
Influences on IT Strategy

How IT Strategy impacts the development of systems base on Commercial Off The Shelf products

Strategy is creating fit among a company's activities. The success of a strategy depends on doing many thing well – not just a few. The things that are done well must operate within a close nit system,. If there is not fit among these activities, there is no distinctive strategy and little to sustain the strategic deployment process. management then reverts to the simpler task of overseeing independent functions. When this occurs, operational effectiveness determines the relative performance of the organizations, and the strategic initiatives are lost.

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Introduction

This White Paper presents a look at the influences on the outcome of an Information Technology Strategy. This IT Strategy can be applied to enterprise-wide system development or deployment activities as well as more focused efforts of a single project.

This IT Strategy provides a guide to the to the strategic activities to be taken during the course of an Information Technology project.

An IT Strategy must address the following activities:

- Aligning the IT Strategy with Business Plans.
- Defining the target business units that make use of the various system components.
- Defining the applications suites that can be deployed against these target business units.
- Defining the architectural alternatives for the system environment.
- Defining the processes used to map the business requirements against the system architecture.
- Defining the detailed strategies for managing the data.
- Defining the strategies for procuring Commercial Off The Shelf software systems.
- Defining the technical infrastructure needed to deploy the system.
- Defining the organizational changes needed to support the system.

This White Paper describes a framework for discovering the influences on IT Strategy and the impact of these influences on the resulting system architecture.

The Themes of IT Strategy

The IT Strategy contains three (3) major themes. These themes form the foundation of the IT Strategy as well as the tactical processes that will be deployed in support of these strategies.^[1]

These themes are:

- Business improvements are enabled by Information Technology that is integrated not disintegrated. This integration must be horizontal versus vertical. Horizontal systems remove islands of information and build bridges between the business units. In this integrated system, multiple data sources are made transparent to the end users as well as the applications that utilize them.
- Information Technology requirements are always growing, changing, and being extended. The Information Technology is no longer static, but dynamic adapting to the changing business requirements.
- Information Technology is about abstractions. If only hardware, software and data were the only foundations of a system, then Information Technology would not be able to keep pace with the business requirements. Instead, business processes, objects and services are the foundation of the system, which then drive the business processes in their adaptation of the changing market forces.

¹ "Integrating IS and the Organization," Michael Earl, CRIM WP95/4, *Centre for Research in Information Management*, London Business School.

What is Strategy?

Strategy is creating fit among a company's activities. The success of a strategy depends on doing many things well – not just a few. The things that are done well must operate within a close fit system. If there is no fit among the activities, there is no distinctive strategy and little to sustain the strategic deployment process. Management then reverts to the simpler task of overseeing independent functions. When this occurs operational effectiveness determines the relative performance of the organization.^[2]

Improving operational effectiveness is a necessary part of management, but it is not strategy. In confusing the two, managers will be unintentionally backed into a way of thinking about competition that drives the business support processes (IT) away from the strategic support and toward the tactical improvement of operational effectiveness.

Managers must be able to clearly distinguish operational effectiveness from strategy. Both are essential, but the two agendas are different. The operational effectiveness agenda involves continual improvement business processes that have no trade-offs associated with them. The operational effectiveness agenda is the proper place for constant change, flexibility, and relentless efforts to achieve best practices. In contrast, the strategic agenda is the place for making clear tradeoffs and tightening the fit between the participating business components. Strategy involves the continual search for ways to reinforce and extend the company's position in the market place.

The concept of fit among functional units is one of the oldest ideas in strategy. Gradually however, it has been supplanted with *new* concepts of *core* competencies, *critical* resources and *key* success factors. In fact *fit* is far more critical to the success of the IT systems than is realized.^[2] Strategic fit among the various systems components and the business processes they support is *fundamental* not only to competitive advantage but also to the sustainability of that advantage.

Fit among a company's activities creates pressures and incentives to improve operational effectiveness. Fit means that poor performance in one activity will degrade the performance in others, so that weaknesses are exposed drawing management's attention. Conversely, with increasing fit, improvements of one activity will pay dividends in other areas.

The challenge now is to create *fit* among the IT components and their matching business components.

² "What is Strategy," M. E. Porter, *Harvard Business Review*, Volume 74, Number 6, pp. 61–78.

Jack Welch Speaks: Wisdom from the World's Greatest Business Leader, J. Welch and J. C. Lowe, John Wiley & Sons, 1998.

Control Your Destiny or Someone Else Will: Lessons in Mastering Change—From the Principles Jack Welch Used to Revolutionize GE, N. M. Tichy and S. Sherman, Harpers Business, 1994.

What is System Architecture and Why Do We Care?

If we were setting out to build a home, we would first lay out the floor plans, grouping each room by function and placing structural items within each room according to their best *utility*. This is not an arbitrary process – it is architecture. Moving from home design to IT system design does not change the process. Grouping data and processes into *information systems* creates the rooms of the system architecture. Arranging the data and processes for the best utility is the result of deploying an architecture. Many of the attributes of building architecture are applicable to system architecture. Form, function, best use of resources and materials, human interaction, reuse of design, longevity of the design decisions, robustness of the resulting entities are all attributes of well designed buildings and well designed computer systems. ^[3]

In general, an architecture is a set of rules that defines a unified and coherent structure consisting of constituent parts and connections that establish how those parts fit and work together. An architecture may be conceptualized from a specific perspective focusing on an aspect or view of its subject. These architectural perspectives themselves can become components in a higher-level architecture serving to integrate and unify them into a higher level structure.

The architecture must define the rules, guidelines, or constraints for creating conformant implementations of the system. While this architecture does not specify the details on any implementation, it does establish guidelines that must be observed in making implementation choices. These conditions are particularly important for component architectures that embody extensibility features to allow additional capabilities to be added to previously specified parts. ^[4] This is the case where Data Management is the initial deployment activity followed by more complex system components.

By adopting a system architecture motivation as the basis for the IT Strategy, several benefits result:

- *Business processes are streamlined* – a fundamental benefit to building enterprise information architecture is the discovery and elimination of redundancy in the business processes themselves. In effect, it can drive the reengineering the business processes it is designed to support. This occurs during the construction of the information architecture. By revealing the different organizational views of the same processes and data, any redundancies can be documented and dealt with. The fundamental approach to building the information architecture is to focus on *data, process* and their interaction.
- *Systems information complexity is reduced* – the architectural framework reduces information system complexity by identifying and eliminating redundancy in data and software. The resulting enterprise information architecture will have significantly fewer applications and databases as well as a resulting reduction in intersystem links. This simplification also leads to significantly reduced costs. Some of those recovered costs can and should be reinvested into further information system improvements. This reinvestment activity becomes the *raison d'état* for the enterprise-wide system deployment.
- *Enterprise-wide integration is enabled through data sharing and consolidation* – the information architecture identifies the points to deploy standards for shared data. For example, most Kimball business units hold a wealth of data about products, customers, and manufacturing processes. However, this information is locked within the confines of the business unit specific applications. The information architecture forces compatibility for shared enterprise data. This compatible information can be stripped out of operational systems, merged to provide an enterprise view, and stored in data repositories. In addition, data standards streamline the operational architecture by eliminating the need to translate or move data between systems. A well-designed architecture not only streamlines the internal information value chain, but it can provide the infrastructure

³ *A Timeless way of Building*, C. Alexander, Oxford University Press, 1979.

⁴ "How Architecture Wins Technology Wars," C. Morris and C. Ferguson, *Harvard Business Review*, March-April 1993, pp. 86-96.

necessary to link information value chains between business units or allow effortless substitution of information value chains.

- *Rapid evolution to new technologies is enabled* – client / server and object-oriented technology revolves around the understanding of data and the processes that create and access this data. Since the enterprise information architecture is structured around data and process and not redundant organizational views of the same thing, the application of client / server and object-oriented technologies is much cleaner. Attempting to move to these new technologies without an enterprise information architecture will result in the eventual rework of the newly deployed system.

Framework for the IT Strategy

Before proceeding with an IT Strategy, a framework is needed to represent the various views of the IT System. In this paper the Framework can be based on the seminal work of John A. Zackman. ^[5] Using the architectural paradigm, the Framework provides answers to:

- *What* – is the system made of? What components are assembled to make the system what it is? How are these components connected? What are the mechanisms used to connect the components?
- *How* – does the system work? What are the details of the system integration? What tools have been used to integrate the components? Are these tools appropriate for the task at hand?
- *Where* – are the components of the system located relative to one another? What is the topology for the data and processes? How is this topology managed?
- *Who* – does what relative to these system components? How do the users interact with the system? How is access controlled to the system resources?
- *When* – do things happen in the system? What is the sequence of events within the system? How is work routed through the system? How are the users notified that work is ready, complete, suspended, canceled?
- *Why* – are various system choices being made? What is the underlying architecture of the system? How did the system components come to be connected? How will these components be migrated to the next generation?

The Framework provided through this approach is:

- *Simple* – since it is easy to understand. In its most elemental form, it provides three perspectives: The Owner, the Designer, the Builder and three abstractions: Material, Function, and Geometry.
- *Comprehensive* – is addresses the Enterprise in its entirety. Any issues can be mapped against the Framework to understand where they fit within the context of the Enterprise as a whole.
- *Language* – it helps develop a set of thought processes for addressing complex concepts and communicates them precisely with few, non-technical words.
- *Planning Tools* – it helps the participants make better choices since these choices are no longer made without a context.
- *Problem Solving Tool* – it enables the participants to work with abstractions, to simplify, to isolate simple variables without losing sense of the complexity of the Enterprise as a whole.
- *Neutral* – is it defined totally independently of tools or methodologies and therefore any tool or any methodology can be mapped against it to understand their implicit tradeoffs.

The Framework for Enterprise Architecture is not *the answer*. It is a tool for thinking about the answers.

[5]	<i>Data</i>	<i>Function</i>	<i>Network</i>	<i>People</i>	<i>Time</i>	<i>Motivation</i>
Scope What is the span of interest for the system and its users?	List of things important to the business units and the data that represents them.	List of processes the business units perform and the operations to be incorporated into the system.	List of locations in which the business operates	List of organizations important to the business and their interactions with the system.	List of events significant to the business units	List of business goals and strategies to be addressed by the system.
Enterprise Model How are the process and data elements arranged within the enterprise?	Semantic models describing the meaning and use of the data elements.	Business process models describing how the data is used within each business process.	Logistics models describing the logical connectivity between the various system components.	Work flow models describing the steps taken for each work process.	Master schedules describing the temporal sequencing of the business processes.	Business plan describing the cost and benefits of automating each business process.
System Model How are the process and data elements arranged within the logical system?	Logical data model for each process in the system.	Application architecture describing the connections between the various applications.	Distributed system architecture describing the network arrangement of each processing element.	Human interface architecture describing the various user interface components.	Processing structure describing the processing sequences of each application step.	Business rule model describing the business rule for each process and data element.
Technology Model What are the technological elements of the system?	Physical data model each process in the system.	System design of the application and data elements	System architecture describing the arrangement of the technological elements of the system.	Presentation architecture describing the mechanisms of presenting information to the users	Control structure describing the interconnections between the processing steps in terms of sequence and effectiveness.	Rule design describing the detailed business rules for each processing step and the associated data.
Detailed Representation How are these elements represented in practice?	Data definition for each element in the data models	Programs used to implement the system.	Network architecture for the actual hardware and software components.	Security architecture for each application and user community.	Timing definitions for each application and associated data.	Rule specification for each data and process access sequence.

Figure 1 – Zackman Enterprise Architecture Framework

⁵ This table is taken from John Zachman’s original works, “A Framework for Information Systems Architecture,” J. A. Zachman, *IBM Systems Journal*, Volume 26, Number 3, 1987. “Extending and Formalizing the Framework for Information Systems Architecture,” J. F. Sowa and J. A. Zachman, *IBM Systems Journal*, Volume 31, Number 3, 1992.

Vertical versus Horizontal Approaches to IT Strategy

The IT Framework in Zachman's works describes five (5) increasingly detailed levels or views: scope, enterprise model, system model, technology mode, and detailed representation of three (3) architectural components: data, process and technology (see Figure 1):

The majority of strategic business and technology breakthroughs using this approach are found within the top rows of Figure 1. The first two rows are business management views of the architecture that have nothing to do with the underlying technology. The lower levels of the architecture have to do with building actual applications and databases. The focus of the IT Strategy will be on the top levels of Figure 1 for the following reasons:

- Having a plan is necessary to ensure success, but it not sufficient. Most architectural efforts skim through the higher-level views and spend months or even years becoming mired in the technical details of the system. The high-level view defines the *boundaries* of what should be automated in any one information system. This approach focuses the effort on successful business deployment, not just the technical details of the products and services.
- The higher-level views of the system are the foundation and must stand the test of time. The lower levels of the architecture are actually unstable due to the rapidly changing technology environment.
- In order to gain control over the technology assets, the business units need to understand that architecture provides the structure that guides, scopes, and controls the implementation process. Many significant breakthroughs occur during the development of the business views of the enterprise information architecture.

Within the IT Framework, there are two (2) primary approaches to IT System Architecture:

- Vertical – which creates disconnections between the various architectural components. This organization comes about by developing systems to meet the needs of individual use groups, rather than the needs of the business enterprise.

The information technology psyche begins at the department level or lower, rather than at the business or enterprise level. As a result, the system's design becomes very department-dependent, often to the point at which expenditures and activities were optimized to the benefit of the department and the detriment of the enterprise.^[6]

Placing the emphasis on end-user satisfaction continues to encourage this departmental myopia, creating vertical systems with their own proprietary data, software, and technology components. Each system is optimized for productivity within the department, not the enterprise.

- Horizontal – using the architectural concept of planned deployment, the enterprise information systems architecture framework described in Figure 1 provides an alternative approach to the departmental isolation of the vertical system architecture. This architecture allows integration and coordination across the enterprise. This integration and coordination always requires a shift away from the vertical or proprietary approach to a horizontal approach that cuts across the organizational lines of data and process ownership.

The Value of Architecture

Software architecture design is intimately related to life cycle cost. A well-designed software architecture represents a valuable investment that yields adaptability to new requirements and technologies over the system's life cycle.

⁶ L. Runge, *Computerworld*, October 24, 1994, pp. 113.

Influences on IT Strategy

The IT Strategy components described above are based on the physical and logical technologies of the IT Infrastructure. These describe how, what, when, and where to technology of the IT Strategy is to be deployed. The effects of this technological deployment are another element of the IT Strategy. In the Zachman approach to IT Strategy is *supply side* focused and the domain of IT professionals.^[7] In order to complete the IT Strategy the influences of these technologies on the organizational aspects of the business must be understood. The questions to be answered include:

- What IT applications should be deployed to yield competitive advantage?
- What technological opportunities should be considered?
- What IT platforms should be deployed and what IT policies are needed to manage these platforms?
- Which IT capabilities should be nurtured and which should be acquired from outside sources?
- How should IT activities be organized and what is the role of the IT function?
- What is management's role in the IT domain and what IT capabilities are required for today's managers?

The answers to these questions involve determining how the components of the IT Strategy *Fit* together and how they are *Interrelated*. The influences approach to IT Strategy is based in a simple and effective view of how business executives are able to conceptualize strategic decision-making processes in the domains of:

- Organizational Strategy
- Information Systems Strategy
- Information Technology Strategy
- Information Management Strategy

It is the discovery and description of the interdependence between these four (4) strategies to forms the basis of this approach.

⁷ *Integrating IS and the Organization: A Framework of Organizational Fit*, Michael J. Earl, London Business School, Centre for Research in Information Management Working Paper, CRIM WP95/4.

"Information Technology Planning in the 1990's: Directives for Planning and Research," A. C. Boynton, *MIS Quarterly*, March 1987.

Information Management: The Organizational Dimension, M. J. Earl, Oxford University Press, 1996.

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"Experiences in Strategic Information Systems Planning," M. J. Earl, *MIS Quarterly*, Volume 17, Number 1, March, pp. 1-24, 1993.

Information Management: The Strategic Dimension, M. J. Earl, Oxford University Press, 1988.

"Information Systems Strategy Formulation," in *Critical Issues in Information Systems Research*, edited by R. J. Boland and R. A. Hirscheim, John Wiley and Sons

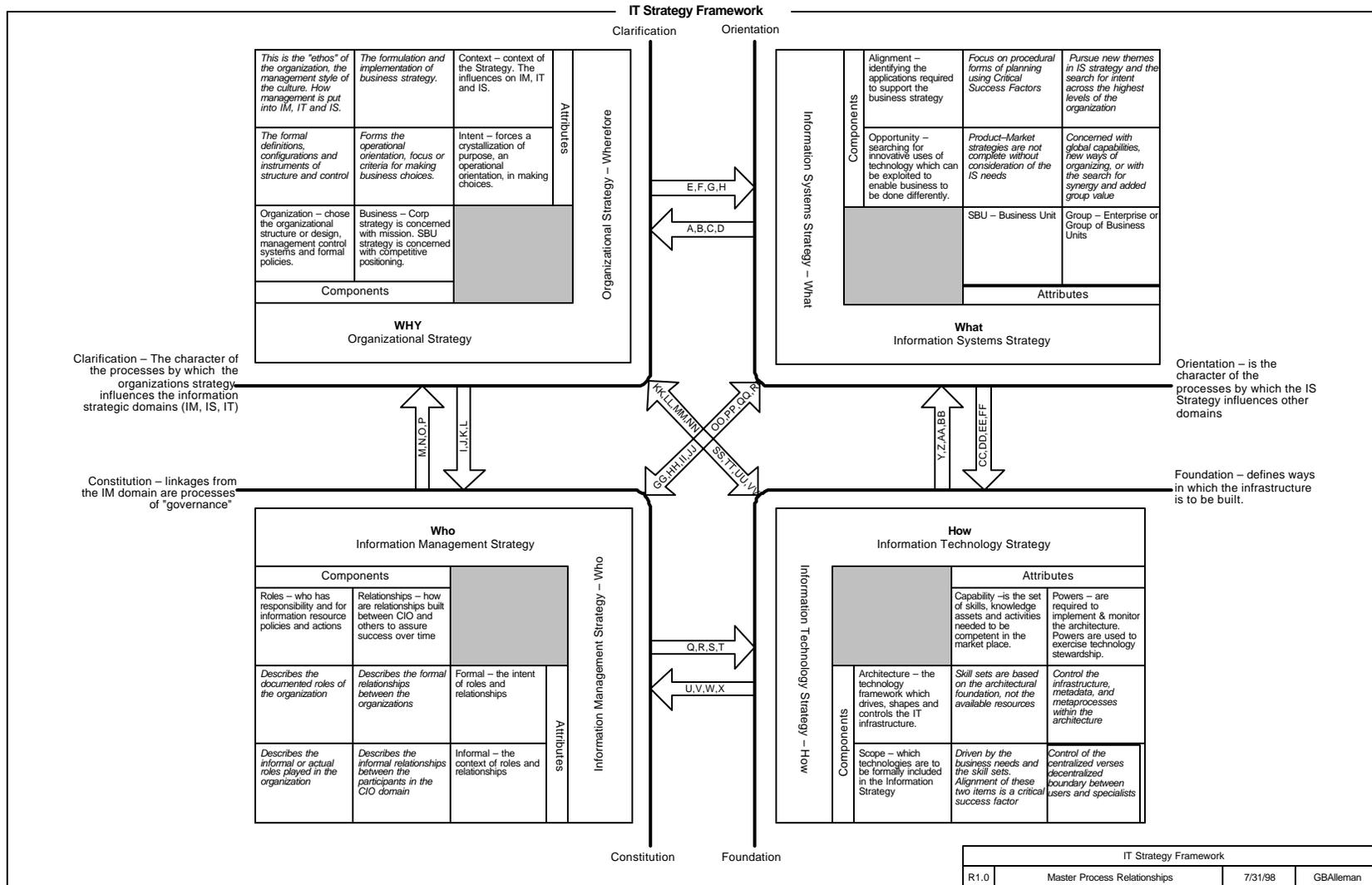


Figure 2 – Organizational Influences of the IT Strategy

Methodology of the IT Influences Description

The following narrative describes the details of the IT Strategy Framework. Each Framework component described in the diagram *influences* the other three (3) components in ways described below. The individual *lettered* influences originate from the four (4) results produced by the intersection of the *attributes* and *components* of each *What, Why, How, and Who*. The individual descriptions follow in clockwise manner around the intersection matrix, starting in the upper left corner.

Components			
A, L, Q, Y CC,U,P,E GG,KK,OO,SS	B, K, R, Z DD,V,O,F HH,LL,PP,TT		Attributes
D, I, T, BB FF,X,M,H II,MM,QQ,UU	C, J, S, AA EE,W,N,G JJ,NN,RR,VV		Attributes

Figure 3 – Legend of the IT Influences Diagram

The Influence diagram contains the following elements:

- Components – of the business strategy.
- Attributes – or characteristics of the organization.

Four interacting elements of the strategy are:

- Organizational Strategy – describes the organizational structure of the various business units, how they interact, the named participants in each organization and the informal behind the scenes participants
- Information System (IS) Strategy – describes the behavioral aspects of the system which support, promote, or enhance the business activities.
- Information Technology (IT) Strategy – describes the actual computing systems, their architectures, operation and maintenance. Although focused on the physical technology, the acquisition, installation and deployment of these technologies and a critical component of the IT Strategy.
- Information Management (IM) Strategy – describes the creation, management and use of information. This information is usually in the form of database contents and the work processes built around them.

Four Elements of the Strategy

In each of the four strategy elements the *components* and *attributes* are organized in the following manner:

- Organizational Strategy – *WHY* (the wherefore and rationale for the strategy)

Components of *WHY*

- Organizational components – chose the organizational structure or design, management control systems and formal policies.
- Business components – the corporate strategy is concerned with mission. The strategic business unit strategy is concerned with competitive positioning.

Attributes of *WHY*

- Intent – forces a crystallization of purpose, an operational orientation, in making choices.
 - Content – is the context of the Strategy. The influences of the Organizational Strategy on the other three strategy elements.
- Information Systems Strategy – *WHAT* (the components of the strategy)

Components of *WHAT*

- Alignment – identifying the applications required to support the business strategy.
- Opportunity – searching for innovative uses of technology which can be exploited to enable business to be performed better.

Attributes of *WHAT*

Strategic Business Unit – the individual business unit.

Corporate or Group – the highest level of the business organization in which the individual business units operate.

- Information Technology Strategy – *HOW* (the mechanisms of the strategy)

Components of *HOW*

- Scope – which technologies are to be formally included in the information strategy
- Architecture – the technology framework which drives, shapes, and control the Information Technology Strategy.

Attributes of *HOW*

- Capability – is the set of skills, knowledge assets and activities needed to be competent in the market place
 - Powers – are required to implement and monitor the architecture. Powers are used to exercise technology stewardship.
- Information Management Strategy – *WHO* (the participants in the strategy)

Components of *WHO*

- Roles – who has responsibility for information resource policies and actions
- Relationships – how are relationships built between the CIO and others to assure success over time.

Attributes of *WHO*

- Formal – the intent of roles and relationships
- Informal – the context of roles and relationships

The following sections describe the details of the influences between *Why*, *What*, *How*, and *Who*.

What's Influence on Why

The influences between *What* and *Why* include:

A – Focus on procedural forms of planning using Critical Success Factors – The enterprise-wide management of data demands an enterprise-wide data and process management planning horizon. The uniformity of the procedural focus encompasses all participants rather than individuals.

B – Pursue new themes in IS strategy and the search for intent across the highest level of the organization – Pursuing intent across the enterprise consolidates the operational choices for all participants. Acting as one origination can now be facilitated through the IT Strategy.

C – Concerned with global capabilities, new ways of organizing or with the search for synergy and added group value – The consolidation of the product *vision* can now cross business unit boundaries. This impacts the organizational aspects of the decision making process, since participants are now impacted as a *collective* rather than in isolation

D – Product-Market Strategies are not complete without consideration of the IT Needs – Economies of scale can now be applied to each business unit, while reusing their existing infrastructure. The consolidation of this infrastructure demands that the participants share in the infrastructure *vision* as well as provide for its management.

Why's Influence on Who

The influences between *Why* and *Who* include:

I – The Ethos of the organization, the management style of the culture. How management is put into Information Management, Information technology, and Information Systems – The collective vision of the enterprise-wide IT system must be propagated throughout the organization. This can not be done by simply starting at the top and working down. A bottom-up and top-down approach is required to assure all participants share in the same vision at the same time

J – The formulation and implementation of business strategy – The creation of the components of strategy must take place through the collaborative process of consensus building. The resulting system is not a sum of all opinions but is built on an architectural foundation, which meets the needs of all participants.

K – Forms the operational orientation, focus or criteria for making business choices – The participants in the IT Strategy process must be focused on the operational aspects of the decision making activities. As such, they must have a detailed

understanding the operational processes and the consequences of the various IT Strategy options.

L – The formal definitions, configurations and instruments of structure and control – The integration of the various individual organizations can not be based on a shared organization chart. However, some form of consistency between each participant's business structure is needed to assure uniform reporting paths. As a result, the IT Strategy must assume a uniform reporting and deployment structure as well as consistent deployment metrics throughout the organization.

Who's Influence on How

The influences between *Who* and *How* include:

Q – Describes the documented roles of the organization – The creation of a formal organization chart and job description will form the basis for documenting the various roles within the IT organization and the organizations it serves.

R – Describes the formal relationships between the organizations – The relationships between the various participants can be formally described. The roles and responsibilities document is one tool for this description. Service Level Agreements are another mechanism through which relationships and the associated performance metrics can be described.

S – Describes the informal relationships between the participants in the CIO domain – The deployment of operational systems will depend on the informal relationships between the IT providers and the IT consumers. These relationships can be established and maintained through the support environment.

T – Describes the informal or actual roles played in the organization – The skill sets necessary to successfully deploy, operate, and maintain the system must be broader than the formal job description. The compartmentalization of roles must be avoided. Generalist must be recruited, trained, and deployed throughout the IT provider's organization

How's Influence on What

The influences between *How* and *What* include:

Y – Skill sets are based on the architectural foundation, not on the available resources – The skill set availability directly impacts what functions can be performed by the deployment and operational teams. The demand for skill sets must be met with the supply of skill sets. This in turn will influence which technologies can be deployed within the scheduled timeframes.

Z – Control the infrastructure, metadata, and metaprocesses within the architecture – The guidelines for controlling the infrastructure will influence what technologies are deployed in the operational environment. The mechanism for controlling this infrastructure is usually defined within the IT Strategy and the operational departments in the IT Organization.

AA – Control the centralized versus decentralized boundary between users and specialist – The mechanism for controlling the boundary between centralized and decentralized environments and the user and specialist domain is defined in the IT Strategy. This control focuses on the operational aspects of the applications. Infrastructure elements are separated from the application elements. The

infrastructure elements are usually centralized while the application elements are nearer the end user domain.

BB – *Driven by the business needs and the skill sets. Alignment of these two items is a Critical Success Factor* – The scope of the deployment mechanism is controlled by the available skill sets. Each business unit's needed will place a specific burden on the available resources for installation, startup and operations of the various application suites.

What's Influence on How

CC – *Focus on procedural forms of planning using Critical Success Factors* – these Critical Success Factors must be traceable to the architectural components. Each architectural component can be used to support a CSF using metrics. By building on the businesses Critical Success Factors, the IS Strategy can directly support the measurable outcomes.

DD – Pursue new themes in IS strategy and the search for intent across the highest level of the organization – the coupling of product and market strategies with the IT Strategy provides a directly measurable benefit for both the product organization and the IT organization. By supporting the production environment with enabling technology, the IS Strategy can be developed around the business needs, while maintaining its architectural foundations.

EE – Concerned with global capabilities, new ways of organizing or with the search for synergy and added group value – The Globalization of the IT Strategy is actually based in the concept of removing the boundaries of operation from the system. Localization's must be avoided, while still provided sufficient flexibility to meet specific business process needs. This can be accomplished through an architectural foundation strategy in which system components are tailored to meet specific needs. The foundation of these tailored components forms the basis of the modifications. This is the primary role of object technology. New behaviors are derived from existing objects, through new or altered methods, while maintaining the standard behaviors and interfaces for all other users.

FF – *Product–Market Strategies are not complete without consideration of the IT Needs* – The individual product / market strategies must be owned by the operational unit managers. Using the foundation architecture, the IT system will be deployed to meet these strategies. Any localization will be managed in isolation (using the tools of the system).

How's Influence on Who

U – Skill sets are based on the architectural foundation, not on the available resources – The skill set requirements directly influence the personnel being deployed.

V – Control the infrastructure, metadata, and metaprocesses within the architecture – The controlling personal are responsible for implementing the infrastructure need to understand the metadata and metaprocesses for the organization. This understanding should be based on a specific model of the data and processes, which is maintained in the IT Organization.

W – *Control the centralized versus decentralized boundary between users and specialist* – The assignment of the personnel for controlling the centralized versus decentralized boundaries must understand both the meta data and processes issues as well as the computing infrastructure.

X – Driven by the business needs and the skill sets. Alignment of these two items is a Critical Success Factor – The personnel responsible for aligning the centralized and decentralized application domains must have the skill sets to deal with the individual business processes.

Who's Influence on Why

P – Describes the documented roles of the organization – The organizational description need to be clearly defined so that responsibilities and man loading requirements can be

O – Describes the formal relationships between the organizations – The formal relationships for the organizational components are necessary in order to define who does what. This organization chart only defines the formal lines of communication, the informal lines are also necessary to actually make the organization function.

N – Describes the informal relationships between the participants in the CIO domain – These informal relationships form the basis of the real work within the organization. Based on the formal aspects of the business, the knowledge of where and how to get something done is usually held in locations outside the formal repositories – simply because of the tribal knowledge and job movement.

M – Describes the informal or actual roles played in the organization – The informal roles played by the participants is as important as the formal roles. Mentoring, external advise, historical knowledge, and outside opinions all add to the value of the IT Strategy and its supporting processes.

Why's Influence on What

E – The Ethos of the organization, the management style of the culture. How management is put into Information Management, Information technology, and Information Systems – The culture of the organization influences what the IT Strategy delivers through the design and deployment of the business systems. What is important to the organization is conveyed in the level of detail, business process control, support systems, performance and capital expenditure levels.

F – The formulation and implementation of business strategy – By articulating the business strategy is terms of system behaviors (the external behavior as seen by customers and clients), the business units are creating a vision of their operations.

G – Forms the operational orientation, focus or criteria for making business choices – By defining the measurable behaviors of the system, through the operational metrics the software components become embedded in the culture of the business. We do it this way because that's the way we do it – becomes the rational for the underlying systems. The organization then takes on the culture of the software systems.

H – The formal definitions, configurations and instruments of structure and control – The formal model of the organization is held in the software system. The Metadata and Metaprocesses come to represent the business operations. The users of the system then drive to software system directly, which in turn drives the underlying business processes indirectly.

Why's Influence on How

SS – *The Ethos of the organization, the management style of the culture. How management is put into Information Management, Information technology, and Information Systems* – By setting down the cultural aspects of the IT Strategy, the

implementation boundaries can be defined. What methods, technologies, expectations, and personnel behaviors are expected can be used to form the underpinnings of the planning process.

TT – The formulation and implementation of business strategy – By formulating the clear and concise business strategy the implementation plans can be aligned with the business plans. Without this alignment the metrics needed to verify the business goals can not be determined.

UU – Forms the operational orientation, focus or criteria for making business choices – Defining the intentions of each business in their use the IT technology and its operational behaviors resulting is a clear set of goals and objectives by which the resulting system can be measured

VV – The formal definitions, configurations and instruments of structure and control – The formal definitions of the organization's expectations can be translated into actual project plan details.

How's Influence on Why

KK – *Skill* sets are based on the architectural foundation, not on the available resources – The development of skill sets facilitates the development of the underlying technology. In many cases the addition of new skill sets brings new ideas into the organization that would not have normally been found in the static maintenance and operation of the legacy system.

LL – Control the infrastructure, metadata, and metaprocesses within the architecture – By controlling the infrastructure the delivery of IT Systems can be provided in a uniform manner. A single face of the system can be presented. The result of this uniform delivery process can be seen as dial tone to the end user community

MM – Control the centralized versus decentralized boundary between users and specialist – By defining the boundaries between infrastructure and end user applications the common components of the system can be syndicated across the organization. The specialized components of the system can then be isolated to minimize their effect.

NN – Driven by the business needs and the skill sets. Alignment of these two items is a Critical Success Factor – The skill set inventory must be maintained throughout the life cycle of the system. These skills are driven by both the technology and the business needs.

Who's Influence on What

OO – *Describes the documented roles of the organization* – Each role in the IT Organization must be mapped to the various levels of the operational business units. Some roles span the entire organization, while others are targeted to specific business activities within an individual business unit.

PP – Describes the formal relationships between the organizations – The formal mapping of these roles defines the boundaries of the organization chart.

QQ – Describes the informal relationships between the participants in the CIO domain – The informal relationships that exist between the providers of technology and business applications and the end user must be capable of adapting to the ongoing needs of the user community.

RR – Describes the informal or actual roles played in the organization – By providing multi-talented individuals, knowledge not normally found in a structured organization can be provided with no extra cost or effort.

What's Influence on Who

GG – Individual project managers and the IT Information System organizational planning process must be facilitated by individuals with the proper skills and motivations.

HH – By creating and holding a vision of the IT System, the architectural aspects of the system will drive the business and technical components. It's the vision thing should be the watchword of the IT Organization.

II – Using IT as a strategic weapon the organization can add value to the business operations. Continuous improvement of IT based processes is no different than continuous improvement of all other manufacturing processes.

JJ – By providing both technology and business expertise within the IT Organization, the product and market strategies will be on equal footing with the software, hardware, cost and operational strategies.

Conclusion

Without some understanding of the activities that influence IT Strategy, the management of such a strategy is becomes difficult is not impossible. By understanding what the influences are on the strategy, direct actions can be taken to manage these influences as well as direct resources to intervene when the management process fail to produce the desired result.