

Technologyforecast

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Nesta edição

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agilidade nas organizações

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Preparar, fogo!
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Lidere, siga um líder
ou saia do caminho

Prezado Executivo de TI,

Faça mais com menos. Seja inovador. Gerencie as mudanças contínuas. Preveja as mudanças de mercado. Direcione os investimentos para obter diferenciação. Padronize sempre que possível para reduzir custos. Crie valor por meio de aquisições. Use a informação como arma estratégica. Desenvolva infra-estrutura sustentável. Seja mais ágil.

Esses tópicos lhe parecem familiares? Em conversas com executivos de negócios e de tecnologia, fica evidente que muitas iniciativas, aparentemente isoladas, têm um desafio em comum: gerenciá-las numa era de mudança contínua sem comprometer o futuro da organização ao passar de uma crise para uma próxima.

Há uma nova metodologia em desenvolvimento que pode ajudar a antecipar as mudanças de mercado e avaliar seu impacto para a empresa como um todo antes de determinar se há necessidade de uma reação imediata. Essa abordagem, descrita em detalhes nesta edição do **Technology Forecast**, é uma maneira de prosseguir com os investimentos de forma ágil, quando ainda fizer sentido, sem o perigo de causar um prejuízo maior que o benefício desejado. Essa abordagem integra dois modelos de negócios e uma tendência crescente entre os CIOs:

- **Modelo de negócios baseado em valor** – este modelo relaciona os objetivos estratégicos de criação de valor para os clientes com equilíbrio da performance entre ativos, processos de negócios e infra-estrutura, que compõem a cadeia de valor estendida do negócio.
- **Modelo de negócios baseado em agilidade** – este modelo é uma abordagem conceitual de como uma mudança de mercado, em curso ou prevista, afeta ou pode afetar o modelo de valor dos negócios.
- **O papel do CIO** – em resposta a essas novas abordagens de modelagem de negócios baseados em valor e agilidade, o papel do CIO está entrando num período de “redefinição existencial” em busca de uma maior relevância no contexto do negócio.

Esperamos que a leitura desta publicação seja proveitosa e sirva de referência na definição de estratégias e demais esforços de sua área para que sua própria empresa obtenha melhorias de desempenho. Estamos à disposição para comentários, críticas ou discussões sobre os tópicos abordados e as conclusões a que chegamos, por meio de nossos contatos locais identificados na contracapa ou até mesmo diretamente com os consultores indicados em cada um dos artigos.

Cordialmente,

Ricardo Neves
Líder de Consultoria em Tecnologia da Informação
no Brasil e América do Sul

Technologyforecast

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Fall 2008

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Message from the editor



The current financial crisis does have an upside—we're gaining a renewed understanding of where the risk really lies. Credit default swaps are just one example. Financial services companies, hedge funds, and other parts of the shadow banking system are learning that poor anticipation of the future has real costs. The financial trading system had been growing for so long that few in the industry could imagine it retracting. Today they are learning that a long, straight road will always, eventually, throw a curve at you. Anticipating that curve is the essence of agility; without agility, survival itself comes into question.

Are financial services companies unique in forgetting that the straight road eventually bends? Hardly. The US auto industry is in decline because it failed to anticipate that oil might jump past \$60 a barrel and stay there. The music industry has yet to fully define a new business model in the age of digital distribution and the Internet. The list is long.

Some companies actually develop future scenarios, only to fail to connect the insights from those scenarios to business planning. Witness the watch industry. Strategists in that industry have been aware for several years that there is a trend for young consumers to rely on their cell phones to tell time. Where is the evidence enterprises will be agile in response to this existential threat?

How to maintain a high level of responsiveness is the main issue we explore in the Fall 2008 issue of the *Technology Forecast*. As observers and researchers of industry trends, we have been perplexed by the apparent lack of readiness many firms demonstrate when they face market disruptions. Almost always, these disruptions have been predictable—perhaps not in their timing but certainly in their likelihood of happening at some point in time.

The emerging trends we've uncovered in leading-edge organizations point to a solution. Agility requires anticipation. Agility requires planning. Agility requires an ability to test the impact of a market shift on customers and on the enterprise. Ultimately, agility requires an understanding of where current value lies and a commitment to modeling potential outcomes to choose the most profitable future path.

During our research, we spoke with three people who have thought deeply about these issues. Jeanne Ross from MIT's Center for Information Systems Research; Yury Zaytsev, retired group information officer of Swiss Reinsurance Company; and Martin Curley, senior principal engineer and global director of IT Innovation and Research at Intel add much to the discussion. All agree that senior management must commit to a shared understanding of their operating model, reaching consensus on where the business should perform in a standardized way and where the business will focus on creating distinction. Agility comes when you know—before a scenario takes place—how a disruption will affect what your customers value and the ability of your operating model to deliver that value. Your model for agility tells you that.

The introductory article, “Modeling value and agility,” in this issue describes the common thread that connects seemingly disparate initiatives taking place in many enterprises today. It introduces the concept of a business value model, a business agility model, and the key role a strategic CIO will play in advancing the cause of agility within the enterprise.

Article two, “Ready, fire, aim,” establishes the value proposition for actively modeling the enterprise via a business value model. Too often, companies jump into initiatives without fully understanding their impact. We describe a typical business situation where an enterprise was not paying attention to its customer value proposition as it pursued a rapid growth strategy. The best strategy will fail to deliver if management doesn't clearly focus on the delivery of value to customers.

Article three, “How to hit a moving target,” brings the future into the modeling exercise by introducing the business agility model. Scenarios are valuable tools for management and are not new. Too often, however, the output of deep and thoughtful scenario planning has been a notebook on a shelf. Business agility modeling forces management to engage with scenarios and make decisions on the basis of risks and rewards about anticipatory investments in agility.

The last article, “Lead, follow, or get out of the way,” brings the CIO into the picture. We describe the trends that have held the CIO back from being a full business partner in the C-suite and why the pursuit of agility is an ideal path forward for CIOs wanting to stay relevant. CIOs are actually the best candidates to lead an agility initiative.

Please visit our online presence at pwc.com/techforecast, where you can find these articles, our Summer 2008 issue of the *Technology Forecast*, and future issues. If you would like to receive future issues of the *Technology Forecast* as a PDF attachment in your e-mail box, you can sign up at pwc.com/techforecast/subscribe.

And as always, we welcome your feedback on this issue of the *Technology Forecast* and your ideas for where we should focus our research and analysis in the future.



Paul Horowitz
Principal
Technology Leader

This issue's interviewees

The interviews in this *Technology Forecast* focus on an emerging trend in management: creating a shared understanding of your unique position in the market and the business activities that deliver that positioning. Such creation implies a commitment to aligning business processes to that shared understanding.

Finding companies that have significant experience with this approach is a challenge. Jeanne Ross from MIT's Center for Information Systems Research shared insights from the multi-company research incorporated in her book *Enterprise Architecture as Strategy* and provided us with a review of where most companies sit. Yury Zaytsev describes his experiences at Swiss Reinsurance Company and the process of inventing many of the steps an individual company must follow to align its target business model and how the company actually operates. Martin Curley takes us into the highly standardized environment that describes Intel's semiconductor manufacturing business model and the challenges Intel faces to build new business value propositions.

All three interviewees covered a wide range of topics. For this issue, we have augmented each article by extracting the parts of each interview most relevant to the article theme. These interview segments appear on pages 24, 40, and 56.



Jeanne W. Ross
Director and Principal Research Scientist
Center for Information Systems Research (CISR)
MIT Sloan School of Management

Jeanne W. Ross studies the organizational and performance implications of enterprise initiatives related to enterprise architecture, governance, and new IT management practices.

Ross shares her research in lectures, executive education courses, articles, and books. Her work has appeared in the *Sloan Management Review*, *Harvard Business Review*, *The Wall Street Journal*, *CIO Magazine*, *MIS Quarterly*, *MIS Quarterly Executive*, and *IBM Systems Journal*, among others. She has coauthored two books: *IT Governance: How Top Performers Manage IT Decision Rights for Superior Results* (Harvard Business School Press, 2004) and *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution* (Harvard Business School Press, 2006). Her third book, *IT Savvy: What Top Executives Must Know to Go from Pain to Gain*, will be published around the end of the year. Jeanne is a founding senior editor of *MIS Quarterly Executive* and currently serves as editor-in-chief.



Yury Zaytsev Independent consultant advising insurance companies

Yury Zaytsev has been a practicing IT professional for more than 25 years. He has successfully applied his management and technical skills in the insurance industry, using technology to solve business problems on a global scale.

In Russia, Zaytsev developed the complex IT system for the 1980 Olympic Games in Moscow. Upon concluding this project, he moved to the US, where he worked first as an IT project manager for the retail group K-Mart in New Jersey and after that for seven years as vice president of the American International Group, New York.

He joined Swiss Reinsurance America in 1992 as head of Information Technology for Swiss Re's US subsidiaries. In 1995, he was put in charge of Swiss Re's Global IT, and he was appointed to Swiss Re's executive board in 1999. He retired as group information officer at the end of 2007.

Zaytsev studied engineering and computer technology at the Technical University in Lvov (Ukraine), graduating with a master's degree.



Martin Curley
Senior Principal Engineer and
Global Director of IT Innovation and Research
Intel Corporation

Martin Curley currently manages a network of centers that catalyze IT innovation. Previously, he held IT management positions at Intel as well as General Electric and Philips. He has a degree in electronic engineering and a master's in business studies from University College Dublin, Ireland.

Curley is the author of *Managing Information Technology for Business Value* published by Intel Press in 2004, and the coauthor of *Managing IT Innovation for Business Value* published in 2007.

He is an adjunct professor at the National University of Ireland, Maynooth and co-director of the Innovation Value Institute. He also is a fellow of the Institution of Engineers of Ireland and the British Computer Society.

Modeling value and agility

New management tools provide a means for anticipating market changes, assessing their end-to-end impact, and determining the necessity of an agile response.



If you want to truly understand something,
try to change it. —Kurt Lewin

Do more with less. Be more innovative. Manage continuous change. Anticipate market shifts. Bias investment toward differentiation. Standardize wherever possible to reduce costs. Deliver value from acquisitions. Make information a strategic weapon. Create a sustainable infrastructure. Be more agile.

Management teams in today's bewildering business environment are expected to meet all these requirements, and they face a constant flow of decisions regarding them. They agonize over priorities in the hope of getting traction on a few, but they often end up with an unwieldy list. Project teams, meanwhile, tread water waiting for decisions to be handed down from higher up. Once priorities are clear, project leaders too often take contradictory approaches to deal with their own microcosms. Optimizing for one initiative seems to mean suboptimizing for another.

Enterprises struggle with this dilemma for at least two reasons. First, they tend to deal with change piecemeal, the entire organization reacting in poorly coordinated fashion. Second, they apply new strategies and tactics directly to operations without first understanding their effects, which can lead to disruptive, unintended consequences.

In scores of conversations with business and technology executives, PricewaterhouseCoopers (PwC) has observed that many apparently unrelated initiatives share a common challenge: to manage initiatives in an era of continuous change without tearing the organization apart by lurching from one initiative or crisis to the next.

Although it is apparent only in bits and pieces today, an evolving methodology can help executives anticipate market changes and assess their meaning for the

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enterprise as a whole before deciding whether an agile response is necessary. The emerging approach, described in detail in this issue of the *Technology Forecast*, is a method for proceeding with investments in agility when they make sense and without doing more harm than the intended good. This method fuses two key models and a growing trend in the CIO office:

- **Business value model**—This model links strategic intentions for the creation of customer value to the orchestration of assets, business processes, and infrastructure that already define the enterprise’s extended value chain.
- **Business agility model**—This model is a conceptual assessment of how a change in the market, actual or anticipated, affects or will affect the business value model.

- **The role of the CIO**—In response to this emerging value and agility modeling, the CIO’s role is entering a period of “existential redefinition” toward greater relevance.

Executives might argue that they’ve tried various methodologies to bring some rationality to change. Too often, though, those efforts take place in different parts of the enterprise without the knowledge of other projects under way or how they affect each other. The service-oriented architecture, process modeling, enterprise architecture, maturity models, and other techniques deal only with facets of the larger need to achieve sustainable agility in a world of constant change.

By viewing major challenges through this lens of value and agility modeling, executives can better see the relationships among them. They also gain several leverage points with which to address the various

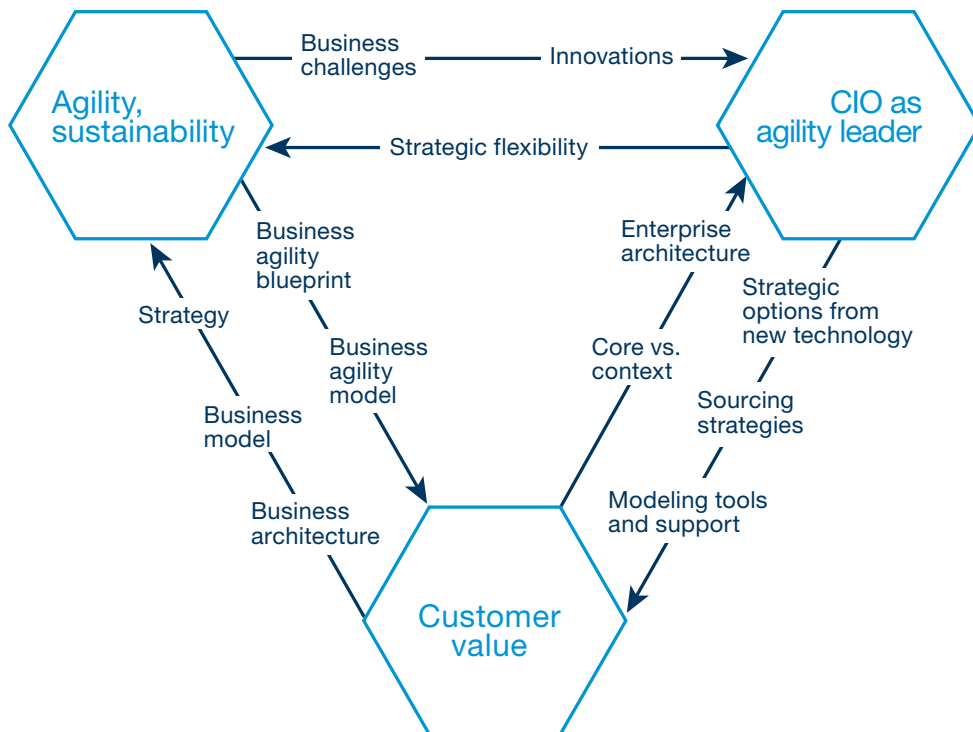


Figure 1: Emerging approach to enterprise management

Source: PricewaterhouseCoopers, 2008

challenges they face, knowing that they can start with the point that makes the most sense and it will cascade through the organization.

Figure 1 shows how these themes inform and are informed by each other. This introduction briefly explains the themes, and the following articles provide more detail.

The business value model

A business value model is a conceptual map that links senior management's strategic intentions for the creation of distinct customer value to the orchestration of assets, business processes, and infrastructure, including the suppliers and partners that define the extended value chain of the enterprise. Management also needs an assessment—PwC calls it a business value platform—of the current state of assets, processes, and information in place that define the actual way the enterprise operates.

Business executives at leading companies use various terms for these business value and agility models. But whatever they call them, companies using the two concepts find they can change their platform thoughtfully and with greater concern for achieving strategic intent without unintended consequences.

As Figure 1 demonstrates, the business value model enables a management team to explore questions of agility, growth, and sustainability. It is also practical in that it informs the development and evolution of the enterprise architecture, defines what is core versus

The business value model is not meant to be static. It must be dynamic—it is subject to pressures to change as a result of new technologies and the need for agility in response to potential market-changing events.

context (what could be outsourced), and represents a map against which management can compare potential acquisitions for compatibility.

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The business agility model

Business agility is the ability to make desirable change quickly, effectively, and without undue stress on or damage to the organization. That means building in some capacity for change and having a clear understanding of when to make changes. Without this agility, organizations suffer through a series of fire drills that burn out the staff and create confusion.

Agility relates to sustainability in two ways: the agile enterprise can thrive well into the future; and an organization that has designed itself to be agile can withstand the impact of changes when it chooses to initiate them.

The business agility model is a conceptual assessment of how a change in the market, actual or anticipated, is likely to affect the business value model, particularly the customer value targeted by senior management with its strategic intent. With that analysis in hand, executives can estimate the return on investment from changing the business value platform. The business agility model anticipates change and lets management determine whether, how, and when to invest in an enhanced ability to respond to change.

The evolving role of the CIO

Agility modeling also serves as an input to the CIO and the entire technology organization. By developing a set of scenarios that have been vetted against the business value model, the agility planning process raises challenges for the CIO to consider against the existing enterprise IT architecture. The CIO can then determine what would be needed in the enterprise architecture to develop strategic flexibility related to a specific challenge, which then becomes part of the decision-making process regarding investments in agility.

It is becoming a cliché to suggest that the old-style CIO, who leaves business strategy and business operations to others, has a limited future. Pundits harangue CIOs to become more strategic, to deliver innovation, to be a partner to other C-suite officers. These entreaties are valid, but they shed little light on how to accomplish these things.

Some may find it surprising that this discussion involves technology. In many enterprises, technology is an enabler to execute management strategies. It does not receive the same level of management concern as an operating model and agility capacity. That's dated thinking.

Today, any organization of substantial size is designed to operate as an integrated collection of human- and technology-driven activities. Most companies are increasing the ratio of technology-driven to human-only activities—for efficiency, quality, customer management, and compliance reasons. Therefore, any significant effort to enhance management processes will run straight through IT. Old-school IT couldn't justify a seat at the management table, but today's technology executives can—and must.

It is becoming a cliché to suggest that the old-style CIO, who leaves business strategy and business operations to others, has a limited future. Pundits harangue CIOs to become more strategic, to deliver innovation, to be a partner to other C-suite officers. These entreaties are valid, but they shed little light on how to accomplish these things.

How is the CIO supposed to evolve? When enterprises adopt the methodology previously described—taking the time to design and align business processes to a purposefully chosen business value model, and doing the hard analysis that can deliver agility—the CIO is the obvious candidate to support many of the key activities.

CIOs have the broad understanding of where functional processes intersect across domains. They provide the

enterprise architecture framing that defines the existing application and technology infrastructure. And they manage the IT assets that capture and deploy information that supports decision making. All three activities have long been part of the CIO job description.

PwC's proposed management principles rely on an informed CIO to understand the enterprise in two additional key areas:

- 1. Value modeling.** Developing a business value model is an exercise for which IT staff are particularly adept. Managers who take on this responsibility must be comfortable working at different levels of abstraction, from the concrete workflows to the value chain

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concepts that capture and simplify enterprise value creation. An appropriate technical environment is also needed to support the modeling activities. That's a natural role for the CIO's organization.

- 2. Cost-benefit assessment.** Building a plan for agility requires a deep understanding of how change in the business environment will stress the existing model. The CIO is best placed to understand and estimate the costs of building in the flexibility that would be needed to respond to a market-changing scenario. The CIO, working with other executives, is in position to estimate a cost-benefit ratio associated with a specific aspect of business agility.

Simply adding these functions to the CIO's long list of responsibilities without making other changes in the CIO's role is a bad idea. The article about the CIO's evolving role describes these changes.

Conclusion and forecast

The approach outlined in this *Technology Forecast* does not yet exist in proven, case study form. PwC has seen aspects of it in many organizations, though they haven't been fully developed. However, the underlying patterns of use lead us to forecast with confidence that this fused approach will emerge as the prominent business and technology management framework in the years ahead. Our examples are necessarily indicative of the greater whole we anticipate, not absolute proof of it.

This *Technology Forecast* examines each of the themes raised in this introduction, describing in more detail how they are evolving to enable higher enterprise performance. Each article is accompanied by interviews from leading-edge thinkers who are actively exploring this emerging approach to enterprise management.

For more information on the topics discussed in this article, contact Justin McPherson at +1 770 330 7038.

Ready, fire, aim

Strategic intent too often goes awry. Modeling the value proposition is the blueprint for avoiding unintended consequences.



You're the parts supplier best known for quality in your industry. Compared with competitors, you have the highest quality metrics. Managers and workers know what your value proposition is, what makes you distinct—it's the quality.

The economy takes off. You adopt a strategy to acquire competitors and the plants of some customers who want out of manufacturing. Revenue grows, your stock soars. As you acquire plants, quality suffers a bit. No surprise given the acquisitions; what a great problem to have, you think.

Fixing things causes some wear on your plant managers. They don't complain. They just leave. Employee turnover aggravates the quality issues. Rework and other quality-related costs rise, narrowing profit margins. However, revenue continues to grow, and market share has never been larger.

Then, as signs of economic softening and inventory build-ups appear, one day a big customer demands more supply chain visibility. You handle it as a one-off situation.

Suddenly the economy sags. Revenue slows, excess capacity grows. Now every customer is demanding supply chain visibility to better manage their inventory costs. They still want quality as well as low costs, and they point out that your quality has declined. You're still trying to bring the acquired plants up to standards through training and information systems.

But these fixes aren't enough. Customers threaten to switch to your main rival. They argue that your once-superior quality is now only equal to the rival, at best. The rival also made acquisitions, but not as many. It passed on some opportunities to build market share to ensure it could fully integrate the acquisitions it did make and to give customers supply chain visibility.

Your crisis deepens. Red ink and plant closings follow. What happened? You understood your value proposition. You seized opportunities that made the company bigger and should have made it stronger. As your CEO is shown the door and the new boss promises stockholders a return to profitability, a Wall Street wag, when asked what happened to your company, intones on CNBC: the best-laid strategic plans often go awry.

Companies can be “ready” in that they intuitively understand their value proposition and how a new strategy could enhance it. They fail to “aim” before they “fire” by not making enough effort to thoroughly understand all possible consequences of the decision on the value proposition.

The specter of unintended consequences

The preceding scenario might be oversimplified, but does it sound familiar? Too often, strategic intent leads to unintended consequences that hurt your business. Every executive team regularly faces crucial decisions—everything from acquisitions to new sourcing strategies, from new product lines to implementing systems. Before they commit to any strategy, do they make a reasonable effort to understand its probable impact on the current value proposition and to determine how unforeseeable circumstances might play a role?

A few companies do. Most do not.

Companies can be “ready” in that they intuitively understand their value proposition and how a new strategy could enhance it. They fail to “aim” before they “fire” by not making enough effort to thoroughly understand all possible consequences of the decision on the value proposition. The result: unintended consequences can erode the customer value proposition.

Our hypothetical company’s value proposition was quality, which took a bigger hit than expected—an unintended consequence—as the result of an overly aggressive acquisition strategy. If executives had examined a business value model, they would have been more likely to understand where they were vulnerable as they pursued the strategy. A business agility model would have helped them assess unplanned circumstances, including the demand for greater visibility. Figure 1 shows how the business value platform, business value model, and business agility model interrelate.

Without a systems-level understanding of the potential impact of a change, the enterprise creates unnecessary risk that can have a major impact on the most cherished value of the business itself.

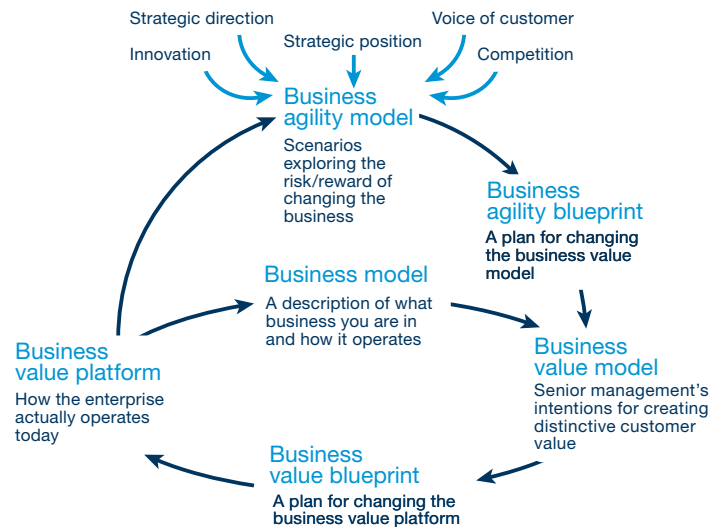


Figure 1: Interrelation of the business value platform, business value model, and business agility model

Source: PricewaterhouseCoopers, 2008

This issue of the *Technology Forecast* focuses on these models and how they can help enterprises. Variations already in use at Intel, Swiss Reinsurance (Swiss Re), and others imply that leading-edge companies will increasingly use them. This article examines the business value model, and the next article examines the business agility model.

Although strategic projects inevitably affect an enterprise’s distinct value proposition for good or ill, they tend to be driven entirely by bottom-line considerations. Rarely are strategic decisions influenced by an understanding of how various interlocking elements create the value proposition or how aspects of the strategy might affect each of those elements. Executives usually have a much better idea of a big decision’s likely impact on the numbers than its likely impact on various links in the value chain. Just as they use financial models to determine a project’s impact on the bottom line, executives can use other models to understand their current value proposition and to determine the likely impact of strategic intentions or unexpected forces on that proposition.

Rarely are strategic decisions influenced by an understanding of how various interlocking elements create the value proposition or how aspects of the strategy might affect each of those elements.

Implicitly, most executives and staff understand their current way of doing things—how the enterprise creates value today. On some level, they also understand their operational environment, including people, processes, IT infrastructure, and their information (intellectual and financial) assets. This totality of assets and processes is the business value platform. The business value platform also includes suppliers and partners in place today. This platform defines the way the enterprise currently operates to serve its customers and generate a return for stockholders.

The business value platform goes beyond the internal components that typically compose an operating model. Many executives may think their operating model describes their business value platform, but the operating model is only a piece of the platform. Indeed, not seeing the broader asset base can lead to unforeseen consequences.

When companies plan or react to change, they most often take action that directly targets their business value platform. This can cause problems. Executives know that enterprises are complex systems with many subtle connections among processes, but they often act as if this is irrelevant. They acknowledge that unintended consequences can occur when making changes, but they admit—perhaps with chagrin—that they don't know what to do about them, and yet they sally forth anyway. Without a systems-level understanding of the potential impact of a change, the enterprise creates unnecessary risk that can have a major impact on the most cherished value of the business itself.

This is where the business value model comes into play. The business value model (see Figure 2 for a generic version) defines a structured way to maintain an idealized map that links strategic intentions for the creation of distinctive customer value to the orchestration of the assets, business processes, and infrastructure, including



Figure 2: High-level business value model: Generic version

Source: PricewaterhouseCoopers

the suppliers and partners that define the extended value chain of the enterprise. It describes a method of migrating the business value platform over time in response to planned and unplanned, as well as internal and external, changes to markets. It provides multiple levels of detail, from highly abstract descriptions to more meticulous flows of the business processes, human capital, and information assets needed to deliver value, and the infrastructure needed to support them.

The final piece of this methodology is the business agility model, which is a structured way of using scenarios to assess the impact of internally and externally driven changes to the enterprise, its markets, or the broader environment on customer value propositions and ultimately enterprise value. Figure 3 provides definitions of these key terms.

No one expects executives to perfectly predict the future, but many executives presently rely too much on intuition and luck.

Business value models can help executives understand the interrelationships along the entire chain of talent, information, intellectual property, supplier relations, and business processes that create customer value. Business agility models can help them to identify some of the unintended consequences of strategic intent and to deal with unforeseeable circumstances, such as

Business value platform: A description of the assets, business processes, and infrastructure, including suppliers and partners, actually in place today that define the way the enterprise operates to serve its customers.

Business value model: A conceptual map that links senior management's strategic intentions for the creation of distinctive customer value through orchestration of the assets, business processes, and infrastructure, including the suppliers and partners that define the extended value chain of the enterprise.

Business agility model: 1) A conceptual assessment of how a change in the market, actual or anticipated, affects or will affect the business value model, particularly the distinctive customer value targeted by senior management with its strategic intent. 2) An estimate of the return on investment from changing the business value platform; defined as the value opportunity plus value-at-risk less the cost of the investment.

Business agility blueprint: A plan for how changes in the business value model will be made as informed by the business agility modeling process.

Business value blueprint: A plan for how changes in the business value platform will be made as informed by the business value model.

Figure 3: Key definitions

Source: PricewaterhouseCoopers

economic slowdowns and speedups, changing markets, new customer demands, government regulations, and disruptive technologies. In other words, they no longer have to depend so much on intuition and luck.

Any change—whether created intentionally or experienced through market changes—is understood only when tested and analyzed through the lens of how the business creates value. That's why a business value model should help executives see the requirements of

their value proposition not as discrete issues around which to have initiatives, but as a set of related activities that must be handled as a set.

Today, there's scant evidence of this kind of modeling and ample evidence of "ready, fire, aim." Consider the following two contrasting examples.

By comparing potential acquisitions against its own business value model, Swiss Re has been able to avoid much of the grief it might have encountered had it not conducted a thorough model-based analysis of its various acquisition targets.

Strategy without value modeling

The first example—one without value modeling—is Solectron. Solectron was one of the major success stories in electronics manufacturing services (EMS) in the 1990s, its customer value largely driven by the quality it achieved on the plant floor. It was the first company to win two Malcolm Baldrige awards for quality. When markets became volatile, Solectron's best-built circuit board had little value for an OEM customer that couldn't sell the boards. And some OEMs shifted how they defined the value they gained from their EMS relationship.

As the markets became volatile, an OEM's ability to know the status of the material in its supply chain, specifically the inventory of components and systems in process, became as important as product quality. EMS companies had the data, but many, including Solectron, were unable to deliver it in real time to customers.

A business value model could have alerted Solectron's management to the possibility that customer value might evolve to include visible information. The business value model would have targeted the goal of

standard processes and data. An examination of the business value platform and its distance from this goal would have raised a yellow flag. With the additional context of customer preferences evolving to include real-time supply chain data, the yellow would have turned red, screaming for a change in strategy—fewer acquisitions—and a focused re-orientation to delivering the Solectron business value model as soon as possible.

Bud Mathaisel, Solectron's CIO at the time, recalls in an interview with the *Technology Forecast* how the customer's idea of what constituted quality began to change. "As the market for technology products started to collapse in 2002, our OEM customers needed better visibility into their supply chains," he says. "They wanted information close to real time, and even though their own systems were not standardized, they expected us to deliver data that was standardized across platforms. We had been on a growth path through acquisitions, meaning new integration tasks for IT. Worse, some acquisitions came with multiple, nonstandard systems. In effect, we created a backlog of integration and standardization work that diluted our perceived ability to deliver on this new definition of quality."

Solectron never returned to its previous levels of profitability and was later acquired by Flextronics.

Strategy with value modeling

Swiss Reinsurance is the second example—this time a company that performed value modeling. Swiss Re also grew through acquisitions, but it put a great deal of thought into the insurance and reinsurance companies it acquired, and whether what it calls its operational model was up to the challenge of each merger. Over the years, the company evolved what it now calls the global operating model, an approach similar to the business value model described in this article. By comparing

potential acquisitions against its own business value model, Swiss Re has been able to avoid much of the grief it might have encountered had it not conducted a thorough model-based analysis of its various acquisition targets.

Yury Zaytsev, the retired group information officer at Swiss Re, says the model includes three elements: "It's a business model defined in core business processes. It's a set of system and business solutions that support elements of this model. And it's the information capability that allows the company to make decisions required during day-to-day operations. All three of them greatly interact with and greatly depend on each other." For more of Zaytsev's insights about business value modeling, see the conversation that starts on page 24 of the *Technology Forecast*.

To provide evidence that the method works, Zaytsev points to Swiss Re's largest acquisition, General Electric Insurance Solutions, in 2006. Swiss Re has a deep understanding of its own end-to-end processes because of its commitment to an enterprisewide, shared business value model. This knowledge was instrumental in enabling Swiss Re to quickly analyse and decide on their target operating platform. The analysis confirmed that for the majority of business lines, most transactions could be migrated to the Swiss Re global operating platform. The result? After 90 days of the transaction close, renewal of most of the new GEIS business could be performed on Swiss Re's global operating platform.

Zaytsev emphasizes that Swiss Re's business value model is not static, but evolving. "It's more like a journey than a destination. It's a matter of responding to short-term developments without changing your [business value model], while also applying lessons to the long-term evolution of the model."

Solectron illustrates what can happen when executives don't apply value models to their strategic decisions.

"The whole goal of a framework [what PwC calls a model] should be to help people focus, so that the limited time they have is spent on the most important choices they need to make."—Jeanne Ross

Swiss Re suggests the power of proceeding with strategic decisions only after examining the forces that could blow the business value model off course.

The goal of this article's recommended methodology is to get more predictable, reliable results from strategic initiatives. To achieve that goal, you need to model the processes and outcomes before changing the business. But you can't effectively do that unless you separate strategic decisions from how the enterprise actually works. That is counterintuitive to some people, but vital to success.

Instead of going straight from strategic decisions to initiatives targeting the business value platform, leading-edge companies are introducing business value and business agility models into the process of managing change. Among these companies are Intel, Swiss Re, and a number of companies mentioned in Jeanne Ross's book *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution*.¹

Making the tough choices

Jeanne Ross, principal research scientist at the MIT Center for Information Systems Research, has analyzed several such leading-edge companies in her own research on enterprise architecture. Among the companies she has studied, the biggest difficulty for most is maintaining focus. "This means making the tough choices, deciding what are we going to be versus what we are not going to be," she says. "The whole goal of a framework [what PwC calls a model] should be to help people focus, so that the limited time they have is spent on the most important choices they need to make." (For more insights from Ross about business value modeling, see the conversation on page 24.)

But not even leading companies use models as holistically and intentionally as they should. Still, their partial efforts do show the value of this approach and demonstrate how much greater their results would be if they took modeling all the way.

There's evidence that leading-edge companies are moving in that direction. The *Technology Forecast's* interviews with Ross, Zaytsev, and Martin Curley, senior principal engineer and global director of IT Innovation and Research at Intel, discuss ways that value modeling has evolved toward greater specificity and more deliberate consideration of cause and effect. They describe business value modeling taken to a deeper level of detail. (To read insights from Martin Curley on business value modeling, see the Q&A on page 24.)

Mathaisel's experience at Solectron indicated that senior management shared a high-level, conceptual model for how the company would create value for customers by targeting quality. It failed to stay focused on customer value creation as rapid acquisitions distracted management. That's because the model was implicit rather than explicit, and because the model wasn't actively used to assess the total impact of strategic decisions on customer value propositions.

The primary purpose of business value modeling is transparency and management consensus on a strategy for creating distinctive customer value.

A many-layered model

A good model simplifies a complex situation. But simple doesn't mean devoid of detail. A good model separates unnecessary detail from necessary detail relative to what needs to be understood in a particular context. Models can have several levels of abstraction and detail, which can help provide the necessary focus for the individuals participating in the analysis. Because a business value model applies to complex organizations, it must have several levels of abstraction if different layers of management are to find it meaningful and useful.

¹ Jeanne W. Ross, Peter Weill, and David C. Robertson, *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution* (Boston: Harvard Business School Publishing, 2006).

The highest abstraction is Level 0, which brings forward the most direct connection between customer value propositions and enterprise focus. This concept is illustrated in Figure 4, which shows PwC's interpretation of how Solectron might have conceptualized its Level 0 business value model in comparison with Jabil Circuit, a leading competitor in the EMS industry. Jabil's customer value proposition is being responsive to OEM customers, a proposition that requires an infrastructure focused on information and process standardization. Jabil's management appears to have understood that a rapid acquisition strategy would have weakened this core value proposition.

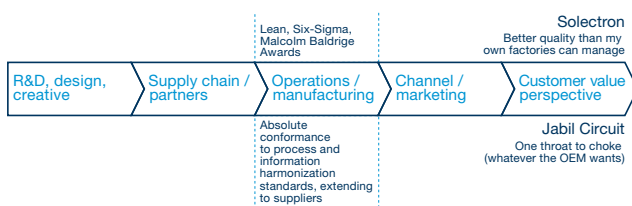


Figure 4: High-level business value model: Solectron vs. Jabil Circuit

Source: PricewaterhouseCoopers

A Level 0 business value model addresses the core question of competitive differentiation and the internal assets and processes most directly linked to that differentiation. A Level 0 model is most beneficial when doing high-level strategic analysis appropriate for C-suite and strategy group deliberations. It accentuates the necessity of making choices in the context of your competitive situation, including:

- What is the most distinctive value proposition you offer customers? Orchestrating your assets and processes with a bias toward distinctive customer value propositions creates more sustainable market positioning.
- What are the most distinctive value propositions of your main competitors? Understanding how your competition attempts to target distinctive value propositions helps you avoid being surprised by market developments.

- What is the one part of your business most responsible for creating that distinctiveness? Even more than knowing your core versus your context, staying focused on your most important assets and processes can guide many important decisions, from organizational learning to talent development and retention to acquisition strategies.
- What are the parts of your main competitors' businesses that create distinctiveness? Keeping a close eye on how your competition targets its own internal investments can guide your decisions about defensive acquisitions or changes in product strategy.

Level 0 greatly simplifies the complexity that large enterprises face. Simplification allows focus, in this case, on competitive differentiation. A Level 1 business value model takes the outcome of Level 0 models and creates the next level of detail. This level is a more complete description of the extended enterprise, incorporating all major organizational elements and any critical partners and suppliers. It also brings into focus an end-to-end process perspective. Relative to the Level 0 business value model, a Level 1 business value model does the following:

- Adds detail to the value chain by breaking down individual elements into constituent parts. For example, it allows multiple value propositions with customers, or explicit references to insourced versus outsourced manufacturing activities. In end-to-end process maps, modeling at this level can support branches to different customer value proposition endpoints.
- Separates business activities into distinctive and nondistinctive processes, acknowledging that distinctive value creation can occur in many parts of the value chain. This separation is especially useful for steering investments to the parts of the organization most closely associated with distinctive value propositions.
- Explicitly defines where management believes value creation occurs through standardization versus customization of specific processes throughout the enterprise. This mapping establishes a shared rationale and understanding for where local variation

is considered strategic, and where compliance with an enterprise standard is mandatory.

Figure 5 provides a graphic representation of the levels.

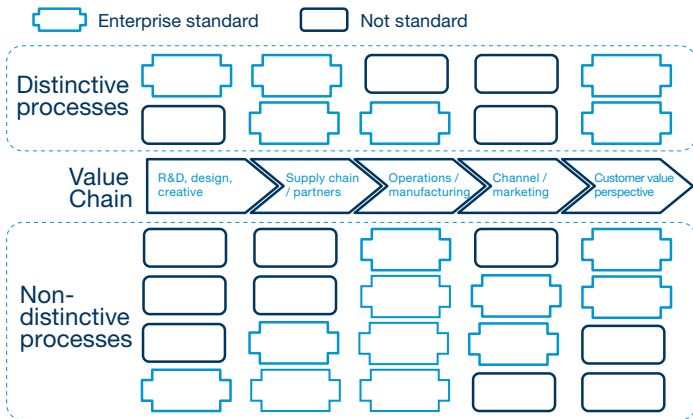


Figure 5: The business value model, Level 1

Source: PricewaterhouseCoopers

Level 2 business value models create a shared context that allow even deeper levels of business value modeling to occur within individual business units. A Level 2 business value model, for example, can map the detailed processes within the customer relationship management function to customer value creation. Activities that are costly and poorly connected to value can be targeted by middle management for reengineering, outsourcing, or even removal.

The Level 1 business value model helps middle management better understand when changes in the Level 2 business value model can be treated locally or must be coordinated globally. By constructing a layered model of this type, management puts its strategic intent in an operational context. The model communicates to the entire organization how and where to focus the pursuit of distinction. But the model does this while acknowledging that nondistinctive components of value creation are also important, explicitly saying that the objective for these business activities is to be “good enough.”

The primary purpose of business value modeling is transparency and management consensus on a strategy for creating distinctive customer value. A secondary purpose is to manage the evolution of that strategy over time.

Using a business value model is like coordinating a set of changes to computer software. When done well, management considers how planned changes in the code will affect the customer. Compiling all of the changes in a single framework establishes a reference model against which the business value platform (how the enterprise actually operates) can be measured, gaps between the model and the platform assessed, and priorities for changes in the platform agreed upon.

The business value blueprint

A well-crafted business value model is designed to help an enterprise deliver on its strategic intent. A business agility model is a way to anticipate change and to help companies become more agile while continuing to deliver on strategic intent, as the next article explains. But these models are worth little if the will of management expressed in them never changes the way the enterprise actually operates. For that, enterprises need a plan for evolving the business value platform while addressing any holdover gaps between it and the current version of the business value model. They need a business value blueprint.

A business value blueprint increases the likelihood that investments will achieve both tactical and strategic ends by driving investments toward customer-centric definitions of value. It does so by tracing value creation from the customer back through the end-to-end value chain. For example, where value creation is constrained because of limits imposed by the IT architecture, the blueprint can define both the business process change and the architecture change needed. It is sensitive to immediate and future needs.

Among other things, a business value blueprint is equal parts a “to be” enterprise IT architecture plan and a complete systems development methodology. Combining both frames of reference explicitly guides the evolution of the business value platform one project at a time, so it more closely aligns with the business value model. It creates strategically tactical outcomes.

Conclusion and forecast

The goals of delivering strategic intent are to create exactly (and only) what is intended and to minimize any negative, unintended consequences along the way. But the best-laid plans are subject to surprises:

- Competitors alter the dynamics of the market
- Governments change the regulatory environment
- The economy speeds up or slows down

Most enterprises are flooded with information and speculation about market changes even as their own efforts to develop new products and services follow their own highly unpredictable course. The business world is full of uncertainty, challenging even the best companies to become more agile.

Enterprises have been changing their way of doing things—their business value platforms—without full consideration of the enterprise as a complex system. Too often, this results in unintended consequences and failed projects. Companies can get better at achieving strategic intent. They will increasingly rely on models as an active buffer between critical business operations and the slings and arrows of market disruptions and internal change efforts. The result will be more predictable, reliable results from strategic initiatives.

More companies will learn to leverage the power of models to guide the expression of strategic intent. These models will incorporate the full logic of their stakeholder value propositions, keeping a special focus on the customer value propositions that make them distinctive. Whether a strategic initiative is proactive—

Magna Carta aligns company with strategic intent

PwC’s approach to aligning the way a company currently operates to the strategic intent of management is called Magna Carta. This is a shorthand label for its full description: “Method for Advancement and Governance of an Enabling Architecture” and “Composite Application Right-Time Architecture.”

As the derivation implies, Magna Carta helps to evolve the business value platform through two interrelated deliverables: It defines the architecture blueprint that will be necessary to optimize the enterprise’s performance of the business value model, and it defines the methodology by which the organization can iteratively and incrementally move forward in an agile fashion.

Magna Carta for this reason is the blueprint that delivers a set of tactical, business process support changes to the business value platform but does so informed by the plan in place to tune the entire enterprise architecture, so that the architecture aligns with the business value model.

an acquisition, a new supply chain strategy, or innovations brought to market—or reactive—responding to a competitor’s price move or dealing with a major recession—modeling the value chain from concept to customer is critical in today’s large, complex enterprises.

The business value model is the first part of the method to more fully realize strategic intent. The second part is the business agility model, which is described in “How to hit a moving target” on page 30.

For more information on the topics discussed in this article, contact Glen Hobbs at +1 678 419 1332.

Business value model interviews

We spoke with Jeanne Ross, Yury Zaytsev, and Martin Curley about the emerging *business value model* concept. None of our interviewees refer to the concept specifically as a “business value model.” Ross and Zaytsev use the term *operating model*, and Curley talks about an *enterprise capability framework*. PwC introduces the term *business value model* to incorporate the broader themes that all three discuss in overlapping, though not identical, ways.

Discussion with Jeanne Ross

PwC: Companies are increasingly aware of the need to develop management strategies that create a sustainable future while they respond to their day-to-day market challenges. Analyzing your customer value proposition and figuring out how to extend that proposition is one approach to sustainability. Is this a reasonable approach?

JR: We certainly see a lot of companies trying to recognize the customer and provide an enriched experience to the customer by leveraging customer data and the customer relationship. But it's hard to do, and I think we don't have a lot of examples of companies that do that well.

PwC: What does your research suggest companies need to look at to have a sustainable future?

JR: First you must figure out how you want to operate. If you understand how you want to operate, then you

can have a strategy and know how you are going to execute it. What do we mean by “how you want to operate?” For a given customer value proposition, you must understand the extent to which you need everybody performing the same critical processes the same way. You also must understand the extent to which the individual parts of the organization must share data, so they can function effectively.

PwC: How does this square with the need to innovate? How do you make customers feel special if the operating model dictates treating everyone the same, for example?

JR: One way of looking at the operating model concept is that it frees the organization to innovate at the edge. This is very consistent with what Charles Handy was saying about 20 years ago. You don't want everybody focused on the things that just have to routinely get done. That's why you standardize them. You want

everybody focused on the things that make you unique. That's what you accomplish by basically taking the routine tasks off the plates of managers. It's not the only way to look at operating models. For some companies, the competitive edge will come from an end-to-end global capability that others can't match. And so for those companies, the operating model is about articulating and understanding that competitive edge and how you are going to make sure you sustain it.

PwC: But once you put these questions to a management team dealing with their specific complex reality, they may find it difficult to come to agreement. What sort of frameworks can help management understand their operating model?

JR: I think all the frameworks, at least the ones that have long-term value, help management understand their choices a lot better. People are looking for frameworks that give them focus, and I think that's why our operating model framing has proved valuable. It puts things in terms of simple choices. Interestingly, when we study companies, they seem to have the most difficulty with maintaining their focus. This means making the tough choices, deciding what are we going to be versus what we are not going to be. The whole goal of a framework should be to help people focus, so that the limited time they have is spent on the most important choices they need to make.

PwC: What are some of the good things that happen once this sort of focus has delivered a mutually understood, agreed-to core operating model?

JR: If we can get this core into place, then as long as the general concept of how companies are going to

make money in a specific industry is stable, we can count on empowered people to make the organization successful. I think this is the beauty of really understanding your core. You provide people with information, explain to them the goals of the organization, empower them to meet those goals, and encourage them to experiment. The companies I see right now that are good at this concept of a core have basically changed what they expect people to do. For example, in the simplest manufacturing environment it's about saying to your salespeople, "From now on it's not just about revenue; it's about profitability. So take a look at how much it cost us to customize something for your customer. If they really want it, let's make sure we will make money on it. Don't just say, 'Well, you're a good customer; we're going to do what you want.'"

PwC: I would expect that a major challenge to defining your core operating model would be to achieve a shared understanding across your senior management team about how the organization really functions. Doesn't this run up against the functional organization of management? How will the head of marketing, for instance, truly understand, say, the supply chain process?

JR: People are in marketing because they love marketing, or they're in manufacturing because they love manufacturing—and so of course the part of the organization they're in is what's most important to them. And that's a problem. On the one hand, we want that kind of passion, and on the other hand, it gets in the way. The framework we've talked about and its ability to simplify and provide focus does not solve that problem. The governance process can solve that problem, but the simplification process can't.

PwC: Are you seeing some creative, new approaches to governance to address this issue?

JR: We are seeing really leading-edge companies take their 30 to 35 top managers and say, “From now on, you are all going to sit on at least two strategy teams.” These strategy teams focus on things like becoming the largest company in the market, being number one in customer service, or producing the highest quality scores. They put these top 35 senior managers on one team covering an area that they are deeply familiar with. But they also put them on one of the strategy teams that isn’t their specialty. They make those strategy teams responsible for defining change and systems requirements. They quickly find senior managers saying

things that they have never said before, such as, “Oh, if you need that system to do that, then there is no point doing my system until we have done your system. We will make yours the higher priority.”

That’s like a miracle. And I think that’s a governance process. I don’t see a framework like a core operating model creating this sort of miracle. Making these strategic tradeoffs is all about learning what you do in the context of what everybody else does. For that sort of learning to take place, you must put in the time, and you must have people willing to articulate their own context, but they also must be willing learners. We’re seeing these creative governance ideas make that happen. ■

Discussion with Yury Zaytsev

PwC: An MIT case study¹ explained that Swiss Re has pursued the development of a global operating model, a process that has taken more than a decade. What was the motivation for this investment?

YZ: For many years, Swiss Re had been operating as a combination of many different legal entities, with different brand names, connected to a parent company in Zurich through the capital structure. But those entities basically operated on their own client base with their own ways of doing things. As this environment grew, we arrived at a certain level of diversity, because nobody looked at it as one structure, one global enterprise. In 1996, just after I joined Swiss Re as group information officer, Walter Kielholz was named the new CEO to replace Lukas Mühleemann, who had moved on to lead Credit Suisse. Walter was interested in looking at how we could become a truly global enterprise and take advantage of global capital, global client relationships, and global diversity. He understood that the diversification of our risks on a global basis together

with our use of capital and the use of our skills and experiences on a global basis could create a more sustainable Swiss Re.

PwC: What exactly did sustainable mean in this context?

YZ: Here’s how I think about it. There are many forces that influence corporate performance. These forces may come from the market, they may come from organization changes, and most importantly they come from the ability to use skills and competencies embedded in the corporation. And the more a company can look forward and align itself to the markets to deliver better performance without really changing its operating model every time it needs to do something, the more this company becomes sustainable. This operating model is not something that you can define once and say, “I’m done.” It’s more a journey than a destination. It’s a matter of responding to short-term developments without changing your core operating model, while also applying lessons to the long-term evolution of the model.

¹ Yury Zaytsev and Jeanne W. Ross, “Building a Global Operating Platform at Swiss Reinsurance Company,” *MIT Sloan School of Management Research Briefing VIII-1B*, March 2008.

PwC: So the primary goal of this decade-long project was targeted at the development of a global operating model?

YZ: We did not describe it as an operating model at first. It became apparent to us as we made progress in becoming a globally consistent company that it could be described as an operating model. At first we called it a business application architecture and business information architecture initiative. And these were driven by our business model, defined as the end-to-end processes that define our internal value chain. But what eventually surfaced was a more fundamental challenge: how to bring the right information at the right time and the right place to the right people so they can make the right decision.

Today we describe our operating model as a combination of three things. It's a business model defined in core business processes, it's a set of system and business solutions that support elements of this model, and it's the information capability that allows the company to make decisions required during day-to-day operations. All three greatly interact with and greatly depend on each other. However, all of that is definitely driven by the business model and the business design of this model.

PwC: What phases did you have to work through before you saw some real changes?

YZ: We are talking about a process that has taken years, so I will have to greatly simplify the phases. At the highest level they could be called the technology infrastructure standardization phase, the business terminology standardization phase, the business process harmonization phase, and the operating model improvement phase. The latter represents the continuing evolution of the model. The phases also overlapped; they were not strictly linear.

PwC: Can you describe the business terminology standardization phase? Is this like an enterprise data modeling exercise?

YZ: No, not at all. You must understand that this effort needed a foundational element to proceed, and that element was everyone having a common understanding of the Swiss Re business model. Semantics are a critical part of it, and we created our own data language, called Swiss Re Data Language, where we documented the terms. When we referred to terms such as risk, client, customer, or relationship, it was all documented in very specific language. This made it possible, then, for us to create a shared understanding of one common Swiss Re business model across the global firm.

PwC: You referred to “harmonizing your business processes” earlier. Did you mean “standardization”? Harmonization could mean a lot of different things.

YZ: Standardization means you define certain sizes of screws, certain sizes of bolts, and everybody uses the same. To me, harmonization is a creative process. You bring many people together with their distinctive knowledge and understanding of a business process they all do somewhat differently, and you help them create one inclusive common process.

PwC: So harmonization is really the process, and standardization is the outcome.

YZ: Correct. You can describe it this way.

PwC: Where was all this harmonization activity leading to? What motivated such a large investment?

YZ: We knew we could greatly increase the use of our internal competence, skills, and knowledge by bringing everybody to this consistency we called harmonized business processes. After we define things at this level—and we basically define it with a key rule that as long as it's one core process, it requires one solution—we don't need many solutions. You can immediately see that by bringing people's skills and knowledge into a harmonization process, we can develop a set of consistent solutions. This includes being able to deposit and retrieve a lot of different information in a consistent

form, with consistent definitions, consistent usage, and following the design of a core business model. This allows any company of our nature, which is greatly dependent on people's skills and information, to benefit more and more as this operating platform is developing forward.

PwC: Were all business processes treated the same? Was the focus on harmonization targeting non-value-add processes, what some might call commodity processes?

YZ: Commodity processes were not our focus.

PwC: So your harmonization effort targeted only those processes that specifically defined you as a reinsurance business?

YZ: We more or less put the business model together starting from client relationships and proceeding through assessing risk, underwriting, pricing, and on to the elements of collecting cash, paying our claims, and so on. If we wrote down all our business processes on a piece of paper, we basically would divide this piece of paper in two. On the left side would be everything that is driven by the markets, by our own internal competence, and by our own knowledge of the company. We decided we would most likely need to develop these applications ourselves. There are not enough market tools in our business that would be able to help us. However, everything that is on the right side of that piece of paper—cash collections, finance, HR processes, etc.—is more common to the industry, and therefore our advantage there is to find the outside tools that could be implemented faster and efficiently, and we can gain some benefit there. ■

Discussion with Martin Curley

PwC: Our focus in this issue of the *Technology Forecast* is on the strategic use of value models to enhance enterprise performance. Is this something Intel is actively engaged in today?

MC: We are. In fact, we are one of the founders of the Innovation Value Institute² (IVI), which puts value management front and center of its research agenda. In the IVI we are partnering with other leaders, such as Boston Consulting Group, Chevron, SAP, Microsoft, and Astra Zeneca, to build an integrated value-based model that helps drive a structural change in the way organizations get value from IT. We use two main frameworks at Intel; the first derived from IVI research. We have the IT Capability Maturity Framework (CMF),

which is our process map for IT. It says, “Here are the business processes that we need to run IT.” And then from a business standpoint, we have a related framework that we’re finding quite powerful called the Enterprise Capability Framework. And this, basically, is a map of all the business processes within Intel, at different levels of granularity. It includes everything—design processes, manufacturing, sales and marketing. What we’re able to do with both frameworks is decide which processes are going to be differentiating, which are going to be competitive, and which are going to be base. With that understanding, we can do a health assessment and identify where we have underinvested and where we have overinvested.

² <http://ivi.nuim.ie/>

PwC: Do these frameworks allow Intel to better understand the challenges of creating new value for customers?

MC: Yes, they do. They also are providing a road map for improving IT and business capability to deliver more value. We are able to assess where we are against a reference capability framework and indeed benchmark against other companies to determine our relative maturity.

Intel is fairly unique. One of our senior VPs talks about Intel as being the largest single-cell organism on the planet. We have a very successful core model. And Craig Barrett, our chairman, talks about that core model being a creosote bush, and everything that's underneath it has died because the model is so successful. The processor business model is one of those business ideas and models that appears once in a generation, and trying to replicate that is difficult. So we do have one operating model as a company, and that is enormously successful. We can even make bad ideas work, and we have. Now Intel's challenge is to grow—whether we profit from the core or do something different. Our CEO, Paul Otellini, has launched a number of high-potential growth initiatives, and to support this, we need to find an operating model for the company that keeps the core going but also allows new businesses to prosper. So I think at the moment our Enterprise Capability Framework is a view of the core operating model with a couple of skews that are allowing us to try to find a path to some complementary operating models that can coexist with the core operating model.

PwC: Is this focus on really understanding your operating model a new development?

MC: I think the formalization of a business operating model vocabulary is new. People have had an intuitive sense of it without really calling them business operating models. I think the work that Jeanne Ross and other folks are doing is really helping to educate management. It makes things visible that were sort of taken for granted. Managers have to make explicit decisions as they define their company's operating model. It's only my perspective, but I think the business operating model concept will probably become much more talked about and debated.

PwC: How does this focus on value creation and operating models relate to innovation at Intel?

MC: I think we do an outstanding job with our product innovation and with our process innovation, and they're two of our core competencies. I think we will continue to do that. I think we've figured that out. It's very hard. You know, our engineers excel and they do a fantastic job, but the opportunity for Intel now is actually business innovation. We have got to innovate on our business model and on our business operating model, so that we're able to monetize the invention and innovation better than we've done it in the recent past. ■

How to hit a moving target

Constant change requires a business agility model—a method of evaluating your options for the next market disruption.



The US auto industry might be in better straits today if it had adopted business agility models a decade ago. During the 1990s, the highest profit margins were on sport utility vehicles (SUVs) and pickup trucks, which Americans couldn't buy fast enough. Some warned that

heavy dependence on sales of gas guzzlers was a risk because fossil fuels would become scarcer. It was not a matter of if, but when. As Figure 1 shows, this was a prescient warning.

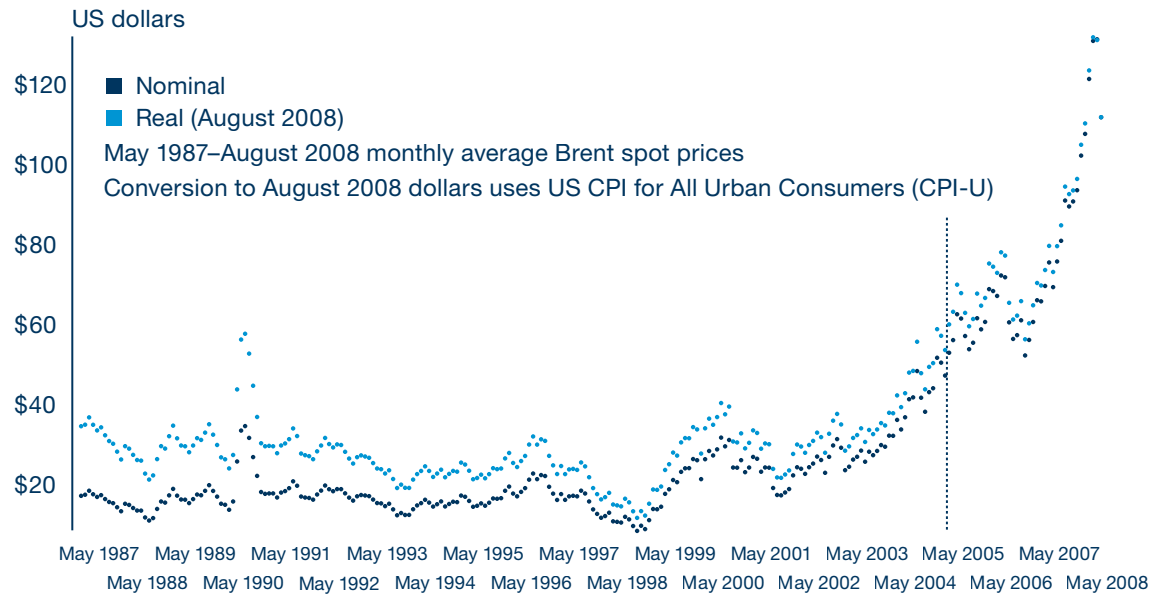


Figure 1: The price of oil, 1987–2008

Sources: Energy Information Administration and Bureau of Labor Statistics, 2008, as used on Wikimedia Commons, 2008

Then 9/11 happened. The Iraq War took a major source of petroleum offline. Prices started to skyrocket. Face into the wind, US automakers continued to rely on mostly large, gas-guzzling vehicles to meet American demand. The US manufacturers clearly weren't ready for a market change toward fuel efficiency in 2008.

It is apparent today, with 20-20 hindsight, that they needed to find a way to meet US demand for trucks and SUVs, while building into their operations some options that would have allowed them to respond quickly to market changes. Serious agility modeling could have led them in one or more strategic directions.

For example, they could have invested more heavily in developing fuel-efficient engine technology, including hybrid. Such technology would have improved customer value at the time while anticipating customer demand of the future.

They could have designed their European cars to more easily adapt to American needs (with snap-in pieces for mutually exclusive requirements). The economies of scale from this approach would have offset the increased cost of harmonizing the platform.

Similarly, they could have mass-manufactured standard platforms in strategic locations and used various sheet metal "skins" for each local market. This approach would have provided greater agility on a regional basis.

With business agility modeling, the automakers would have had a method for deciding which investments

An intentional effort to bring agility into an enterprise's DNA as a managed attribute lets organizations recalibrate themselves for agility to serve corporate strategy, without the risk of chaos.

were worthwhile and when to make them. Agility modeling is all about anticipating alternative future scenarios and taking steps to ease the adjustments needed should those scenarios occur.

A methodology for permanent agility

Business executives are not clairvoyant, and no one expects them to predict the future. But it is senior management's job to anticipate changes and plan for them. Business agility modeling, bolstered by an agility blueprint, can help executives identify trends that might demand changes in the business value model. Business agility modeling is the key to deciding whether, how, and when to respond to market disruptions.

Before executives can create a business agility model, they need a sound understanding of their business strategy. The previous article, "Ready, fire, aim," described two strategic essentials: a business value model, which means knowing what it is that creates distinctive customer value in your end-to-end value chain; and a business value platform, which is a candid assessment of how your assets, business processes, and systems actually work.

Armed with these models, a management team is ready to clarify its need for agility by running scenarios to test their impact on the business. The scenarios could be immediate market disruptions, changes the organization may choose to introduce, or future circumstances uncertain in time or scope. Scenario analysis seeks to answer one key question: "How will this affect our strategic intentions for creating customer value?"

Answering that question requires a business agility model, which is a way to understand the effects of change, the cost of it versus retaining the status quo, and the benefits of accommodating it or not. After a management team completes a business agility model, then a business agility blueprint provides a plan for exploring the full consequences of making a change before exposing the business to an idea.

Figure 2 shows the complete cycle. This approach reduces the risk of change while increasing your ability to handle change. It is the missing link between strategy and tactics.

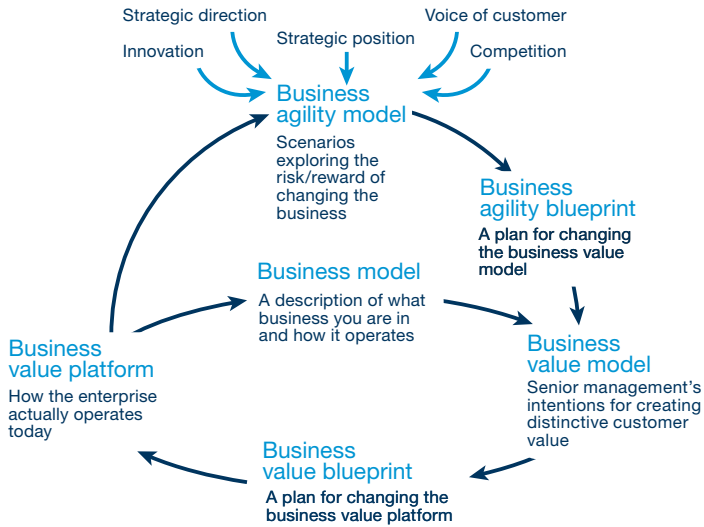


Figure 2: Interrelation of the business value platform, business value model, and business agility model

Source: PricewaterhouseCoopers, 2008

The need for permanent agility

Before we further explain the business agility model and business agility blueprint, it's important to understand the goal of permanent agility. Agility is the ability to move quickly in new directions as needed without

breaking the core infrastructure and without putting the organization at undue risk. Agility involves speed and flexibility as well as standardization and consistency. Aligning those two aspects is what allows an organization to achieve the right agility for itself and to adjust the degree of agility according to circumstances.

Speed and flexibility enhance responsiveness to customers. By designing speed and flexibility into your operational platform, you sustain agility over the long haul. Standardization and consistency create efficiencies and reliability. Standardization and consistency are no longer barriers to change, but force multipliers that let you change more readily. Think of it as the combination of stability control, power steering, power braking, and a tight turning radius on a car.

Yury Zaytsev, retired group information officer at Swiss Re, puts it this way: "Agility is the ability of an enterprise to effectively respond to a wide variety of disruptions while retaining the core design of the business itself; that is, its fundamental business model." (For more insights about agility from Zaytsev, read the interview excerpt on page 40.)

One key aspect of agility is to know what should not be easily changed. A stable infrastructure enhances agility by grounding your operational capabilities. Jeanne Ross, principal research scientist at the MIT Center for Information Systems Research, urges companies to determine what is not going to change, build it solidly, and reuse it as much as possible. (In the interview on page 40, Ross discusses her views on reacting to change scenarios.)

Business agility modeling, bolstered by an agility blueprint, can help executives identify trends that might demand changes in the business value model.

With a stable infrastructure in place, executives can more easily concentrate on the processes where flexibility and change are useful. “Every morning you are going to wake up and something else in your world is going to be different. You need to know whether it’s something different that you should respond to or whether it’s something different that you are ready for,” Ross says.

Focusing just on speed and flexibility will quickly lead to chaos—systems and processes will either become unique or so customized that they will be impossible to maintain. Over time, this myopia decreases agility because the organization becomes too unwieldy and too fragmented to move in a single direction. Likewise, an overemphasis on standardization makes the organization too bureaucratic, converting useful dependencies and standards into self-limiting constraints and bottlenecks. Both extremes introduce unnecessary, often harmful risks.

Most large companies have too many constraints that inhibit their agility. A bureaucracy has set in—derived from sensible needs, to be sure—that has lost an appreciation for agility and often discourages it. An intentional effort to bring agility into an enterprise’s DNA as a managed attribute lets organizations recalibrate themselves for agility to serve corporate strategy, without the risk of chaos.

Business agility models and blueprints are crucial to this effort.

Start with a simple model

We propose that executives develop a simple business agility model that amalgamates real-time events and future scenarios. The modeling exercise plays these events and scenarios against the business value model to assess their impact on customer value and to test the organization’s ability to respond.

With a stable infrastructure in place, executives can more easily concentrate on the processes where flexibility and change are useful.

This process is subjective. Future scenarios, in particular, require management to establish a subjective probability that the event will occur. Management must estimate the value at risk and the cost of making any changes. Informed by the results of the modeling activities, management is in a stronger position to respond to only those events and scenarios that protect or add to the value created by the business.

There are no limits to the creativity management can bring to this exercise. Intel, for example, applies game theory to its anticipation exercises, according to Martin Curley, senior principal engineer and global director of IT Innovation and Research at Intel. (See Curley’s comments on agility in the interview on page 40.)

Business agility modeling is iterative. It comprises successive cycles of gauging future agility needs, modeling how agility can be implemented, deriving the plan that defines what needs to change in the business value model, and then working to bring the current business value model and the way you operate into alignment. It’s important to note these techniques are not massive business reengineering efforts or backward-looking architectural definition efforts.

The idea is a two-step process. The first is to create a simple agility model that does three things:

- Leverages the business value model; that is, what makes your company different in ways meaningful to the customer and thus to the company’s long-term success

- Shows the range of action the value-creating processes can respond to effectively; this demonstrates the extent to which each process can adapt to handle the agility needs you anticipate
- Establishes dependencies indicating whether value-creating processes constrain or magnify each other; this helps you to avoid making changes in one process that other processes will prevent from having the desired effect, and to see where related processes should be changed together for best results

Most value-creating processes cut across organizational silos and should be treated as end-to-end enterprise processes. This explains why the piecemeal, local-solutions approach isn't effective. Few important processes exist in a vacuum. The end-to-end nature of the business agility model and blueprint is another reason why these are enterprisewide activities owned by senior management.

The second step is to review key strategies, examining not just where you want to move the business, but also possible scenarios for change—positive and negative—that may occur outside your control. With that range of scenarios, you can decide the degree of agility you want to build into your key processes on the basis of effort, cost, and opportunity—giving yourself a more rapid response capability if these scenarios, or similar ones, materialize.

Understanding the business agility model

Business models and frameworks are established concepts in business management. PwC prefers the word “model” because it implies a dynamic approach, while “framework” implies something static. This is a subtle but useful difference because agility is about dealing with dynamic states. Popular frameworks already in use include cash flow and balance sheet models; organizational, strategy, and value network (value chain) models; enterprise architectures; and corporate performance management schemes. They all have their place and can help in creating a business agility model.

But these models don't anticipate change or help you manage change, which is continuous today. They are static descriptions of the actual or intended state and offer no guidance on what could be changed, under what conditions, or if change would be useful or necessary. They can tell where you are or where you want to be, but not how to get there—much less help you see if your destination should change and how that affects your path or the pace at which you move.

In contrast, a business agility model looks at key value-creating processes—typically those that serve customers—in the context of a specific internally or externally driven change in the market. The precursor to this activity is to create a business value model. Only by doing so is it possible to paint a full picture of how any scenario will affect customer value.

The decision logic in the business agility model must define answers to the following in relation to a scenario that creates pressure for change:

- What is the value created by the standardization of processes and data systems? Standardization has a cost: inflexibility and dependency. It also has a benefit: efficiency and predictability. Understanding the cost and benefit lets you determine the overall value for each process's desired standardization level and whether that assessment has changed given the scenario.
- What is the value created by process flexibility in key processes? Flexibility has a cost: complexity and management overhead. It also has a benefit: responsiveness and opportunity. Does the scenario change either way?
- What subjective probabilities has our management team agreed upon concerning possible market disruptions? Having a common view of the likelihood of various scenarios and their likely effects lets you prioritize where to invest in agility.
- What is the value at risk or the value foregone if a scenario takes place and the necessary agility is not in place to respond?

- What will it cost to embed this anticipation? The cost of embedding the desired agility in each key process must be weighed against the probability that the agility would be useful.

When defining a business agility model it is important to minimize constraints, so you don't inadvertently prevent actions to support unanticipated future needs. The only constraints to impose are those that you specifically want to have, such as to reduce significant risk (for example, requiring a legal review for contracts that exceed a target value) or to meet regulatory needs (for example, all workers conform to local regulations defining employees and contractors).

It is important not to get too deep into details when defining a business agility model. It is enough that the model specify mandatory conformance with relevant statutes as opposed to embedding the current statutes in your model. Similarly, the business agility model does not dictate the specific fields in the customer definition, or the technologies required to execute it, or who has authority over changes to the process. These are details that individual staff will determine on the basis of the model's parameters and the specifics of what they want to do and have to work with. They are not at the strategic level at which a business agility model must operate.

The business agility model provides the C-suite a mechanism for managing continuous change in a proactive, anticipatory way. It encourages creative thinking to explore the “unknown unknowns.”

Using the business agility blueprint

With the business agility model in place, the organization can now define—with the help of specialist staff such as enterprise architects—the business agility

blueprint. The blueprint is a bridge between the decisions management has made about where to invest in greater agility, and the current model of how the enterprise creates value for customers. The blueprint delves into the next layer of details on how to implement change as informed by the business agility model. The blueprint tells you what must change in your business value model to support the agility goals.

The blueprint must lay out the transition points and decision paths related to introducing agility for key value-creating processes. The blueprint should outline the path from the “as is” to the “to be” states not prescriptively, but indicatively—after all, the path to the “to be” state may need to change on the basis of unexpected circumstances. This is where enterprise architects and CIOs are essential to success, since they usually can deal with the details in a flexible way, adjusting specifications as needed while staying true to goals. (The CIO's role is explored more in depth in “Lead, follow, or get out of the way” on page 46.)

The business agility blueprint operates at several levels and includes appropriate detail for each level. At a high level, the blueprint lets enterprise architects, business unit managers, and others understand how business operations and their associated technologies and workflows must change to meet the new target business value model.

At lower levels, the business agility blueprint traces the implications of changes to show operational managers and production staff what the effects of their local changes would be on the intended value model. The blueprint provides the missing connection for understanding what to change at the tactical level in support of an evolving strategy, and it provides the missing connection for understanding how local tactics support or thwart the overall strategy. An example of how an agility model and blueprint prepare an organization to deal with an external change appears on page 38.

To better understand the business agility model, consider how building architects work with models. The business value model parallels the master architectural blueprint, which comprises several engineering drawings: one for electrical, plumbing, structure, ventilation, people flow,

and so on. The master blueprint is the detailed output created from the overall building model that the architect created on the basis of customer specifications. In the enterprise, management's strategic intent for creating distinctive customer value is analogous to customer specifications.

The architect may receive requests to modify the model. Before finalizing changes in the master blueprint, these proposed modifications must be tested against several constraints, such as limitations defined in the building permit, structural requirements, and others. Agility modeling directly parallels these activities. Before management decides to change the business value model, a business agility analysis determines a rationale for doing so.

In a building project, changes to the master blueprint precede construction. Changes are made in drawings, not buildings. In an enterprise context, changes almost always affect how the enterprise operates. In that sense, management needs to use the equivalent of change orders that outline how general contractors adjust their remodeling plan (and budget) in consultation with customers. These change orders directly parallel the role of the business agility blueprint. They represent the changes management has decided to make to the business value model after testing with agility modeling.

It's easy to overdo an agility blueprint, turning it into a highly detailed document with the flexibility of a straitjacket. Doing so would repeat the failure of the enterprise architecture approaches in the 1990s that sought to document the "as is" states of companies to the nth degree—multiyear archeological efforts that did nothing to further the needed evolution of those organizations.

Conclusion and forecast

Management teams need a set of integrated processes that maintain focus on business value creation while grappling with current and future challenges to that value. The business agility model provides the C-suite a mechanism for managing continuous change in a proactive, anticipatory way. It encourages creative thinking to explore the "unknown unknowns." It simplifies decision-making regarding the significance of market events by exposing the cost and value of adapting to them. It creates an opportunity to envision future scenarios and a system for determining if the cost of adapting is justified. This orientation helps ensure that an organization does not over-engineer for flexibility or efficiency.

The business agility blueprint collects the decisions for how the organization plans to enhance agility. These are applied to the business value model in a coordinated fashion, maintaining vigilance for how the end-to-end value chain is affected. By focusing on changing the model before changing the platform, the business agility blueprint offers those with deeper process knowledge a chance to surface issues that need resolving before applying changes to the business value platform.

Agility is a key value that existing frameworks do not account for, but it has become essential in an era of constant change. Five-year plans are unrealistic today, so a planning approach that defines long-term goals, recognizes likely change factors, and sets the context for achieving both known and likely goals under changing circumstances is needed instead. That's what the business agility model and blueprint provide.

An agile organization can more easily adjust its key processes and direction when needed without tearing itself apart through rushed actions or falling behind due to needless rigidity in its management structure, process designs, and technology infrastructure.

The result of this approach is both customer value and strategic value. An agile organization can anticipate customer demands before they become obvious, creating more of the customer delight that furthers brand loyalty. An agile organization can more easily adjust its key processes and direction when needed without tearing itself apart through rushed actions or falling behind due to needless rigidity in its management structure, process designs, and technology infrastructure.

We expect this approach to take root as organizations realize that various piecemeal modeling techniques deal only with facets of their larger need to achieve permanent and sustainable agility. The role of the CIO is crucial to this effort, and we turn to that role in the next article.

For more information on the topics discussed in this article, contact Joe Tagliaferro at +1 973 236 4226.

Agility modeling applied to a US automobile manufacturer

For a hypothetical example of how business agility modeling would create insight and motivate action, consider how a US automobile manufacturer might have modeled the need for agility in response to rising oil prices. Automakers may in fact have done exactly as described. This is simply a hypothetical example to demonstrate the modeling process.

It is October 2004. Oil prices have been rising steadily and have recently passed \$60 per barrel. Based on the steadiness of the trend line, especially compared to what happened to oil prices around the time of first Gulf War in the early 1990s, executives decide they must model a scenario for responding to prices if they reach \$100 per barrel. They quickly conclude that consumers will shift abruptly away from energy-inefficient trucks and sport utility vehicles (SUVs) and buy cars that offer style, reliability, and more miles per gallon. What can executives do to prepare for oil at \$100 per barrel if it were to actually happen?

The team considers a number of approaches. All of the options will take too long; market share and deep losses can be expected. But one option could mitigate this undesirable outcome: Bring successful, energy-efficient European models that are part of the corporate family into the US for assembly and delivery here.

A quick analysis uncovers two major roadblocks. First, government regulations regarding safety and emissions are inconsistent. Cars sold in the US must be designed to protect the driver and passengers; safety regulations in Europe are biased toward protecting pedestrians. Similar issues confound pollution control. Second, assembly lines are nonstandard, and reconstituting assembly lines in the US takes too long.

The team maps all these issues, including concern for more economical cars, into their business value model and highlights in dark blue those customer value propositions and business areas most affected by this scenario. (See Figure 3.)

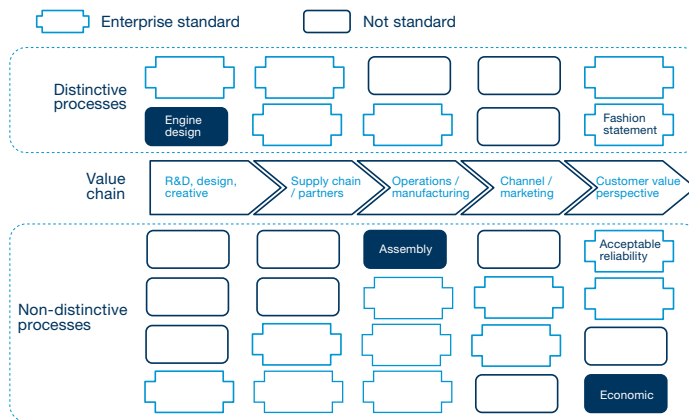


Figure 3: The business value model, Level 1: Oil at \$60/barrel

Source: PricewaterhouseCoopers

With a quick scan of the model, the executive team understands where more detailed analysis must begin. They decide to launch a cost-benefit analysis of making the needed changes in the model, including:

- Developing enterprise standards for the design of modular collision protection and bumper assemblies, so that different regulatory schemes can be accommodated by the same fundamental car design
- Developing a “world engine” capable of being tuned to meet emissions standards in any jurisdiction
- Creating the assembly-line standards needed to reduce the time it will take to begin assembly of European models in US factories
- Rethinking the fashion statement value proposition to include global warming remediation for customers who have those concerns

The analysis delivers an estimate that more than \$8 billion of revenue per year is at risk if oil reaches \$100 per barrel. Management discussions lead them to conclude in 2005 that the probability of oil hitting \$100 per barrel and stabilizing there is at least 50 percent. The estimated cost of changing the business value platform to conform to the model created in the agility scenario is \$10 billion. The executive team decides to proceed.

Agility interviews

The pursuit of agility is a challenge because it is about change. Management theories mostly focus on ways to develop and execute on strategy—implicitly describing a stable environment. In a sense, today's management theories are linear, but today's environment is nonlinear. Change is so constant that the implicit assumption of stability no longer holds. And yet our interviewees agree that agility is defined in part by having a clear understanding of where the enterprise needs a stable, standard set of business processes. Defining the line where standard gives way to flexible is today's management challenge.

Discussion with Jeanne Ross

PwC: What do you see as the connection between enterprise architecture and agility?

JR: In terminology an enterprise architect might use, we think of agility as the reuse of existing IT and business process capabilities. More generally, you could just say agility is the use of existing organizational capabilities to rapidly generate new business value while limiting cost and risk.

PwC: Why do you think enterprise agility has become such a hot topic?

JR: Agility matters now more than ever because we need profitable growth. Companies in the past have

typically focused on profit or on growth. Today's marketplace demands profitable growth. That's difficult, because growth is usually a tooling-up stage and profit is usually a taking-out-cost stage. So if we are trying to grow profitably, it means we have something in place that we can reuse and we already have some cost management and some world-class practices in place. Companies no longer have the luxury of not making money on a new venture. When they take something to market, they must make money on it. And I think that's why agility is getting so much attention today.

PwC: How does your notion of agility include the idea of anticipation, of being prepared for change?

We would add to your definition some ability to anticipate what's coming, preparing your organization by investing in strategic flexibility exactly where a change has the most impact.

JR: Yes, and in some ways your definition and my definition make up the whole. You are saying that one way to be agile is to see what's coming and get ready for it. Our perspective is that it may be too hard. You have to know so much. We suggest companies should figure out what's not going to change, build that very solidly, and then reuse it in the next environment where there will be some changes but the stable piece that you built can be reused.

PwC: But some change, anticipated or not, challenges the very core of a company. It can destroy any value created by your operating model. If change is accelerating, are companies going to define more flexible operating models?

JR: Instead of companies saying, "Well, I don't want to build anything too solid, because my world might change," I think companies will become more and more aware of the strengths and limitations of what they've built. If a time comes when it doesn't work, they don't say, "Oh wait a minute, this is what we have, so we must reuse it." Instead they say to themselves, "This is what we have, it isn't right for where we're going, so let's get started on something totally new."

PwC: Do frameworks such as your operating model concept need to be designed for change or designed to change?

JR: We are trying to design it for change. The operating model provides direction, because every morning you are going to wake up and something else in your world is going to be different. You need to know whether it's something different that you should respond to or whether it's something different that you are ready for. Are you in a position where you will be able to take advantage of it? The concept of the operating model is to design for change, so that as you set your direction you understand fundamentally what you are doing as well as the limits of flexibility your operating model allows around the edges. But you can simultaneously use understanding to recognize when your operating model is not working anymore and thus needs to be discarded and you start over. So in that sense I think you first design for change, but in doing so it will help you recognize when an operating model just isn't going to work anymore. In that way, I would say it should simultaneously be designed to change. ■

Discussion with Yury Zaytsev

PwC: Enterprise agility seems to summarize what many companies want to pursue these days. It's a fairly abstract concept. Can you define it in a more concrete way for us?

YZ: Agility is the ability of an enterprise to effectively respond to a wide variety of disruptions while retaining the core design of the business itself; that is, its fundamental business model. Companies demonstrate agility when this business model survives many generations of organizational models and many generations of different market conditions. Perhaps the highest levels of agility are when the enterprise and its sustaining business model define the market environment others must respond to.

PwC: Can you point to ways in which Swiss Re has demonstrated this type of agility and what contributed to that agility?

YZ: A good example is our GEIS acquisition in 1996, which in size and significance was much larger than any of our previous acquisitions. Successfully integrating a large acquisition is one indicator of agility. In fact, even before the integration step, being able to rapidly make the right decision on a potential acquisition is a true demonstration of agility. In essence, it represents a test of whether you have a foundational understanding of your business model, one that has been translated into a sustainable operating model. At Swiss Re, we can quickly compare a potential acquisition for compatibility and avoid bad acquisitions where the target company would be a poor fit with our operating model.

But even when a positive decision has been made, acquisitions are disruptive by their nature. You have to integrate data centers, you have to make HR decisions, you have to compare business logic and align the whole organization to the better logic. But having completed

other acquisitions in the context of having a globally consistent operating model, we understand what we need to look at in the target acquisition and what needs to be done. Ninety days after the transaction closed, Swiss Re could renew most new GEIS business at both companies mainly via its operating platform.

PwC: Some companies have recently reported better success with merger integration by using middleware to mediate differences between systems and processes. Is this what you mean by having an operating platform ready for post-deal integration?

YZ: No. That's technology integration. It's not true business integration. It astounds me when I hear of a company that has 20 or 25 different business models—and 20 or 25 ways of implementing it in different places—acquiring a company that has 10 or 15 different business models. The CEO and CFO of the acquiring company will say, "Within a year and a half or two years, we'll deliver \$2 billion of synergies." How do they know? How could anybody compare 25 different business models with another 15 and understand the points of integration that actually could or will produce synergies?

Our approach is to combine two companies that we have concluded have a common or potentially common business model, and to harmonize the global operating platform so the combined business runs on that single platform. Our integration focuses on integrating the information from different sources and migrating it to our level of consistency, quality, and structure. It's not actually system integration that defines our integration process.

PwC: How does your focus on a core operating model enhance your agility in offering innovative

solutions to customers? All this focus on a single standard would seem to constrain Swiss Re's ability to customize its offerings to customers in innovative ways.

YZ: Again, you're looking at the core capabilities of the firm, and you're looking at how you can enhance client relationships by having a consistent operating model. When that foundation is in place, by nature of its consistency and its transparency, you enable client-facing staff to apply more intelligence, more skills, and more innovation to what they offer their clients. For example, earthquakes are a major factor in the reinsurance business. You'd really like to consider a wide range of scenarios in developing customer-specific insurance options that are priced appropriately to our risk exposure. Without a global operating platform, client staff spend most their time dealing with the diversity of information. They're lucky if they can run two scenarios in a month. With the consistency and transparency of our operating model, we can run 20, 30, or more in a day.

PwC: So you're saying that agility does not equate to complete flexibility. By analogy, a jellyfish is quite flexible, but because it has no

vertebrae, it can do only certain things. You're saying that to innovate in value-creating ways, the flexibility in your operating model must be intelligently positioned relative to a set of standard or consistent ways of operating.

YZ: Correct. There's a lot of misunderstanding about this, in my view. I think it's because there is this contradiction in definitions of standardization and customization. The more standardized you become in the core operating platform that supports your fundamental business model, the more customization you can offer clients because your structure is so solid.

PwC: So standardize the core to enable agile customization at the edge.

YZ: Correct. You can customize different things because you know it all comes back to one set of systems, processes, and information. If you try to customize things that are not standardized, you're creating generations and generations of that, and then it's impossible for any middleware or any additional process to connect those pieces together. ■

Discussion with Martin Curley

PwC: A trend we're watching is how companies are responding to the need for agility. What do you think is driving this interest in agility?

MC: I think the meta-theme is the speed of change. It is clearly driving greater interest in agility.

PwC: Is this an important focus at Intel?

MC: Absolutely. From an IT standpoint this is very important, and from a business standpoint it is very

important. In IT, I think the focus is moving from patching different solutions on an ongoing basis to providing a platform for business agility. Additionally, we think an important component of business agility is having information superiority over our competition through the use of analytics, business intelligence, and visualization.

Once you have the information, of course, then you have to be more agile in your ability to respond. One way to do that on a localized basis within the innovation centers is to use extreme programming and rapid

solution prototyping. From a business standpoint, innovation velocity is very important and Intel has a strategy called “Tick-Tock,” which is a synchronized strategy to introduce alternate significant processor architecture and manufacturing process innovations every other year. This is almost like hard-coding agility into our business operation, and our position as a keystone player in our business ecosystem allows us to be mostly proactive, setting the pace rather than reacting.

PwC: So Intel is seeing agility in terms of sensing and responding?

MC: Yes and no. Alan Kay once said the best way to predict the future is to invent it. This is what our “Tick-Tock” strategy is about—being agile enough to predictably invent and innovate new processor architectures and manufacturing processes so that we set the pace for innovation and continue to drive Moore’s law. However, on sensing and responding, the whole Darwin thing has sped up dramatically. First you need the ability to sense and then the ability to respond—those two competencies both have to be there. You may have heard it said that management without leadership leads to mediocrity, but leadership without management leads to catastrophe. I think there’s a direct parallel to agility—sensing without the ability to respond is bad, but probably even worse is responding without the ability to sense.

PwC: Information superiority seems to cover the sense side of agility, but what about anticipating something happening? Do you look at scenarios to anticipate the need for agility?

MC: Let me give you one example and see if that helps. We’ve been doing some very interesting work with gaming theory around demand forecasting for new products. The results we get from using this approach

are at least as precise as using the conventional method and often more accurate and much less costly. So this is something that has very significant implications for the business. Any new product we launch will carry a lot of risk in terms of future demand. We have the forecast from a couple of vendors that are going to adopt this product, but in parallel we’re using gaming theory to actually plan and help develop our factory utilization plan. By better forecasting demand, we can somewhat mitigate the need for expensive agility, avoiding building costly inventory while taking advantage of revenue upside where that is likely to be available.

PwC: You’ve talked about Intel’s success with its core operating model of designing and manufacturing semiconductors. Where does agility come in?

MC: When you choose your operating model, I think you’re hard-wiring in agility in certain dimensions, and then you’re excluding agility in other dimensions. You’ll end up doing some unnatural act if you try and do something that the operating model isn’t specifically designed for. Cisco’s competency is in developing an operating model for the fast incubation of new businesses—which I think that company does extremely well. Cisco’s business operating model is structured for acquisition agility. That’s not something that Intel does very well. Maybe it’s something that we should do.

PwC: How do you make sure that your efforts at being agile and innovative will create value?

MC: When someone develops an innovation, we map it into our value paths, so we can decide whether to go forward. If we see something that’s quite attractive, we can anticipate how it will impact a specific value path. The innovation could be a new solution that goes

through the formal Intel IT product lifecycle, or it could be something that's so valuable that we rapidly adopt it (meaning it's deployed within 30 days), providing we make sure it's legal and it's secure. Or it could be something that becomes part of a new Intel product, or it could be something that influences our enterprise architecture—something that fundamentally changes the cost structure of not only IT but Intel.

PwC: Where are you seeing the most success when people struggle with the need for agility?

MC: Agile innovations often happen at the convergence of business and technology. It's an example of the Medici Effect, you know, how Frans Johansson said that the most powerful innovations happen at the intersection of different disciplines. And this is a frontier that, I think, people are really understanding: When business and technology meet, that's where we can really get innovations that overperform and have higher yields than the sort of innovations that just stay within a particular discipline. ■

Lead, follow, or get out of the way:

Why the CIO should own agility initiatives

CIOs must be more strategic. Agility is what they should be strategic for.



You're the CIO of a large retailer. If the CEO asks what you and your organization can contribute to make the enterprise more strategically agile during an expected recession, do you have an answer? If the CEO doesn't even bother to ask what you can do to help, what does that mean?

As companies wrestle with continuous, overlapping change, they are trying to figure out what is keeping them from being more agile. Does your CEO see the enterprise technology portfolio as an asset or a liability in the pursuit of agility? More to the point, are you part of the problem or part of the solution? For most CIOs today, the only way they'll be part of the solution is to rewrite their job description and promote the new one to their boss.

Agility is not merely the ability to respond swiftly to change. Agile organizations anticipate future market shifts and assess the degree to which these shifts will affect the sustainability of the business. Where

appropriate, agile organizations modify their systems and processes before such shifts occur. Doing so often protects value at risk or creates new value opportunities. (The PricewaterhouseCoopers paper "How to build an agile foundation for change" explores this agility concept in more detail.)

Given the rising importance of agility, it is entirely appropriate to question the role of the CIO and the IT organization. IT has helped streamline and standardize many inefficient business processes. But efficiency and agility are not one in the same. (See the article, "How to hit a moving target," on page 30 for more discussion about business agility modeling.) In many respects, now is a fortuitous time to ask these questions. You likely are asking how you and your IT organization can contribute to making your company more agile. Perhaps you've initiated a service-oriented architecture (SOA) project for just this purpose, but you know enterprise agility is not something IT can do by itself. What's the right approach?

The definition of a strategic role for a CIO should include more than just understanding the business when proposing technology plans. What's missing is the imperative that enterprises become permanently agile. In fact, redefining the CIO role to lead the process of achieving agility—and not simply being strategic for the status quo—is an essential part of what companies must do to achieve that permanent agility.

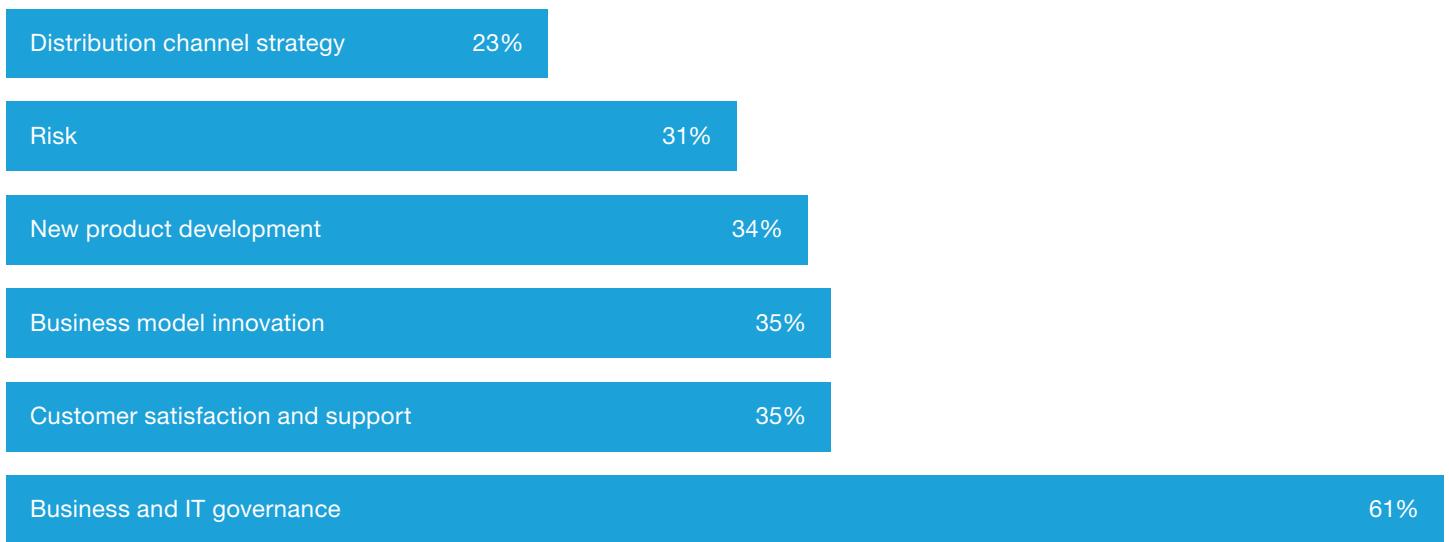


Figure 1: Areas of CIO strategic leadership by 2013

As ranked by survey respondents. Source: EIU Survey, 2008

Part of the answer is to ensure that the CIO role changes to a strategic one. You’ve probably heard that before. Indeed, a 2008 Economist Intelligence Unit survey of senior management highlighted several critical areas where the CIO is expected to make strategic contributions between now and 2013. (See Figure 1.) Several of these business functions require agility. Companies must innovate to enhance their customer value propositions while complying with standards set by the enterprise or its regulatory context.

The definition of a strategic role for a CIO should include more than just understanding the business when proposing technology plans. What’s missing is the imperative that enterprises become permanently agile. In fact, redefining the CIO role to lead the process of achieving agility—and not simply being strategic for the status quo—is an essential part of what companies must do to achieve that permanent agility. (The articles and interviews in this issue of the *Technology Forecast* explain the other necessary actions CIOs should anticipate.)

Why the CIO role is at a major crossroads

A decade ago, technology investments were considered essential for survival in the emerging Internet-connected, global, 24x7 world. In the best of circumstances, companies transformed themselves with the help of technology—they learned how to focus on their core competencies, how to integrate processes with partners, suppliers, and distributors, and how to deliver a stable business model.

In the worst of circumstances, companies purchased duplicative and nonstandard software that didn’t pay off as expected. Most companies are somewhere in between. What had been exciting enabling technologies circa 2000 have become ball-and-chain anchors dragging the enterprise down as it seeks to respond to changing markets and new customer demands. As a result, the very role of technology, and its CIO leader, is now being fundamentally questioned.

In the last five years, businesses commonly put the CIO and the IT organization on the defensive, insisting on IT alignment with the business. That’s a polite way of saying that technology spending is too high for the

value it brings the business. It says technology efforts don't bring sufficient competitive differentiation and that IT gets in the way by being difficult to implement, manage, and modify.

CIOs are only too familiar with the fact that today, 75 percent of IT spending is on maintenance activities and only 25 percent is on value-creating new initiatives. Management often asks CIOs to reverse this ratio while simultaneously reducing their budgets. The message is damning: IT has become a financial drain, not a value creator.

Some industry-watchers consider in-house IT a necessary evil that may not be necessary much longer. Too many IT investments have resulted in unmet promises, especially during the Internet bubble era. A "silver bullet" mentality ruled and fear of falling behind caused many management teams to invest in technologies they hardly understood.

SAP CEO Henning Kagermann believes enterprise IT has yet to re-establish its reputation with the business. "If I look back, the status of e-commerce was obviously overhyped. Collectively, all players together caused a lot of damage to our industry by promising clients things they couldn't fulfill, and I doubt we have recovered from that." Today, senior management is even less likely to believe in the promise of technology. Put it all together and what does it say about the future of the CIO?

The CIO role served its purpose during the 1990s and 2000s. The computing and Internet revolutions were permeating businesses for the first time. But now that IT has become generic, some CEOs question the strategic value of the role, making it plausible to suggest the CIO will soon be an unnecessary position. (See the sidebar "How to tell if you're an endangered CIO" on page 54.)

The forces of commoditization, consolidation, outsourcing, and cloud and utility computing all support

the notion that technology is becoming largely generic. Off-the-shelf technology can do the job as is, and regular businesspeople (especially the younger workforce that grew up with computers) can manage it themselves. There's no reason to own nondifferentiating technology, much less to create your own alternatives to it.

Those who believe the CIO role is at the end of its useful life cite the example of electricity. In the 1880s, businesses invested in their own electrical power generation and the infrastructure and staff to support it. Electricity was the new technology promising to transform industrial processes. But businesses quickly abandoned this local ownership when national electric grids were established. Generating and managing electrical facilities was no longer a core, differentiating competence.



Some enterprises and analysts today believe that IT is following the same trajectory. Companies needed to install tremendous amounts of IT infrastructure to be competitive when computers and the Internet were clearly becoming game-changers in the late 1990s.

Agile organizations anticipate future market shifts and assess the degree to which these shifts will affect the sustainability of the business.

Many say that accessing electrical power as a service presages accessing IT as a service. And the shift to municipal utilities and the national electric grid starting in the 1890s is their model for what is about to happen to IT as cloud computing and the other forces take hold.

As technology becomes commoditized and nonstrategic, focus instead on efficiency and cost, the thinking goes. Eliminate as much internal technology as you can. By this thinking, the CIO is dead. Why should senior staff include someone whose job is merely to procure IT services from outside vendors?

The CIO role isn't necessarily dying—though CIOs who do not reinvent themselves will become obsolete. IT's role must expand beyond provisioning the technology infrastructure. After all, now that everyone has it, the technology alone will no longer make the fundamental difference to business success. In other words, CIOs must increasingly bias their personal energy and attention, together with the focus of the IT organization, toward the higher levels of the CIO function stack shown in Figure 2.



Figure 2: The CIO function stack

Source: PricewaterhouseCoopers, 2008

As evidence of this shift, companies increasingly see the CIO role as a chief innovator, chief strategist, or chief process officer, or some combination of the three. Some CIOs are even changing their titles to include operations or production responsibilities.

Certainly, this is the view of the CIO expressed in a 2008 Economist Intelligence Unit survey. Many executives at companies big and small see CIOs and

their IT organizations as both essential innovation drivers and operational managers. (See Figure 3.)

More than 55 percent of senior executives expect CIOs to be full partners to the business by the year 2013. Only half as many see CIOs as full partners today. So their work is cut out for them. How should CIOs redefine their role so they become full partners in the C-suite?

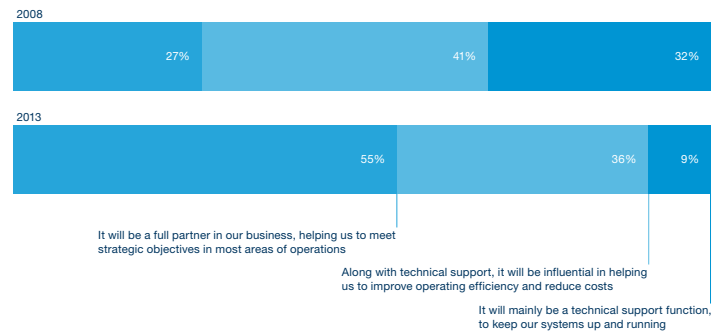


Figure 3: Which best characterizes the role that IT plays in your company in 2013?

Source: EIU Survey, 2008

What's holding CIOs back? What can they do about it?

As many technologies become generic and easily sourced, CIOs should be able to direct more of their attention toward strategic issues. Most CIOs today have too much operational detail on their plate to make this shift, however. First they must pull themselves out of the deep technical weeds they and their predecessors co-created with the business during the “big bang” period of the computing and Internet revolution.

Dealing with this accidental, complex IT environment is business as usual today. Even CIOs who see the need to radically simplify their IT infrastructure can't overcome business unit reluctance to make changes. Business unit leaders don't want to change their way of doing business just to help reduce IT complexity. So much for CIOs becoming more strategic.

CIOs need a business rationale to convince senior management that the enterprise needs a more consistent, more standard way of operating. That

rationale is greater enterprise agility, so the enterprise can innovate and maintain a distinctive customer value proposition. “One way of looking at the operating model [what PricewaterhouseCoopers calls the business value model] concept is that it does free up the organization to innovate at the edge,” notes Jeanne Ross, principal research scientist at the MIT Center for Information Systems Research.

Yury Zaytsev, the retired group information officer at Swiss Re, notes: “If you don’t have a consistent structure, you’re most likely focusing only on how to get information after the fact to laboriously craft some consistency of structure. Your thought process and your intentions are not about how to explore opportunities and how to create innovation; your focus and attention are on covering the basics.”

CIOs must help their senior management colleagues establish a discipline for creating consistency in the way the enterprise operates. This discipline starts with a shared understanding of the business—being able to see the connections between your customer value propositions and the business assets and activities that deliver on those value propositions. Only by explicitly defining a business value model will senior management reach that shared understanding. As Figure 4 shows, the best way to start is to look across the enterprise and agree on two fundamental issues: 1) which business processes need to follow a corporate standard, and 2) which business assets and activities deliver distinctive customer value. CIOs are ideally positioned to support senior management’s deliberations, and IT is similarly well positioned to help extend the business value model into finer levels of granularity.

Many executives at companies big and small see CIOs and their IT organizations as both essential innovation drivers and operational managers.

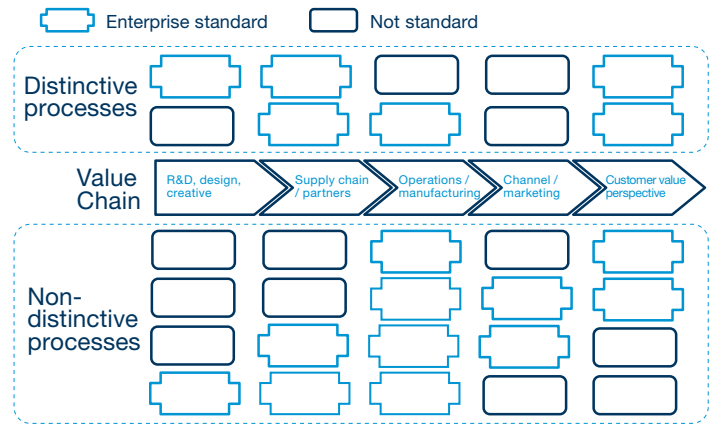


Figure 4: The business value model, Level 1

Source: PricewaterhouseCoopers

But let’s be clear. The goal here is not simply to have a model. The model is what helps you deliver your goal, which is a consistent way of operating to enhance agility.

“The point of a [business value model] is to help you understand who you are, what you are, and what you are good at, so that the first thing you would always try to do is take advantage of who you are, what you are, and what you are good at. And then the second thing it would let you do is recognize when who you are, what you are, and what you are good at isn’t good for something,” says MIT’s Ross. In other words, deep self-knowledge helps you stay focused on opportunities and innovations that can leverage your core. That self-knowledge also helps you avoid distractive changes and initiatives inconsistent with maintaining distinctive customer value.

For example, Toyota’s “pilot team” method allows fast changeover from one car model to another on an assembly line without significantly dropping quality after the changeover. This approach is a significant evolution of Toyota’s business value model that highlights a task-based kaizen continuous improvement approach. But the innovation stayed true to the core distinctive Toyota process known as jidoka, where individuals can stop the production line for quality or defect reasons.¹

1 Paul S. Adler, Barbara Goldoftas, and David I. Levine, “Flexibility Versus Efficiency? A Case Study of Model Changeovers in the Toyota Production System,” *Organization Science* 10 no. 1 (January–February 1999), p. 43.

“This [business value model] is not something that you can define once and say, “I’m done.” It’s more a journey than a destination, and as you learn in any journey, when you reach a certain point, you discover how to enhance or advance this point further.” —Yury Zaytsev

“This [business value model] is not something that you can define once and say, ‘I’m done.’ It’s more a journey than a destination, and as you learn in any journey, when you reach a certain point, you discover how to enhance or advance this point further. That’s what this [business value model] is all about,” says Swiss Re’s Zaytsev.

Adds MIT’s Ross: “The [frameworks for modeling] that have long-term value are frameworks that help management understand their choices a lot better. ... That’s why the [business value model] has proved valuable certainly to the companies we have talked with.”

Change is essential, and the assets that a strong and prepared CIO brings to the table can help focus the management team on managing change in an intentional, continuous way.

Intel, for example, has developed what it calls an enterprise capability framework, which is a map of business processes at Intel (such as processes for marketing, sales, and design) that helps management determine which processes are differentiating, which are competitive, and which are base (necessary but not distinction-creating). The map also helps management determine the gaps between the reality and the desired state, says Martin Curley, senior principal engineer and global director of IT Innovation and Research at Intel. The CIO uses this framework to develop the capabilities and architecture to deliver the processes in the appropriate way. The framework is based on the company’s current business value model, and Intel is using it to clarify agile approaches to extending its business value model in profitable ways.

Resolving the paradox of administration that prevents permanent agility

Thanks to James D. Thompson,² for the past 40 years, management theory has had a label for the issue we expect will be resolved in the coming years. That issue is the “paradox of administration,” in which management believes it must choose either an organizational design suited for standardized, repetitive tasks or it must choose an organizational design suited for flexibility and innovation—but not both.

Early path-breaking efforts by innovators attempting to solve this paradox indicate that a solution is at hand. This emerging approach not only resolves the paradox but more importantly achieves permanent agility. The primary elements of this approach include:

- A shared understanding of how the enterprise creates value for customers via the business value model described in the previous section
- An ability to anticipate and handle change in an agile way through analysis and preparation
- Impact assessments of future market scenarios on the business value model)
- Organizational clarity about where these competencies sit within the organization and how they influence strategy, tactics, and operations

“There is no black-and-white in the world,” says SAP’s Kagermann. “There are many, many trends constantly presenting themselves, not just one. ... There is no single trend that will make the difference; it is the surprising combination of many trends that defines the

² James D. Thompson, *Organizations in Action* (New York: McGraw-Hill Book Company, 1967).

future.” This is why achieving agility should be treated as an ongoing activity, performed in a programmatic way.

The case for the redefined CIO as agility leader

Who should lead the effort to develop and manage the core competencies associated with creating an agile enterprise? A fundamental starting point is the creation of a business value model. Developing enterprisewide models first and foremost requires an engineer’s model-oriented mindset. But it goes beyond process skills; the leader of this effort must have deep knowledge and insight of the extended enterprise and the way it operates. More specifically, the agility leader must:

- Understand the interconnections that define a company’s entire extended value chain, including suppliers, partners, and distributors
- Have detailed knowledge of the level of consistency of processes and data across the enterprise’s functional units
- Have an informed point of view on emerging technologies and what they can mean for the business

These business value modeling activities could theoretically be managed by any of several C-level positions, or by a new function. The “new” CIO is the ideal leader, but only if such a CIO has developed a deep knowledge of how the company operates within its markets.

“[Businesspeople] usually look at their own level of specificity, their own level of function, and their own level of activity, and they don’t look at [innovation and customer value] from end to end,” notes Swiss Re’s Zaytsev. “The title of COO of operations or systems has started to become more popular—but as you start examining these roles, they’re not looking at the whole enterprise. They’re looking at operations, which starts over here. And they’re saying, ‘Operations starts here, and this is services, and IT is services.’” This local, compartmentalized focus explains the need for the CIO to see and orchestrate the big picture. Specifically:

- CIOs have a view of the entire organization, and thus are in an ideal position to see how the business really works, especially around key processes that extend beyond individual business units, such as product design and execution, customer knowledge and service, and consistency of vision and implementation.
- CIOs are problem-solvers, specializing in the judicious use of technologies to solve business problems and create business opportunities. That skill is fundamental to business success in a technology-based world.
- CIOs understand engineering methods and the rigor required in modeling activities. As discussed in this issue of the *Technology Forecast*, most companies succeed through intuition, hardly something that organizations can count on for continual success. Furthermore, few business leaders are skilled or disciplined enough to apply modeling consistently, which will be a necessary approach in the next five years. CIOs, at least those with engineering training, have this ability and the comfort of using it every day.
- CIOs manage the means by which much of a company’s business actually operates. Even as generic, non-value-creating technology is outsourced (as it should be), the CIO maintains the map between core business processes and the technology supporting them.

A CIO and IT organization that focus on agility are set for a bright future. They have the right skills, the enterprisewide perspective, and the delivery capability to adopt a formative approach to managing business value through modeling activities. These models help senior management overcome a growing challenge—delivering strategic intent. The models do this by exploring multiple future possibilities while constantly directing current operating approaches closer to the periodically updated target future states. (See “Ready, fire, aim” on page 14 for more discussion of the evolving the business value model.)

None of this means a CIO can or should act alone when leading an effort to enhance enterprise agility. But a truly strategic CIO is in the best position help the entire C-suite understand the path to agility and manage the process of developing the core competency.

Of course, the company has to want to achieve permanent agility. When the CEO asks about it, the well-prepared CIO will seize the opportunity to become more strategic. If the CEO is looking elsewhere for help, the smart CIO will figure out a way to get involved.

For more information on the topics discussed in this article, contact Larry Best at +1 646 471 4889.

How to tell if you're an endangered CIO

Do you aspire to continue to be a CIO, or aspire to be one? Unless you're about to retire, you should ask yourself some critical questions about your ability to contribute as technology itself becomes more commoditized, externally sourced, and easier to manage. The more "yes" answers you have, the more you are at risk of becoming obsolete.

1. Do you focus more than 15 percent of your time on the technology infrastructure in your organization either because you want to or because the technology infrastructure requires you to?
2. Do you handle daily operations yourself, such as network administration, desk-side support, or disaster recovery?
3. Do you spend most of your time with your own IT staff?
4. Is your primary job to implement technology in response to needs defined by others?
5. Are you measured more by IT metrics (such as IT spending as a percentage of revenue, IT uptime, and operational efficiencies) than on business-relevant metrics (such as innovations supported, speed of response to a competitor move, or time to synergies after an acquisition)?
6. Do you rely on vendors and suppliers to determine your technology architecture and to define the processes that your technology infrastructure implements?

7. Do you look upon external provisioning trends (such as cloud computing, software as a service, utility computing, business process outsourcing, and services hosting) primarily as a way to reduce costs?
8. Do you rarely present to the C-suite and board of directors, or are you rarely invited to strategy discussions with these groups?
9. Are you considered to be “political” and self-endorsing?

How to tell if you are enhancing your strategic role as a CIO

Are you making progress toward becoming more strategic, being part of the CEO’s “kitchen cabinet,” and being seen as a business and IT leader? The more “yes” answers you have, the further along you are to reassuring your role in the C-suite.

1. Are your IT operations reliable, costing less over time and scaling up to meet demand while occupying less than 15 percent of your personal time?
2. Does the executive team seek your active participation when working on strategic visions, scenarios, and future road maps—including major acquisitions?
3. Do business units seek your advice on business process, especially when resolving conflicts between local business process optimization and global business process standards?

4. Have you established and delivered a breakthrough to the business (measured in terms of new revenue, higher profitability, greater customer satisfaction, and greater external recognition for company excellence)?
5. Has the organization identified you as an enterprisewide leader for attracting talent, enhancing collaboration, and improving clarity of governance in the enterprise?
6. Are you seen as an individual who develops and manages productive relationships throughout the enterprise?
7. Do you have responsibility for process reengineering?
8. Is business intelligence considered to be a core capability of your enterprise? Are you recognized for having championed it and deployed business intelligence capabilities?
9. Are you actively engaged in initiatives within your organization that focus on developing and delivering innovations?

CIO interviews

CIOs are used to change. Technology is probably the fastest changing component of the enterprise. And the evolution of the CIO role has kept pace with changes in the technology landscape. But CIOs have always had one trump card in senior management meetings—their comfort level with technology concepts. Is this enough anymore? What are the new core competencies CIOs will need to focus on to remain a strategic partner to the business? Our interviewees discuss the evolving CIO role in the context of agility and innovation.

Discussion with Jeanne Ross

PwC: In your book, *Enterprise Architecture as Strategy*,¹ a huge focus is on, let's face it, the blocking and tackling of enterprise architecture development. Your operating model concept, which simplifies the enterprise architecture development process around standards for processes and data, is very helpful. And yet it seems hard to imagine senior managers approaching the issue in this way. CIOs must find it difficult to get this onto the C-suite agenda.

JR: Yes, some CIOs come to us and say, “The operating model would be a good discussion to have. Can you come lead the discussion?” CIOs still have that problem of getting the C-suite to care enough to talk about it.

But senior management teams we have spoken to were looking for a simple language that they can understand. And there have been CIOs that have said, “This little two-by-two (processes standard or nonstandard; data standard or nonstandard) was a way to finally get a discussion that everybody felt like they were capable of having.”

PwC: CIOs are often positioned as being technology savants while the rest of the C-suite doesn't feel sufficiently knowledgeable to offer an informed opinion.

JR: I think this has always been the CIO's greatest challenge. How do I engage everyone in a conversation

¹ Jeanne W. Ross, Peter Weill, and David C. Robertson, *Enterprise Architecture as Strategy: Creating a Foundation for Business Execution* (Boston: Harvard Business School Publishing, 2006).

that's going to help us understand the long-term role of technology and IT-enabled business processes? How can I get really strategic decisions made without the senior management team feeling like they have to make a decision on things they don't really understand? And there have been CIOs who have said to us, "This is the model that makes that possible." As long as senior managers want to have the discussion, this is a model that enables the discussion.

PwC: Do companies need to have reached a certain level of business process and IT maturity to have this discussion?

JR: You would think so, but it's not necessary. For a lot of CIOs, they just want someone to articulate fundamentally how the company wants to do business. If you ask people that straight out, they'll give lots of different, not-very-useful answers. But if you ask, "What critical processes do we want to make sure either are or are not shared across this organization?" and also ask, "What is the very small set of data around which this business revolves?" then an effective CIO can make real progress. These kinds of questions don't usually take senior management to questions about maturity levels. But smart CIOs know that the next thing they must consider is enterprise maturity level. If they think, "I now understand the operating model," and they think they are going to wake up tomorrow and put it in, they could run into some major challenges.

PwC: Looking beyond the CIO as an individual, where do you see the IT organization making the biggest contribution to companies seeking a better understanding of their operating model?

JR: I think almost every company could vastly improve its decision-making processes. They need to make decisions faster. IT can provide greater clarity and better understanding for decision makers through better performance metrics. Almost every company I know—even the really good ones—could do even better on that and it would make a huge difference.

PwC: Are there other places IT can be a real difference maker?

JR: There is this big push now to empower the people who are interacting with customers and suppliers and business partners to make decisions. But they will make terrible decisions unless you make sure they completely understand how the business operates and how they contribute to that business. Empowerment is very dangerous if you don't set it up right, and that's why the governance piece of the operating model is so important. This is where IT can play a major role. Senior management must design a better governance model, but IT must translate this into consistent decision-making patterns and obviously get the necessary information to the right people. Getting the right information into the right hands is going to be huge. And if we want to go full cycle, that comes from having processes that are standardized enough that the data is reliable. ■

Discussion with Yury Zaytsev

PwC: Moving to a global operating model must have had the potential to gore an ox or two. How did Swiss Re overcome the internal resistance to change that inevitably challenges any such major transformation? Was there a specific division of labor between you as the group information officer and the group CEO?

YZ: It started, I think, in a relatively simple form. When we began the transformation program, the discussions were around business application architecture and business information architecture. The initial goal was to minimize the number of solutions and to harmonize them to reflect the consistency of our business model. Walter Kielholz, our CEO, put it this way: First, it made perfect sense to him to harmonize our solutions in pursuit of our globalization strategy. And second, he said he would not formally promote this solution harmonization effort. He said, “That’s your job, not mine. It’s up to you to work with businesspeople to promote that.”

However, he told me he would support me in other ways. One, he created additional cost pressure on the business units to discourage them from creating different solutions on their own. And two, when someone had a reasonable complaint about why harmonization was disrupting their business, he would invite me to meet the unit head to discuss things. I said, “Walter, that’s the best support I can possibly find from the CEO.”

Over time it became much easier. My favorite question when people said they could not do certain things would be, “Is the exception to the rule that you’re looking for driven by market conditions, or is it driven by history?” And in 99.99 percent of the cases, it would be driven by their history and ultimately they would go with the global standard. One consistent solution around the world delivers far more value to the group, even if it’s less exciting than what you wanted to do in your own environment.

PwC: Did you as the group information officer have ultimate responsibility for creating the harmonized business processes that defined the global operating model?

YZ: No. It had to be the business unit leaders. We would work with them. We organized many, many workshops. But we could not, by definition, define the core processes that conform to Swiss Re’s fundamental business model.

PwC: Are businesspeople naturally inclined to create a harmonized global business process?

YZ: No. They usually look at their own level of specificity, their own level of function, and their own level of activity.

PwC: Is this just another way of moving companies toward a shared services model of common infrastructure?

YZ: Oh, it makes sense that certain activities need to be managed in a common fashion. This is a minuscule step. Somebody needs to look at the business from beginning to the end. Who are the best people in any enterprise to see that from beginning to the end? IT people. There is nobody else. Now, it doesn’t mean that all CIOs will step up to a challenge of this nature and take a risk of this size, because a lot of this is political. A lot of CIOs would say, “Look, I’m planning to be here three or four years. Why would I start this whole phenomenon that would take a lot longer than that to implement?” There are many counterarguments, but I believe that sooner or later—perhaps in a different way or using a different approach—more and more firms will make the long-term effort to understand their core operating model so they can develop a sustainable foundation for business.

PwC: So here's the quandary. IT is the one group that actually has the vision across the whole organization, everyone else works in functions that limit their vision of the end-to-end processes, but the business must own and define the end-to-end processes.

YZ: Correct. But workshops and a little motivation can broaden their view. And in the process they can see a lack of standardization. For example, we looked at client relationship management. One business unit would have solution A. Another would have solution B, etc., etc. So everybody had their own solution for client relationship management. I asked, "Is this really a different process? Do we really need to collect different information?" And a simple picture like that speaks a thousand words when you start discussing it with the business.

PwC: So it's sort of IT leader as coach or even psychoanalyst?

YZ: It's an education and discovery process to deliver understanding. It's establishing a focus on the process and not on the content and not on functions. That is what makes a huge difference. People would talk about how their businesses functioned in very different ways, and I would go to them and say, "You know, your process is consistent around the world." I said that to nine CEOs of different underwriting divisions. And they said, "You're crazy," or "You don't understand how we do the work. It's completely different." I said, "I understand you do it differently. I'm saying the process by which you should or are doing it, is basically the same." And once you get to the point where they start realizing that the focus is on the process and not on the content, the turnaround can be very easy. They're all responsible businesspeople and they want the company to perform better, so they take ownership and they drive it forward. ■

Discussion with Martin Curley

PwC: Across the economy, what broad changes in business strategy are you seeing that impact the CIO and the IT organization?

MC: I think a big change that's happening in business is the attempt to move to service models. Companies that historically were product companies are trying to move away from a one-time purchase to an annuity stream by providing a service. And inevitably that's enabled by IT. I think Rolls-Royce is a very good example of that. The company is now trying to sell Power By The Hour. So instead of selling an aircraft engine and maybe a maintenance contract on top of that, Rolls-Royce can use automated telemetry and all that good stuff to sell Power By The Hour, and the company can offer something that's completely different.

PwC: Are you seeing any changes in the way businesspeople and IT people are communicating? Are they finding more common ground and common understanding of their domains of expertise?

MC: Yes. In the 20th century, I think that IT people had to be bilingual, and not very many were. So we had this gulf or chasm, and IT folks were seen as hard to understand, even the IT executives. But I think in the 21st century we are seeing business executives who have some technology acumen, and we have IT executives who are demonstrating business acumen, and that really is the sweet spot. Nokia is a really good example. It changed the name of its IT organization to business infrastructure. And that, I think, was a big step both in terms of vocabulary and in terms of a vision of what the IT organization wanted to offer Nokia.

PwC: Where is this trending? What does it mean for the future of the CIO?

MC: A core part of our agenda is that the CIO in the future will stand for chief innovation officer, not chief information officer. Of course, it could stand for career is over if the CIO fails. The accelerating pace of change cuts two ways with technology. Change is often created by new technology, but technology is often at the heart of successful efforts at dealing with change. I think we'll see the successful CIO becoming a much more important part of the executive team, part of the kitchen cabinet. But the profile of the CIO will have to change. That person will have to be just as much a businessperson as an IT person. Today there are very few examples of CIOs becoming CEOs. But I think that will become more common in the future.

PwC: Does this mean that CIOs need to shift from treating business unit heads purely as customers? What would it mean if a CIO is truly treated as a peer of the other business leaders in the C-suite?

MC: It probably comes back to the Swiss Re example, you know, helping the organization understand where extra investment in IT is going to create competitive advantage, and where non-competitive processes can be supported with lower-cost alternatives. In the interview on business value models, I described the Enterprise Capability Framework that calls for management to define what makes them distinctive. But I think many organizations don't have that blueprint. CIOs can lead this effort. In fact, they need to if they want to be

considered a peer. It creates the context for more intelligent discussions with business leaders. Ultimately, IT needs to move from seeing business unit heads as customers to seeing them as peers and ultimately to symbiotic partners.

PwC: What will the work experience and resume for a successful CIO look like in 2015? What would be most strikingly different from today's CIO resume?

MC: A good way to think about that is by analogy to what happened with electricity generation. When that started, every company had its own generators with staff and leadership to go along with it. Then, all of a sudden, electricity grids were developed and it could be accessed as a utility. I think whether the same thing happens in IT will be a huge modulator on what the future profile of the CIO becomes. But there's no doubt that technology is becoming more and more important. I think the CIO will be part of the CEO's kitchen cabinet—will be one of the key decision makers—and business acumen will be as important as technology skills. A key part of this is dealing with today's IT complexity: Can we abstract that into a utility, with automated management of all the complexity? Presuming that happens and if that's successful, then we can really think about the CIO as the chief innovation officer. When that happens, the focus will be on innovation technology rather than just grappling with complexity and trying to provide a utility-like service. So I think that will be the significant shift.

PwC: Assuming enterprise IT does make that shift, what experiences will best prepare a CIO for being the chief innovation officer?

MC: I think the formal skills are doubly an engineer—and I'm biased, because I'm one of those—with an MBA. And having entrepreneurial skills will be a dominant factor in determining the success of a chief innovation officer. When I talk about entrepreneurship, it's not necessarily doing startups. That's one of the manifestations of entrepreneurship. More generically, it's learning how to shift resources from lower-yield activities to higher-yield activities. I think that's what entrepreneurship is all about. I think that will be the dominant skill. Additionally, CIOs who can help with the corporate renewal process will be those who have longevity and impact. Gartner has identified a new type of IT leader called a "versatilist," which is a leader who can anticipate, analyze, and quickly respond to opportunities and changes. In a world of speed and change, CIOs who can manifest IT as a platform for agility rather than a cost to be minimized will be the winners. ■

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Subtext

Business value platform

A description of the assets, business processes, and infrastructure, including suppliers and partners, actually in place today that define the way the enterprise operates to serve its customers.

Business value model

A conceptual map that links senior management's strategic intentions for the creation of distinctive customer value through orchestration of the assets, business processes, and infrastructure, including the suppliers and partners that define the extended value chain of the enterprise.

Business agility model

1) A conceptual assessment of how a change in the market, actual or anticipated, affects or will affect the business value model, particularly the distinctive customer value targeted by senior management with its strategic intent. 2) An estimate of the return on investment from changing the business value platform; defined as the value opportunity plus value-at-risk less the cost of the investment.

Business agility blueprint

A plan for how changes in the business value model will be made as informed by the business agility modeling process.

Business value blueprint

A plan for how changes in the business value platform will be made as informed by the business value model.

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Nosso papel como consultores em TI é o de planejar, selecionar, desenhar, gerenciar e implementar componentes de tecnologia - dentro de uma visão multidisciplinar - para o suporte ao sucesso do negócio dos nossos clientes.

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