



The dynamics of information-system-driven value creation

**A responsibility shared
by the senior management of corporations**

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Foreword

Today, information systems (IS) are recognized unanimously as a key driver for creating corporate value, and they continue to account for an increasing share of total investment. Despite this, senior management still debates the precise nature of the value generated by IS, how to measure the return on investments in IS, and what the conditions are for maximizing that return.

How can the value added by information systems be defined, quantified and optimized? It was with the aim of answering these crucial questions and gaining a better understanding of how an IS contributes to a major corporation's overall performance that CIGREF and McKinsey & Company joined forces to conduct this study.

The study builds on a collaboration that began in 2002, and which has resulted in the publication of two white papers. The first of these focused on the relational dynamics of CEOs and CIOs around the IS in major French companies. The second extended this analysis to the top management team as a whole, including the managers of Business Units (BUs).

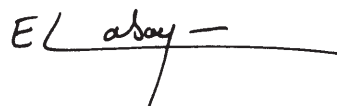
This latest work takes up the investigation where our previous analysis left off. This time, we have based our approach on in-depth observations of best practice in a group of companies that, although in very different sectors, are notable for the competitive advantage they derive from their information systems. The collection and detailed analysis of their experiences, embedded in their specific contexts and priorities, shows the conditions under which the IS can best contribute to the economic performance of a company.

In addressing these new horizons of IS-driven value creation, through their extension to business dimensions, this study defines the outlines for a constructive dialogue within the executive committees. In doing so, it aims to foster modes of collaboration that can lead to substantial improvements in companies' operating and financial results, going beyond the domain of information technology.

We would like to take this opportunity to thank the executive management of major French corporations for their trust and for their time, which allowed us to complete a project that opens up new perspectives on a key concept: the value-in-use of information systems.



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Executive summary

This document is the third publication to emerge from work initiated in 2002 by CIGREF and McKinsey & Company with the aim of clarifying the conditions under which the information systems (IS) of major companies create value. Two earlier white papers, published in 2002 and 2004, described **different models for the relationships between the CIO, the CEO, and the Business Units (BUs)**. We also identified differing degrees of maturity in these relationships **ranging from simply communicating to building mutual trust**. This latest analysis probes deeper into the concept of IS-driven value creation, and the conditions favorable to it, based on observations of best practice in major French and international companies.

Beyond the asset value of IS investments (software, hardware and the know-how of IS personnel), it is their

value-in-use that truly influences enterprise performance. As value-in-use takes different forms in different companies, the IS function must support the company's core business priorities at every level: transformation, operational excellence, innovation, customer relationship management, or regulatory compliance. Subsequently, the value-in-use can be quantified by the company's own business metrics.

The levers traditionally available to the IS department (e.g., application integration, industrial policy, development and operating process excellence) are necessary, but they act only on the asset value of the IS.

To increase the value-in-use implies activating levers that lie at the interface between the IS department and the BUs, such as investment allocation, enterprise architecture, project management excellence, process redesign, or change management.

Value-in-use is what really has an impact on a company's performance.

To activate these levers, new alliances are needed between CIOs, CEOs and BU managers. We see numerous examples in major companies where a BU manager and a CIO work in tandem, taking joint responsibility for a common objective such as implementing a major transformation program, an operational excellence initiative, or a strategic plan. **Independently of such alliances, the CIO may also be called upon to play a wider role in order to facilitate the adoption of such levers.** In certain banks, for example, the responsibility for the IS and for operations is assigned to a single person. In the sales and marketing field, IS functions may be grouped with the management of the web distribution channel. In some service businesses, CIOs take the lead in executing transformation projects or in implementing operational excellence.

IS-driven value creation is of necessity a co-creation of the CIO, CEO, and the BUs.

We also observe that in those enterprises that are most advanced in terms of IS-driven value creation, **IS governance is fully integrated into corporate governance.** The greater the strategic importance of the IS, the more it is integrated into the agenda of the executive committee.

The key takeaway from the study—namely that **IS-driven value creation has to be a co-production of the CIO, CEO and the BU managers**—suggests several definite workstreams for CIOs as well as for their counterparts at the CEO and BU management levels.



From trust-based relationships to IS-driven value creation

The extent to which the information system contributes to value creation depends on the situation of a company and its business priorities, and on the maturity of the relationship between the CIO, the CEO, and the Business Units¹. However, once identified, how can companies quantify the source of IS-driven value creation? Above all, what conditions must be fulfilled to enable it to emerge and—beyond that—be maximized? These questions have arisen from more than six years of joint reflection by CIGREF and McKinsey & Company.

Just how much information systems contribute to the overall value produced by the enterprise is probably one of the hottest—and most hotly debated—questions asked inside major companies. Nobody contests that, in any business, the IS function's mission is to contribute to the performance of all of a company's activities. However, when it comes to measuring this contribution, identifying its mechanisms, and increasing its impact, the data and facts are lacking. What do we really know about the dynamics of IS-driven value creation?

CIGREF and McKinsey & Company have been working to clarify this deceptively simple question since 2002. With the publication of our first white paper², we highlighted three typical

situations that shape an information system's contribution to a company's overall performance.

- Some companies, faced at some point in their development with issues in managing their IS tools, need to resolve “the IT problem” before advancing any further. In such cases, the CIO cannot expect to act as anything other than a “firefighter” with the task of limiting value destruction.
- Once the fundamentals are ensured or reestablished, the priority is to leverage the IS to improve the business processes. Here, the CIO takes an active part in boosting sales efficiency, improving productivity, etc.

¹ In this study, these designate the management of an operational as much as a functional entity.

² CIGREF - McKinsey & Company, *Dynamique de la relation entre Direction Générale et Direction des Systèmes d'Information dans les grandes entreprises françaises*, White Paper, November 2002.

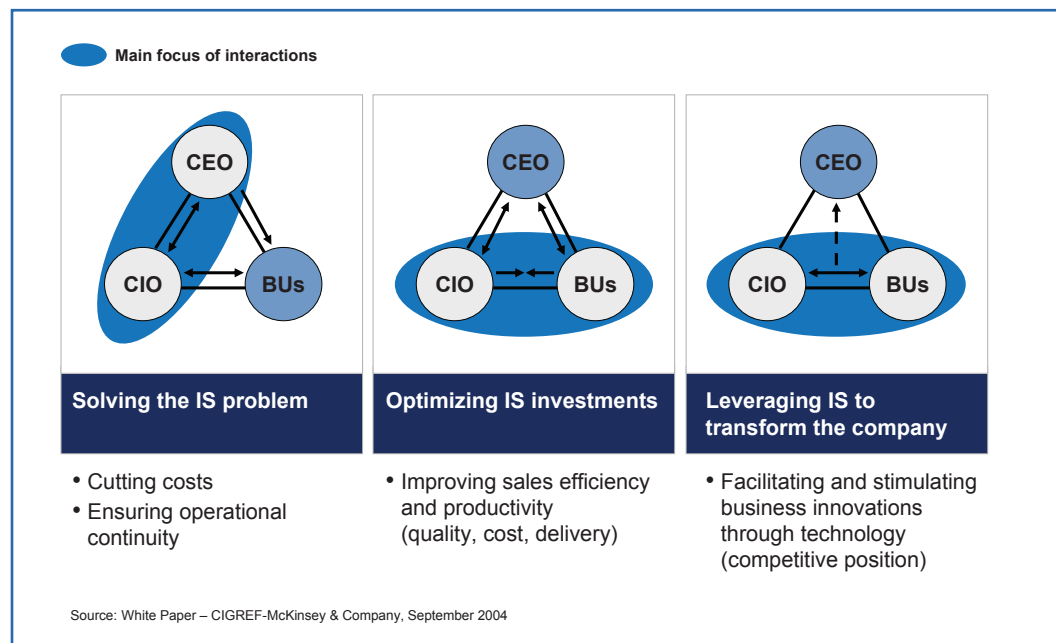
- Finally, in the most advanced companies, the IS functions are a true transformation tool, providing crucial support for a company-wide strategy plan (e.g., turnaround, restructuring, post-merger integration, and/or geographical redeployment).

When, in 2004, we extended our analysis to encompass the three-way relationships between CIOs, CEOs and BUs³, it became evident that these situations implied objectives and priorities for the IS that were specific to each enterprise, and which, more importantly, entailed differing typologies of relationship between the management levels (*Exhibit 1*).

The 2004 study also identified the varying degrees of maturity in this three-way relationship within major companies, ranging from simple communication to more trust-based interactions. The latter case provides the best conditions for a genuine strategic dialogue among executives. Such a dialogue focuses on how best to leverage the IS to create value for the business, while the purely technical aspects (controlling IS costs, ensuring the productivity and quality of the IS) are usually passed over, as they are assumed to be entirely under the control of the CIO (*Exhibit 2*).

Exhibit 1

The relationships between the CEO, the CIO and BUs can differ depending on a company's situation and its priorities



³ CIGREF - McKinsey & Company, *Relational Dynamics around Information Systems within Management Teams of Major French Companies*, White Paper, September 2004.

Exhibit 2

The relationships between CEO, CIO and BUs also demonstrate different degrees of “maturity”

	COMMUNICATION	UNDERSTANDING	TRUST
	from CIO to CEO and BUs	between CIO and CEO/BUs	between CIO and CEO/BUs
Focus of the CIO	<ul style="list-style-type: none"> • Maintaining transparency <ul style="list-style-type: none"> – Detailed reporting – Simplified governance 	<ul style="list-style-type: none"> • Explaining the IS <ul style="list-style-type: none"> – In a business framework (financial, operational) – Through a personalized relationship 	<ul style="list-style-type: none"> • Integrating the IS <ul style="list-style-type: none"> – Into business governance – With a business impact
Focus of the CEO/BUs	<ul style="list-style-type: none"> • Reducing IS spending • Ensuring continuity of service and functionality 	<ul style="list-style-type: none"> • Thinking more in terms of investment • Understanding IS management 	<ul style="list-style-type: none"> • Taking ownership of IS decision making processes and the value contributed by the IS
Logic of interaction	Transaction <ul style="list-style-type: none"> • Ensuring IS performance • Client/server mode: IS seen as CIO's private domain 	Alignment <ul style="list-style-type: none"> • Interpreting/translating business strategy in terms of a strategic IS plan 	Integration <ul style="list-style-type: none"> • Maintaining an ongoing dialogue within the same organizational structures

Source: White Paper – CIGREF-McKinsey & Company, September 2004

It is now widely accepted among major companies that progress through the three levels of maturity of the CIO/CEO/BU relationships is a prerequisite for moving further towards IS-driven value creation. While it may be necessary, however, it is not sufficient.

Experience shows that this subject—or to be more precise, the many questions that it raises—continues to spark lively debates between the CIO community and their principal interlocutors at the CEO and BU levels. There is no shortage of unanswered questions even on the key aspects:

- How is IS-driven value creation to be defined? What are its tangible results? How is it measured?

- What are the conditions for maximizing value creation? In particular:

- What levers should CIOs and BU managers pull simultaneously?
- What alliances are needed between CIOs and their peers on the executive committee? Should the CIOs play a new role?
- How should IS governance be organized? In other words, what forums and processes can companies use to channel the dialogue between CIOs and their CEO and BU counterparts?

To address these questions, CIGREF and McKinsey & Company undertook a new study in 2007-2008. As the third part of a long-term joint analysis,

the study sets out to examine how the added value generated by a company's information systems can be defined, quantified and optimized (*see box*).

“Dynamics of IS-driven value creation” study: principles and outline methodology

This study is based on interviews with CIOs from different companies that have implemented a set of best practices in the field of IS:

- Companies that have undergone major transformations;
- Managers of large groups from a wide range of business sectors, such as AXA, EDF, Danone, EuroDisney S.C.A., La Poste, Nexans, Pernod-Ricard, PSA Peugeot Citroën, Saint-Gobain, Sanofi-Aventis, and Société Générale;
- CIOs with long and diversified experiences in their own sector or in a variety of different sectors.

From May to November 2007, we conducted individual in-depth interviews with these institutions, centering on the company's particular situation and main strategic projects, its core business priorities, the focus and objectives of the IT/IS department, and its experiences, approaches, tools, success stories and challenges.

McKinsey & Company brought to this work the foundations of an overarching analytical framework and the firm's cumulative experience acquired on projects supporting the top management of major international groups on strategic IS-related issues.

This focused approach, prioritizing the expertise and experience of major companies' management, enabled us to gain key insights into active practices “on the ground”.



Prioritizing value-in-use

The value that information systems represent for each BU resides not only in the systems as such: their true potential lies in their “value-in-use”. This is linked closely to each company’s core business priorities, and can only be measured by business indicators. In other words, in those companies that succeed in implementing best practice, the IS indicators reflect only a marginal part of the IS function’s actual performance. The real impact of the IS shows in productivity gains or on the bottom line.

Getting new systems up and running on time, making sure applications are available, and managing budget constraints are the traditional missions of the IS department. Indeed, the mastery of these technical fundamentals is a *sine qua non* for

value creation. However, technical excellence in pure IS terms cannot be an end in itself for the CIO; at best, it serves to establish the CIO’s credibility in dealings with executive managers and BU heads.

IS performance in itself, no matter how faultless, is not the only objective of the IS team. The term “value creation” only takes on its full meaning when the technologies are actually applied in core business processes, i.e., when the IS becomes one of the components—among other factors—of business performance.

It follows from this that the value generated for the company by the IS occurs at two complementary levels: that of “asset value” and that of “value-in-use”.

- **“Asset value”** encompasses the value of the company’s IS assets in the usual sense of the word, namely hardware and software, as well as the value of intangible assets such as the IS organization (processes and skills) responsible for the operational excellence of the processes specific to the IS function. This intangible component of IS asset value is increasingly recognized, as CIGREF’s work on immaterial capital⁴ has demonstrated. It can be measured using traditional IS metrics.
- **“Value-in-use”** refers to the value created by the deployment of the

assets listed above and their actual utilization in core business processes by company personnel. It is therefore measured using business indicators alone: increased business-process productivity, higher sales, shorter cycle times, etc.

Usage is the key factor in IS-driven value creation, as it contributes clearly and directly to the company’s overall results. This value can only be made concrete by a meaningful dialogue, both upstream, on the technical specifications and target objectives, and downstream, on managing change in a way that will enable users to truly take ownership of the IS tools. Nevertheless, value-in-use escapes easy characterization. From our research, it is clear that there is no universal model and value-in-use takes different forms depending on the situation prevailing in the company. We identified a very wide range of business priorities between the major groups and, likewise, considerable heterogeneity in the corresponding “values-in-use” of the IS.

Transformation, operational excellence, customer relationship management, innovation, security, optimization of investments, and economies of scale are each a priority that cor-

⁴ CIGREF, *Valeur et performance des SI. Une nouvelle approche du capital immatériel de l'entreprise*, http://cigref.typepad.fr/cigref_publications/capital_immatériel/index.html

responds to different expectations in terms of the IS contribution (*Exhibit 3*).

For example, in the context of a BU or production unit in need of a far-reaching transformation of its economic model, the key priority should be the creation and deployment of a new IS platform.

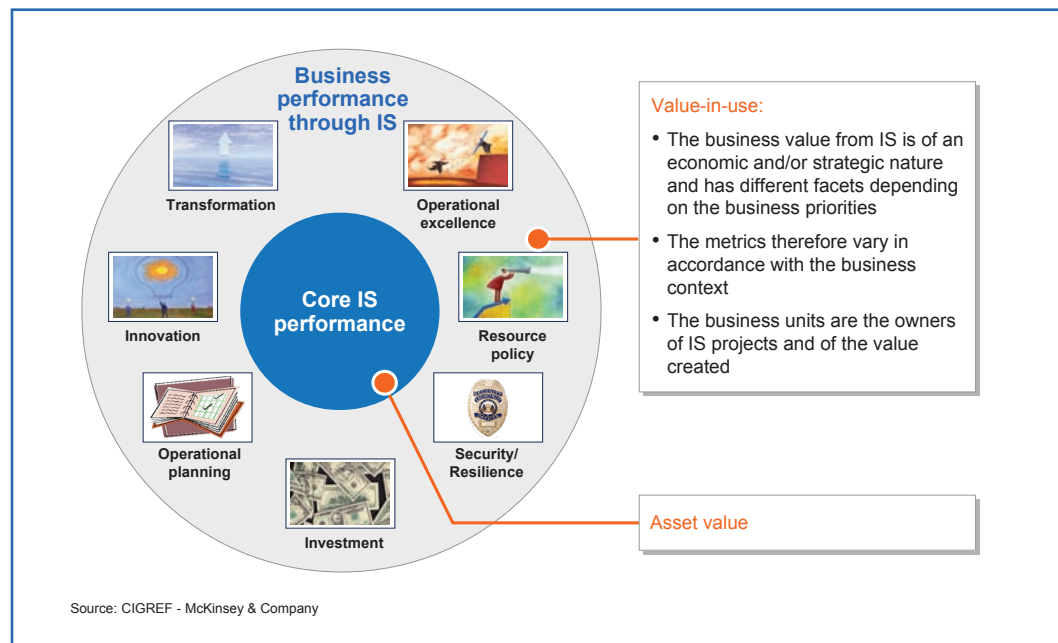
If, on the other hand, the company is in a continuous improvement loop, pursuing an objective of operational excellence, the major contribution

from the IS will be expected in the field of process optimization.

In the case of groups with more than one core business, the issues are of a different nature. At this level, the concerns often center on optimal resource allocation, the implementation of a cross-functional support policy (procurement, localization strategies, etc.), and regulatory compliance. The IS challenges will involve security, shared services, or the ranking of investment priorities.

Exhibit 3

To the business, the “value-in-use” is the real value of IS; it depends on a company’s situation and business priorities



As is only logical, in each of these situations, the most relevant business indicators for assessing value-in-use will differ:

- For a group focused on **optimizing investments** between its various businesses, the economic value expected from the IS department might be a substantial improvement in the cost/revenue ratio, while the strategic value might be a competitive edge in terms of investment or acquisition capacity. The indicators that are tracked will be mainly financial, such as the ratio of IS spending to revenue, which will then be compared with the operating ratio, i.e., operating costs over revenue.
- For a business in a process of **operational improvement**, the expected economic value will arise more from reducing the total cost of operations and of the IS, as well as from the financial gains that result from higher productivity. In this case, the strategic value will be generated

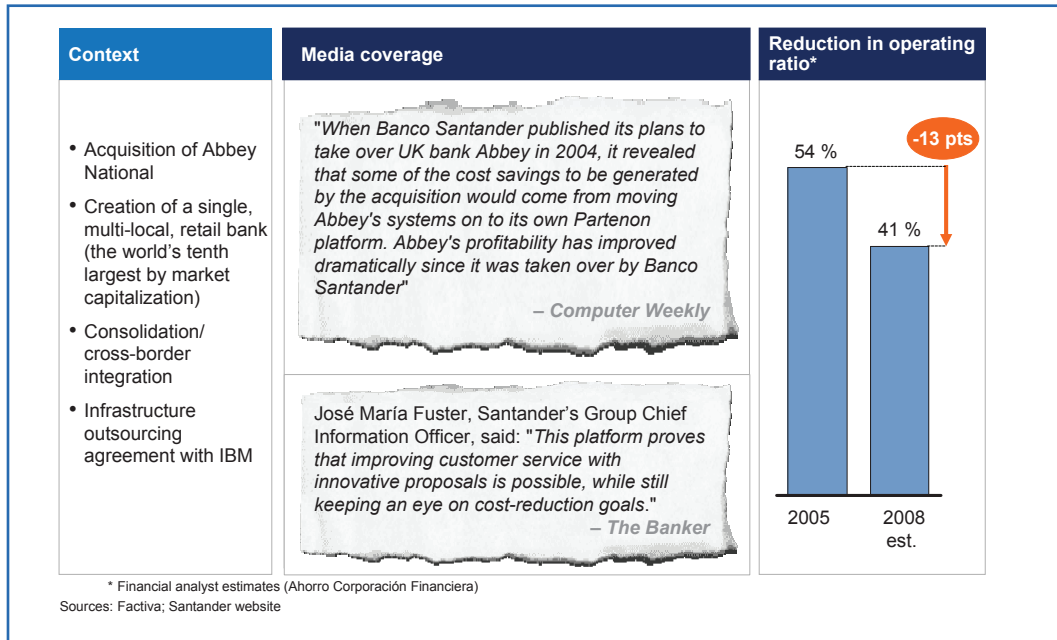
by improvements such as attaining a quality level that allows for differentiation from the competition. The indicators monitored will be purely operational: costs, lead times, quality (e.g., the total cost of opening a bank account, the quantity of mail processed per week, etc.).

While it is true that value-in-use can take multiple forms depending on the situation and priorities of each company, it must always be possible to express it in economic and/or strategic terms. For example, the substantial IS investments made by the Santander Group enabled it to reduce its operating ratio from 54% in 2005 to 41% in 2008 (according to estimates), placing the group at the forefront of the European banking sector, where the median ratio is 59%⁵. This result allowed it to free up a large amount of capital for acquisitions—smoothing the way, for example, for the buyout of Abbey National in 2004—and to develop an unparalleled capacity for capturing M&A synergies. Indeed, 80% to 90% of the synergies from mergers in the

⁵ Median of Western European banks (McKinsey & Company IT Benchmarking).

Exhibit 4

Santander gained a competitive edge thanks to its IS that made it easier to acquire new entities



banking sector are synergies of cost, mainly in the field of operations, and are therefore more or less directly facilitated by the IS (*Exhibit 4*).

To account for this value-in-use requires measurement and monitoring instruments that are optimally adapted to a company's situation. These

will include specific business metrics, as well as overall economic and strategic indicators.

To this end, performance dashboards can combine the usual IS performance indicators (unit costs and the efficiency of application maintenance, development and infrastructure) with those

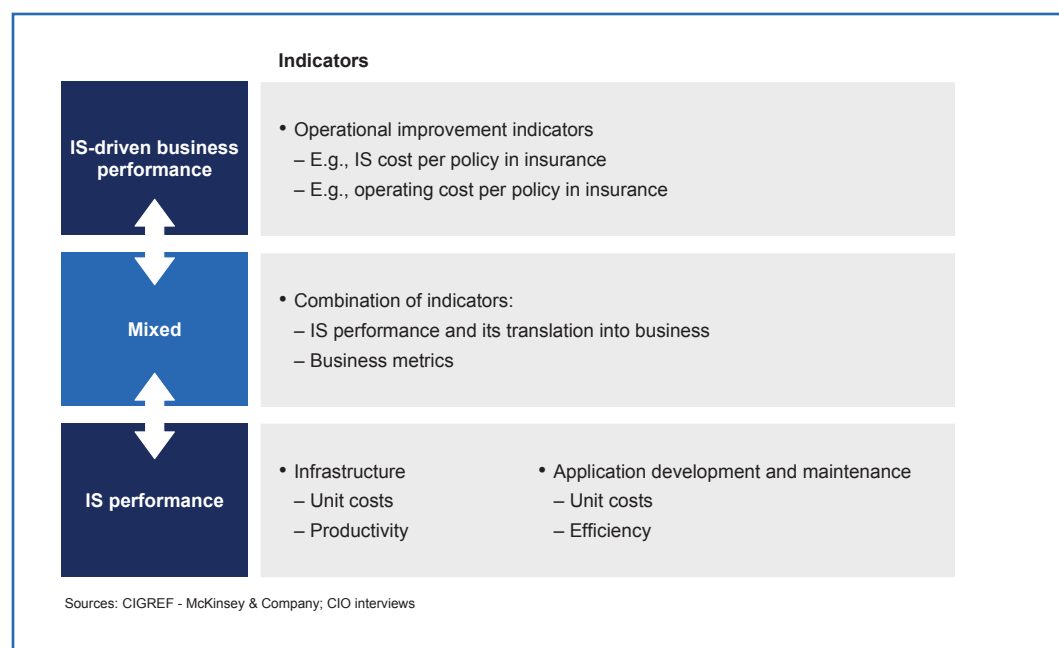
mentioned above, which measure the IS business performance (*Exhibit 5*).

Whatever the situation in which a company operates, the best practices observed demonstrate that the BUs must be the ultimate owners of

IS projects and of the value created, while the CIO must remain in charge of the technical performance of the IS, which will continue to be monitored and managed using conventional tools such as external benchmarks.

Exhibit 5

Value-in-use – and its measurement – are heavily context-dependent, which is why the CIO dashboards are strongly differentiated across companies





New levers for joint action by CIOs and BU managers

Once the sources of value have been clearly identified, CIOs can work on developing them with their BU counterparts. To do so, they must bring into play new levers, in addition to the usual instruments at their disposal. These new levers lie at the interface between the IS department and the BUs.

The CIO's traditional levers of application integration, industrial policy and process optimization (Cobit, CMMi, or ITIL) provide control

over the technical fundamentals and reinforce the asset value of the IS. However, they are insufficient for developing value-in-use.

The major companies at the cutting edge of IS-driven value creation implement a number of additional levers, which are positioned at the interface between the IS and the BUs (*Exhibit 6*).

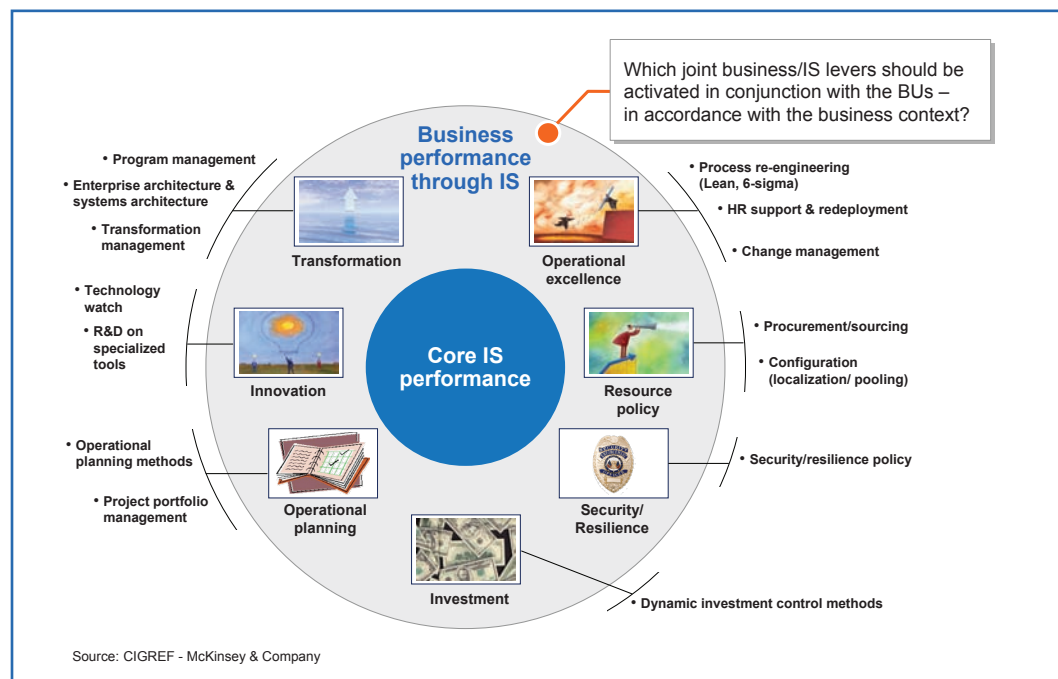
We do not suggest, of course, that all of these levers should be pulled at once; the most relevant ones should be selected to match a company's priorities. The combination of levers chosen by the CIO will depend on the sources of value tapped by the information system and on the positioning of the CIO.

- The case of France's retail banks illustrates the way in which the CIO can place the lever of

enterprise architecture at the service of a **transformation program**. The enterprise architecture is understood here as the way in which the business processes, software applications and underlying technological infrastructure all interact within a business model. In the space of a few years, the banking sector has evolved from a strongly decentralized business model, split into separate regions, toward a more centralized model (with the creation of back-office production centers covering several regions, if not the entire country). This change is the result of applying a "multi-channel" approach, aimed at enabling customers to access the different channels of their bank

Exhibit 6

Generating value-in-use requires joint business/IS levers



(branch, telephone, internet, etc.) from anywhere in France or abroad. Such a transformation necessarily entailed massive IS investments to define new IS platforms and make them interoperable with existing systems. CIOs played a significant role alongside BU managers in designing and implementing these new enterprise architectures.

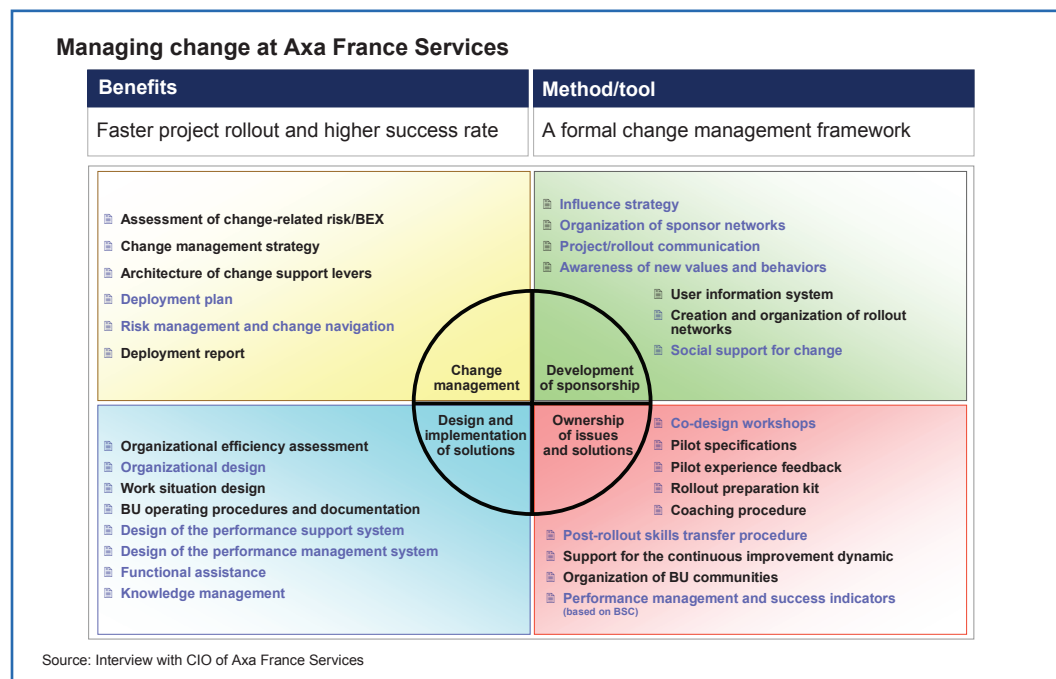
- In a different context, the CIO involved in an **operational excellence** program will focus mainly on process improvement and re-engineering methodologies (such as Lean and 6-Sigma) with support from operations managers, change management (training and communication), and supporting the redeployment of human

resources, in collaboration with the HR department and the BUs.

At AXA France Services, for example—an entity that acts as an IS service provider for the group as a whole—the introduction of a joint change-management methodology, the result of close collaboration between the CIO and the BUs, significantly accelerated the rollout of projects while at the same time increasing their success rate. In this instance, the key contribution of the CIO was to place a dedicated team with strong functional skills at the disposal of the BUs and to raise awareness in the organization of the issues of change management (*Exhibit 7*).

Exhibit 7

Change management combines business and IS facets



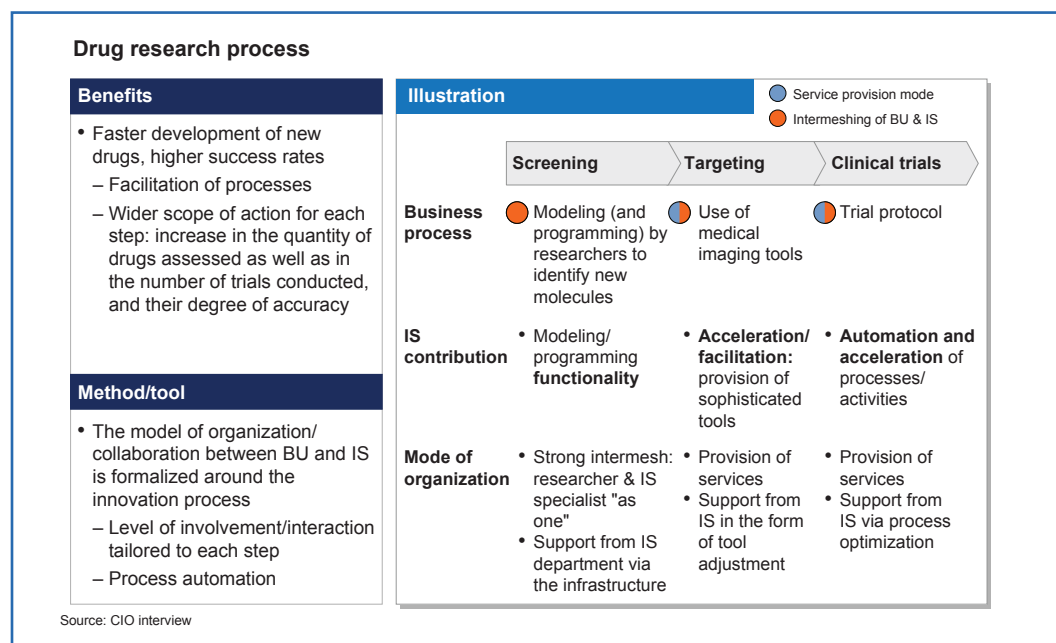
- In a sector like the pharmaceutical industry, where **innovation and the IS are inextricably linked**, the CIO will be associated at every step in the research and development of new products, with the specific mission of shortening time-to-market and reducing development costs.

In one of the sector's leading firms, we observed a model of IS/BU collaboration around the innovation process. This model allows for a clearer overview and adaptation of the level of involvement of IS at every step in the process, and contributes to the faster development and launch of new products (*Exhibit 8*).

- In the case of UPS, the contribution of the IS to supply chain optimization was critical to the radical transformation of the company from a situation of low profitability to an efficient, high-growth, multi-business model. It allowed new, high value-added services to be developed (e.g., same-day delivery and bespoke solutions) and operations to be optimized in real time (e.g., rationalized parcel loading and optimized truck routing). UPS's information systems gave the company a clear advantage in terms of practical data for more efficient risk management and pricing policies (e.g., parcel insurance).

Exhibit 8

Innovation and IS are tightly linked in the pharmaceutical industry





Stronger alliances and broader roles for CIOs

For CIOs, the first requirement for IS-driven value creation is to activate new levers at the boundary of their core activities. This leads to a second requirement: openness. CIOs must not entrench behind a restrictive definition of their responsibilities. They must form new alliances with BU managers and/or take on new roles that go beyond the traditional frontiers of their function.

If they are to access the levers that control value-in-use creation, CIOs cannot remain centered solely on getting the technical basics right. The privileged position of the IS—due to its cross-functional role in a company—is an invitation for CIOs to take

a position outside their core activities and join forces with one or more non-IS functions, for example to execute a major transformation project, coordinate strategic planning, or manage investments.

By extending such links beyond their own core technical domain, CIOs play a liaison role, interfacing with the BUs. In the examples of best practice that we identified, the CIOs create alliances with operational and functional BU managers. They form “dyads” based on a privileged relationship with (depending on the company’s situation and priorities) the Human Resources Director, Chief Financial Officer, Internal Audit Director, Chief Security Officer, etc. (*Exhibit 9*).

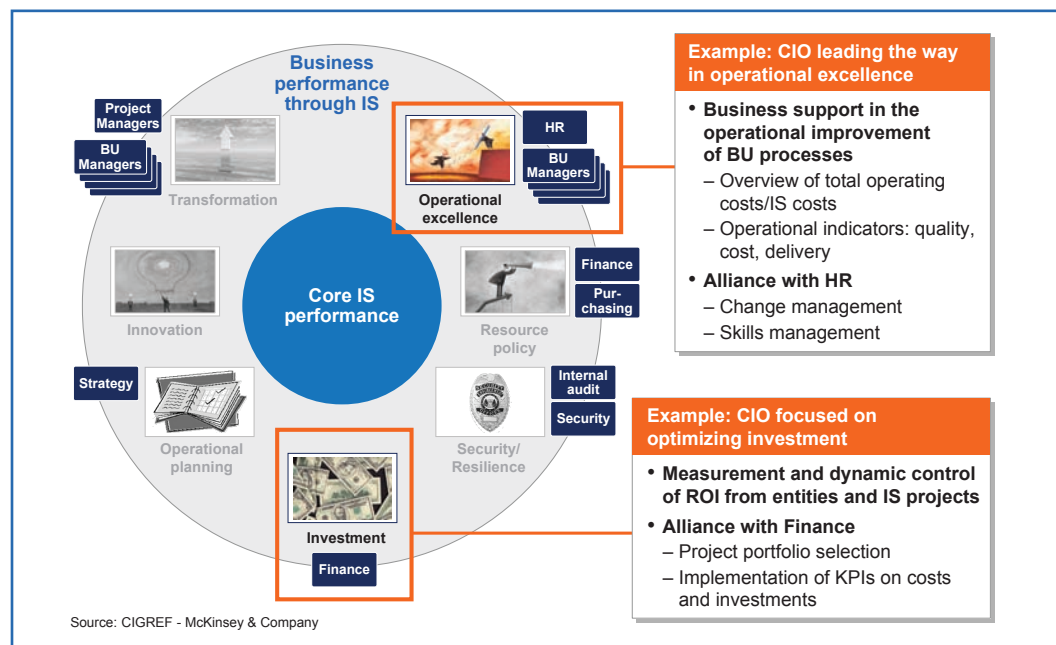
Where a company’s priority is **operational excellence**, the CIO will be most closely involved in operational process design and change management. An alliance

with HR will be built around change management and skills management; an alliance with the other BUs will center on process improvement, where the CIO has a clear overview of the total operating costs as well as the IS costs. The CIO also takes part in implementing operational indicators (cost, quality, delivery) to manage change effectively.

Where a CIO focuses on **optimizing investments** at group level, the priority will be to manage an investment portfolio. In such relationships, our observations show that the CIO is the ally of the Chief Financial Officer in maximizing the return on investment from IS projects. Both, after all, are

Exhibit 9

Depending on a company’s priorities, the CIO builds alliances with his peers



ideally placed to compare jointly the evolution of IS spending with that of the company's economic performance, as the CIO brings expertise in evaluating IS projects, as well as an overall vision of costs. Such an alliance does not necessarily make the CIO into a "cost killer", determined to cut IS costs or to keep IS spending pinned at a supposedly "healthy" level. However, it does give the CIO the responsibility to monitor continuously the impact of higher IS spending on business performance. Taken to its logical conclusion, it is notable that some CIOs are directly in charge of the investment committee.

As a further example, a CIO in charge of **security and resilience** aspects becomes the ally of the Internal Audit function and the Chief Security Officer.

Whether this broadening of the CIO's role takes the form of an alliance or of a formally recognized dual responsibility is ultimately of secondary importance. Our observations suggest that the preferred option depends mainly on the field of activity. Frequently, in IS-intensive industries, such as banking, insurance, telecommunications, and e-commerce, the CIO officially wears two hats. In the banking sector, for example, the combination of IS and operational responsibilities is often formally instituted in a new position of "CIO/COO".



Integration of IS governance and corporate governance

How can IS-driven value creation be managed, when the main levers are at the interface between IS and the BUs? Our observations of best practice in major companies shows that, in addition to inter-departmental alliances, a key success factor is the full integration of IS governance into corporate governance. The IS then ceases to be a separate item on the executive committee's agenda and becomes a component in all of the company's decision-making forums and processes.

IS governance, when integrated into the governance of the company as a whole, links business decisions directly to their implications for the IS. It is meaningless, after all, to expect CIOs to interact with his counterparts on the executive committee on certain strategic business issues if they are

not at the same time involved in the decision-making process.

Companies at the cutting edge of IS-driven value creation include IS governance in the overall governance process. This requires the systematic participation of the IS function in all

of the key business-related forums for strategic and operational planning. It also means that exchanges between the IS and the BUs focus primarily on business matters within the framework of these business structures (e.g., the operational planning committee). Strictly IS matters are dealt with separately: their governance (e.g., decisions about technical infrastructure or architecture) is “encapsulated” within the IS department itself (*Exhibit 10*).

Our observations reveal several organizational models that enable the required integration of the IS into key business decisions.

One option is for the IS department to participate in the company’s business forums. A second option, in contrast, builds into the IS processes certain business processes, such as the operational planning of projects and resources. In both of these cases, all decisions on technical matters (concerning infrastructure, architecture or operational planning relating only to the IS) follow their own separate cycle.

In a decentralized organization, where the BUs operational planning is insufficiently mature, IS strategic planning can even act as a vehicle for overall strategic planning, through the

Exhibit 10

IS governance should be fully integrated into corporate governance

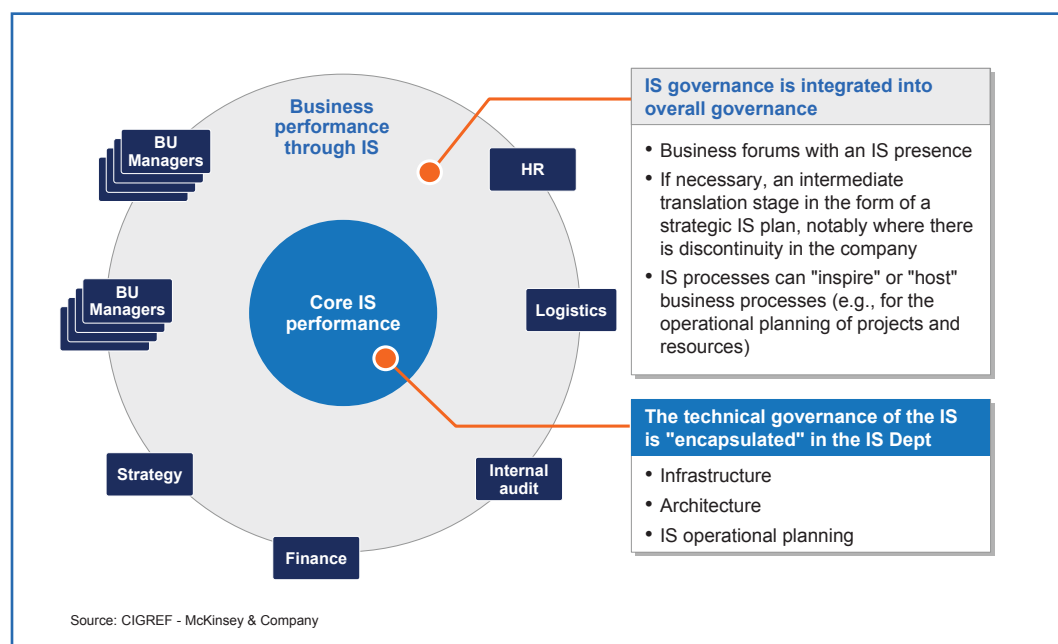


Exhibit 11

In a decentralized organization, IS strategic planning can be a vector of overall strategic planning

Organization of IS strategic planning					
No specific IS forums, just BU forums chaired by IS					<div>BU forums</div> <div>IS forums used by BU for operational questions</div> <div>Mixed IS/BU forums</div>
Cycles	Forums	Periodicity	Actors	Areas addressed	
Long term	Strategic vision	• Executive Committee	• Bimonthly	• ExCom members • Group CIO	<ul style="list-style-type: none"> Overarching executive decisions and strategy Major IS decisions Consolidation of the master plan: budget, project portfolio
		• IS Steering			
Short term	Budget framework and planning	• Financial Forum	• Annual	• Financial Director • Subsid. ExCom • Group CIO	• Based on annual master plan review
	Operational planning	• Domain Councils*	• Bimonthly	• BUs • Business IS	<ul style="list-style-type: none"> Operational review of overall business priorities Review of IS projects Search for IS innovations
		• Local IS Committees (master plan)	• Annual	• Subsid. ExCom • Local IS • Regional IS	<ul style="list-style-type: none"> IS strategic planning over 3 rolling years (the "master plan"), reviewed annually <ul style="list-style-type: none"> Ranking of priorities for IS projects (Group, local) Budget proposal

* For each major BU domain, e.g., supply chain, production, sales & marketing
Source: CIO interview; CIGREF - McKinsey & Company

implementation of mixed BU/IS forums led by the IS department (*Exhibit 11*).

However, certain exceptional circumstances may temporarily interrupt this integrated mode of governance; the IS department may need to pause the process (a “time-out”) to set up ad-hoc discussion forums with the BUs. This tends to happen when the company’s environment is characterized by a strong discontinuity, such as a major transformation, whether voluntary, such as a change in the economic model, or involuntary, as in the case of radical regulatory changes. At such times, the CIO will focus resources on

assessing the impact of recent changes on the IS. The CIO will then factor these changes into a new, specific, strategic plan (*Exhibit 12*).

The new strategic plan formalizes the potentials and implications for the BUs, and translates them into IS budgets and project portfolios, and into changes in the IS architecture or governance. The plan also defines a framework for deciding on trade-offs between projects (*Exhibit 13*).

Exhibit 12

When a company faces a discontinuity, a dedicated IS strategic plan can help translate business priorities into IS initiatives

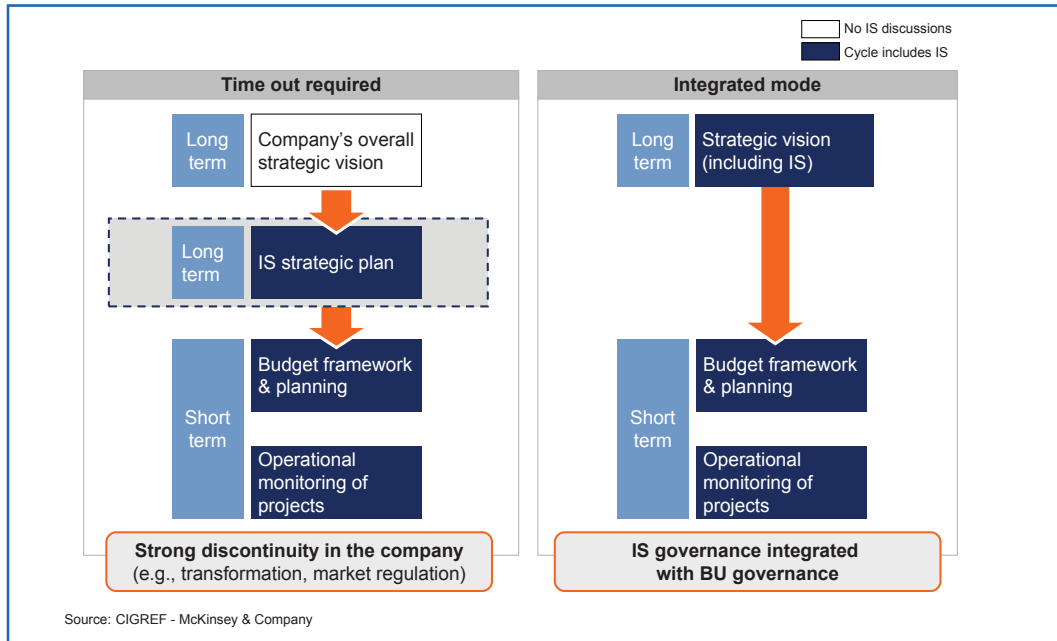
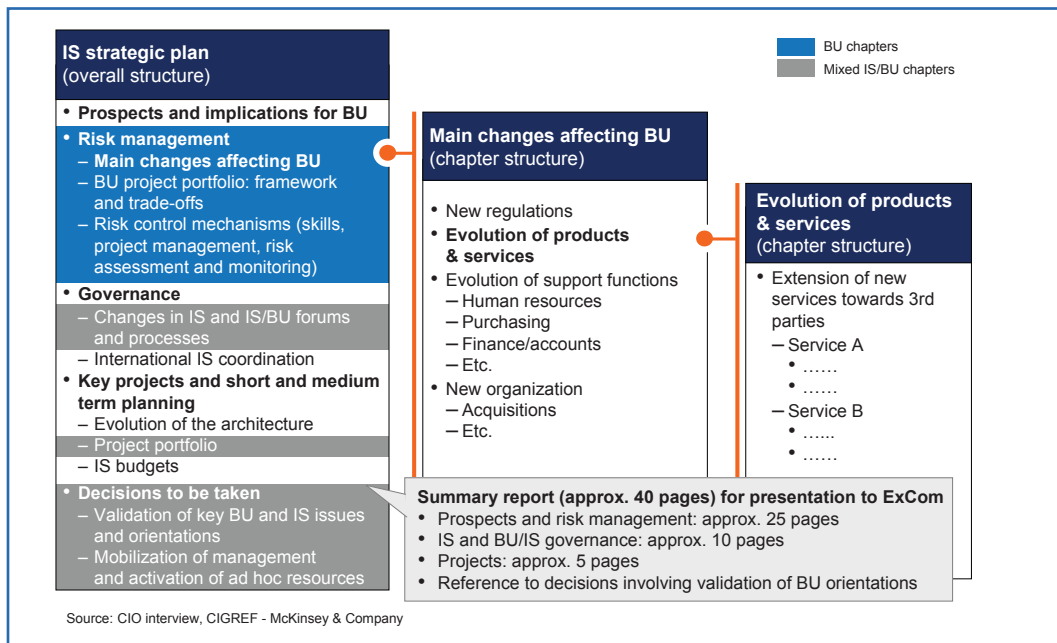


Exhibit 13

An IS strategic plan builds BU priorities into the CIO's agenda





Toward new horizons in IS-driven value creation

We can summarize in a single sentence the best practices of major companies at the cutting edge of IS-driven value creation: “Performance is co-created by the CIO, the CEO and the Business Units”. Identifying and describing best practice is one thing, but it is another to operationalize it. The potential benefits for a company are significant, but there are also considerable challenges for all of the stakeholders. These lessons translate into several workstreams for CIOs, CEOs and BU managers if the implications of our study are to be realized.

We can describe with a simple framework the best practices implemented by the major companies (*Exhibit 14*). The value-in-use of the IS emerges when the IS department (building on the total mastery of the technical basics of its activity) activates the levers situated at the interface with the BUs; when it expands its scope of action through alliances or

by developing new roles; and when its governance is fully integrated into that of the company.

With this framework in mind, the next step for companies that aspire to release untapped reservoirs of value-in-use is to identify the challenges CIOs, CEOs and BU managers must address (*Exhibit 15*).

Exhibit 14

Dynamics of value creation through IS: our reference framework

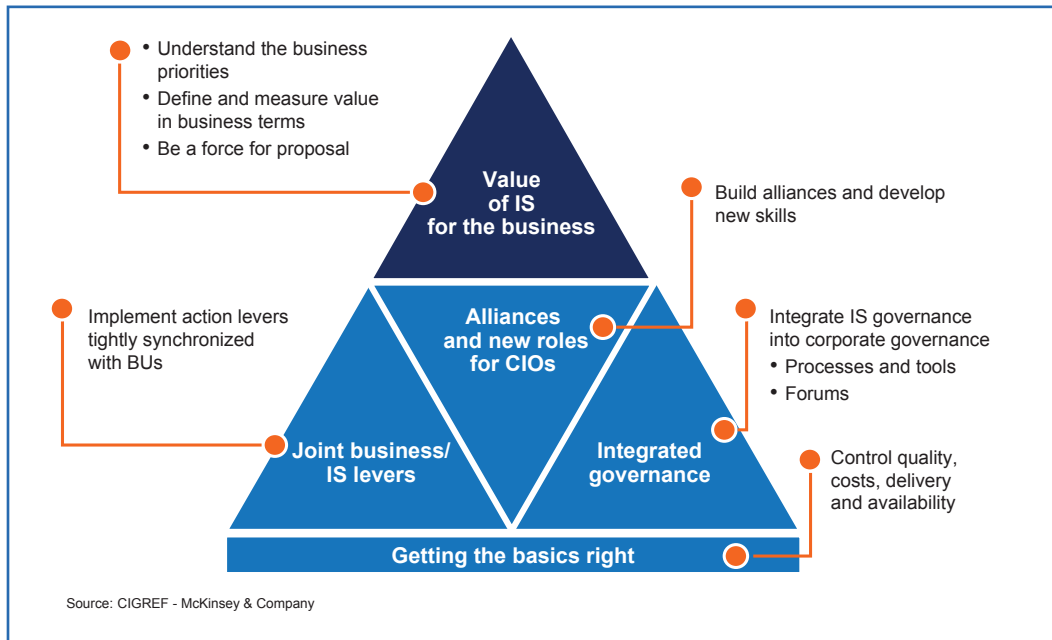


Exhibit 15

Creating business value through IS: benefits and challenges

	Benefits for the company	Challenges	
		For CIOs	For CEOs/BUs
Value	<ul style="list-style-type: none"> • Value-in-use of an economic and/or strategic nature for BUs • BU Managers taking ownership 	<ul style="list-style-type: none"> • Understanding expectations about IS and formulating them in business terms • Being a force for proposal • Ensuring faultless execution 	<ul style="list-style-type: none"> • Formulating objectives and priorities in business terms
Action levers	<ul style="list-style-type: none"> • A wider palette of IS and non-IS levers • Effectiveness of levers 	<ul style="list-style-type: none"> • Ranking priorities and sequencing the levers to be used • Taking a position on cross-functional projects 	<ul style="list-style-type: none"> • Involving IS in cross-functional projects
Alliances and roles	<ul style="list-style-type: none"> • Skills synergies between IS and BUs, targeted to fit the context 	<ul style="list-style-type: none"> • Developing non-IS skills • Being "collaborative" • Reinforcing IS's cross-functionality 	<ul style="list-style-type: none"> • Moving the CIO away from a purely technical focus
Governance	<ul style="list-style-type: none"> • More direct interaction <ul style="list-style-type: none"> – No translation phase – More business-centered dialogue 	<ul style="list-style-type: none"> • Creating symbiosis between BU forums and IS forums 	<ul style="list-style-type: none"> • Bringing IS in on strategic and operational planning for BUs

Source: CIGREF - McKinsey & Company

For the CIO, the key challenge is one of skills. A new range of know-how must be acquired or developed, supplementing the traditional core competencies. The required knowledge comes mainly from the BU domain: the company's business model, finance, project management, and even accounting or law. A solid grasp of process re-engineering, investment allocation or regulations are just some of the strings that CIOs will need to add to their bows. Relational and organizational skills will also be much in demand: communication, change support, flexibility in the interactions with management counterparts, along with other attributes of the CIO will determine the force of the value creation dynamic.

For CEOs and BU managers, the challenges are as much about mindsets as capabilities. They must move away from a "customer/service provider" relationship mode and adopt a mindset that leads to an "alliance" mode, with all that this implies in terms of mutual trust. The objectives here comprise learning to formulate operational goals without imposing a specific technical solution, accepting the integration of IS governance into the company's overall governance structures, agreeing to give a broader role to the CIO once all the technical basics are in place, and remaining attentive and open to technological innovation.

These challenges, and the framework that our study brings to light, raise a number of questions of immediate operational relevance, in addition to framing the agenda for CIOs, CEOs and BU managers.

CIOs must ask the right questions and anticipate all of the implications—for themselves and for their teams—of creating the conditions for the emergence of value-in-use:

■ **Is the mastery of the technical basics sufficient to enable a trust-based relationship to develop?**

Faultless execution is essential for asserting the legitimacy of the CIO. The IS function will find it much easier to act as a proactive force for proposal if it can show that its experience and its own best practices can be applied throughout the company. For example, the CIO will gain credibility in the eyes of other management levels by demonstrating a mastery of project management, innovation, the introduction of shared or remote services, or the management of subcontractors, etc.

■ **Are there clear definitions of value-in-use and the criteria to measure it?**

The CIO must then ask whether the value-in-use that he or she is

supposed to be co-creating has been adequately defined for the particular situation and priorities of the company (transformation program, operational excellence, improving the customer relationship, etc).

One of the clearest signs that the BUs' expectations of IS have materialized is the inclusion of operational performance indicators in the performance metrics applied to the CIO. The CIO dashboard, with its targets and incentives, must incorporate situation-specific indicators. For example, an improvement in the overall cost/benefit ratio (in the case of an "investor" CIO) or progress in a transformation project (in the case of a "transformer" CIO) or process quality criteria (in the case of a CIO with joint responsibility for operational excellence).

The IS department has everything to gain from demonstrating its understanding of business priorities by systematically formulating its own projects in terms of the priorities as expressed and communicated by the CEO.

To consolidate its role as a driver of new ideas, the IS department should participate in innovation forums and play a proactive role in the launch of new products, services, and businesses. It should also widely share with the other

departments the insights from its technology watch, highlighting potential uses for the BUs.

■ **Have the BU/IS interface levers been properly identified?**

The CIO must take an active position on all of the company's main transversal projects, whether they cut across functions, across BUs, or across geography. The IS function adapts to this logically as it is transversal by definition. This is the CIO's "trump card", and it should be played for all it is worth!

■ **Does the CIO make effective use of alliances with the BUs? Does the CIO's role extend beyond the IS?**

One way to foster the fulfillment of this condition is to develop the relationship skills of CIOs and their teams, and train them to facilitate meetings, exchange ideas, and summarize key points. Additionally, multiplying the opportunities for networking between IS personnel and their management counterparts will help them gain a better understanding of the other side's issues and concerns.

■ **Is the IS governance sufficiently integrated into overall governance?**

This last factor can be supported by constant participation in

the key forums and by creating proactive and reactive validation loops to ensure that IS projects and investments are always aligned with the business priorities.

The framework provided by our study also opens up areas for reflection and development for **CEOs and BU managers**, who are the CIO's allies in the co-creation of value-in-use:

■ **Do the expectations of the CIO go beyond just “getting the basics right”?**

One of the main difficulties for CEOs is getting clarity on what exactly is expected from the CIO. CEOs must ensure that the CIO has a solid understanding of business issues as well as the ability to perform faultlessly the basic missions of the IS function, as well as “collaborative” skills and an aptitude to act as a driver of new ideas—a “proposal force”—to contribute to the company's overall economic performance.

It is therefore the CEO's responsibility to demand that the CIO's contribution to overall performance is like the BUs and support functions, and thus moving beyond a purely technical focus.

■ **Are the business priorities and implications formulated in measurable terms, both for the BUs and for the IS function?**

To ensure joint responsibility for the creation of value-in-use, business objectives and priorities must be expressed clearly, in detailed, concrete terms. The BUs can then monitor the achievement of the objectives, and the IS function can propose and implement technical solutions whose contribution to the result will be measurable.

■ **Has the CIO been involved in major transversal initiatives?**

The status of the IS must move from that of a “constraint” to that of an accelerator for all business projects with a transversal dimension (across BUs, functions, or geography). The CIO must not be sidelined from major projects and initiatives such as transformation programs, operational excellence, innovation committees, etc.

■ **Does the CIO have formal or informal roles outside the strictly technical domain?**

As we saw, “natural” dyads or combinations of responsibilities (IS plus Operations in banking, or

IS plus Purchasing in industrial groups) may form by themselves. Such associations often prove very beneficial for creating transversal skill synergies and for broadening teams' outlooks on professional development.

■ **Do the existing mechanisms of governance create efficient links between BUs and the CIO?**

Strategic or operational planning mechanisms should involve the CIO so that the IS aspects of the company's key projects can be integrated upstream. Their objective must be precisely to define the business priorities and the resource policy to be implemented. We observed that if such mechanisms are insufficiently robust, there is a risk that the IS project steering committees or even the IS master plan processes will take the place of the BU strategic or operational planning processes, or end up "hosting" them. It is essential, therefore, that the BUs should have forums that allow for effective consultation between the company's constituent parts; such forums will always focus on the expected value for the business.

For all CIOs, CEOs and BU managers who aspire to create greater business value by leveraging the IS, this study offers a framework of analysis and a number of action items going forward. Building on a series of broad questions—what is business value? What are the conditions for its creation?—it highlights the issues facing the management of major corporations and defines a set of questions of direct operational relevance.

From the exchanges between the participating CIOs, the CIGREF management teams, and McKinsey & Company, we forecast a very stimulating period ahead for relations between CIOs, CEOs and BU managers. All share the same passion and commitment to improve their companies' overall performance. We are convinced, therefore, that a lively dialogue around shared business objectives is possible and is currently gaining ground as many organizations are pursuing it actively, and it will be fruitful and a source of value creation for the companies that take this path.

Thanks

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