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Getting IT Right

*An Approach to Managing
IT Complexity*

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Getting IT Right

An Approach to Managing IT Complexity

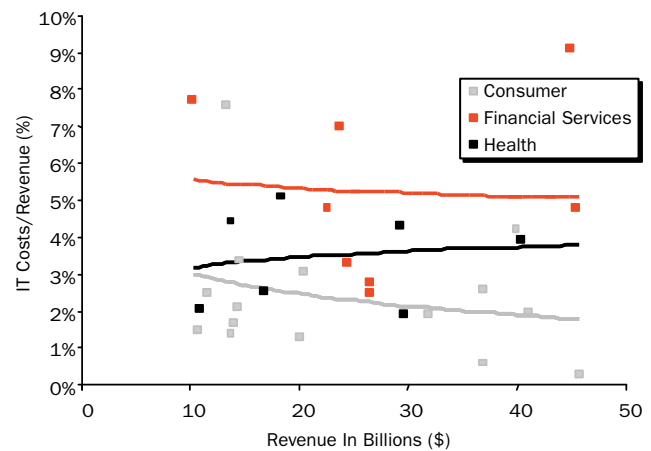
Growing complexity in information systems poses a significant challenge to senior managers. Mergers and acquisitions, changing markets, and customer demands have encouraged piecemeal investments in new functionality. The resulting patchwork of systems often fails to provide adequate support for key business objectives, such as:

- **Quality decision making**
Current systems provide vast amounts of data, but sometimes yield little valuable information.
- **Speed to market**
New products and services must reach the market before an opportunity passes, but companies are unable to facilitate a quick new product launch because their systems don't share common capabilities.
- **Cost containment**
Efficient, low-cost delivery of products and services is critical to success, but an overly complex portfolio of offerings leaves little opportunity for scale advantages.

To make matters worse, cost-structure analysis and industry benchmarks suggest that large IT systems should offer huge efficiencies of scale, but for most companies IT costs as a percentage of revenue remain high.

Exhibit 1 shows IT spending relative to revenue in three different industries for 2002. The chart illustrates that lower IT costs (as a percentage of revenue) are

Exhibit 1
IT Costs as a Percent of Revenue



Note: 1) Sample size was 30 companies in the consumer, financial services, and health industries.

2) The trend lines are logarithmic trends.

Source: Meta Group Inc., 2002

not correlated with increased revenue. When done right, there are scale efficiencies to exploit; these have fueled the significant growth in outsourcing as businesses seek to capture scale efficiencies they cannot achieve themselves.

Complex and poorly integrated IT systems impede performance, and they are expensive. Yet, as businesses grow more intricate, the demand will only become more pressing for robust systems that can support business objectives. Complicating the situation, pressure to cut IT costs will continue to increase as the business environment becomes more competitive and markets continue to shrink.

However, before pointing to complicated, expensive IT systems as a root cause of poor performance or esca-

lating costs, senior managers need to step back and take a hard look at how their systems became so complicated. The answer may surprise them.

Understanding Complexity

Excessive organizational and business process complexity is the root cause of many IT problems. Organizational complexity is expensive, hard to manage, and causes system integration nightmares. Complexity is sometimes driven by misalignment between business needs and IT goals. In other instances, IT goals are aligned with an ill-defined business model. For example, in service-based businesses such as insurance, a poorly planned product architecture drives fragmentation, complexity, and high cost in the systems required to support the business model.

However, removing complexity altogether is not the answer. Most companies want to offer meaningful customer value, variety, and differentiation at the lowest cost. In fact, well-managed differentiation can offer valuable competitive advantages. Achieving that strategic objective requires a certain amount of business complexity, and that inevitably leads to some IT complexity.

Complexity should be eliminated when it provides no clear benefits, but managed when justified by enhanced business value. Making such adjustments requires management to incorporate the full spectrum of products, services, business processes, and IT issues in the decision-making process.

Before an organization can determine just how much complexity is enough, management has to understand what is causing it. IT complexity is the result of both business drivers and IT drivers:

Business Drivers:

- Lack of well-defined products and service offerings
- Poor business understanding of customer segments and needs
- Increasing need to customize offerings for individual customers

IT Drivers:

- Inability to develop the appropriate underlying governance model

- Application portfolio not rationalized, leading to excessive system proliferation
- IT decision-making processes performed in silos

Once an organization understands its unique mix of complexity drivers, it can begin to address IT complexity as part of a larger business focus on optimizing overall corporate complexity. There are four components in any successful complexity optimization plan.

1. Creating Efficient Product and Service Architectures

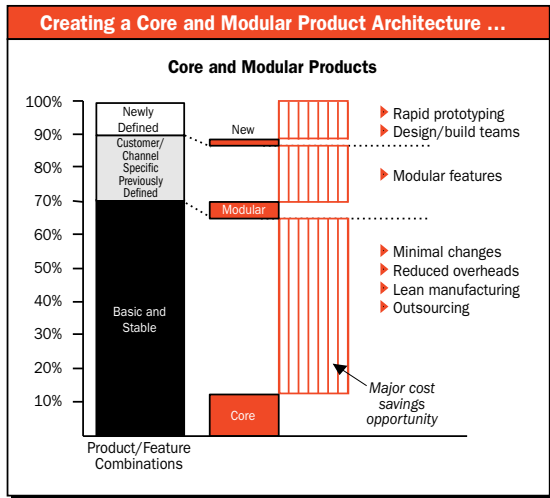
Root Issue: The lack of well-defined product and service offerings leads to a proliferation of products and services, increasing both IT complexity and overall costs. Scale advantage typically occurs when overhead and other indirect costs are spread across high volumes. However, the perceived need for unique products, coupled with an incomplete understanding of customer requirements, often drives unnecessary complexity into a business, and results in a tangled network of inefficient IT systems.

Ideally, a portfolio of products and services should be managed to balance the value of variety relative to the cost of complexity. It is essential to take a customer-focused view to determine the value of variety and the necessity for product differentiation. Companies that do this successfully can then create a product and/or service architecture made up of a small number of basic frameworks around which they align their business processes. This unleashes efficiencies of scale and isolates sources of variety and complexity.

Exhibit 2 provides an example of improved product management. In this case, a financial services company thoroughly examined its product offerings to determine what customers valued. The company then reduced the number of its product offerings from 150,000 to 1,500 and cut 30% of its operations and technology costs in the process.

By taking the product-management approach outlined in Exhibit 2, the company achieved its objectives quickly and avoided a typical multimillion-dollar, multiyear IT system overhaul.

Exhibit 2
Improved Product Management



Source: Booz Allen Hamilton

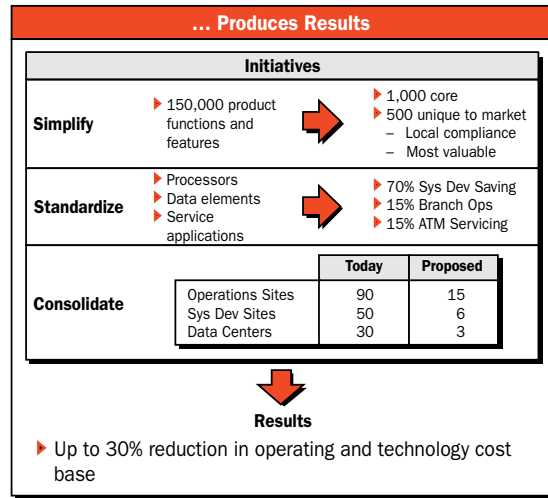
Besides reducing the number of products or services, a business can apply other tactics. The organization can change the way products and services are packaged and offered, thereby simplifying fulfillment. In addition, by performing more meaningful segmentation of the market, companies can better manage product and service variety.

Technology can play a pivotal role in adjusting the product and service architecture. For example, product configurators are rules or constraint-based platforms that enable defined relationships between products/components and their workflow implications.

2. Process Alignment

Root Issue: Overly customized or overly standardized processes.

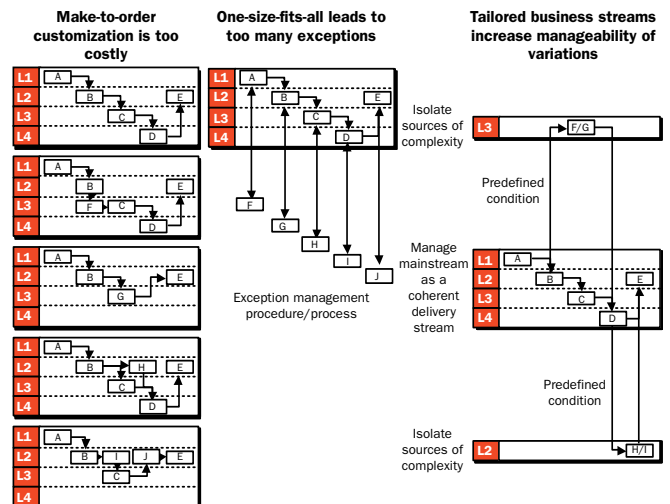
Manufacturing productivity has outpaced that of the service industries over the last several decades. Concepts such as lean manufacturing and its most recent form, tailored business streams (TBS), can help identify areas of commonality and complexity and can limit cost. Originally developed as the Toyota Production System, the lean manufacturing approach has successfully improved manufacturing efficiency by pushing authority down to the level closest to the task and running quality inspections or controls before executing the riskiest processes. These concepts can be effectively applied to improve almost any product or service management strategy.



Tailored business streams simplify businesses by aligning major components of infrastructure and processes to the product/service management strategy (see Exhibit 3). They assist management in determining when to implement basic and repeatable processes, predefined customer options, or custom solutions. These concepts apply equally to processes within manufacturing and service industries.

As tailored business streams are adopted, information systems can be aligned more easily to the revised business processes. Tailored business streams fre-

Exhibit 3
Tailored Business Streams



Source: Booz Allen Hamilton

quently result in reduced costs because they allow these systems to be streamlined.

3. Organizational Alignment and Governance

Root Issue: Splintered decision making and lack of organizational focus leads to excessive system proliferation and lack of effective integration.

Effective IT governance requires the alignment of IT strategy with business strategy. It ensures that 1) the value of variety requested by the business is offset against the proposed costs of complexity, and 2) supported projects are aligned with agreed-upon IT architecture and standards.

But how do organizations achieve that alignment? Streamlined decision making is the key. Many organizations simplify management structures as a means to improve decision making and reduce organizational complexity. However, organizational complexity is rarely created by structural elements. Businesses that attend first to creating proper organizational alignment find that this approach drives simplification.

Organizational alignment involves three key issues:

1. Who decides what (boundaries, decision rights, etc.)?
2. What do they need to know (performance measures, decision support, etc.)?
3. What is in it for them (promotions, bonuses, perks, etc.)?

Effective demand management, well-defined decision rights, and economic transparency are essential to IT governance. Economic transparency is especially critical, as it leads to well-defined budgets and a clear understanding of the total cost of ownership, including the costs of complexity, data migration, and system retirement.

When people have clear authority, the right information, and incentives to act in the best interest of the organization as a whole, rather than for any individual business unit, complexity is minimized. For example, a corporate-wide product development oversight board could drive and maintain the product architecture; an IT governance board could optimize resource deployment across different business units.

4. Focused Information Technology

Root Issue: Lack of decision-making tools that can provide business insight given available data and a fragmented technical infrastructure.

Wholesale IT renewal programs have typically been considered a prerequisite to effecting process change, but they have actually become a roadblock and often a distraction. Such renewal programs have generated three challenges:

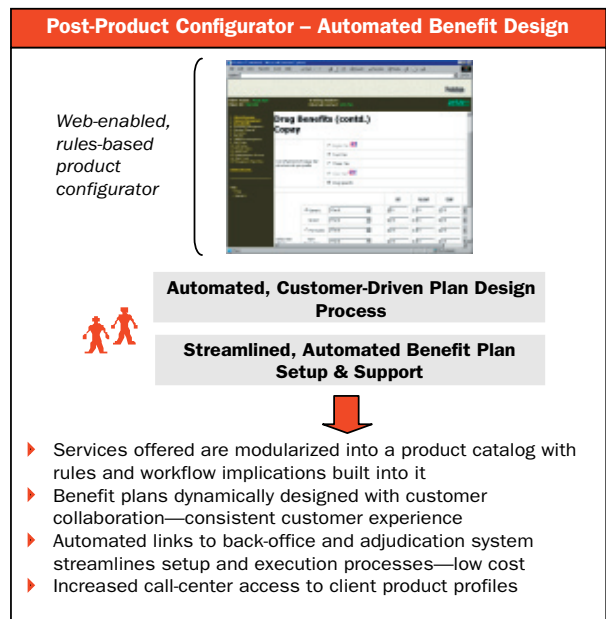
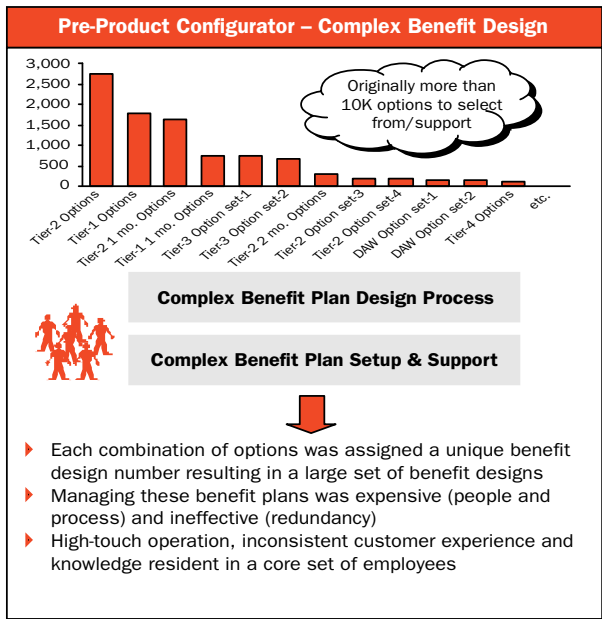
1. *Oversimplification and minimal process change* results in automation to deal with process complexity (i.e., addressing the symptom and not the root cause).
2. *Too much internal focus* on the re-engineering process itself diminishes focus on the customer or the market.
3. *One-size-fits-all IT approaches* make the scope of system renewals too broad, leading to very costly and time-consuming implementations. As a result, too much of the process change is dependent on the “killer application” being right, which becomes an excuse for capturing the benefits.

An integrated and focused IT approach can be a catalyst for complexity reduction when IT and business issues are integrated and customer and market perspectives are incorporated into the mix. Key enabling applications such as decision analytics, rules engines, product configuration models, and workflow and business process management strategies can offer many benefits, including:

- Isolating complexity in front-end applications without introducing complexity in the back-end
- Reducing complexity through automated application of predefined business rules
- Decreasing the time required to reconfigure supporting business technology

For example, a leading pharmacy benefits manager estimates a 10% increase in annual revenues through successful implementation of a product configuration application (see Exhibit 4, page 5). Similarly, a leading financial services company anticipates a 20% reduction in delinquent accounts after the implementation of decision analytics, workflow management solutions, and simpler financial controls.

Exhibit 4 Product Configurator



Source: Booz Allen Hamilton

Product configurator market leaders such as Firepond, ILOG, Selectica, and Siebel offer solutions that automate and isolate the complexity and time taken to define a customized product/service. This increases self-service options while promoting the unbundling of services/products with minimal increase in configuration complexity.

Tailored business stream concepts can also be applied to systems and IT architectures. Maturing technologies provide for modular application architectures, isolating and reducing complexity. Integration platforms such as Enterprise Application Integration (EAI) and new technologies such as Web Services are enabling simplification of IT infrastructures with minimum recoding/redesign. For example, one firm isolated its complex system components from its base processes and systems with the use of object and integration technologies. This process allowed the firm to consolidate eleven administrative systems into only two.

Getting Results

Before proceeding with an IT complexity optimization plan, organizations should consider the following key elements of any such program:

Complexity Optimization Program Implementation Considerations

- Beware of proposed “silver bullets”—this problem won’t be fixed through outsourcing or other solutions that don’t address root organizational causes.
- The enterprise as a whole should be considered (across business units and functional areas)—otherwise, complexity may just be transferred from one part of the business to another.
- Meaningful complexity optimization requires root-cause analyses and a thorough understanding of business priorities and underlying economics.
- Unlike some major IT initiatives such as ERP and CRM, complexity optimization programs generally do not require additional capital investment.
- While the solutions should be pay-as-you-go, a holistic perspective is essential:
 - Begin by articulating customer value and the product architecture
 - Tailor the core business processes
 - Define the underlying technology architectures
 - Implement systems incrementally into this new construct

Businesses can achieve significant improvements in their capabilities as well as sizable cost savings through a rationalized business portfolio and a new IT focus aimed at managing complexity. However, there is no single approach to managing complexity, and simplification efforts are ideally driven from business

transformations. When embarking on a complexity optimization program, a company should implement first the processes that will yield immediate results and help fund the program. In the end, a well-executed plan will more than pay for itself and will unlock the many lasting benefits of a simplified state.

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