Center for Connected Health was moving in this direction. But being a thought leader is not sufficient to ensure success, Kvedar cautioned. In fact, the farther out in front an organization is, the greater the challenges with scaling can be. Truly cutting-edge ideas tend to start off in smaller markets, which often makes them harder to replicate and spread into larger markets, he said.

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*“Why not go where no one else is going?”*

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Innovating successfully boils down to a combination of creativity and market-readiness, according to Kvedar. “Market-readiness may be the more complex of these two elements,” he said, “because customers are so crucial. We only do studies now where we can find a customer to pay for it first.”

Kvedar shared two of his strategies through the example of a recent Center-sponsored initiative, Healthrageous.

### Birth of Healthrageous, Inc.

Healthrageous is a behavior change solution that delivers biometric monitoring and automated coaching to consumers through mobile applications that are accessible on their cell phones, wireless tablets, and other data devices. Its target audience is employers that want to improve workforce health or lower their health care expenses. It began as a research project called SmartBeat in 2009, was spun-out, renamed, and incorporated as a for-profit business in 2010.

The Center had long been interested in projects that dealt with hypertension. Several years ago, Kvedar recalled, one of the Center's physicians attended a dinner with a data storage company executive who expressed an interest in workforce health. The result was that Kvedar floated the idea of testing one of the Center's innovations — an experimental self-management tool — inside the company, EMC, Inc.

Later that year, more than 400 EMC employees with hypertension volunteered to participate in a blind clinical trial. They were randomly separated into an intervention group and a control group. The intervention group was instructed to use a wireless blood pressure cuff to monitor their blood pressure three times a week and to login to the SmartBeat website at least once a week. There they could review the results of their blood pressure measurements and find educational information on how to improve their readings through exercise, diet, and other behaviors. The control group was advised to seek the same help for behavior change through medical consultations with their doctors.

Over six months, a clear disparity was seen between the two groups. Fifty-five percent of the intervention group lowered their blood pressure from “hypertensive” to “controlled,” compared with 26% of the control group. Furthermore, a greater

percentage of the intervention group showed a willingness to use new medications, and a greater ratio reported better communication with their doctors as a result of the trial as well.

### Spinning Off

Impressed, EMC wanted to expand SmartBeat to its workforce in California, Texas, and Florida, but there were complications. Partners' legal department couldn't permit the rollout because of regulations in California that prohibit provider organizations like Partners from running businesses in other states. In addition, Partners' code of ethics prevents its employees from benefitting financially from their relationships with commercial vendors to the hospitals. Partners had granted an exclusive license to SmartBeat (by then renamed HopSkipConnect) to commercialize the technology, but this meant that the startup could no longer employ Partners staffers, including Kvedar, or sell its service into Partners hospitals.

Meanwhile, additional corporations and hospital systems, including California-based Kaiser Permanente, were clamoring to try SmartBeat, too. Although EMC funded the initial trial, it wanted Partners to shoulder the liability of future experiments.

It became clear to the Center team that for SmartBeat to fulfill its potential, it would need to be separated from Partners entirely. Kvedar recruited Rick Lee, a non-Partners professional, to run the project as a CEO, and together they pitched their would-be startup to venture capitalists.

In April 2010 they spun out from Partners, and in May closed their first round of funding with North Bridge Venture Partners. In September 2010, Healthrageous launched the service with its first customers, Massachusetts Eye & Ear, and Raytheon, plus a new commercial deployment with EMC.

The company is flourishing in its independence, said Lee. Healthrageous launched a new version of its service in 2011, and is developing deployments with new customers and channel partnerships, including six Blues organizations. Their customer base is also expanding beyond patients; a pharmacy benefit management company is sponsoring a Healthrageous tablet deployment to participating physicians. If the growth continues, Lee said the company is on track to generate \$6 million in revenues by the end of 2012.

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*“We deliberately choose things that will get people’s attention.”*

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There remain risks for Healthrageous, Lee cautioned. “Most pilots can’t scale because the perfect circumstances of a pilot can’t be replicated. You put your best people on the pilot, but by the time you expand 10-fold, you’ve run out of your best people. You end up using your second and third teams.” Fortunately, technology can ameliorate this labor constraint and is one of the reasons why Healthrageous has successfully scaled so far. Its “technology platform works just as well for 1 million users as it does for 200 users,” said Kvedar. “It confounds the customer, who is inclined to think that it costs an incremental amount of money for each 1,000 people you add to a platform.” Speaking as a physician, Kvedar cautioned that health care providers, in particular, still don’t fully buy into the idea that technology can replace people. But when they do, he noted, Healthrageous will scale even faster.

It is important to note that Healthrageous’ business plan presumes that it can do more with data collected from a remote monitoring device if it pours that patient data into a sophisticated, rules-driven software engine. For example, the company says it can offer faster, more effective behavior modifications because its suggestions are the product of volumes of comparative data and delivered in real time. Healthrageous calls this “dynamic personalization.”

Kvedar said, “We were quite sure that Healthrageous would play into health plans, and of course they have. And as the health care provider reimbursement landscape is changing to accountable care organizations, they are starting to sell into that environment to get providers to adopt Healthrageous sooner than we would have predicted.”

Meanwhile, the Center for Connected Health continues to invest in new technology projects, pushing to repeat the model that worked so well with Healthrageous. Says Kvedar: “If you bring us an idea and we like it, the first questions we’ll ask are ‘do you have a funding source?’ and ‘is there a corporate sponsor?’”

### Lessons Learned

The Center’s experience with Healthrageous solidified its model for innovation:

1. Embed the customer in the project from the very beginning.
2. Spin-off the project into an independent commercial entity.

There are a number of benefits from engaging the customer early, explained Kvedar. It offers the opportunity to learn how customers will use a technology — as well as how they will *not* use it. The entrepreneur can then innovate to fulfill the customer’s specific needs and thereby avoid costly

mistakes. This increases the odds of delivering a product the customer wants to buy. Securing the customer upfront as a sponsor also diminishes one of the biggest risks in the innovation process: sourcing adequate funds to support the project from development through to deployment.

“The downside of this is that if you’re really a sage, sometimes you won’t be able to find a customer who is willing to try what you’re doing,” Kvedar added. “But that is an acceptable risk given the rigor that finding a customer brings to your process.”

Spinning out a project into an independent commercial entity is strategically valuable because it eliminates the legal constraints of operating inside a highly regulated provider organization. A spin-off allows a project to behave less like a nonprofit-sponsored research project and more like a real start-up. This also tends to make the project more attractive to the commercial customers, which further increases its odds of success.

### When the Customers Are Physicians

Not all innovations are good candidates for commercialization, and in any case Partners, as a provider organization, is not in a position to sell software directly to employers and health plans. The Center has several remote monitoring projects that continue to scale within Partners but are unlikely to move outside the organization.

These include Diabetes Connect and Blood Pressure Connect, biometric remote monitoring tools that employ the same basic technology as Healthrageous. Patients use a blood pressure cuff or blood glucose monitor to collect data, which are fed to a hospital database via a wireless connection. About 1,000 patients currently participate in the Diabetes Connect or Blood Pressure Connect programs.

Diabetes Connect and Blood Pressure Connect differ from Healthrageous in two important ways: (1) the business-to-business customer is a care provider within Partners, not an independent employer; and (2) these services do not depend on sophisticated software platforms or rules engines.

Explained Kvedar, “Instead of spending time developing the rules [engine] and a mobile application, we spent the time developing the [user] environment for a nurse who calls you up and says, ‘Gee Carleen your BP is running high; what can we do about that?’”

## One Step at a Time

### INNOVATING AT KAISER PERMANENTE

Kaiser Permanente has been generating new ideas since its inception, which was itself an innovation in health care delivery and financing. Begun as a health plan for shipyard workers, it is now the largest managed care organization in the country, with a for-profit medical group, a nonprofit health plan, and a nonprofit hospital system operating in nine states. Kaiser Permanente has 167,000 employees, 35 medical centers, and it serves nearly 9 million people a year.

Kaiser’s large infrastructure enables it to test and attempt to scale almost any innovation that it wishes to within the safety of its own organizations. To continuously improve care, operations, and business practices, Kaiser maintains a number of operating units that are dedicated to identifying, nurturing, and testing innovations. These include the Center for Total Health in Washington, DC, an interactive education facility; the Sydney R. Garfield Health Care Innovation Center in San Leandro, CA, an environment dedicated to conducting test pilots; and an internal consulting group focused on activities such as workflow and hospital environment redesign.



Kaiser also sponsors a grassroots innovation networking community called the Innovation Learning Network, which fosters knowledge sharing across disciplines within and outside of the organization. It includes more than 25 health care organizations and design firms across the US and the United Kingdom.

### Bottom-Up IT Innovation

To identify and promote IT-based innovations, Kaiser created the Innovation and Advanced Technologies division. The unit operates on a bottom-up approach that harnesses employee creativity, said Faye Sahai, executive director. The division has its own capital fund, the Innovation Fund for Technology, which it uses to make seed investments in ideas proposed by Kaiser employees.

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*The division has its own capital fund, which it uses to make seed investments in ideas proposed by Kaiser employees.*

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The fund's 12-member review board examines some 150 proposals annually. Of these, about 12% are funded. "We haven't been going as much for quantity," said Karin Cooke, manager of the fund, even though its investment rate bests that of a typical venture capital firm. Typically, venture capital firms fund fewer than 10% of the business plans reviewed. Kaiser does not disclose the size of its fund, but a sampling of grants ranges from \$75,000 to more than \$500,000.

Applications are submitted directly to the fund, after extensive pre-screening. "Before people even apply to our fund, we spend a lot of time redirecting them if something already exists elsewhere in Kaiser Permanente," said Cooke. Ideas must pass a four-point test:

- 1. Expert vetting.** The board consults subject matter experts within Kaiser to assess the merit of the idea. For example, if a project concerns insulin monitoring the board would consult a Kaiser diabetes specialist.
- 2. Commercial scan.** The board conducts what Cooke called a "commercial scan" to determine if Kaiser can purchase a product or service similar to the proposed project in the open market.
- 3. Resource review.** The board reviews whether the proposed tool or service latently exists in any of Kaiser's existing resources. For example, if the proposal relates to software, the board would consult Kaiser's EMR vendors to see if a comparable, but under-leveraged, functionality exists in the organization's current software platforms.
- 4. Novelty test.** Is the idea really new? The board does an internal review of similar innovation projects that are already underway elsewhere inside Kaiser. This portion of the review had been done manually, which was very labor-intensive. More recently, Kaiser developed its own internal Facebook-like network, called IdeaBook, where employees "crowd source" information and refer each other to existing projects.

The Innovation and Advanced Technologies division also helps scale the innovations it supports. Cooke explained: "When we say 'scale,' we mean taking an idea from prototype to availability



throughout the region. To get anything to move into production, there is a lot of stakeholder engagement that needs to happen on a variety of levels,” she said. Sometimes this means that Cooke and her colleagues get involved locally with an innovator to help cultivate support for the project among the regional leadership. At other times it means providing bridge funding for a project so that it can expand from a prototype to regional distribution.

### One Region at a Time

#### THE CASE OF AUTOCAL

An example of the scaling process is the automated insulin drip calculator — AutoCal — project. The idea came from a Kaiser nurse named Christine in the Northwest region. (Kaiser did not disclose her last name). Christine wanted to replace the current, and error prone, method for recording patient glucose levels on an Excel spreadsheet with an automated process. She had an idea for how such a technology application should work, and submitted her proposal to the Innovation Fund for Technology.

A thorough review of the project included consultation with subject matter experts in nursing and diabetes as well as the requisite scan of the market for available commercial technologies. “We didn’t find anything quite like what Christine was looking for,” said Cooke. The AutoCal project received funding of \$75,000. A prototype was developed by Kaiser’s corporate stable of programmers in Oakland, and the application was deployed to Kaiser’s Northwest region for testing.

One of the obstacles to adoption, Cooke’s team has found, is the change to workflow that a new tool requires. “It took a lot of buy-in to get nurses to try it,” Cooke recalled. “Christine was surprised at how much effort it took to get them on board.”

Acquiring that buy-in meant that members of the Innovation and Advanced Technologies group

went to the Northwest region to meet with Christine and leaders in her region, including staff from the operations and medical groups. Together they discussed a path forward for AutoCal.

In the initial 18 months of the project, it cost \$165,000 to get AutoCal from prototype to deployment in the Northwest region. The project will now need to raise more money if it is going to scale into other Kaiser regions.

One of the challenges of working within Kaiser is that for a project to scale across its eight regions, it has to cultivate support from within each region, individually. Not all of Kaiser’s IT is developed nationally, so it is conceivable that a project could require custom development from one region to the next. Fortunately, the software behind AutoCal does not require custom coding because it was built by Kaiser’s national developer team. Added Cooke, “We didn’t want the cost to replicate it to be too great, so we used a national team so the coding is universal.”

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*For a project to scale across all eight regions, it has to cultivate support from within each region, individually.*

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The Innovation and Advanced Technologies group is trying to find internal partners who can help AutoCal expand beyond the Northwest region. Because many Kaiser facilities don’t use insulin drips, taking on AutoCal means a workflow change. This would create an opportunity to engage the Kaiser consulting group and to change the workflow and clinical processes, and that costs money.

Right now, Cooke said, the buy-in for this kind of transformation is not there. “The key factor is the will. We have not yet managed to identify the people who really want to engage in the process of workflow change that is needed to install AutoCal,” she said. “Once we get this, the actual funding will be fairly minimal because the coding does not need to be replicated.”

Ultimately, the goal is to connect AutoCal to Kaiser’s medical records platform, from which any Kaiser region could easily pick up the innovation and deploy it.

### One Hospital at a Time

#### THE CASE OF TUG

Sometimes achieving the necessary buy-in to scale an innovation requires more formal incubation. An example of this strategy comes from Kaiser’s Southern California region, where a robotic hospital courier called TUG is being deployed within the Los Angeles Medical Center.

In 2007, Kaiser was looking for ways to leverage IT to improve the experience and efficiency of its nursing staff. Ethnography research undertaken by the Innovation and Advanced Technologies group revealed that nurses spend a great deal of time on “indirect patient activity”— doing things like pulling a computer cart around for data entry, or toting around meds and linens and trash.

“We asked ourselves if there was a way to free up the nurses so they could spend more time with patients,” recalled Sean Chai, a director of the Innovation and Advanced Technologies group. Unlike the AutoCal program, “this was an example of identifying the problem first, and then going out to find the technology.” Chai explained that sometimes in these situations Kaiser issues a request (akin to a “request for proposal”) to its technology partners — companies like GE or Philips — and invites them

to the Garfield Center to demonstrate proposed solutions.

During its scan of the commercial market for a strategic fit among existing technologies, Kaiser found a solution called TUG, a robotic delivery unit made by a company called Aethon. However, recalled Chai, “No one thought we’d come back with a robotic solution, so initially people didn’t really embrace it or see its potential.” Kaiser brought TUG to the Garfield Center and incubated it in a simulated environment. Staff could experiment with it and familiarize themselves with it, to understand how it would affect them and their work. These incubation periods help foster the engagement or buy-in from staff that is so important to successful scaling, Chai said.

For now Kaiser is scaling TUG exclusively its Los Angeles Medical Center. Eight robots are running currently there, with between four and six more to be deployed this year.

Chai explained that not all innovations can be scaled across multiple regions. Sometimes even within regions, cost and regulatory requirements vary from state to state. Different technology standards may apply. “It’s not always so easy and we are very mindful of this when we are identifying a new technology innovation,” Chai said. “This doesn’t mean the benefit of an innovation like TUG must remain in a silo. Even if the robots themselves are not being deployed outside California, he said, “we are spreading the lessons learned to the rest of the facilities and across the regions.”

## Sourcing from the Outside

### INNOVATING AT ASCENSION HEALTH

Incorporated only 13 years ago, Ascension Health is the youngest institution surveyed in this research. It also stands apart for a notably outward-looking approach to innovation. This alternative strategy is driven largely by one of its newest business units, called Transformational Development. Where Kaiser-Permanente and Mayo Clinic look to their own employees for innovative ideas, Ascension Health uses Transformational Development, or “TD” to reach beyond its own walls for additional ideas and technologies to help it transform health care.

Launched in 2007, TD was specifically charged with looking five to 15 years beyond Ascension’s normal planning horizon to identify potential challenges to the hospital system, as well as the innovations that will be necessary to address them. To do this, Ascension realized it could not use a silo approach or be dismissive of ideas “not invented here.” Instead, TD followed the wisdom of Bill Joy, venture capitalist and co-founder of Sun Microsystems. Joy famously told politicians, business leaders, and entrepreneurs contemplating the pursuit of innovation: “Not all the smart people work for you.” Would-be innovators who do not take the opportunity to leverage the talent of others, are very likely leaving “creative productivity” on the table, said Joy.

In its early years, TD sought inspiration from a broad portfolio of external sources.

The unit “probably has been 90% externally focused,” said Scott Lambert, a lead partner of TD. “But this is beginning to change,” he added, noting that in the last year, TD has begun to look internally for innovations, too.

## How TD Was Initiated

Ascension Health came into being in 1999 with the merger of two nonprofit health care systems: the Daughters of Charity National Health System in St. Louis, Missouri, and the Sisters of St. Joseph Health System based in Ann Arbor, Michigan. By 2002, Ascension Health’s network of hospitals and related facilities had grown into the largest nonprofit and Catholic health system in the country. Today Ascension and its 33 members — they call them “health ministries” — comprise more than 1,200 facilities across 20 states and Washington, DC, including 68 acute care hospitals. Most of these facilities are located in the Midwest, South, and Northeast.

Shortly after its formation, Ascension Health’s leadership issued a “call to action”: The new entity would deliver “health care that works, health care that is safe, and health care that leaves no one behind.” Illuminating the first part of that mandate, delivering “health care that works,” proved somewhat elusive. “It went undefined for a while,” recalled Lambert. What was clear was that Ascension’s leadership would not be satisfied with any version of the status quo. They wanted to push health care further.

To learn more about innovation theories and methods, it engaged Innosight, the consulting firm headed by Harvard’s Clayton Christensen, author of many seminal texts on the concept of disruptive innovation. Ascension consulted with Ideo, the innovation and design shop based in Palo Alto, California. It also considered the Lean Six Sigma method, popularized by Motorola and General Electric. Lean focuses on improving business processes and involves considerable training and certifications for personnel. “We purposefully decided not to centrally push Lean,” recalled Lambert, “instead letting our health ministries decide for themselves whether to pursue this approach.”

Establishing a truly disruptive innovation program, versus one that focuses on incremental improvements in tools or work processes, is especially challenging, according to Lambert. In theory everyone has the best intentions, but in practice, he said, “you’re always drawn to things that are nearer-term because those things address the fires that people are dealing with now. Our leadership team said ‘health care is ripe for disruptive innovation. We really need to be part of that disruption.’ The only way to do that was to create a function within Ascension that was not worried about the day to day.”

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*“Our leadership team said ‘health care is ripe for disruptive innovation. We really need to be part of that disruption.’”*

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This became TD’s mandate. Since 2007, the unit has grown to eight permanent staff members, including Lambert. It occasionally still uses third-party consultants when the need arises. Several senior Ascension executives also play roles at TD. Chief Strategy Officer John Doyle is also the managing director of transformational development, providing overall leadership for the group. Ascension’s Chief Medical Officer David Pryor, MD, and Chief Advocacy Officer Susan Levy also are involved in TD projects.

## Transformational Development’s Six Platforms

Lambert and his colleagues identified six “platforms,” or areas of focus, that would be crucial to Ascension’s idealized notion of an innovated system of care — a system that spans the patient’s life cycle, that includes everything from acute to chronic care, and that is not constrained by infrastructure or geography. TD’s six platforms address:

1. Early life intervention
2. Senior care
3. Population-based care and chronic care
4. Transformation in acute care
5. Community health and access
6. Care anywhere (mobility and/or remote care)

Ascension Health is adamant about its commitment to patients. “When we say ‘person-centered care’ we mean for *life*,” Lambert emphasized. “We want to create lifelong relationships with those we’re trying to serve, instead of the episodic, event-based care which is what health care is known for today.” With this in mind, innovations that are clearly patient-centered have become a key component of TD’s selection process. So far, of its six platforms, most of TD’s innovation projects have fallen into the last two categories: community health and access; and mobile and remote methods of care delivery.

### 2-1-1 Health Navigator

A good example of a patient-centered innovation in the health access space is a project called 2-1-1 Health Navigator. This project illustrates how far outside its own system Ascension is willing to go to find and support good ideas, even where the benefits

of its support positively impact health systems other than its own.

With 2-1-1, Ascension works with local community organizations and providers to help at-risk populations find appropriate health resources, simply by dialing 2-1-1 on their landline or mobile phone. Specially trained, often multilingual, “navigators” can help callers assess their health needs, screen and qualify them for reimbursement programs or free drug programs, schedule appointments, and even provide follow-up services. The idea is that the 2-1-1 project will evolve as a new entry point into the health system, improving access for populations that fall through the cracks because the system is confusing and intimidating.

The project began with Lambert and his team engaging in ethnographic immersions with at-risk patients in Austin and Los Angeles (even though it has no facilities of its own in Los Angeles). According to Lambert, the purpose of the immersions was to experience “a day in the life” with these groups to clearly understand the health resources they most need and use.

In one case the team spent a day playing the role of a recently laid-off white collar professional. His daughter had asthma, and his COBRA had just run out. Where would he get care, they wondered, and how would he pay for it? In another, Lambert and his team spent a day assuming the role of an undocumented day laborer. “We went to the street corner, we went to the one-room apartment he shared with six other guys to see what was in the refrigerator. The question was: You go to work, fall off a ladder and hurt your back. How do you get care? What do you do if it doesn’t get better? Who do you talk to? Who do you trust?” Lambert recounted.

The TD teams learned that even health care professionals versed in health systems could not easily find the health resources that these individuals

needed. Still, a common denominator emerged: Every potential patient had a cell phone.

Through a venture capitalist at the firm Triple Tree, Ascension reached out to the Wireless-Life Sciences Alliance, which connected TD with a nascent 2-1-1 Health Navigator pilot already in place in San Diego. Ascension began funding 2-1-1 Health Navigator in San Diego in December 2010, and subsequently funded additional pilots in Palm Beach, Florida, and Nashville, Tennessee. Nashville is the only 2-1-1 Health Navigator location where Ascension has a hospital presence of its own.

Why would Ascension invest so much in innovations with no direct impact on its own systems? “We wanted to run it in different places to make sure it was replicable,” explained Lambert. “We’re big on setting things up that are sustainable. Right now we’re trying to understand the 2-1-1 model so we can scale it elsewhere within Ascension,” Lambert added.

It is still too early for quantifiable metrics on the impact of 2-1-1. An ideal metric might be a reduction in ED visits among a pilot’s target population. For now, feedback from users has been positive and the 2-1-1 call volumes continue to grow. “That tells us that the demand is there,” said Lambert.

### Enterprising Health

Another example of TD’s efforts to spur innovations in the community health and access space is called Enterprising Health. This is a community incubator established by TD and Ascension’s local ministry, St. John Providence Health System of Detroit. The idea is to find local entrepreneurs who are, as Lambert put it, “health-passionate individuals.”

“This really grew out of a recognition that we can’t solve the health needs of the poor and the vulnerable from St. Louis, because we haven’t lived

in their shoes,” said Lambert. “We have to work with people on the ground.”

Working with a local community leader who promoted the program through church groups and community organizations, TD recruited more than 200 people to participate in an eight-week education program that included courses on health systems, entrepreneurship, team-building, and human-centered design. (The latter demonstrates the influence Ideo has had on Ascension.) Classes began in January 2011. A few months later, 13 of 46 participating teams presented their ideas to executives from Ascension, St. John Providence, and the Michigan Economic Development Corporation. Five teams received coaching, infrastructure support, and parcels of seed funding to develop their prototypes and flesh out their business plans. Each of the three winners received \$10,000 or more.

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*“The idea is to germinate community-based, co-created businesses that will engage and inform enough people to drive a culture change around health.”*

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Here again, the benefits to Ascension are indirect. According to Lambert, few of the business ideas the teams proposed had to do with selling a product or service to Ascension or any hospital system. All of the winning proposals were aimed at benefiting health care consumers before they even enter the health system.

One of the winners is a proposal for a startup called En Garde! Detroit. It offers an after-school fencing program to teens from primarily low-income communities. Using iPads and a custom curriculum, the courses embellish lessons in the mechanics of fencing — sometimes called the “chess of athletics” — with lessons in science, math, and engineering. Ultimately, the goal is to improve the health of at-risk students, as well as their scientific literacy and college preparedness.

Another winning proposal envisions The Change Game, a social networking game aimed at encouraging African American youth and men to stay active and healthy. Like other avatar-oriented games, it rewards players for specific behavior. The player’s avatar becomes more valuable — stronger and bigger — after the player runs a mile or takes a walk in the real world. Social gaming has proved effective at engaging even the very recalcitrant through competition, and Change Game leverages this as well. It encourages players to motivate each other’s avatars with physical challenges. Said Lambert, “We liked the concept of getting gaming into a target audience that has many health challenges.”

Lambert addressed the question of whether an incubator of small projects is worthwhile to a large health system, considering the energy investment in educating first-time entrepreneurs.

“It’s all grounded in the intent to improve health in the community and we don’t have all the answers for how to do that,” he said. “The idea is to germinate community-based, co-created businesses that will engage and inform enough people to drive a culture change around health.” Ascension believes that this bottom-up approach has a better chance of success than if it were to try to run a community impact program from the top down.

“Can we have a culture change that is driven from the community up that addresses the health



issues that we're facing?" Lambert asked. "We want to find out." Ascension believes the residual benefit of healthier communities will ultimately impact its own operational performance. If the pilot in Detroit continues to show success, TD plans to scale this incubator model to other cities.

### AHConnect

TD also cultivates partnerships with third-party providers of technology tools and services to test new innovations. One such project, called AHConnect, was a partnership with the national electronics retailer, Best Buy, to test a remote monitoring tool for diabetes patients. AHConnect is one of a handful of projects that fall into TD's sixth focus area "care anywhere."

Participating patients would collect their blood pressure or glucose levels with a remote monitoring device and then, using a gateway device purchased at Best Buy, securely upload their data to a central collection system and call center operated by Ascension Health. Qualified nurses on the other end would then reach out to the patients with wellness coaching and patients could track their progress via an Ascension-designed consumer portal. Unfortunately, no insurance company yet offers reimbursement for remote monitoring, so AHConnect required patients to pay out-of-pocket for both the gear and the service. TD's hypothesis was that highly engaged diabetes patients would be willing to spend some of their disposable income on AHConnect, if using it meant a potential improvement in their condition and quality of life.

"The hypothesis was not valid," conceded Lambert. "What we were trying to do was shortcut the remote monitoring space. But because no payer [reimburses] for it, no one would buy it."

It was a lesson that Ascension is now putting to good use. At its health ministry in Arizona called

Carondelet Health Network, community health workers are instead using internet-based telehealth to deliver diabetes education to rural Arizonans, including Native Americans. The classes are conducted over landlines from community health centers. An enhanced pilot, launched last year, has added a "medical home" structure to the program, with physicians at the top of the care tree. Most importantly, Mercy Care, a local payer affiliated with Aetna, agreed to pay for the second trial. Mercy Care is hoping to benefit from reduced reimbursement claims. TD provided some of the coaching around which technology would be most helpful and is supporting the development for the website.

### Now Looking Inward

Building on know-how developed by tapping innovations outside Ascension, today TD is looking inward in a new way for some creative spark, as well. "Historically, we in TD have been going out and trying to find ideas elsewhere, but we've stepped back [and] made some changes in how we operate," Lambert said. "Now it could be the hospital housekeeper in Austin saying, 'Hey, I've got this great idea for reducing infections in our key care centers.' An idea could come from anywhere within the organization."

TD recently launched the Living Lab, where Ascension employees volunteer to test and review new tools and services. Some of the concepts they test are commercially available, like the digital device FitBit. Others are sourced from among the 113,500 workers employed in Ascension's health ministries. Lambert believes the Living Lab will be a valuable way of assembling perspectives on which innovations should be scaled across its hospitals. "So it's not TD deciding what is the best idea," he said.

The Living Lab will experiment with "open innovation tools" — software applications that



help users collaborate on their ideas. Examples include Accenture's Innovation Solutions Network (commonly known as “the grapevine”) or Kaiser's IdeaBook.

Although TD is applying greater focus on internal ideas, it is not a wholesale change in strategy, Lambert cautioned. It is more an evolution to a healthy balance between imports and exports. “There will still be a healthy amount of TD looking externally for innovations,” he said. “But it might go to 50:50.”

## Conclusion

The four health care institutions surveyed in this research — Mayo Clinic, Partners HealthCare, Kaiser Permanente, and Ascension Health — consider innovation to be a foundation of their vitality and future success.

But, as the case studies demonstrate, it is challenging to pursue innovation as a strategic business direction. Regardless of the cost in labor and capital devoted to discovering novel technologies, services, and business models, few of the innovations pursued ever make it to the marketplace. Even fewer survive there.

The criteria for successful innovations are not uniform. Yet there are a few common lessons, or takeaways, to be drawn from the case study examples. The first is that discipline can, and must, be brought to the quixotic innovation process. In fact, each of the surveyed institutions created a formal innovation process that was assigned to a dedicated business unit (or units).

In each innovation program, a delineated process for selecting the right ideas to pursue was developed. Each was unique to its organization's goals, strategies, and circumstances. Likewise, each organization established a strategy for scaling successful projects. For example, Partners chose to scale an innovative

## Rules for Innovating

1. Create a dedicated innovation team or business unit.
2. Establish a formal framework to help your team select the best ideas to pursue.
3. Identify the method(s) of scaling that is most appropriate for your institution. (Do you scale within your organization, or turn the innovation into an independent business?)
4. Creativity is uniformly distributed. Leverage multiple sources for the best ideas to pursue.
5. Expect failure. Iterate and try again.

wellness service, Healthrageous, by spinning it out into an independent commercial entity. Kaiser Permanente is scaling two initiatives — the robotic hospital courier TUG and the insulin drip innovation AutoCal — within its own system.

The case study institutions sought innovations both internally and externally, mining good ideas from their employee base, through the commercial market, or even from a community incubator made up of first-time entrepreneurs. These innovating institutions demonstrated that talent and good ideas are plentiful in health care. They also showed how ideas need to be shaped and distilled — and many winnowed out — to arrive at innovations that can succeed over time.

The final takeaway from this research is the importance of iteration. Organizations that would innovate must have a capacity to learn from failures and to try again. This is the hallmark of all successful innovators within and outside of health care.

## Endnotes

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