A Pathfinder to Better Performance

> *"Our Age of Anxiety is, in great part, the result of trying to do today's jobs with yesterday's tools."*
> Marshall McLuhan

IT can be to the insurance company what high-tech firms have been to the economy—a catalyst for change that efficiently links key information to secure access points and an engine driving rapid growth. Of course, the opposite is also true: IT failures can seriously harm the insurance company.

Why? Technology and information have become so important to how insurance companies operate that even small changes can dramatically affect many areas of the business. This reality is reflected in the amount of IT assets accumulated over years due to large IT budgets, often second only to payroll in size. *How many of these assets are still underleveraged, for whatever reason? What impact on results would an across-the-board 10 percent increase in return on IT assets (ROA) have?*

Clearly, the stakes are high. And yet, IT is often seen as a simple support function or an expense ripe for outsourcing. It is rarely seen as an enabler or creative pathfinder for the business.

IT's daily pressures often derive from thankless, sometimes no-win tasks, such as ensuring core service levels of up-time, data quality, security, and compliance. Beyond these basic operations— "keeping the lights on"—IT must also respond to the never-ending and always-changing needs of their business customers. The challenge of managing their expectations is intensified by the pressure to reduce costs, do more with less, and even outsource major capabilities.

Companies often cite poor alignment of IT with other functions as the key challenge. IT, however, can be the pathfinder that helps the company discover a new way to drive value and maximize ROI and ROA. Unfortunately, the opportunity for IT to demonstrate this is often blocked by three common barriers.

Barrier 1: Effective alignment cannot succeed without a common language and unifying map

IT must be well aligned with the business. Much has been written about processes for achieving greater alignment in IT decisions. These include:

- Securing senior executive sponsorship
- Implementing gating procedures and ROI justifications for project approvals
- Establishing steering committees and business partnering roles and responsibilities.

However, for any of these processes to be successful, IT and the company as a whole need to share a common language and unifying map.

This is really about building a relevant business context for what IT can do. The language and map must reflect a fundamental understanding of what issues matter to the success of the insurance company. Then you can form a credible view on how IT capabilities can help. The map must show how IT capabilities fit among the company's other functions, processes, decisions and, most important, goals. It must show who benefits from these capabilities. And it must be able to communicate the strengths and weaknesses of these IT capabilities across a range of infrastructure, applications, and information, as well as how to manage them. Think of it as a Google™ Earth tool for IT. Zoom in on business objectives and evaluate different technical options based on an understanding of detailed capabilities.

Business Visibility

IT/Business Options/Paths

Detailed IT Capabilities
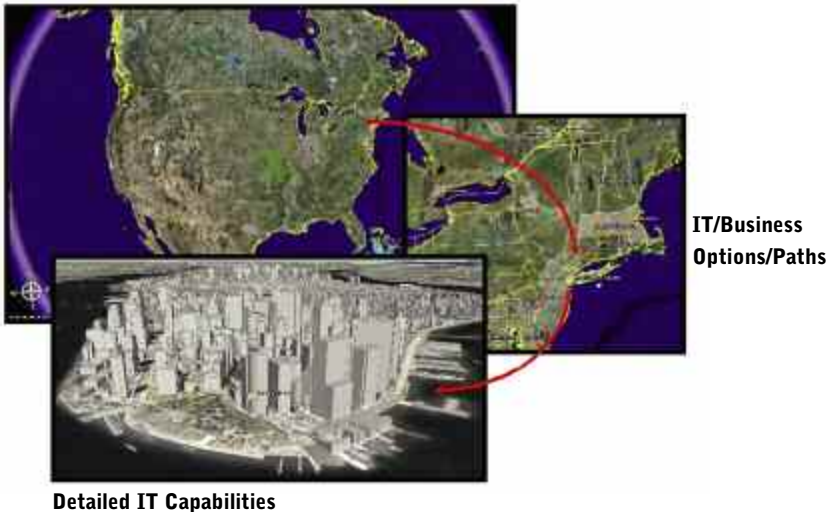
The common language and unifying map should include the fundamental anchors of metadata, such as customer, product/service, and location, along with standard business rules. Finally, it must also clarify and explain IT terminology. Non-technical audiences should be able to understand the impact of IT in business terms and answer some fundamental questions, including:

- Where are we today, where do we want to be, and how can we get there?

- What business processes and strategic goals are being negatively affected?

- How could IT drive better business performance? Which users stand to benefit?

- How well do multiple, discrete IT assets combine to fulfill complex business performance requirements?

- What information do we need to drive better decision-making capabilities, in terms of content (measures and dimensions), business rules (metadata), and use (functionality)?

- What financial and human resources do we require to fulfill your goals?

- How should costs be aggregated and allocated to reflect actual use?

- What are the cost/benefit trade-offs between alternative technical options?

Barrier 2: The difficulty of developing more credible, closed-loop measurements of IT's value to the company

It is standard practice within most IT departments to evaluate the return on investment for projects and initiatives, and measure the cost/benefit of various IT capabilities. The challenge comes in developing a value measurement system that:

- Is credible with Finance and users alike

- Provides insight into cause and effect drivers

- Goes beyond point measurement to reflect the entire organization

- Is consistent across projects, departments, and business units

- Provides a closed loop so that results can be compared to the plan and lessons learned.

Fundamentally, IT creates value by improving operational efficiency and/or effectiveness, but defining what this actually means isn't straightforward. One approach is to use the simple notion of input/output changes. Greater efficiency means reducing input cost—the effort or time required to achieve a given level of output. Greater effectiveness means achieving better-quality or higher-value output for the same level of input. A further guideline for defining useful metrics is to divide them into three distinct categories:

- **IT efficiency** ➔ Direct total cost of ownership (TCO) savings in use of IT resources

- **Business efficiency** ➔ Productivity savings in terms of business users' time to perform both transaction and decision-making work

- **Business effectiveness** ➔ Improved business performance from faster and more informed decision-making.

IT Value Management
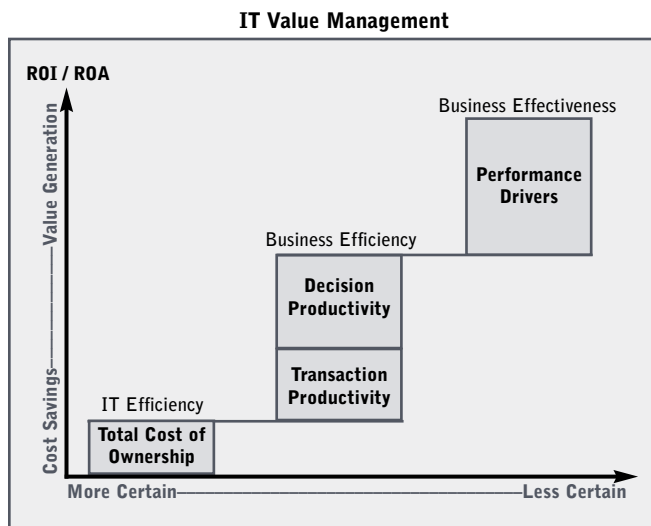
These three categories include measures ranging from cost savings (efficiency) to value generation (effectiveness), as well as from more to less certainty in the numbers. This is the dilemma and the challenge for IT: the greatest opportunity for ROI and ROA is also the least verifiable, and therefore the least credible.

Hard numbers around IT efficiency, such as cost savings and cost avoidance, are easier to measure and are often the only ones Finance sees as credible. Businesses document such costs, or they occur upfront, and therefore involve fewer future projections. Pursuing TCO is a well established discipline. It captures hidden costs such as implementation, change orders, maintenance, training, and user support. TCO also evaluates common drivers of IT inefficiency such as lack of standardization and consolidation.

Determining the value of business efficiency in user productivity improvements is somewhat harder. However, there are established processes. Historically, IT's primary focus has been on improving efficiency through automation. Cost savings in core transaction processes justified much of the countless dollars spent on technology over the last decade. The heavy investment required to implement enterprise resource planning systems, for example, was usually justified based on the ROI of process improvement that reduced cost per transaction.

However, measuring value merely in terms of IT efficiency from cost savings, or business efficiency from improved transaction productivity, understates the total value. Insurance companies have already achieved most of the major cost savings available from consolidations, platform standardization, and transaction process improvements. While you may still need incremental upgrades and integration initiatives, the bigger opportunity for value is in improving the efficiency and effectiveness of decision-making.

As noted in the introduction, analysis from McKinsey shows that the proportion of more complex decision-based (tacit) work has increased relative to transaction-based work. It now represents more than 50 percent of the workload in many industries.

Unfortunately, decision-based work is much harder to measure, and therefore to determine how to improve. It is information-intensive, interactive, and often iterative. IT must evaluate the value of improving business efficiency and effectiveness around decision-making work. The critical asset— and therefore the element to measure—is information. IT delivers value through quality of information. You measure that quality in terms of relevance, accuracy, timeliness, usability, and consistency. The higher the quality of information, measured across all of these factors, the better the decision-making. This leads to greater user productivity and the ability to drive performance goals.

Some metrics on decision productivity come from monitoring the use of a reporting, scorecard, or overall performance management system. *How many people use it? How often do they use it? When do they use it? How often are reports updated? How many new reports do users create? Who are these power users?* IT can also track user feedback about information quality through self assessments and qualitative ratings.

Metrics quantifying business effectiveness are in some ways more straightforward, though not necessarily as certain or verifiable. These are based on the performance metrics for the decision area you are improving. As demonstrated throughout this book, decision areas are defined by drivers and outcomes that reflect the cause-and-effect relationships among business issues. This metric hierarchy provides the logic for ROI/ROA calculations and for monitoring success over time.

Barrier 3: Lack of good decision-making information for managing IT

IT often lacks its own decision-making information. Beyond the need for metrics noted above, IT needs a context for making a wide range of decisions, as well as for filtering the volume of data it generates. There are two types of IT information sources that are often not fully integrated or harnessed.

The first comes from applications that serve IT processes. Use of information from systems management tools has become quite common, notably to manage security and compliance issues. For example, compliance with Sarbanes-Oxley's Section 404 for General IT and Application Controls involves reviewing access rights, incident logs, change and release management data, and other information generated by IT applications. This information is useful for making decisions beyond compliance.

The second source comes from having more consistent information about the IT management process itself. The Sarbanes-Oxley legislation was a catalyst for well established best practices in IT becoming more widely adopted. These practices include:

- Frameworks such as Control Objectives for Information and related Technology (COBIT®) from the IT Governance Institute and the Information Technology Infrastructure Library (ITIL) framework
- Methodologies such as the software development life cycle (SDLC)
- Organizations such as the Project Management Institute (PMI).

Greater acceptance and use of these best practices provides more information about IT and the business processes, organizations, and users that IT supports.

The Business of IT

The five decision areas described in this chapter provide IT with insights and facts to help drive overall value for the company. The sequence of these decision areas provides a logical and iterative flow of analysis and action. The start and end point—IT with a clear view of *where* and *how* it is driving business value—sets the basis for priorities and plans to close gaps. You require a detailed understanding of the effectiveness of IT assets, both individually and combined, to see how to make them more effective. In order to optimize your current assets, or add new ones, you must monitor the projects closely and manage vendors. Finally, you need visibility over the many "moving parts" to ensure you comply with business and regulatory objectives to mitigate risks.

Decision areas in IT:

- **Business value map** ➜ Where and how does IT drive business value?

- **IT portfolio management** ➜ How are IT assets optimized for greatest ROA?

- **Project/SDLC management** ➜ Are projects on time, on budget, on target?

- **IT vendor management** ➜ Are vendor service levels and costs managed optimally?

- **IT compliance management** ➜ Are IT risks and controls managed appropriately?
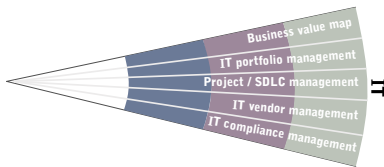
Business Value Map

The business value map provides a high-level view of IT's effect on the business, both currently and potentially. This information sweet spot combines common language with value measurement in a single unifying map for use throughout the business. Of the five decision areas, this is the most important for driving better alignment between IT and the other functions. It helps define the demand for IT and the ways IT can assist. Organizations use the business value map at different levels and stages of IT processes. These include defining IT strategy, setting priorities, approving projects and investments, defining requirements, monitoring user acceptance, and validating success.

The business value map provides a consistent understanding of the business and an overall understanding of IT. One useful source of this information is the consistent view of the business required by Section 404 of the Sarbanes-Oxley legislation in terms of organizational entities, transaction processes, systems, people, and their overall relationship to financial accounts. The business value map provides context and measures gaps in current or projected IT capabilities.

This helps clarify the *where*, *who*, *how*, *what*, and *when* questions:

- *Where* are better IT capabilities needed in the company in terms of organizational units, functions, and processes?

- *Who* are the users and stakeholders of better IT capabilities?

- *How* will better IT capabilities drive value for the business (and did they last quarter)?

- *What* are the requirements for developing better IT capabilities?

- *When* must better IT capabilities be available?

This decision area lets you compare strengths and weaknesses in IT capabilities across different business units, processes, and functions. Then you can relate any gaps back to the drivers of performance. *Information quality is a leading indicator of business value—is IT delivering the right information at the right time to the right decision-makers to support the business?* You can evaluate gaps in information quality using a number of qualitative factors. These include relevance, accuracy, timeliness, availability, reliability, breadth of functionality, and consistency. These factors can be used to clarify cost/benefit options and let you prioritize potential improvements.

BUSINESS VALUE MAP

GOALS	METRICS	DIMENSIONS	
Business Priority Score	BI Users (#)	Current/Target Scenario	IT Project Status
Business Value ($)	Business Effectiveness Index	Scenario	IT Project Status
Information Quality Index	Business Efficiency Index	Decision Processes	IT Projects
IT Capability Index	Employees (#)	Business Function	IT Project Type
IT Costs ($)	Information Accuracy Rating	Decision Area	IT Projects
	Information Availability Rating	Employee Decision Role	Key Business Information
		Work Function	Business Subject
	Information Consistency Rating	Decision Role	Area
		Fiscal Year	Metadata Model
	Information Relevance Rating	Year	Organization
		Quarter	Division
	Information Timeliness Rating	Month	Department
		Information Supply Chain	Organization Code
	Information Functionality Rating	Information Supply Chain	Strategy Focus
		Information Stage	Strategic Area
	IT Project Costs ($)	IT Improvement Priority	Strategy
	IT Projects (#)	IT Improvement	Transactional Processes
		Priority Rating	Process
			Sub-Process
			Activity

FUNCTION	DECISION ROLES	PRIMARY WORK	CONTRIBUTORY	STATUS
IT/Systems				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Finance				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Customer Service				
	Executives			•
	Analysts		•	
Marketing				
	Executives			•
	Analysts		•	
Sales				
	Executives			•
	Analysts		•	
Purchasing				
	Executives			•
	Analysts		•	
Operations/Production				
	Executives			•
	Analysts		•	
Product Management				
	Analysts		•	
Human Resources				
	Executives			•
	Analysts		•	
Actuarial				
	Executives			•
General Management				
	Executives			•

IT Portfolio Management

This is the supply side of the IT value equation, while the business value map decision area is the demand side. Portfolio management offers details of and insights into the insurance company's IT assets, how well these support the business, and what opportunities exist to improve IT ROA spending by:

- Expanding the portfolio by acquiring new IT assets

- Investing more in existing IT assets to generate greater value from them

- Retiring obsolete or inefficient IT assets

- Implementing controls to mitigate risk related to IT assets.

While there are many potential categories and attributes of IT assets, the three core ones are infrastructure, applications, and information. Using this decision area, IT can analyze the inventory of physical IT assets (hardware, software, data sources, and applications), their properties (such as vendor and direct cost), and their core capabilities (such as flexibility, scalability, reliability, compatibility, and availability).

GOALS	METRICS	DIMENSIONS	
IT Capability Index	BI Users (#)	Application Software	IT Efficiency Opportunity
IT Costs ($)	Employees (#)	Application Type	IT Savings Magnitude
IT Efficiency Index	IT Asset Availability Rating	Software	IT Savings Type
	IT Asset Compatibility Rating	Data Sources	IT Improvement Priority
		Data Source Type	IT Improvement
	IT Asset Flexibility Rating	Data Source	Priority Rating
	IT Asset Reliability Rating	Decision Processes	IT Project Status
	IT Asset Scalability Rating	Business Function	IT Projects
	IT Direct Costs ($)	Decision Area	IT Project Type
	IT Indirect Costs ($)	Discretionary Budget	IT Project
	IT Project Costs ($)	Reporting Period	Key Business Information
	IT Projects (#)	Year	Business Subject Area
		Quarter	Metadata Model
		Month	Organization
		Goals/Metrics Hierarchy	Division
		Goal Type	Department
		Goals	Organization Code
		Metrics	Transaction Processes
		Information Supply Chain	Process
		Information Stage	Sub-Process
		Infrastructure Environment	Activity
		IT Technical Layer	
		IT Asset Type	
		IT Asset	

FUNCTION	DECISION ROLES	PRIMARY WORK	CONTRIBUTORY	STATUS
IT/Systems				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Finance				
	Executives	•		
	Managers	•		
	Analysts	•		
Customer Service, Marketing, Sales, Compliance, Purchasing, and Operations/Production				
	Executives			•
	Analysts		•	
Product Management				
	Analysts		•	
Human Resources				
	Executives			•
	Analysts		•	
Audit				
	Executives			•
	Analysts		•	
Actuarial				
	Executives			•
General Management				
	Executives			•

Improving IT efficiency, however, is not enough. Most organizations have tied 70 percent of their IT budget to non-discretionary items. You can't cut these "keeping the lights on" costs easily. You can gain additional and invaluable insight in this decision area by comparing how diverse IT assets work together to support specific areas of the business. Think of these IT assets as belonging to an information supply chain that acquires, manages, and delivers access to information for end users. Thinking in terms of shared and integrated supply chains delivering information and functionality makes it easier to explain how improvements to incomplete, complex, or obsolete IT assets represent greater effectiveness and value to the insurance company.

IT should set standards and document the core business metadata for the insurance company. Consistent metadata and business rules are critical for information to become a trusted sweet spot in decision making processes.

Project/SDLC Management

This decision area is one of two that make up IT's operational bread and butter. Value is generated from IT assets by implementing new software and infrastructure or developing new applications. With IT's discretionary budget for new projects limited to about one-third or less of the total IT budget, resources are scarce and expectations high. This makes good information even more critical.

Most IT departments have hundreds of separate projects that are interrelated, overlapping, or at various stages of completion. This decision area tracks the status of major projects against common project management milestones such as scope, requirements analysis, design specifications, development, testing, implementation, and production. Monitoring on-time, on-budget, on-quality project indicators is critical to managing scope, unplanned changes, and necessary adjustments. This information, which may need to be aggregated from several sources, also improves alignment around project priorities and helps flag duplication in purpose or scope.

GOALS	METRICS	DIMENSIONS	
IT Project Completion (%)	External Resource Days (EFT)	Business Scope	Project Start Date
IT Project Lead Time (#)	Internal Resource Days (EFT)	Reporting Period	Year
IT Project ROI (%)	Initiatives Rejected (#)	Year	Quarter
	IT Project Cost ($)	Quarter	Month
	IT Project Value ($)	Month	Contract End Date
	New Initiatives (#)	Forecast Scenario	Project Management
	Project Duration (#) – Business Days	(Plan/Actual/Forecast)	Project Team
		Scenario	Project Sponsor
	Project Duration (%) – Variance	Investment Range ($)	Project Manager
	Rejection Causes (#)	IT Projects	Project Member
	Total Resource Days (EFT)	IT Project Type	Project Completion Date
		IT Project	Year
		IT Project Status	Quarter
		IT Project Complexity	Month
		IT Project Milestones	Project Finish Date
		IT Project Risk Level	Related Projects
			Organization
			Division
			Department
			Organization Code

FUNCTION	DECISION ROLES	PRIMARY WORK	CONTRIBUTORY	STATUS
IT/Systems				
	Executives	*		
	Managers	*		
	Analysts	*		
	Professionals	*		
Audit				
	Executives			*
	Managers	*		
	Professionals	*		
Finance				
	Executives			*
	Analysts		*	
Customer Service				
	Executives			*
Marketing				
	Executives			*
Sales				
	Executives			*
Compliance				
	Executives			*
Purchasing				
	Executives			*
Operations/Production				
	Executives			*
Actuarial				
	Executives			*
Human Resources				
	Executives			*
General Management				
	Executives			*

Contextual dimensions provide greater comparability across different projects. This allows for learning and best-practice sharing between "apples and oranges" by pooling common information about different projects. These dimensions can include:

- Investment amount (< $50K, < $100K, < $500K, > $1M, etc.)

- Complexity (features, information, architecture)

- Dynamic versus static

- Business scope (point solution, departmental, or enterprise)

- Critical skills required

- Risk level (likelihood and impact assessments).

A key benefit of this information is that you gain insights even from failed projects. By seeing what worked and what didn't across many different projects, and by ensuring a full life-cycle perspective on development projects, you can avoid future mistakes and resource misallocations. This information sweet spot helps manage expectations across the team, sponsors, and stakeholders. With it, IT management can avoid project cost overruns, missed deadlines, and subpar quality deliverables. Beyond avoiding the adverse financial implications of failed projects, it also helps IT avoid the potentially serious impact on the company's reputation and credibility.

IT Vendor Management

This decision area represents the other operational information sweet spot for IT. In insurance companies, IT expenditure is significant and strategic in terms of dollars spent on external vendors. IT needs a consolidated view of how much it is spending on IT assets and with whom. It's a long list, from PCs and PDAs to routers and telecom services, from software licenses to system integrator services. Analyzing this information sweet spot helps identify what to consolidate and/or standardize to reduce costs and complexity. It also reveals where you can pool requirements to gain purchasing power or generate higher service levels.

When this information is fragmented across the enterprise, it is difficult to spot duplication of contracts and agreements. Simple comparisons of vendor costs by function and user can help uncover potential excesses. Knowing that other vendors have provided similar products or services also helps IT foster healthy competition and price/quality comparisons.

GOALS	METRICS	DIMENSIONS	
IT Contract Cost ($)	Credit Rating (#)	Application Software	IT Contract Start Date
IT Project Completion (%)	Employees (#)	Application Type	Year
IT Project Lead Time (#)	IT Asset Availability Rating	Software	Quarter
IT Vendor On-Time (%)	IT Asset Compatibility Rating	Data Sources	Month
SLA Performance (%)		Data Source Type	Contract Start Date
	IT Asset Flexibility Rating	Data Source	IT Vendor Status
	IT Asset Reliability Rating	Reporting Period	IT Vendor
	IT Asset Scalability Rating	Year	IT Vendor Type
	IT Direct Costs ($)	Quarter	IT Vendor
	IT Indirect Costs ($)	Month	Organization
	IT Project Costs ($)	Infrastructure	Division
	IT Projects (#)	Environment	Department
	IT Vendor Hourly Rate ($)	IT Technical Layer	Organization Code
	Quality Rating (#)	IT Asset Type	Transaction Processes
		IT Asset	Process
		IT Contract End Date	Sub-Process
		Year	Activity
		Quarter	
		Month	
		Contract End Date	

FUNCTION	DECISION ROLES	PRIMARY WORK	CONTRIBUTORY	STATUS
IT/Systems				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Audit				
	Managers	•		
	Analysts		•	
	Professionals	•		
Finance				
	Executives			•
	Analysts	•		
Purchasing				
	Executives			•
	Managers	•		
	Analysts		•	
	Professionals	•		
Customer Service				
	Analysts		•	
Marketing				
	Analysts		•	
Sales				
	Analysts		•	
Compliance				
	Analysts		•	
Operations/Production				
	Analysts		•	
Actuarial				
	Analysts		•	
Human Resources				
	Analysts		•	
General Management				
	Executives			•

This decision area is also important in managing service levels tied to major outsourcing contracts, a fixture for many IT functions. All service level agreements have trade-offs among quality, time, and cost. Measuring quality, especially in the more complex Tier 3 contracts that manage and enhance applications, can be a challenge. For example, where Tier 1 agreements may measure service availability, numbers of incidents, and resolution response times, Tier 3 agreements need to address access to and use of information from applications, and how easy and quick it is to make changes. Even knowing when contracts are up for renewal, as well as when you are triggering penalty or incentive clauses, can lead to cost savings or improved service levels.

IT Compliance Management

IT compliance management is a key focus for U.S. public companies and especially insurance companies. This decision area consolidates information from different compliance initiatives. As noted in Barrier 3, various frameworks and IT best practices such as COBIT and ITIL require general and application-specific IT controls. This decision area requires three common sources of information.
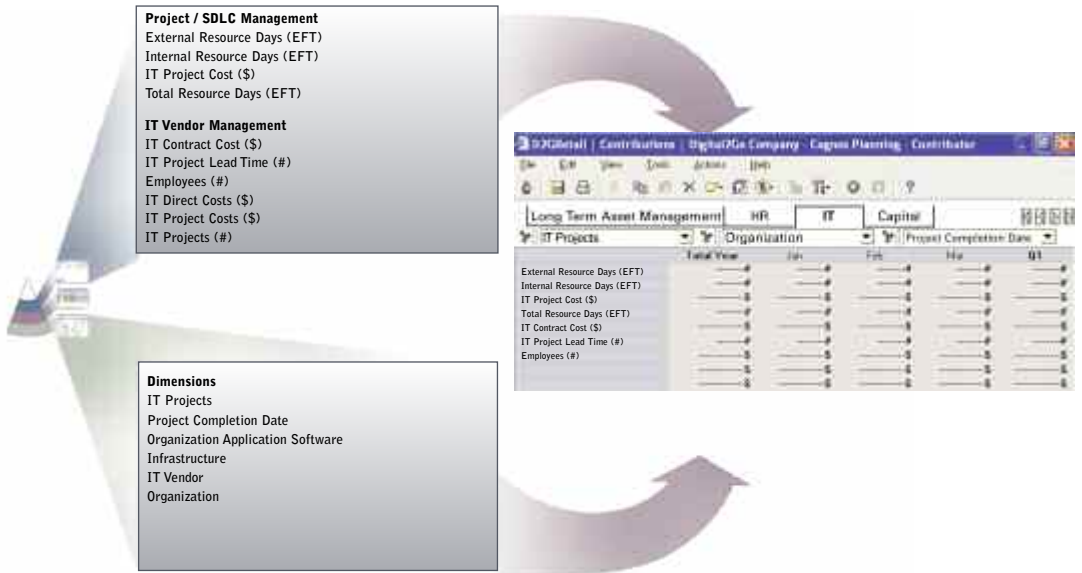
The first is from compliance program management software, such as that used for Sarbanes-Oxley. Similar to the project/SDLC management decision area, this allows IT to ensure that compliance tasks take place and are meeting program milestones.

The second source of information comes from the controls themselves. Of the 34 IT processes across four domains used in COBIT, a subset is required for Sarbanes-Oxley, notably around security and access controls, change and release management, and incident and problem management. In most cases, these controls involve reviewing large volumes of data and flagging exceptions to established procedures.

GOALS	METRICS	DIMENSIONS	
Compliance Completion (%)	Control Effectiveness Rating	Application Software	In Scope
Compliance Costs ($)	Controls (#)	Application Type	Infrastructure
Material Deficiencies (#)	Exceptions (#)	Software	Environment
Regulatory Compliance (%)	External Audit Fees ($)	Assertions	IT Technical Layer
Risk Level Index	Internal Audit Costs ($)	Control Frequency	IT Asset Type
	Issues (#)	Control Method	IT Asset
	Items Overdue (#)	Control Objective	IT Control Processes
	Outsourced Internal Audit	Control Owners	(COBIT)
	Costs ($)	Function	Control Type (App/Gen)
	Regulatory Audits	Position	IT Domain
	Risk Impact Rating	Control Owner	IT Process
	Risk Likelihood Rating	Control Type	IT Control
	Sample Size (#)	Documentation Status	Key Control
	Significant Deficiencies (#)	Entity	Remediation Status
	Tests (#)	Financial Account	Risks
		Financial Statement	Risk Category
		Type	Risk Type
		Financial Statement	Risk
		Line	Test Status
		Financial Account	Transaction Processes
		Reporting Period	Process
		Year	Sub-Process
		Quarter	Activity
		Month	

FUNCTION	DECISION ROLES	PRIMARY WORK	CONTRIBUTORY	STATUS
IT/Systems				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Compliance				
	Executives	•		
	Managers	•		
	Analysts	•		
	Professionals	•		
Audit				•
	Executives			
	Managers	•		
	Professionals	•		
Finance				•
	Executives			
	Analysts		•	
	Professionals		•	
Regulatory/Legal				•
	Executives			
	Managers		•	
	Analysts		•	
	Professionals		•	
Customer Service, Marketing, Sales, Compliance, Purchasing, Operations/Production, Product Management, Human Resources, Actuarial, and General Management				
	Executive		•	

The third source is metadata itself. Today, many organizations still have mostly manual internal controls. Approximately two-thirds or more are "detective" controls, versus the more reliable "preventive" ones. Detective controls involve reviewing transaction records in both detailed and summary form. For example, reviewing an accounts receivable trial balance is a detective control. In order for greater reliance to be placed on these controls, there must be a clear audit trail linking the source of information with the definitions and business rules that apply. Being able to monitor and analyze which metadata governs which reports and who has access to it creates a more reliable control environment. It also supports the enforcement of existing data architecture standards.

Project / SDLC Management
External Resource Days (EFT)
Internal Resource Days (EFT)
IT Project Cost ($)
Total Resource Days (EFT)

IT Vendor Management
IT Contract Cost ($)
IT Project Lead Time (#)
Employees (#)
IT Direct Costs ($)
IT Project Costs ($)
IT Projects (#)

Dimensions
IT Projects
Project Completion Date
Organization Application Software
Infrastructure
IT Vendor
Organization

The Project / SDLC Management and IT Vendor Management decision areas illustrate how the IT function can monitor its performance, allocate resources, and set plans for future financial targets.