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The Rise and Fall of Information Janitors

by Tomek Byzia, Marek Gmerski, and Borys Stokalski

The IT industry has always claimed its importance to the business. Computers and software are depicted in various ads as the corporate savior, the Wunderwaffe, or the "Ultimate Answer to All Management Problems." IT professionals have the privilege of working with truly exciting technology. Our works are made of "thought stuff," and the only serious limiting factor to our creativity seems to be the complexity of our inventions. This fascination makes it hard for us to objectively judge the contribution we make to the organizations we serve. For many years, the role of corporate IT has been that of information janitors. We have been busy trying to clean up the "information mess" of our organizations, being paid little attention when information flows smoothly and earning visibility mostly when something goes wrong.

Today, two major trends force us to redefine this established relationship between the enterprise and its IT functions. The first trend is the decentralization of technology investments. As information janitors get more and more expensive, IT can no longer be managed as a monolithic cost center, driven by the ambitions of engineers. In an effort to solve the problem of overgrown IT spending, financing for IT initiatives began to drift from central IT budgets to the business units that are supposed to benefit from the technology.

[1]K. Potter. "E-Business IT Spending: Type A, B and C Enterprises." Gartner Group Research Note (18 May 2000).

The second trend — the proactive role of technology in creating competitive advantage — stems from the outbreak of the Internet economy. The phenomenon of new business models, innovative products and services, and their threat to existing, established players is often astounding. It is clear evidence that the creativity and effectiveness of people whose main expertise lies in the field of technology can have a serious and positive impact on business.

The role of information janitor has many drawbacks — budget constraints, lack of appreciation for our achievements, status implications. The emerging new role of IT, while overcoming many of those drawbacks, brings new challenges such as direct responsibility for the success of critical business initiatives. Further in this article, we try to analyze how these changes affect the situation of people confronted with the task of developing and managing IT assets in the era of electronic business.

FACING THE CONFLICT

The trend in allocation of operating expenses and investment funding is unavoidable and perfectly logical. With IT budgets comparable to net profits, corporations must put the power of IT spending levels in the hands of the people that are responsible for the critical business processes. According to one estimate, this takes some 60%-70% of the IT budget out of the hands of the CIO.[1] The problem is that business managers must now manage the costs of technology they do not fully understand. IT and business people differ widely in their perception of issues such as quality and time constraints. Let us take a look at the differences in the points of view of IT and business managers (see Table 1).

Table 1 – IT and Business Manager Perspectives on IT Investments

	Business Manager	IT Manager
Feasibility criteria	Business-specific criteria and preferences are applied	Some business criteria dominated by technical point of view
Attitude toward scope management	Preference for scope flexibility; changes usually tend to expand scope	Preference for fixed scope and elimination of ambiguity
Approach to time management	Priority to fit business scenarios and decrease time to market	Preference to maintain schedules that reflect the objective "engineering" complexity of the assumed scope
Approach to quality	Synonym for user satisfaction and fitness for purpose	Engineering category, equals lack of defects and engineering excellence
Approach to cost management	Preference to minimize operating costs, including the costs of the underlying IT infrastructure	Preference to allocate the costs of infrastructure administration to business units and free resources for new development

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The differences outlined in Table 1 are a natural source of conflict, which — if unmanaged — turns into turf wars and systems architectures that are either ad hoc and unmanageable or overly rigid and inflexible. The net results are well known. Studies of the outcomes achieved by corporate IT initiatives relentlessly show us the same alarming picture: tens of billions of dollars wasted in projects that never deliver anything useful.

Challenges brought on by the growth of the digital economy amplify this conflict, experienced by all organizations whose business processes and competitive capabilities rely heavily on information technology. Technology that has been used mostly for automation of back-office activities is suddenly linking directly to the customers and business partners. The creativity of IT professionals and the quality and timeliness of their work translate to the quality of the customer experience and advantages in value chains. As a result, our assumptions and clichéd attitudes about the management of corporate IT assets should probably be revisited.

We assert that neither traditional IT nor traditional business managers have the right skills mix to effectively manage IT investments. Traditional business managers will not be able to exploit the full benefits of IT. Traditional IT managers will not be able to grasp the dynamic business context of their assignment. They will become the technicians of the wired world — not its creators. The question that remains is whether the required new attitude and skill sets can be grown within existing management resources. We believe that, in many cases, established CIOs will find this hard to achieve. The natural source of many future e-business managers will be the turbulent world of Internet startups. On the other hand, it is tempting to see the nonlinear change of the landscape and significance of corporate IT as an opportunity for persons capable of blending technology and business management qualifications into a new mindset.

The digital economy calls for IT investment managers capable of understanding (1) the opportunities and constraints of information technology, (2) the e-business investment lifecycle with its "chasms," "bowling alleys," and "tornadoes" (as described by Geoffrey Moore [1, 2]), and (3) the immediate benefits and hidden growth options in each project. Let's prepare for the casting interview.

OPPORTUNITIES AND CONSTRAINTS

While acknowledging that strategy alignment (assuring consistency between IT strategy and high-level business goals) will remain the primary objective for any CIO, it is worth pointing out that for an e-business, the rationale for alignment may change dramatically. Where today the force driving alignment stems from the need to rationalize big technology bills, e-business requires the business model to be reshaped around value creation opportunities inspired by communication technologies and new media. It is information technology that will help the organization align to its externalities — value networks, markets, customers, key resources — forming the dynamic context of the new economy. Achieving the kind of alignment essential for e-business requires changing the vector of "inspiration flows" between business and IT goals (see Figure 1). This may only happen if the CIO has the capability and courage to step into the role of strategic partner for the existing decisionmakers.

It is one thing to claim that, in the information economy, IT must contribute real value to the business; knowing how to achieve it in a particular situation is another. It's a fact of life that there are many constraints that define the extent to which alignment between business and IT can be achieved.

The primary constraint for the CIO is the strong relationship between the way a business is managed and the way its IT domain is organized. The simplest example of an alignment constraint is the lack of a material business strategy. By material strategy we do not mean a thick document with bold statements, goals, SWOT, scorecards, and matrices (though this is not to deny the usefulness of such documents). Material strategy is something that fuels and gives a distinctive shape to the everyday behavior of an organization. This prerequisite of a formally defined strategy is usually backed

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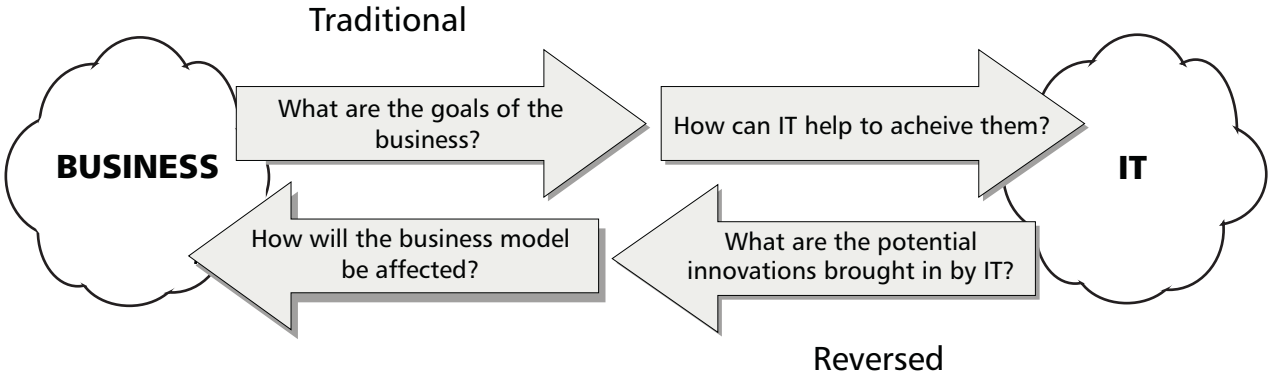

Figure 1 — "Inspiration flows."

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by quite a few artifacts: key business plans, key rules, key values, key mental models, and key insights concerning the future of the business environment. If an organization lacks this kind of consistency on the operational and tactical level, there can hardly be anything close to a strategy at the top, despite the volume of documentation produced by management consultants.

The Relationship Between Business Management and IT Investment Styles

CIOs who happen to work for organizations that either have no strategy or just pretend to have one should start with understanding the alignment constraints that are specific to their situation and define alignment goals for IT accordingly. The diagram in Figure 2 correlates the styles that we have found typical for organizations and their IT functions, and the areas of reasonable synergy between them.

The rows represent different business management styles, starting with "Gold Rush," where the only strategy is to get or retain market share, often without much care about the future profitability of the "conquered land." Management decisions are often taken in the style of Indiana Jones (the famous film hero who, when asked about his plan amidst some adventure, used to answer: "I'll think of something."). The traditional thinking about the division of work and tight management control — still present in many organizations — is represented in the row labeled "Functional." Those enterprises that understand the importance of organizing around the value creation processes are represented as "Process Oriented" (where management focuses on the efficiency of processes) and "Value Oriented" (where the processes are a part of broader, conscious management

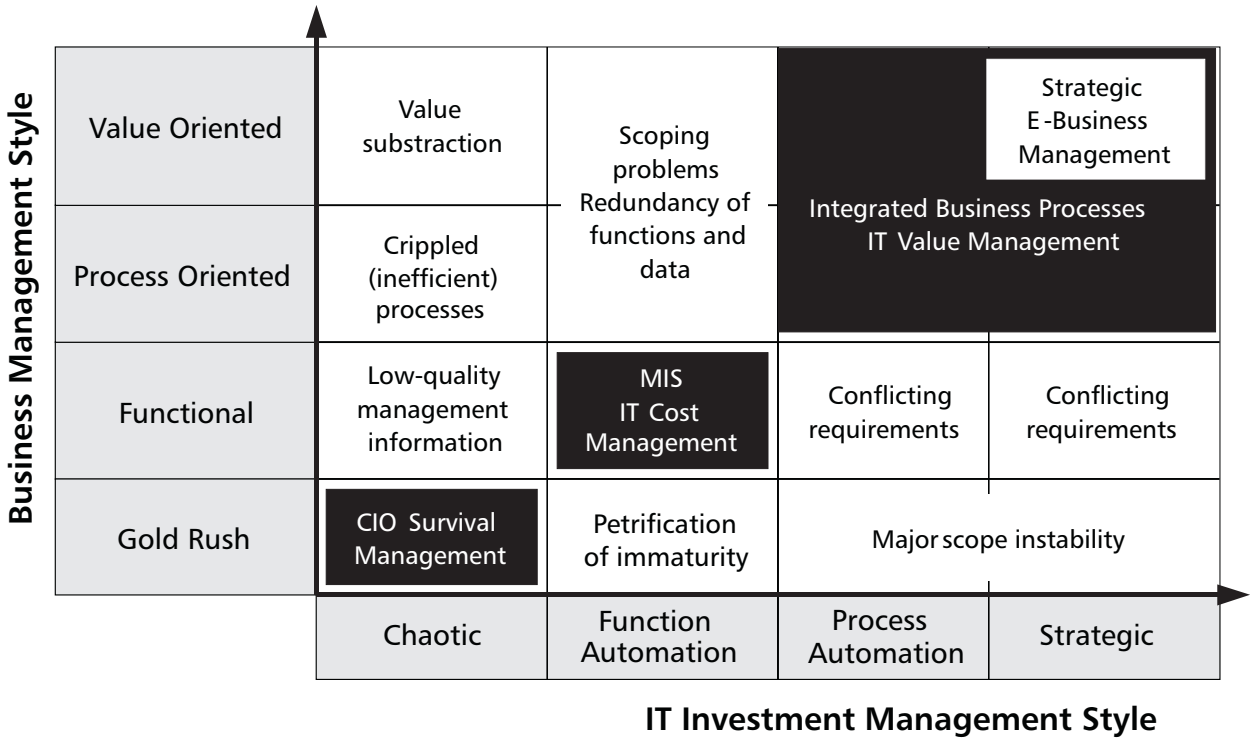

Figure 2 – IT/business alignment matrix.

of the value delivered to shareholders, customers, and employees).

Columns relate to different IT investment management styles. The table covers a number of typical approaches, the first of them being "Chaotic." Here the history of investments reflects the history of power within the organization, with no long-term, strategic pattern being followed. "Function automation" is the fairly clueless approach in which the list of business functions forms the IT strategy. Only in a "Functional" organization is there a chance that the timing and allocation of budgets to the automation of subsequent functions will be rational, as usually the most critical business functions get the most authority and funding. "Process automation" is the approach followed by most organizations and endorsed by most vendors of integrated ERP application suites. It requires business processes to be defined and the management structure to be "Process Oriented," so that there are no "functional walls" inhibiting effective automation of processes. "Strategic" management of IT assets gets beyond process orientation, by implementing assessment of the return opportunities, lifecycle, and costs of ownership for the potential investments.

We believe that there is almost always a possibility of reasonable alignment between IT and business within the constraints set forth by the ruling business management style. Nevertheless, the best environment for effective application of information technology exists in organizations that consciously manage their value chain, through careful business process engineering and value-based management approaches. Only then it is possible to transform the one-sided "command chain" of IT costs management into a two-way strategic e-business management relationship.

THE ANATOMY OF IT INVESTMENTS

Geoffrey Moore has observed the nature of product lifecycles in the high-tech industry, giving excellent descriptions in books such as *Crossing the Chasm* [1] and *Inside the Tornado* [2]. The steady, exponential growth in the capacity of the underlying technologies, along with the relative ease with which successful products can be replicated and improved, creates high pressure and potential to disrupt markets. This attracts investors willing to bet their money against the potentially high rewards. IT investments supporting organizations' external activities (such as the multichannel online sales of information-based products) in many respects follow the same pattern as commercial software products. Thus IT investment management requires a very clear understanding of the lifecycle and business value of different parts of a company's IT assets portfolio.

The lifecycle and business value depend on a number of factors, such as the volatility (as the opposite to maturity) of supported business processes, vendor dependence, technical complexity, and the type of relationships (internal vs. external) supported. Figure 3 depicts those dependencies, showing a possible — not uncommon — strategic profile of IT assets. Based on the analysis of such a profile (some samples are included in Table 2), an IT investment manager can choose the assessment criteria and techniques that are most appropriate and best aligned with the business value. There are two types of IT assets that are of special importance for the e-business. One of them is the enterprise application

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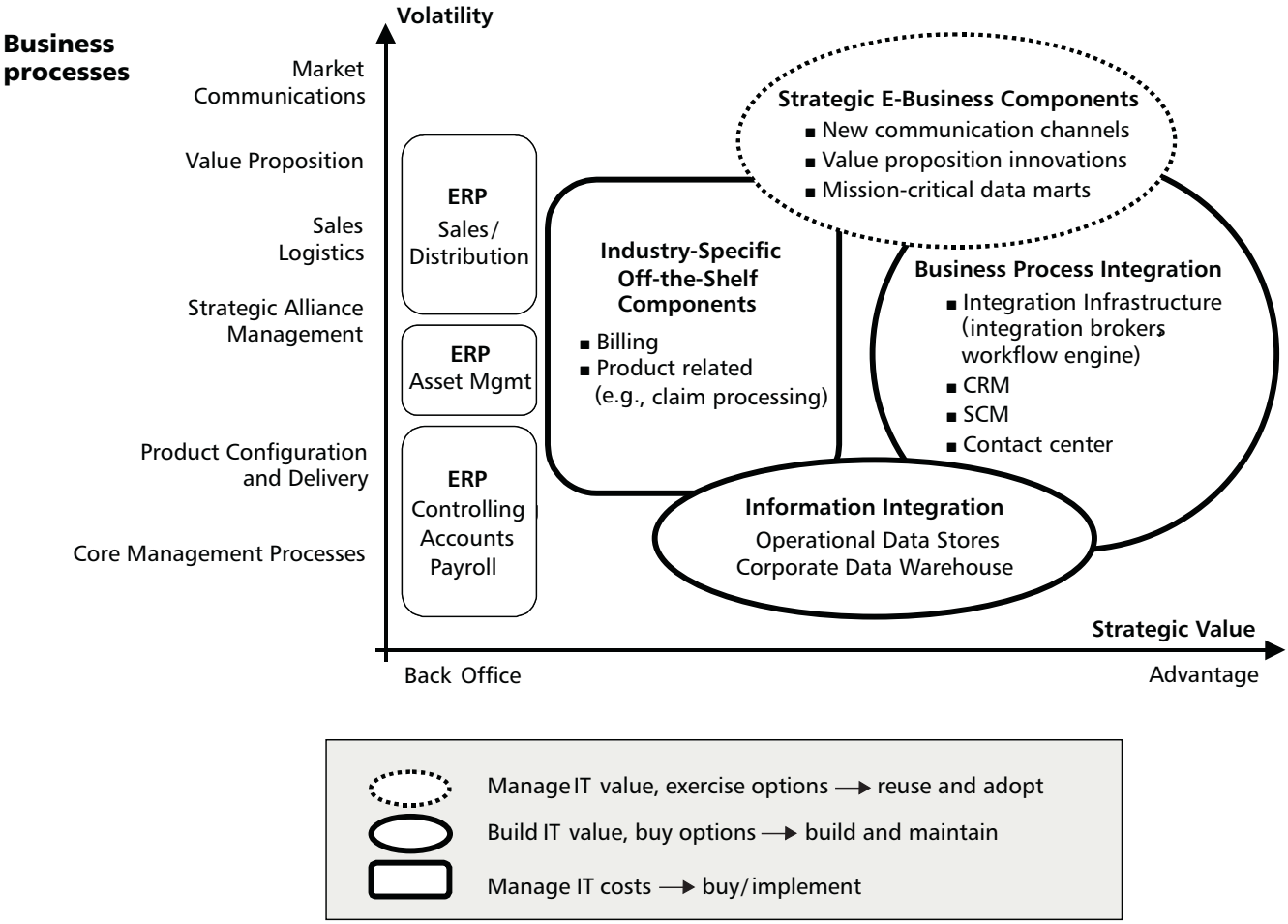

Figure 3 — IT assets portfolio map.

infrastructure, which itself seems to represent pure costs and no business value. The other is the area of strategic business components, built on top of that infrastructure. Modern and still-evolving approaches to contingent investment analysis allow us to see them for what they really are — the key building blocks of e-business architecture.

The value of infrastructure lies not in its immediate returns — these are usually hard to justify. It lies in the options for potential profitable e-business initiatives that it enables. This value is measurable, thanks to innovative application of option pricing models to real (nonfinancial) assets. Thus we can view the process of building the integration infrastructure as the accumulation of digital capital, measured by the value of well-defined future options. Infrastructure investment buys the options. Strategic initiatives, such as using customer-related knowledge for a new market initiative or building a new digital distribution channel using components implemented in the integration broker, exercise those options, delivering actual profits.

Table 2 — IT Assets Analysis Criteria and Techniques

IT Asset Type	IT Asset Characteristics	IT Asset Value Assessment Criteria	IT Asset Value Assessment Techniques
ERP suite components	Used to automate most established business processes as a means of process, standardization, transaction crunching and information capture. Lifecycle depends on vendor strategy, usually requires conservative upgrade policy to avoid high TCO.	▪ Business risk reduction ▪ Maintenance costs ▪ User satisfaction	▪ Total costs of ownership (TCO) management
Strategic e-business components, such as: ▪ Digital communication channels ▪ Value proposition innovations such as ASP services	Used as a part of company value proposition, enables relationships with the external business environment. Often high-risk projects; reuse and underlying component infrastructure may reduce exposure. Short lifecycle, often disrupted by competitors' moves.	▪ Time to market ▪ Customer satisfaction ▪ Scalability	▪ Net present value analysis
Business process integration components, such as: ▪ CRM applications ▪ Message brokers ▪ SCM applications	Used to create potential for future innovations in processes and value propositions. Long lifecycle, constituting a continuous improvement process.	▪ Availability ▪ Scalability ▪ Flexibility ▪ Agility ▪ Data and process quality	Real option analysis

Another important issue facing the e-business CIO is the way the maturity of development processes should be managed in quickly growing e-business companies. It is obvious that there are many different approaches to the design and development of IT infrastructure. The main difference — sometimes associated with the term "process maturity" — lies in the extent to which those approaches embrace certain established formal practices, such as configuration management, requirements management, risk management, and so on. It is also an observable fact that these practices add an overhead to the basic "production" activities.

Applying a mature process to the development of low-complexity IT components of an e-business initiative may seem like a good strategic decision, as it sets the proper ground for the future growth of complexity. From a time-to-market perspective, however, this approach may prove deadly, destroying "first mover" advantages and allowing less-mature competitors to take the market initiative.

So the required CIO competency will be rather a careful, dynamic management of the practices applied to different parts of the IT components portfolio, so that the maturity of processes increases only as a means of maintaining the optimal balance among time to market, customer satisfaction, and total costs of ownership of an IT architecture. This idea is presented in Figure 4.

CONCLUSION

E-business is just one of the many profound changes induced by the dramatically increasing ability to handle and process the information our civilization has created. It may seem sad that the same people who have long struggled to prove the fantastic

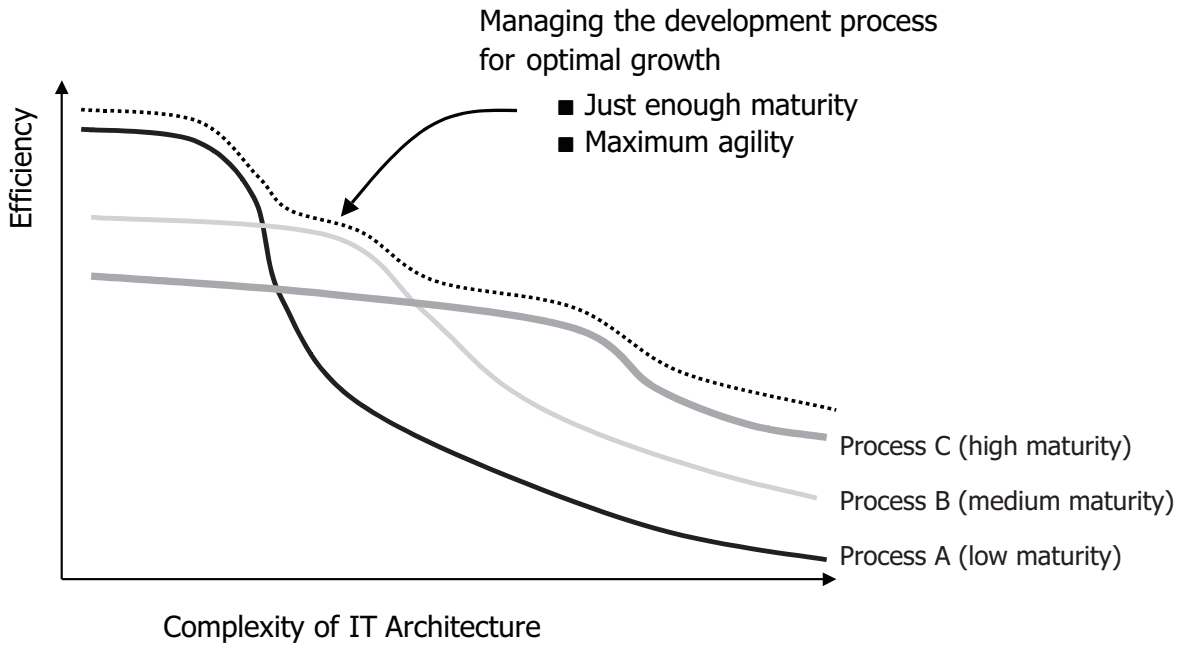

Figure 4 — Just-in-time maturity.

business potential of IT are now threatened by the very fact that what they have always said is today becoming true. Still, what many (sticking to their "janitorial" role) will see as a threat, others will use as an exciting opportunity to take the lead as the strategists, leaders, and creators of the many new information-based products and services that will be impacting our daily lives.

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