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Want to Improve Innovation?
Tailor Your Solution, Don't Import Best Innovation Practices

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Executives in large companies often ask: why are we not better at innovation? There is no shortage of sound advice on how to improve. You need more novel ideas. You need to work with others outside your company. You need different funding mechanisms. You need to protect the new and radically different businesses from the old. You need to execute innovations better. The problem is that all this advice is based on one assumption: the same advice fits all companies. But the truth is that different companies have different innovation challenges. Following a particular piece of advice can oftentimes be wasteful or even harmful. How do you avoid doing the wrong thing for your company and instead spot your own problems, and then fix them?

To underline the importance of this question, consider how two CEOs confronted different innovation challenges. When Steve Bennett arrived as the new CEO of Intuit, the producer of financial software programs like Quicken and Quickbooks, he found a company that had lots of ideas, many gained externally, but little discipline. Recalls Bennett, "We had a lot of good ideas but either couldn't fund them or weren't disciplined at execution."[1] To fix this, he focused the organization on *executing* on its ideas. The result is that Intuit now has matched its strength in idea generation with a new capability of idea execution. In part because of this effort, revenues and profits are up 55% and 72% respectively over the past three years.

About the same time as Bennett took the helm at Intuit, A.G. Lafley became CEO of Procter & Gamble, a company that had been very strong in developing new products internally and bringing them to market. Lafley looked at P&G's innovation challenges and decided the company needed to become much better at generating ideas *outside* the company. After five years of efforts and investments, P&G now has a state-of-the art *external* idea sourcing process that feeds into its strength in idea execution. This has helped fuel a five-year increase in sales and profits of 42% and 83%, respectively.

Bennett and Lafley were confronted with different innovation challenges, which required different solutions. Their companies would likely have been much worse off today if they had simply imported the latest best-practice in innovation management, as did a hardware technology company we studied. Believing that the company needed to generate more and better ideas, managers set out to generate more ideas through "blue-sky" brainstorming sessions. But the problem turned out not to be idea generation (they had plenty of good ideas) but an inadequate screening and funding

mechanism—ideas never got funded nor died. In fact, managers made the innovation process worse, because more ideas were "pumped" into a badly broken funding mechanism. Only when managers eventually installed a selection mechanism did things improve.

These contrasting examples show that every company needs a tailored solution to its particular innovation problem. Thinking this way requires a framework that allows managers to spot and address their particular challenge, but such a framework has not existed up until now. The Innovation Value Chain framework that we outline in this article lets you pinpoint your particular innovation problems and then develop a solution to fix them. It is based on our decade-long research on effective innovation in large companies (see the exhibit "Our Research Behind the Innovation Value Chain").

In a nutshell, the Innovation Value Chain views innovation as a process that begins with idea generation and ends with diffusion of developed ideas (see the exhibit "The Innovation Value Chain"). Innovation here refers to ideas for creating new businesses, products and management practices. Executives should view a company's innovation process as one overarching chain, along which there may be one or more steps that are done really well in a company (the strongest link) and one or more steps that are done poorly (the weakest link). By considering the entire chain, managers can better assess where their company's problems lie and then fix them.

By adopting this approach, managers will gain two crucial insights to help them improve innovation performance in their company. First, a company's innovation capability is only as good as *the weakest link* in this chain. Managers thus need to pinpoint the weakest link to improve and not import best-practice solutions that address other steps. Failing to do so will undermine innovation. But managers can only know how to do this if they take a chain-view of innovation as opposed to looking at each step in isolation. Second, *the strongest link* in the chain is also a weakness: by viewing a strong link as a company's core capability, managers set out to further strengthen this part of the Innovation Value Chain, which can make things worse (as we explain later).

THINK INNOVATION VALUE CHAIN

To improve innovation, executives need to view the process of transforming ideas into commercial outputs as an integrated flow – rather like the value chain of physical goods which transforms raw materials into finished goods[2]. This *innovation value chain* comprises three phases: generating ideas (by generating ideas inside a unit, outside the company, or across units in a company); converting ideas (by selecting ideas for funding and then developing ideas into products or proven practices); and diffusing those products and practices. Let's describe each step in this chain before we look at a chain's weakest and strongest links.

Innovation starts with an idea. No good ideas, no good innovations. Managers often look inside their own functional department, business unit or country subsidiary for creative sparks. The traditional part of idea generation is thus to assess the in-house capacity for creativity: *do people in your unit create good ideas on their own?* Although this type of idea generation is important, it is also limited because many good ideas can be generated by looking outside the immediate boundaries of a unit. The other part of idea generation is thus, *do you source enough good ideas from sources outside the company?* This "open innovation" approach involves tapping into the insights and knowledge that lie beyond the boundaries of the company – including customers, end users, competitors, universities, independent entrepreneurs, investors, inventors, scientists, suppliers, and others far beyond a company's industry. But many companies do this poorly, resulting in missed opportunities and lower innovation productivity. For example, Sony had an impressive record through the 1980s of developing new-to-the-world products such as the Walkman and the Playstation, but it increasingly became insular in its approach to innovation and its new products suffered. According to CEO Howard Stringer, Sony engineers started to suffer from a damaging "not invented here syndrome" by not interacting enough with the outside world[3]. One result was that Sony developed unwanted products and missed good opportunities.

Another crucial—and often overlooked—way of generating new ideas is to combine insights and knowledge from different parts of the same company in order to develop new products and businesses. This is the third way of generating ideas in the Innovation Value Chain: *Do you create enough good ideas by working across the company?* Such combinations are not easily achieved, however, because most companies are structured in a way that separates the business units and divisions

from one another, and discourages people from sharing their ideas. Take the example of Bertelsmann, the large German-based global media company, which is known as a decentralized company where cross-unit collaboration does not easily take place. Its managers took a staggering three years to catch up with Amazon.com in launching an online bookstore, in large part because its publishing houses, the book and music clubs, and the distribution and multimedia divisions could not collaborate on this new business opportunity. According to then-CEO Thomas Middelhoff, "For too long, we sat in endless coordination sessions and asked, 'who should respond? To whom does this business belong?'"[4]

Are you good at screening and funding new ideas? If you do the idea generation steps well, you will have no shortage of interesting ideas. But that can be a recipe for disaster if you have no effective system for screening them: In some companies the problem is that managers screen too hard. Tight budgets, conventional thinking and strict funding criteria combine to shut down the vast majority of novel ideas. Employees quickly get the message, and the idea flow dries up. Consider BT, the UK's largest telecoms group. Stewart Davies became head of R&D in 1998 at a time when the group was in deep financial difficulties. He reviewed the R&D operations and recalled being "staggered by the inventiveness and above all the frustration of the people" he met. There was no shortage of good ideas, he concluded, but the standard funding process killed off new projects that came its way, preventing them from even receiving seed money[5].

In other companies, the problem is that managers do not screen hard enough: the organization overflows with new projects of varying quality, resulting in a lack of strategic coherence, duplicate efforts, and fragmentation of effort where many projects are chronically under-funded and lack enough people. Consider the case of Emap, one of the UK's leading media companies. It set aside approximately £100 million for the creation of its Digital division in 1999 and "just gave out money" to anyone with an Internet-based idea. By 2000 there were 43 separate businesses directed towards on-line media offerings. The unit was closed down two years later with heavy losses and no significant new business to show for its efforts[6].

The challenge doesn't stop once good ideas have received their initial funding. The subsequent challenge is, *Are you good at turning ideas into valuable products and businesses?* Ideas that have been selected for further development often go nowhere because they languish in a part of the organization that is too busy doing other things,

or that doesn't see their potential. This problem is particularly acute with the development of new businesses, because they are almost always seen as misfits. For example, GE invested in a small Energy Management services business in the 1990s to address the burgeoning market demand for energy-efficient lighting, consumer appliances and heating systems. But despite its early successes in winning contracts and developing a market position, there was no natural home for it within the product-focused GE structure. The Energy Management business struggled along as a misfit for a few years before being closed down, and GE missed out on an opportunity to gain early-mover advantage in this growing industry[7].

Are you good at diffusing developed ideas across the company? If done right, good ideas turn into good new products or new businesses. But the innovation challenge does not stop here. The last step is to extract as much economic value from these new products or businesses as possible, by making sure that the relevant parts of the company are pushing them across desirable geographies, channels, and customer groups (this isn't about getting customers to buy once the product is in a market--the traditional challenge of sales and marketing--but getting employees in the company to adopt, launch and push products and businesses wherever possible). In large companies with many subsidiaries and organizations, however, such diffusion is far from automatic and swift. Consider one of Procter & Gamble's classical examples a number of years ago in Europe. The company's management policies favored extensive product and market testing to demonstrate "superior total value" and placed ultimate authority for launching new products on the shoulders of national brand managers. But these policies led to painfully slow rollouts of new products. For example, managers launched Pampers in France an astonishing five years after the product was first introduced in Germany. Meanwhile, Colgate had noticed P&G's early success in Germany and launched a me-too product called Calline (a literal French translation of Pampers) two full years before P&G launched Pampers in France, gaining a dominant market share.

A COMPANY'S INNOVATION PROCESS IS ONLY AS GOOD AS THE WEAKEST LINK

Is idea generation, conversion or diffusion most important? Business writings that advocate one of the parts of the chain imply that the one part they advocate is the most important. But that's not correct: what is important to improve depends on the

company in question. Each of these parts is a necessary but not a sufficient requirement for full innovation success. That means that a company's capacity to innovate is only as good as its weakest link in the Innovation Value Chain (for a quick assessment of your company's idea-value-chain, see the exhibit, "15 Quick Questions to Rate Your Company's Innovation Value Chain"). In our research, we have found that companies often fall into three broad cases of the weakest link (see the exhibit, "Only as Strong as the Weakest Link"). The first is an *idea-poor* company. The idea-poor company is good at the "downstream" part of the Innovation Value Chain but cannot generate good ideas. The result is lots of time and investments going into developing and diffusing poor ideas, leading to poor products and results. Improving idea execution further by importing the latest and best innovation execution practices espoused in the business press is not going to help much and is likely the wrong advice. The argument that companies should focus more on execution in their innovation processes may be true for some but not for these companies. It's not the key problem. The bottleneck is elsewhere. This company needs to improve its idea generation.

In contrast, the *conversion-poor* company has lots of good ideas that managers do not screen and develop properly. In the hard-line companies, good ideas don't see the light of day. They die in budgeting processes that emphasize the incremental and certain, not the novel. In the "let a thousand flowers bloom" approach, in contrast, managers do not cull ideas easily and do a poor job discerning good ones from bad ones. Improving the idea generation process by adopting best innovation practices like "blue ocean" creativity tools or "open innovation" methods is not the answer for these companies, as the problem lies elsewhere. The company needs better idea screening devices, not better idea generation mechanisms.

The last problem case is the *diffusion-poor* company. The problem is that new products and new business concepts are not rolled out across geographies, distribution channels, and customer groups. As a result, good innovations are not monetized. By becoming even better at generating ideas and converting them to new products and businesses, this company can do a bit better, but the real upside lies in aggressively monetizing what it has already been able to develop.

By spotting the weakest link, executives can figure out which part of the Innovation Value Chain to focus on. This is a radically different approach from the typical one whereby managers adopt any number of best innovation practices that are introduced

to them by the business press, management consultants, business academics, and other experts. These practices may be great but likely not for your company's situation. There is no universal best-practice in innovation that managers can grab.

THE WEAKNESS OF THE STRONGEST LINK

During the course of our research, we have often heard managers extolling their particular innovation strength: "We're really creative", or "we're very good at developing products fast," or "we're good at going to market with new products." But these strengths can in fact be weaknesses. To grasp this, let's go back to the hardware technology company that we mentioned in the introduction. This company was very good at generating ideas. At any point in time there were at least 50 very good ideas for new products and businesses floating around in the company. But because managers did not screen these properly (saying 'yes' to the best ones and 'no' to the others), few ideas got any traction. But new ideas kept coming. And the engineers became increasingly frustrated, seeing their creative talents being wasted. Over time, cynicism set in, creating a rift between engineers and managers. To accommodate the engineers, managers then decided to hold idea brainstorming sessions to show that they listened to the engineers. But this of course just made the problem worse, because these sessions generated even more ideas. Oddly enough, this company would have been far better off with a trickle of good ideas rather than the deluge that overwhelmed the managers.

This example reveals a highly counter-intuitive insight from the Innovation Value Chain concept: your innovation strength can also be your weakness. As the example illustrates, having too many good ideas can choke a company that does not have good screening devices. Or consider companies that have invested time and money in developing a great screening process, efforts that are wasted if there are only a few good ideas to consider or if the subsequent development process is poor. This also holds for diffusion: pouring resources into developing a great diffusion capability is money poorly spent if there is nothing good to diffuse. The strongest link is no good if it entails spending money without good returns or if it leads to trouble in other parts of the Innovation Value Chain.

The implication is that managers need to stop strengthening what they see as their core innovation capability and instead start focusing on lifting the weakest link[8]. This

is why it is important to consider all the steps as an integrated flow, so that managers can spot the weakest and strongest links in your company's innovation process.

Let's turn to fixing a weakest link once spotted. Many things can be done to fix any of the steps in the Innovation Value Chain, and indeed much good advice exists for each step (see the exhibit "How Leading Innovation Concepts Relate to the Innovation Value Chain"). In the following pages, we highlight only a few important solutions that stood out in our research as being particularly helpful for managers.

FIXING THE IDEA-POOR COMPANY

Why do some companies have a shortage of good new ideas? Managers often focus on stimulating creativity in their own unit by deploying creativity tools such as brainstorming, customer value innovation analysis, and the like. But other actions are required to generate ideas beyond the boundary of the immediate unit. Our research indicates that the lack of such broader idea generation is often a result of inadequate networks – a lack of good quality links with people outside the company, and a preference for talking to immediate colleagues rather than building links to people in other departments or divisions. The solution is to work on building external and internal cross-unit networks so that ideas flow from the new connections that are made.

Building External Networks. There are two fundamentally different approaches to building external networks and they fulfill very different objectives. So the first step here is to decide which of the two approaches to take.

The first approach is to develop an *external solution network*, geared toward finding a solution to a specific problem. This is what A.G. Lafley built at P&G.[9] In-house product developers now translate a customer need into a technical brief, which is then sent out to many contact points outside the company to see if someone, somewhere, can provide a solution. The pharmaceutical company Ely Lilly has spearheaded an inventive "solution-seeking web-site" called Innocentive.com that it, P&G and others use to find solutions among the world's many scientists and engineers. Companies ("seekers") post a specific technical problem (one case: "solve how to protect fatty acids from oxidation") that any of the more than ten thousand

registered engineers, chemists and other scientists can tackle. The best solver gets the attached monetary reward (in this case, $ 20,000).

The second approach is an *external discovery network*, geared not toward finding a solution but to discovering new ideas within a broad technology or product domain. Companies need to develop different "tentacles" in relevant geographies. Consider how Siemens, the $90 billion large German-based electrical engineering and electronics company, does this in Silicon Valley. Since 1999 it has built a 20-person unit in Berkeley near Silicon Valley called the Technology-to-Business Center (TTB), focused on commercializing technologies from outside the company. Team members have over the past few years developed numerous personal relationships with scientists, Ph.D. students, venture capitalists, entrepreneurs, Governmental labs, and company research centers in order to identify new technologies that can be used by any of the company's 11 operating divisions. The team spends time visiting these contacts, and keeping their eyes open for intersecting technologies and business ideas, but the real value they provide comes from bridging the gap between a good external idea and a specific Siemens business. In partnership with the external innovators, TTB identifies the best partner within Siemens' diverse businesses, defines a new product, builds a technology prototype, and validates the business model. What they deliver to Siemens businesses is not just an external technology but a complete recipe for how to make money with it.

One of TTB's successful idea generations involved interacting with a Ph.D. student from Columbia University. The student had pioneered the idea of applying economic models, like aggregate supply and demand functions, to managing the quality of service on computer networks. TTB hired the student and first tried to apply the technology in Siemens' telecom division. When the telecom downturn slowed their progress, TTB quickly shifted focus to the factory communications division in Siemens and identified an unmet customer need in guaranteeing real-time traffic over factory WLAN networks. As a result of TTB's diverse external network, Siemens was able to release the first ever WLAN product with real-time guarantees, and take a leading place in that market.

Networks aimed at discovery should be *exploratory*, not closed—their objective should be to learn, not tell. To illustrate, consider how Intuit developed a new product called QuickBook Simple Start.[10] They used their process, dubbed "follow me homes," to visit small business owners, often one or two person businesses, to see

how they did their accounting for their business. A 10-person team started off with 40 follow-me homes. Visits followed the principle of observing and learning about how small-business people deal with their receipts, payments and banking (not even how they use a financial software packet, which many do not). Product developers step into the shoes of users to look at the problems they face, from their viewpoint. They learned that many users don't want accounting, don't understand much of it, and do not know many accounting terms. So they set out to strip down QuickBooks to a much simpler version. And then out again to see if users would like this, and they didn't. It was not simple enough and used too many accounting terms. To get it right, the Intuit development team had to go through the follow-me-home process six times. The resulting product has been a bestseller.

When managers develop external solution and discovery networks, the key design principle should be *diversity* and not the number of contacts—that is, tapping into many unique contacts as opposed to interacting with many similar ones. Different kinds of customers provide different kinds of feedback and ideas for new products. Talking to customers, suppliers, competitors, companies in different industries, and university research labs provide more diverse grounds than talking only to a large number of similar customers. That's the opposite of quantitative market research where the purpose is to verify a trend by asking many similar people. Here the idea is to generate ideas by asking many *dissimilar* people. Think not volume of contacts to the outside but different kinds of contacts.

Building Internal Cross-unit Networks. A complementary approach to generating new ideas is to build a cross-unit network inside the company. Employees who do not know each other are unlikely to jointly come up with new ideas. A superficial approach of launching a few cross-unit brainstorming meetings is not going to do the trick. It's artificial and assumes that people generate ideas together on demand. Managers need to cultivate ongoing dialogue and knowledge exchange between people from different units. It needs to be ingrained in the normal way of working.

P&G has done this for years, with many successful cross-fertilized product and business creations as a result. You only have to consider the development of Olay Daily Facials to see the power of this approach. The idea was to develop a facial cream that provided both excellent cleansing and moisturizing. People from the skin-care area provided expertise on the surfactants needed in cleansing; experts from the tissue and towel area provided substrate knowledge; and people involved in Bounce

(a cleaning product) provided expertise from a similar technology that put fragrance on clothes. Three areas recombined their expertise to create a new and highly successful product.

These collaborations do not happen by chance, however, but are a result of a number of organizational mechanisms. To cross-fertilize across all its units, P&G has developed 30 communities of practice, each of which involves people from different areas of the company. They are built around areas of expertise, such as fragrance, bleach, analytical chemistry, and skin and hair science. Based on voluntary members, these communities also solve specific problems that are brought to the group. In addition, representatives from the ten business units meet every month in the global technology council, where they ask questions such as "what are the new technologies with brand applications?" All of this is supplemented with an "ask-me" feature on the internal intranet, where employees can pose a problem or a need and that gets pushed out to 10,000 employees around the globe and then directed to people with expertise in the relevant area. At a more fundamental level, P&G promotes from within and rotates people across countries and units, the result being that people build extensive personal cross-unit networks.

FIXING THE CONVERSION-POOR COMPANY

Why do companies find conversion so difficult? Managers often argue that the system is too haphazard, and that they need a more formal process akin to a stage-gate model for selecting and nurturing the most promising ideas. But our research suggests the opposite. Most companies have no shortage of formal systems for managing ideas, but the number and diversity of people involved creates a risk-averse and bureaucratic process. As one senior executive in a financial services company told us, "if I want to get a new idea to market quickly, I take personal control of it and I steer it through the system. If I want to kill an idea off, I put it into the formal process."

There are no simple solutions to the conversion problem, but research suggests that two principles can go a long way—*multi-channel funding* and *safe havens*.

Take the fourth step in the value chain—screening and funding ideas. If you're a junior person with a good idea, what can you do? You can go to your boss, but your

boss may not like it or have other priorities, especially because your good idea is not incorporated into his budget. In most companies, that's the end of it. But a multi-channel funding model provides you with other options – from small discretionary pots of "play money" through to full-scale venture funds. Consider the case of oil giant Shell's Gamechanger unit. This is a well known and early example of an alternative funding channel, but what stands out is its continued success ten years after it was established in 1995. Gamechanger is a 25-person unit cutting across the major divisions of Shell with an annual seed-funding budget of $40 million in 2006. Headed by Leo Roodhart, a corporate-level executive, the remaining Gamechanger team members are drawn from and reside in Shell's three main sectors of oil exploration & production, retail, and chemical.

Here's how it works. An employee with a bright idea submits a half-page proposal on the Gamechanger website, and within a week he or she will meet with the Gamechanger Panel (at least two people). This meeting allows the panel members to make an initial assessment, and about 50% of the cases are promising enough that Gamechanger typically buys three weeks' of the employee's time to do some additional investigation.

The promising cases return within six months to an Extended Panel of three Gamechanger employees and three external experts. They present a formal business plan, and a request for funding, and again about 50% of these get supported – typically with around $300,000 - $500,000. If funding is agreed, a series of 3-4 tollgates are then set up to review progress, with clear deliverables at each stage. For ventures that get through all these stages and achieve "proof of concept" (which is about 10% of all original submissions), they formally leave Gamechanger at that point, and are either moved into one of the divisions (the vast majority) or they are transitioned into Shell Technology Ventures which operates as a spin-out operation.

Gamechanger has achieved an unusual level of success. Since its formation in 1996 a total of 1,600 ideas have been submitted. The flow of submissions is constant, with 175 submitted in 2005 and between 150-200 per year over the past five years. And it has now built up a track record of success. A remarkable 40% of all development projects in Exploration & Production now have their origins in Gamechanger ventures.

The other key principle in improving conversion is the creation of *safe havens*. Consider the case of a UK high-tech company we call Tenco: it established a separate unit in 2000 whose mandate was "to polish up the hidden gems in the system and grow them rapidly". Of the 13 nascent businesses it was responsible for, nine went on to become viable businesses with solid revenue streams of their own.

Tenco's safe haven model sought to achieve a delicate balance between business autonomy and leverage of corporate resources. To get leverage, the management team built a governance structure that kept the new business teams close to the mainstream Tenco businesses. They remained within the Tenco legal structure and they were overseen by a Board that included heavy-hitting line executives. When one new business team was looking for access to an existing Tenco sales channel, a member of the Board was able to broker the match in a way that worked for the team and the division involved.

To instill autonomy, they located the new business teams in a separate physical location and gave them high levels of operating autonomy. To create an entrepreneurial spirit, they developed a novel risk/reward compensation scheme for the new business managers. Base pay was lower than for a normal Tenco job, but if managers hit all their numbers, their rewards would be as high as those of Tenco's top executives. The management team deliberately avoided the equity-participation model, for fear that this would cause their successful ventures to spin away from the company. And it has worked well: successful venture managers have been reasonably well rewarded *and* they have retained their allegiance to the company.

FIXING THE DIFFUSION-POOR COMPANY

One revealing insight from our research is that diffusion does not happen by fiat. Executives can't just order a company-wide roll-out of developed ideas, be they products, businesses or best practices. Instead executives need to start thinking about company-wide roll-outs as a social process, much like creating a buzz among consumers for a new fashion item. They need to appoint an *evangelist* for each new product, business idea, or best practice. Evangelists take on the mission of "selling" internally. They are the Paul Reveres of a company.[11] They call people, travel, visit customers with sales people, and relentlessly use their own personal connections to increase awareness among employees and convince them to adopt a new product or

business concept. Good evangelists have a *high-reach* personal network, one that consists of *strong* personal relations with many people *in different* parts of the company. The relation has to be strong so that the evangelist can convince the colleague to adopt the product or practice. But the evangelist's relationships also have to span many parts of the company, across business units and country operations, so that across-company diffusion ensues.

Consider Sara Lee's launch of Sanex in Europe. Sanex was first created in Spain, and quickly achieved leadership in the bath and shower segment as a "healthy skin" concept. Excited by this success, Sara Lee's European executive team asked Martin Munoz, the president of Spain and creator of Sanex, to take personal responsibility for coordinating a Europe-wide launch. The only problem was that Sara Lee's highly decentralized structure made it difficult to push a Europe-wide launch, and several country managers had already expressed their lack of support for Sanex. So Munoz made it his personal crusade to win them over and get Sanex to market across Europe. He had excellent results from Spain to help make the case, but as he said "success is never enough". He got lucky early on with the Dutch marketing manager who had lived in Spain. The marketing managers in the UK and Denmark originally said no, but Munoz persevered – he visited them many times, and he brought them out to Barcelona to sell them on the concept. He was also astute to internal changes, and moved quickly to visit, talk to, and convince a new marketing manager who had just replaced a skeptical one in the UK. His tenacity prevailed, and Sanex had successful launches in four countries after two years. It was eventually launched in 29 countries, and for several years was Sara Lee's best selling brand in its household and body care division.

NEW METRICS, NEW ROLES

By working on the weakest link—whether it is idea generation, conversion, or diffusion—managers will improve their company's innovation performance. Over time, a step that was considered the weakest link will likely become a strong one, yielding the honor of being the weakest sibling to some other part of the Innovation Value Chain. And so managers constantly need to move from step to step of the Innovation Value Chain to improve its parts.

Taking an Innovation Value Chain view does not mean business as usual. Managers need to make two changes to their operations. They first need to implement a new set of key performance indicators to track performance across the chain (see the previous exhibit, "The Innovation Value Chain"). Old metrics--like R&D expenditure per new product launched, ROI per new product, or R&D expenditure as percentage of sales--won't do. They are too crude to track the performance of each step of the Innovation Value Chain.

Setting good metrics for each of the steps is not difficult. For example, let's take external idea sourcing. Start with a key one--the number of good new ideas that your company (or your unit) sourced externally last year. You need to set some standards for what you deem "good" vs. trivial and what amount you consider an ideal flow of good ideas from the outside. You may also get a rough estimate of the ratio of good ideas to all ideas sourced from the outside (good or bad). A low ratio of good-to-all ideas tells you that you have a lot of noise in your Innovation Value Chain. As you do this, you will likely discover that your current tracking system does not collect these data, and you may have to start out with an internal survey among employees to collect this.

Managers also need to cultivate new roles for employees in the organization. Each activity requires employees to perform a certain role. At Siemens' Silicon Valley unit, team members are *external scouters* seeking to discover new ideas outside the company. At Procter & Gamble, to cross-pollinate ideas better, many scientists assume the role of *internal idea brokers*, talking to colleagues across the company to identify new ways of combining technologies from different parts of the company to develop new products and businesses. At oil giant Shell, to better screen and fund ideas, Leo Roodhart and his Gamechanger team members act as *internal venture capitalists*, funding and overseeing new ideas in a phased manner with increasing levels of commitments. And at Tenco the venture board act as *project champions,* steering new businesses to success by providing a safe haven. And finally, people like Martin Munoz at Sanex occupy the role of *internal evangelists*, trying to get the rest of the company to adopt, launch and push new products, concept and businesses.

People can assume these roles as part of their normal job. For a big effort, like the Siemens operation in Silicon Valley or Shell's Gamechanger, some full-time jobs are needed.

By taking an Innovation Value Chain view of innovation, managers end up thinking differently about improving innovation in their company. Rather than importing any number of best innovation practices advocated in the business press and in management books and articles, they first spot and fix the weakest link in their company's Innovation Value Chain. Only then do they assess whether a best innovation practice is the right thing to pursue. That's tailoring the right solution to the right problem.

Exhibit: Our Research Behind the Innovation Value Chain

The Innovation Value Chain concept is based on our ten years of research into innovation in large companies. As with other researchers, we began by studying a certain part of innovation, such as idea sourcing, the use of corporate venture funds, cross-unit collaboration, and innovation culture. But we began to realize that these parts cannot be studied alone. As we started seeing the parts together, we realized that we need to understand the overall process to understand a company's innovation performance, or lack thereof. And so the concept of an Innovation Value Chain started to form. Its insight is derived from five large research projects:

- A study of the influence of corporate culture on innovation and entrepreneurship in large companies, involving questionnaire analysis of more than 4000 people in 15 major multinationals, including Oracle, Caterpillar, Bank of Montreal, Renault, and Samsung.
- Case-studies of the different approaches to innovation pursued by twelve large Europe-based multinationals, including Ericsson, ABB, BT, UBS, Philips, Nokia, SAP, Sara Lee, Shell, and Diageo
- A study of inter-unit collaboration in 120 new product development projects in a large high-tech multinational company
- A detailed investigation of the operating models used by 100 corporate venturing units in North America and Europe, including interviews in 30 of these units
- A study involving 50 interviews with senior executives in 25 multinational corporations, focusing on how to innovate across the company. Included interviews with BP, Intuit, Motorola, GlaxoSmithKline, Genentech, Seagram, Jardine Pacific, and Levis.

Exhibit: 15 Quick Questions to Rate Your Company's Innovation Value Chain

Indicate the extent to which you agree with each question:

	Do not agree	*Partially agree*	*Agree*		
Our company culture makes it difficult for people to put forward genuinely novel ideas	1	2	3	In-house idea generation	
People in our business unit come up with very few good ideas on their own	1	2	3		
Few ideas for new products and businesses come from sources outside the company	1	2	3	Idea sourcing outside the company	**Idea-Poor?** If you circle mostly 3s in this set of questions you may be an *Idea-Poor* company
Our product developers often have a "not invented here" attitude—ideas outside are not seen as valuable as those inside.	1	2	3		
Of all the innovation projects we do, few involve team members from different businesses in the company	1	2	3	Cross-pollination among businesses	
It is not very typical for our people to collaborate on projects across our subsidiaries, businesses, and units	1	2	3		
The procedures and rules for investment in new innovation projects are very tight	1	2	3	Selection	**Conversion-Poor?** If you circle mostly 3s in this set of questions you may be a *Conversion-Poor* company
There are well-known stories of great ideas getting killed off by the corporate bureaucracy	1	2	3		
We have a risk-averse attitude towards investments in novel ideas	1	2	3		
New product development projects are often slow to finish on time in our firm	1	2	3	Development	
Established businesses do not easily support new and radical businesses	1	2	3		
When managers try to develop a new business, they have a hard time getting traction	1	2	3		
Our company is slow to roll outs its new products and businesses across multiple geographical markets (regions, countries)	1	2	3	Diffusion	**Diffusion-Poor?** If you circle mostly 3s in this set of questions you may be a *Diffusion-Poor* company
Competitors copy our product introductions fast, and often launch first in other countries	1	2	3		
We are not very good at penetrating all possible channels and customer groups with new products and services.	1	2	3		

Exhibit: How Leading Innovation Concepts Relate to the Innovation Value Chain

How large companies can become more innovative is one of the most researched topics in management research, and many excellent perspectives exist. The Innovation Value Chain concept does not replace these but provides an over-arching framework for how managers can sort out what perspectives and solutions make sense in their particular situation. We offer a few examples of prior writings that primarily focus on one part of the Innovation Value Chain (this list is by no means exhaustive, and we apologize in advance to those experts who think we misplaced their contributions).

Step in Innovation Value Chain		**Examples of leading advice for each step**
Idea Generation	In-house idea generation	• *How to kill creativity,* by Teresa Amabile (HBR May 2000) • *Jamming*, by John Kao (HBS Press 1997)
	External Sourcing	• *Open Innovation*, by Henry Chesbrough (HBS Press 2003) • *Connect and Develop: Inside Procter & Gamble's New Model for Innovation*, by Larry Huston and Nabil Sakkab (HBR March 2006) • *Blue Ocean Strategy*, by Chan Kim and Renée Mauborgne, Harvard Business School Press, 2005. • *Democratizing Innovation*, by Eric Von Hippel (MIT Press 2005)
	Cross-pollination	• *Introducing T-Shaped Managers: Knowledge Management's Next Generation*, by Morten T. Hansen and Bolko Von Oetinger (HBR March 2001) • *Coevolving: At Last, a Way to Make Synergies Work*, by Kathleen M. Eisenhardt and D. Charles Galunic (HBR Jan 2000). • *Collaboration Rules*, by Philip Evans and Bob Wolf (HBR July 2005)
Conversion	Selection	• *Bringing Silicon Valley Inside*, by Gary Hamel (HBR Sept 1999) • *Corporate Venturing: Creating New Businesses Within the Firm*, by Zenas Block and Ian C. MacMillan (HBS Press 1995)
	Development	• *The Innovator's Solution: Creating and Sustaining Successful Growth*, by Clayton M. Christensen and Michael E. Raynor (HBS Press 2003) • *The Ambidextrous Organization*, by Charles A. O'Reilly III and Michael L. Tushman (HBR April 2004) • *Building Ambidexterity into an Organization*, by Julian Birkinshaw and Christina Gibson (SMR July 2004) • *Ten Rules for Strategic Innovators: From Idea to Execution*, by Vijay Govindarajan and Chris Trimble (HBS Press 2005)
Diffusion	Diffusion	• *Tipping Point Leadership*, by W. Chan Kim and Renee A. Mauborgne (HBR April 2003) • *Payback*, by James Andrew and Harold Sirkin, Harvard Business School Press, 2007.

Exhibit: Only as Strong as the Weakest Link

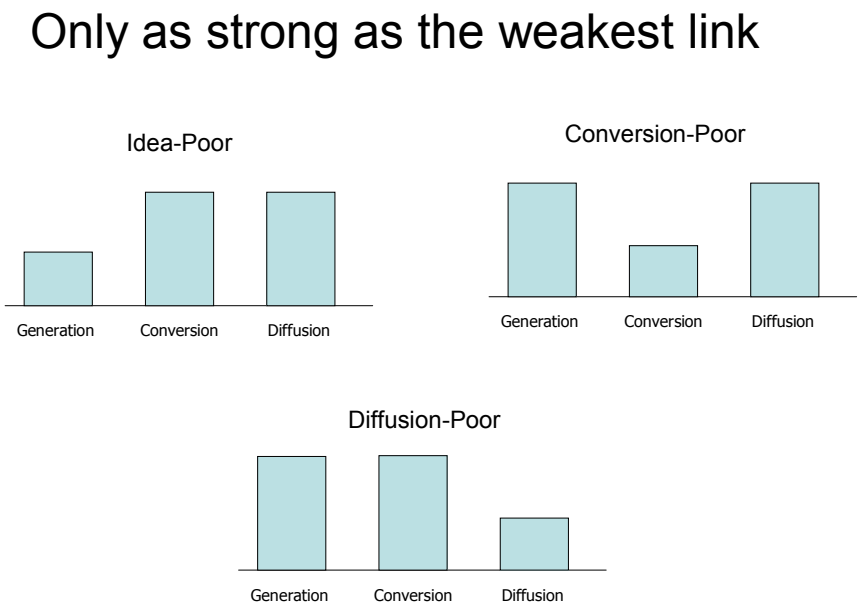

Exhibit: The Innovation Value Chain

The Innovation Value Chain

	IDEA GENERATION			CONVERSION		DIFFUSION
	In-house Inside a unit	**External** Outside the company	**Cross-pollination** Across units	**Selection** Screening and initial funding	**Development** From idea to first result	**Spreading** Multiply across the organization
Key Question	Do people in our unit create good ideas on their own?	Do we source enough good ideas outside the company?	Do we create good ideas by working across the company?	Are we good at screening and funding new ideas?	Are we good at turning ideas into viable products, businesses and best practices?	Are we good at diffusing developed ideas across the company?
Key Performance Indicator	Number of high-quality ideas generated in a unit	Number of high-quality external ideas	Number of high-quality cross-unit ideas	% ideas selected and funded (not too low or high)	% funded ideas leading to revenues; Months to first sale	% penetration in desired markets, channels, customer groups; Months to full diffusion

[1] Quoted in Fortune, December 12, 2005.
[2] Michael Porter articulated the concept of a value chain in his seminal book *Competitive Advantage* (Free Press, 1985). As Michael Porter articulated the value chain for physical goods in a manufacturing era, we seek to articulate the value chain for ideas in a knowledge era.
[3] James Suroweicki, All Together Now, The New Yorker, 11th April 2005.
[4] Quoted in "Bertelsman: Corporate Structure and the Internet Age," Teaching Note, INSEAD, Fontainebleau, France, 2000, by J. Barsoux and C. Galunic.
[5] Taken from London Business School case study "BT Brightstar" by Julian Birkinshaw.
[6] Taken from various newspaper reports: Do we want to track down the specific source?
[7] Taken from Ivey case study "GE Canada: The Energy Management Initative" by Julian Birkinshaw and Nick Fry.
[8] Some firms, such as contract research organizations, deliberately specialize in one part of the innovation value chain and outsource the other elements. Such firms may not control the other elements of the innovation value chain, but they should still worry a great deal about whether they have the right partners to deliver on the elements they have outsourced.
[9] This is described in detail in the HBR article, *Connect and Develop: Inside Procter & Gamble's New Model for Innovation*, by Larry Huston and Nabil Sakkab (HBR March 2006).
[10] Described in Fortune, December 12, 2005.
[11] In book *The Tipping Point* (Little, Brown 2000), Malcolm Gladwell describes how Paul Revere, a hero of the American Revolution, was able to warn people in the small towns outside of Boston that the British soldiers were coming. His extensive and broad personal networks to people in many of the small towns enabled him to effectively diffuse the message.

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