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Feature

Disrupting the Hospital Business Model

Hospitals can heal – if they focus on one business model and stop trying to be all things to all patients.

By Clayton M. Christensen, Jason Hwang, M.D., and Jerome H. Grossman, M.D.

The Innovator's Prescription *(to be published in January 2009 by McGraw-Hill) argues that disruptive innovation is required to make health care affordable. In this excerpt, the authors look into the ways disruption can help hospitals, which in our current health care system are tasked with the impossible job of doing everything well and keeping costs down at the same time.*

In order to understand how to "fix" hospitals, first it's important to understand the value proposition of hospitals. Hospitals have become the workshops within which physicians could be trained and practice their intuitive craft, clinical laboratories where complex medical cases could be solved and unanticipated emergencies and complications could be resolved with as much certainty as possible.

This value proposition has been a great fit for solving poorly understood problems of the past, such as tuberculosis in the early 1900s, poliomyelitis in the 1950s, and AIDS in the 1980s. When these diseases were first encountered, they had to be addressed in hospitals. However, in terms of the complexity of diagnosing and treating disease, for a century hospitals have been on a relentless up-market march on the trajectory of sustaining innovation.

An administrator in one of the major Boston-area teaching hospitals estimated for us that 70 percent of the patients in his hospital today would have been in the intensive care unit 30 years ago, and that 70 percent of the patients in his ICU today would likely have been dead 30 years ago.

His hospital has become extraordinarily capable of dealing with very complicated problems. But in the process of adding all of that capability and its attendant costs, the hospital has overshot what patients with straightforward disorders can utilize when they are admitted.

An important lesson from our studies of disruptive innovation is that the hospitals providing much of today's health care *cannot* and therefore *ought not* to be relied upon to transform the cost and accessibility of health care.

Instead, hospitals need to be disrupted. We need them to cede market share to disruptive business models, patient by patient, disease by disease starting at the simplest end of the spectrum of disorders that they now serve.

The Business Model of Hospitals

Why are hospitals so costly? The answer lies in an examination of their business model. Every viable business model starts with a value proposition — a product or service that helps customers do more effectively, affordably, and conveniently *a job that they've been trying to do*.

"We will do everything for everybody" has never been a viable value proposition for any successful business model that we know of — and yet that's the value proposition managers and directors of general hospitals feel they are obligated to put forth.

A *company* might want to be all things to all people, but this isn't what *customers* need. There are few patients who are searching to "hire" a health-care provider that can do everything for everyone else. Rather, customers of healthcare delivery generally find themselves needing one of two jobs done. The first might be summarized as, "I need to know what the problem is, what is causing it, and what I can do to correct it." The second job would be, "Now that I know what needs to be done to fix my problem, I need it to be done effectively, affordably, and conveniently."

Delivering a value proposition to do the first job requires a solution-shop business model organized around intuitive diagnostic activities; the second job requires a value-adding process business model organized around the efficient delivery of specific procedures (see sidebar, **Solution Shops vs. Value-Adding Processes**).

We know of no business that has successfully housed two fundamentally different business models within the same operating unit. Were it not for today's tangled web of subsidies, administered prices, and regulations that constrain competition, today's general hospitals would not be economically or competitively viable.

Problems Created by Commingling Business Models

When the same hospital seeks to fulfill these two very different value propositions, the consequent mandate for two types of business models creates extraordinary internal incoherence. The resources and the essential nature of the processes inherent in the two business models are different.

Their profit formulas are different as well. Solution shops need to get paid on a fee-for-service basis. Their fees cannot be based on outcomes, because many factors beyond the accuracy of diagnosis affect the results. In contrast, value-adding process businesses can routinely sell their outputs for a fixed price, and they can guarantee their results.

Many market-oriented students of our health-care systems bewail the fact that hospitals and physicians don't readily disclose the prices of what they do, or the outcomes they achieve. The value of the services being offered therefore isn't measured — and as a result, the normal market mechanisms that drive performance, efficiency, and customer-centeredness don't exist in our

health care systems. What these critics have not yet understood, however, is that the value actually *cannot* be measured, because the metrics of value in the two different business models are so different.

The value of products and services can only be calculated by comparing their prices and expected outcomes, relative to the job to be done, but the jobs for which the solution shops and value-adding process services of hospitals are "hired" to do are very different.

Meanwhile, reimbursement formulas typically price both types of hospital services on a fee-for-service basis, with overhead costs spread across them in highly distorted ways. The result is that the value of what general hospitals do simply cannot be measured — let alone compared.

Recommendations for Hospitals

Our first recommendation is that hospitals need to deconstruct their activities operationally into the two different business models: solution shops and value-adding process activities. This can be done by creating hospitals-within-a-hospital, or by building distinct facilities. In either case, the work done within each business model must be organized differently, and their cost accounting and pricing systems must be separated and structured in ways appropriate to each.

Our biggest and best medical centers will be able to bifurcate themselves. Smaller hospitals, however, will need to focus on becoming solution shops or value-adding process hospitals, or simply expect to be liquidated through disruption.

The reason why this division is such a crucial first step is because of the two different jobs-to-be-done for general hospitals. Only when an organization's resources, processes, and profit model are focused around a job-to-be-done can they be integrated in a correct and optimized way that does the job as perfectly as possible.

Dividing hospitals into solution shop hospitals and value-adding process hospitals ensures that each type of hospital can be integrated in a way that gets its particular job done most effectively.

Solution Shop Hospitals

The typical general hospital's solution shop is set up to tackle any disorder in any part or system within the body. To deliver on this promise, a good general hospital must have one of every type of diagnostic equipment, and at least one physician from every subspecialty on staff.

The capability to address such problems cannot reside in standardized *processes*. Rather, it is largely resident in the hospital's *resources* — the intuition, training, and experience of the people who practice there and the equipment at their disposal. Indeed, these individual pieces of equipment and the individual specialist physicians must be kept separate, not tightly linked by processes, in order to have the flexibility to do anything for anybody.

A friend of ours has suffered from asthma for much of his life. Each specialist he saw seemed to have another possible remedy. It got to the point that he was taking multiple medications with multiple side effects, whose combined cost at one point exceeded $1,000 per month — yet he was still not well.

Then he visited the National Jewish Medical and Research Center in Denver, Colorado. National Jewish is a solution shop focused on pulmonary disease, particularly asthma. National Jewish is integrated in an optimal way to diagnose the root cause, and prescribe the best possible course of therapy, for disorders of the respiratory system.

When our friend arrived, they administered a unique battery of tests, then assembled an allergist, a pulmonologist, and an otolaryngologist — also known as an ear, nose, and throat, or ENT, specialist — to meet together with him. They integrated their perspectives on his long medical history together with the test results, told him what was causing his symptoms, and prescribed a straightforward course of therapy that finally solved his problem.

In the general hospital systems in which our friend previously sought solutions, each of these specialists existed. But they weren't integrated in the right way. He had seen each of them individually and was passed from one individual specialist to the next. Indeed, the individuals he saw were typically trying to participate in both the solution shop and value-adding process business models in their hospitals.

What these disjointed general hospital solution shops had been unable to do, a coherently integrated solution shop could readily do. Why? A key reason diseases remain in the realm of intuitive medicine is that they arise at the interdependent intersection of two or more systems of the body. Studying the disease from the perspective of only one of those systems, therefore, can't develop an integrated solution consonant with the integrated nature of the disease.

The Texas Heart Institute is a focused solution shop for cardiovascular disease. The Cleveland Clinic has created "institutes" within the clinic that are focused solution shops. One is a heart and vascular institute. Another is a neurological institute populated by neurosurgeons, neurologists, psychiatrists, and others whose work processes are integrated together in a way that optimizes diagnosis and therapeutic recommendations.

The Mayo Clinic is similarly organized. Patients there are processed through solution shops whose specialists, equipment, and procedures are knitted together across each of the potentially relevant organ system specialties, in order to provide the best possible diagnosis as fast and at as low a cost as possible.

Once the diagnosis and recommendations have been made, they tell their patients, in essence (and using our language), "Now this is what needs to be done. You can go over there to our value-adding process organization to have it done, where we'll charge you on a fee-for-outcome basis. Or you can return to your hometown and have it done there. Your choice."

Isn't it too expensive for the average patient to travel to these distant solution shops? No. It's cheap. Two thousand dollars for our friend to travel to Denver was a pittance to the system, compared to thousands of dollars spent on the wrong prescription drugs and devices that were the result of inaccurate, incomplete diagnoses by a stream of individually operating specialists. An accurate diagnosis ensures that you don't waste money and lives solving the wrong problem.

We believe that, ultimately, focused solution shops will be able to bill fee-for-service rates that cover not just the full cost of their services, but also begin to reflect the value of their work. Current reimbursement formulas constrain and distort this at present.

Value-Adding Process Clinics

Are specialty hospitals good or bad for health care? The "specialty versus general" categorization scheme is a faulty distinction that leads to serious misunderstanding and mismeasurement. Some specialty hospitals such as National Jewish, noted earlier, are coherent solution shops. Their focus allows them to put processes into place that integrate the work of multiple specialists in a way that optimizes delivery of the value proposition.

Because the care is still the realm of intuitive medicine, and because feedback from treatment decisions is essential to the learning that takes place, diagnosis and therapy in these institutions must be one and the same. The organizational structure of coherent solution shops like National Jewish makes it possible for the patient to be in the care of a true team.

On the other hand, the organizational structure of the typical general hospital, with its separate departments of specialty care, typically leaves patients in the care of individuals — often several individuals passing the patient from one to another — since the current structure makes working together and coordinating care cumbersome.

Other specialty hospitals are value-adding process hospitals. These include surgery centers, both inpatient and ambulatory. Some of these do many types of surgery, while others specialize in a specific type.

For example, the Shouldice Hospital, north of Toronto, repairs only external abdominal wall hernias. The Aravind Hospitals in India do eye surgery, and the Coxa Hospital in Finland focuses on hip and knee replacement surgery. Meanwhile, the Cancer Treatment Centers of America offer treatment for dozens of cancer types, even integrating complementary and alternative treatments not typically offered at traditional hospitals, but all in a value-adding process model aimed at following the diagnosis of cancer made elsewhere.

Just as solution shops focused on a job can integrate in ways that optimize their effectiveness, VAP hospitals, because they focus on a job, can integrate in optimal ways as well. Because they can optimally integrate the entire process—from preadmission preparation to the surgery process to rehabilitation to discharge — value-adding process hospitals can do their work at substantially reduced cost, with *much* higher levels of quality.

A hernia repair at the privately owned, for-profit Shouldice Hospital, for example, entails a four-day visit for preparation, surgery, and rehabilitation in a truly country-club-like setting. In the typical U.S. general hospital, this procedure is done on an outpatient basis. Yet the entire cost at Shouldice is *still* 30 percent lower than CPT #49560, the standard reimbursement given for comparable hernia repair in the United States.

In the typical U.S. hospital, unanticipated complications that necessitate additional surgical intervention arise in 5 to 10 percent of cases. At Shouldice, complications arise only 0.5 percent of

the time. The Coxa Hospital for Joint Replacement in Tampere, Finland, achieves similarly better costs than general hospitals. The 64 general hospitals in Finland that perform similar surgeries average unanticipated complication rates of 10 to 12 percent; the rate at Coxa is 0.1 percent.

These differences are not simply attributable to intrinsically better and worse doctors; it's in the nature of the integration enabled by a value proposition that focuses on a specific job to be done. Doctors at Shouldice, Coxa, and other focused value-adding process hospitals may get better at doing certain procedures by doing them over and over, but *everything* within these institutions is optimized for a focused job.

A Question of Focus

One of the things Toyota taught the world is that if we do a task differently every time, it's very hard to improve the result. It's when we standardize that we're able to continuously improve and respond to unanticipated problems in predictably effective ways. This is why focused VAP clinics get so good.

Two "Yeah, but" objections are frequently leveled against arguments for focus. The first is that the kinds of focused solution shop and value-adding process hospitals described here can't handle emergencies and complications of their work — and that to be truly effective, they should be backed up with an emergency department and the full arsenal of a general hospital.

It's interesting that the medical establishment long ago became comfortable with the idea that it's okay for many community hospitals not to offer the full extent of services and expertise as some of their larger brethren. But this is rarely used as an argument against the existence of community hospitals. We accept that these hospitals may not offer the full arsenal because patients who need more sophisticated care can be rushed to a tertiary care hospital. There's little reason why similar transfers and referrals couldn't be made from focused hospitals as well.

The second objection is that specialty hospitals and other value-adding process businesses are accused of "cherry picking" or "cream skimming" the youngest, healthiest, and most profitable patients, while the sickest patients typically go to the general hospitals.

To this we say, "Of course." Patients whose multiple, interdependent illnesses ensconce them solidly in the realm of intuitive medicine need the broad and unstructured arsenal of capability that only the best tertiary care hospitals can offer. We will always need such hospitals. But because much of what is done within them today can be done elsewhere much more effectively and at much lower cost, we just don't need as many of them.

The finger pointing we have seen from general hospital executives is rooted in a faulty cost accounting and reimbursement system that maintains the commingling of business models through cross-subsidization. General hospitals ought to get paid much more than they're paid today for the complex, intuitive work that only they can do.

If the business model of general hospitals today can be separated into its component value propositions with distinct business models of care delivery, and the payment system properly

rewards each for their work, what seems to be cherry picking today will in reality be recognized as the efficient distribution of resources.

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Sidebar: Solution Shops vs. Value-Adding Processes

There are two main business models in hospitals — one casts the hospital as a solution shop and the other casts the hospital as a place where value-adding processes are performed. Here's a rundown on the two types:

The Solution Shop Hospital
The solution shop activities within a hospital — essentially, diagnostic activities — require centralized laboratories filled with the most advanced instruments to analyze blood and tissue samples, and radiology departments with the most sophisticated imaging technologies, such as computerized tomography (CT) scanners, magnetic resonance imaging (MRI) machines, and positron emission tomographic (PET) imagers.

Those who assemble and interpret the results are schooled in the arts of intuitive medicine. In some instances even the finest can't definitively diagnose the problem: the best they can do is develop hypotheses.

In these instances caregivers need to test their hypotheses of what the disorder might be by experimentally treating the patients. If they respond, it verifies the hypothesis. If they don't, it signals that something else is going on, and the physicians initiate treatment for their next best hypothesis, and then the next best after that, and so on.

The Value-Adding Process Hospital
Value-adding process activities comprise the other business model in a general hospital. Their value proposition addresses the second of the jobs-to-be-done — to fix problems after definitive diagnoses have been made. Hip and knee replacement surgeries, the setting of many fractured bones, coronary artery bypass and angioplasty procedures in the heart, and surgical repairs of cataracts and hernias are examples of value-adding process activities.

These activities are not unlike those that occur in a university, a manufacturing plant, or the kitchen of a restaurant. Partially complete (or partially broken) things are brought in one door. The workers pick up a set of tools, follow a series of relatively proven value-adding steps, and then ship a more complete product out the other door.

Innovators' Insight

How Do Disruptors Perform in Recessionary Times?

History suggests that disruptive companies don't necessarily suffer in downturns

Scott D. Anthony and Tim Huse

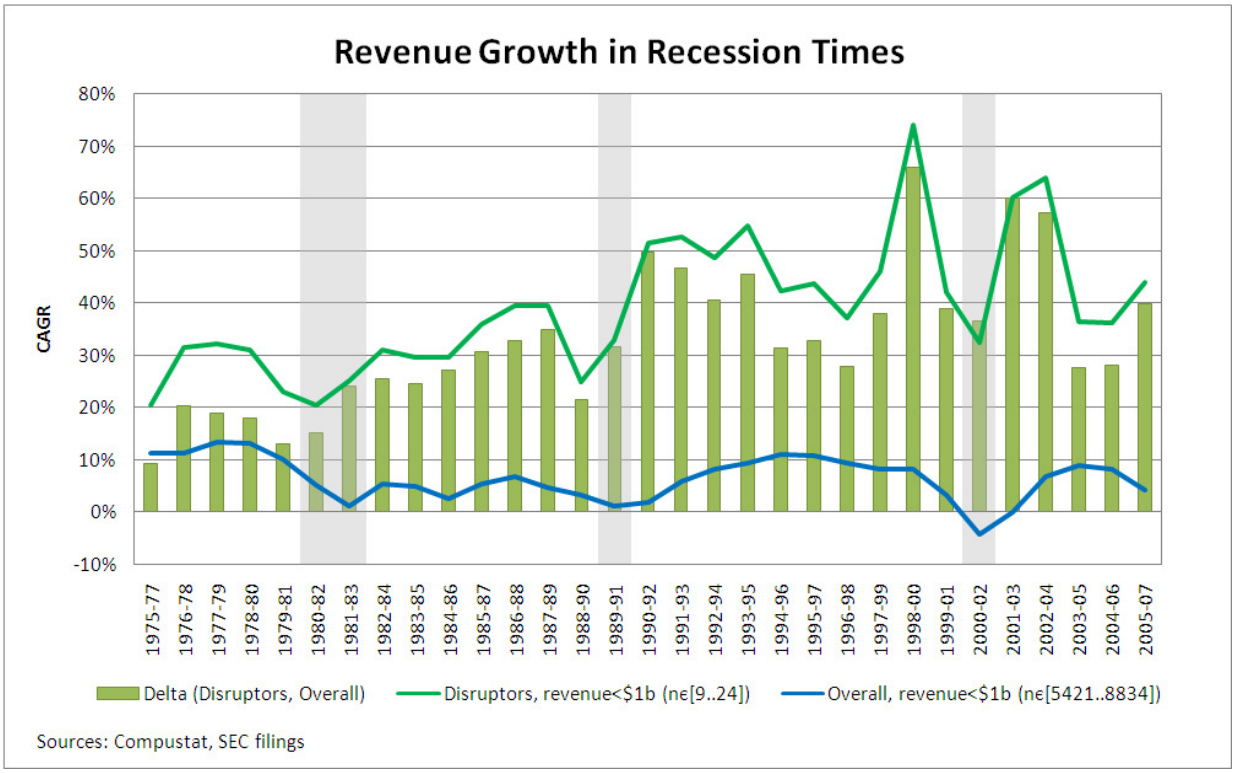
It's natural to assume that one casualty of today's tough economic climate will be up-and-coming disruptive companies that have had some early success but haven't broken through to the mainstream. After all, consumers and companies snapping collective wallets shut will surely take the wind out of the sales of the up-and-comers.

History suggests otherwise. We went back to look at how up-and-coming disruptors (defined as disruptive companies with revenues of less than $1 billion) did in the face of the last three economic downturns in the U.S. (as dated by the National Bureau of Economic Research to cover 1980-1982, 1990, and 2001).

In 1979, 11 such companies, including Intel, Home Depot, Nucor, and Southwest, fit our criteria. Their compound annual growth over the recession between 1979 and 1982 was 22 percent. Between 1989 and 1991, the sample of 11 up-and-coming disruptors, which included Best Buy, Cisco, and Charles Schwab, grew revenues by 33 percent. Between 2000 and 2002, 23 up-and-coming disruptors such as Google, Amazon, and Research in Motion grew revenues by 32 percent.

Our sample is heavily biased, but still the directional results are interesting. One natural question is whether all small companies grew at similar rates. They didn't — in fact the 8,200 or so public companies with less than $1 billion in revenue in 1999 saw collective revenues dip by 4.2 percent a year between 2000 and 2002.

The disruptive advantage goes beyond recessionary climates. The chart below compares the two-year compound annual growth rate of disruptive companies with less than $1 billion in revenues to the compound annual growth rate of all public companies with less than $1 billion in revenues.



The up-and-coming disruptors have grown in good times and in bad. Notably, the disruptive companies rebounded visibly faster and more strongly after each of the three recessions.

Interestingly, the gap between the revenue growth rates of these two groups of companies has been increasing over the past 30 years. Certainly, a number of companies that experienced unprecedented growth during the Internet bubble might cause the spike in the late 1990s. However, even without this distortion the trends still diverge, providing evidence that the tendency for disruptors to outperform the market is not likely to reverse any time soon—if at all.

If you are an investor or analyst, this research suggests paying careful attention to up-and-coming disruptors who have built a solid base from which to drive further growth, such as Alibaba, iRobot, EnerNOC, K12, First Solar, Facebook, and LinkedIn. If you work on an operating company that is debating whether to postpone disruptive innovation efforts until “better times” arrive, be careful. You might be missing great growth opportunities and creating space for competitors to create substantial competitive advantages in tomorrow’s great growth markets.

Voices of Disruption

Interview: Ron Gonen, Co-Founder and CEO, RecycleBank

Ron Gonen is CEO and co-founder of RecycleBank. Previously, he was a Senior Consultant at Deloitte, and a 2002 co-recipient of Deloitte's National Impact Award for his work developing a consulting unit that provides pro bono consulting services. Ron Gonen talked with Lillian Zhao about leading the disruption of the recycling industry. Special thanks to Tim Huse for his contribution to this interview.

Q. What is RecycleBank?

A. RecycleBank helps municipalities dramatically increase recycling by rewarding households for the amount they recycle. We do that by providing every household with a recycling container. This container is embedded with a chip that is read by the mechanical arm retrofitted onto the city's recycling truck. In this way, we identify which households recycle and how much. Households can then log onto our website and see each week how much they recycled and how many points they have earned--similar to looking at a bank statement. Points can be redeemed at over 400 local and national stores. Our website also shows how many trees and gallons of oil were save by recycling. In short, households benefit because they are rewarded for recycling, municipalities benefit because they pay less to landfills, and our reward partners benefit because they get access to tremendous in-home advertising from us.

Q. Are there other players who benefit from your service?

A. First, recycling companies get increased material supplies. They are long-time players in this space and we want them to see us as a phenomenal innovation that can help grow their business. So we create a lot of value for the recycling companies and they in turn promote our expansion in their areas. Second, we create value for a number of consumer products companies, for instance Coca-Cola, by keeping plastic, aluminum, and cardboard for manufacturing and packaging out of landfills and allow them to be put back into the manufacturing supply chain. Third, there is value created for the environment on multiple levels. The power of RecycleBank is that we create value for multiple constituents.

Q. How does RecycleBank itself benefit? How do you make money?

A. Municipalities pay us a cut of the savings we generate by diverting waste from the landfill. For instance, if municipalities are currently sending 100,000 tons of waste to the landfill per year at $70 per ton, and we are able to get people to recycle and divert half of this waste stream, which results in a savings of $3.5 million. Our fees come out of these savings. We sign long-time contracts and benchmark against the time when we start. We also generate revenues through advertising from people coming onto our website looking to redeem their points. There are a number of advertising opportunities that we are able to pursue.

Q. How do you measure RecycleBank's impact and success?

A. We measure impact by how much we are able to increase recycling, which directly determines our profit. If we were able to increase recycling, we get paid by the municipalities. Also as recycling increases, we reward people with points, and as they come to our website to redeem their points, we can monetize that by selling ads on our website. So revenues depend on our ability to increase recycling, and we have been very successful at that. To date, we have saved 574,935 trees (measured by tonnage of paper recycled) and 38,405,690 gallons of oil (measured by pounds of plastic, aluminum, and glass recycled). In terms of growth, we will be providing services in 15 states by the first quarter of 2009.

Q. Have competitors emerged?

A. Not yet, but I am sure there will be competition at some point in the future. That's the American way. At the end of the day we've got to be the best at what we do. Our goal is not to worry when competition is coming; our goal is to provide great service and to pursue an aggressive growth plan that recognizes the importance of economies of scale.

Q. How do you plan to grow and where?

A. We grow in two ways. One is our current customer base. Someone told me very early on: "If you are really as good as you think you are, people should say it for you." So our number one focus is to provide great service to our customers. And when you provide great service, you get great references. The second way we grow is by building our staff. We are trying to find great people to get out there and sell and deploy our service. Geographically, we started in the mid-Atlantic region, but by January 2009, we will be expanding service to other states such as Ohio, South Dakota, Minnesota, Texas, Nebraska, and Florida.

Q. How did you test some of the key assumptions behind your idea?

A. We launched our pilot program in two neighborhoods in Philadelphia: a lower-income neighborhood and an upper-income neighborhood. My biggest learning was that I expected RecycleBank to be really popular with kids, but instead it was the parents who were getting online and redeeming the points because we had very valuable reward partners, such as supermarkets and pharmacies. Another key learning was how long the sales cycle can be when selling to governments. However, the pilot program worked, and it worked in a big way. Everyone in the city wanted to participate. This led to learning how to deal with demand. We did not have the capital or the staff to grow. We still had operational issues that we had to test and work out. I had to learn how to scale properly.

Q. In the face of the current economic slowdown, do you think households will recycle more, or do you anticipate people buying fewer products and thus recycling less in absolute terms?

A. I think it depends on the state of our business. In growth mode, I think the economic slowdown is potentially helpful to our business, because we put on average an annual $400 worth of points into peoples' pockets that they can spend. If we were already at our peak, then a bad economy is bad for anybody. But we are in growth mode, and we do not feel the situation has an impact on our business

model right now. Six months from now, a year from now, that's a different story. But today, we are continuing with our plan to grow.

Q. What vision is guiding RecycleBank?

A. Today we are recognized for revolutionizing the way people view recycling. Long-term, my goal is to revolutionize the way people and companies view consumption. When people go and buy something today, they view it as a linear process: 'I buy it, I use it, and I throw it in the garbage.' I want people to view consumption as cyclical: 'I buy something, I use it, I recycle it, and I get rewarded for the value I have created by making sure it got recycled, then I go back and buy something else (that was manufactured from recycled material).'

If you own a home and you buy something during the week, I want RecycleBank to service you. My vision is to service as many homes as possible, to keep material out of the landfill, and make sure companies are manufacturing using only recycled content. And at the center of it all is teaching consumers to view consumption as cyclical, not linear.

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