

# The Top IS Job

## Chapter 2

# Outline

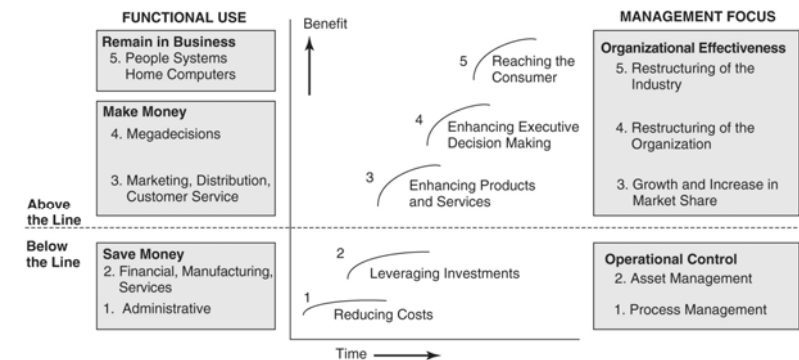
- Where is the IS Organization headed?
  - ◆ The Escalating Benefits of Information Technology
  - ◆ Traditional Functions Are Being ‘Nibbled Away’
  - ◆ New Roles Are Emerging
  - ◆ Towards ‘IS Lite’
- The CIO’s Responsibilities
  - ◆ CIO’s Roles in Three Eras
  - ◆ Leading – Creating a Vision by Understanding the Business
  - ◆ Governing – Establishing an IS Governance Structure
  - ◆ Investing – Shaping the IT Portfolio
  - ◆ Managing – Establishing Credibility and Fostering Change
- The Office of the CIO
- Whither CIO?

# The Management of IT Organization

- Management of IT has changed drastically in past 50 years
  - ◆ Early days: Manage the technology
    - ◆ Get it to work, keep it running and reduce cost of doing business
  - ◆ Then: Manage the information resources
    - ◆ Support decision making, delivering information when and where it was needed
  - ◆ Now: IT is pervasive and is a mandatory link between enterprises
    - ◆ Affecting every aspect of organizational performance, Leading to the formation of business ecosystem

# Waves of Innovation

- Kenneth Primozic, Edward Primozic, and Joe Leben introduce the notion of **Waves of Innovation** which they define as how IT is used by industries and enterprises.



Source: Kenneth Primozic, Edward Primozic, and Joe Leben, *Strategic Choices: Supremacy, Survival, or Sayonara* (New York: McGraw-Hill, 1991).

## Waves of Innovation

- Wave 1: Reducing Costs
  - ◆ Began in the '60s
  - ◆ Focused on increasing the productivity of individuals and business areas by automating manual processes
- Wave 2: Leveraging Investments
  - ◆ Began in the '70s
  - ◆ Concentrated on more effective use of corporate assets
  - ◆ Systems justified on ROI, cash flow etc.

Waves 1 & 2 could be done at 'any time' for saving money (and are still being done!)

## Waves of Innovation

- Wave 3: Enhancing Products & Services
  - ◆ Began in the '80s
  - ◆ Attention shifted to using IT to produce revenue by gaining strategic advantage or creating entirely new businesses
- Wave 4: Enhancing Executive Decision Making
  - ◆ Began in the late '80s
  - ◆ Changed fundamental structure of organizations
  - ◆ Created real-time business management systems

Waves 3 & 4 must be implemented once an industry leader has set a precedent for making money

## Waves of Innovation

- Wave 5: Reaching the Consumer
  - ◆ Began in the '90s
  - ◆ Uses IT to communicate directly with consumers leading to new:
    - ◆ Marketing
    - ◆ Distribution, and
    - ◆ Service strategies
  - ◆ Changes the rules of competition

Management must be involved in guiding IT use once you "cross the line" for making money

## Traditional Functions are being Nibbled Away

- IT has become an essential piece of business strategy
- Not keeping up in IT may even mean going out of business
- The job has become too large for one group
- While the growing importance of IT is causing the IS department's work to expand into new areas of responsibility, management is realizing that the traditional and more operational portions of the job do not have to be performed by the IS department
  - ◆ Particularly 'centralized'

## Traditional Functions are being Nibbled Away – Traditional Responsibilities

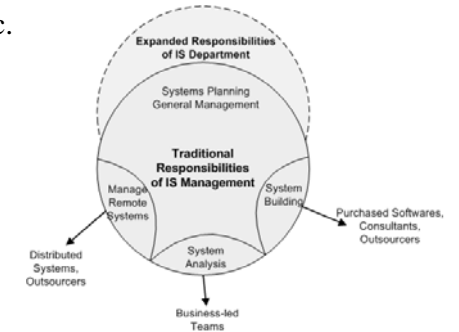
- Managing operations of data centers, remote systems, and networks
- Managing corporate data
- Performing systems analysis and design, and constructing new systems
- Systems planning
- Identifying opportunities for new systems

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## Traditional Functions are being Nibbled Away – New Trend

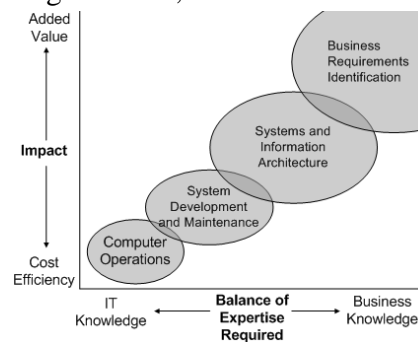
- Distributed systems: Software applications migrating to user areas
- Ever more knowledgeable users have taken on increased IS responsibilities
- Better application packages: Less need for armies of programmers, analysts etc.
- Outsourcing



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## New Roles are Emerging

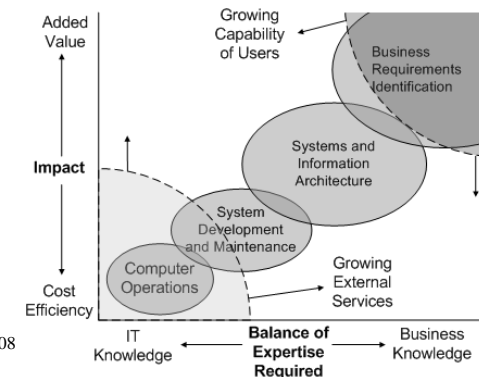
- IS is not a single monolithic organization, but rather a cluster of four functions
  - ◆ Run operations
  - ◆ Develop systems
  - ◆ Develop architecture
  - ◆ Identify business requirements



Each of these functions require a different set of skills and a different management strategy. The business-oriented activities are more important to the enterprise

## New Roles are Emerging

- The Squeeze on Traditional IS Activities:
  - ◆ Growing External Services
  - ◆ Growing Capabilities of Users

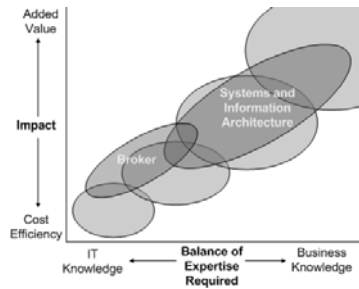


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## New Roles are Emerging

- Two roles will emerge as dominant for IS function
  - ◆ Outsourcers have not sufficient management involvement to understand and satisfy all organization needs
    - ◆ IS becomes the **broker** between technical service providers and business units
  - ◆ Enterprise IT Architecture
    - ◆ Highly challenging, must follow tightly business trends to stay competitive



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## Toward IS Lite

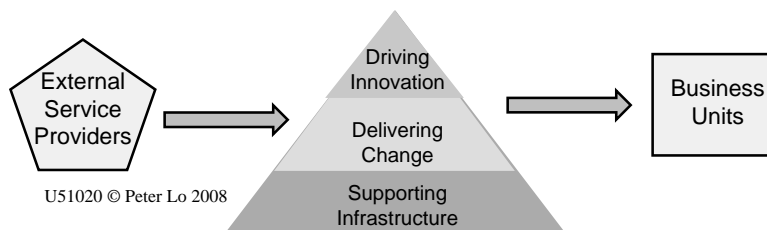
- IS started “Centralized” and evolved into a “Federal Model”
  - ◆ Some activities are handled centrally (e.g. standard operations)
  - ◆ Others are dispersed to business units to meet local needs (e.g. application development)

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## Toward IS Lite

- IT activities take place in three IT macro-processes:
  - ◆ Driving Innovation – Strategic planning, architecture design and business requirements definition
  - ◆ Delivering Change – System development and support of user changes
  - ◆ Supporting Infrastructure – Desktop support, data center and network operations



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## Toward IS Lite

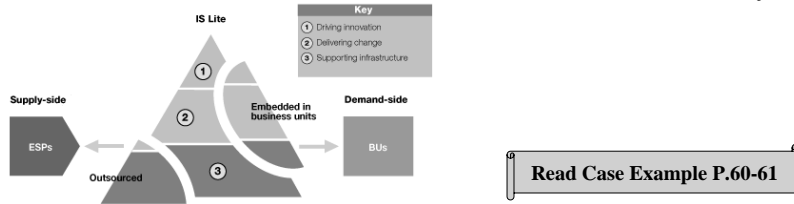
- Four major structural trends for IS Lite
  - ◆ Process-based working
  - ◆ Outsourcing
  - ◆ Specialist centers of excellence
  - ◆ Increasing IT activity embedded in business units.

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## Toward IS Lite

- After IS Lite
  - ◆ Driving innovation would be retained internally and mostly centralized for coherence and exploitation across the enterprise.
  - ◆ Delivering change would be mostly moved out to the business units to get the benefits of being close to customers.
  - ◆ Supporting infrastructure would be selectively outsourced under central control for cost and efficiency

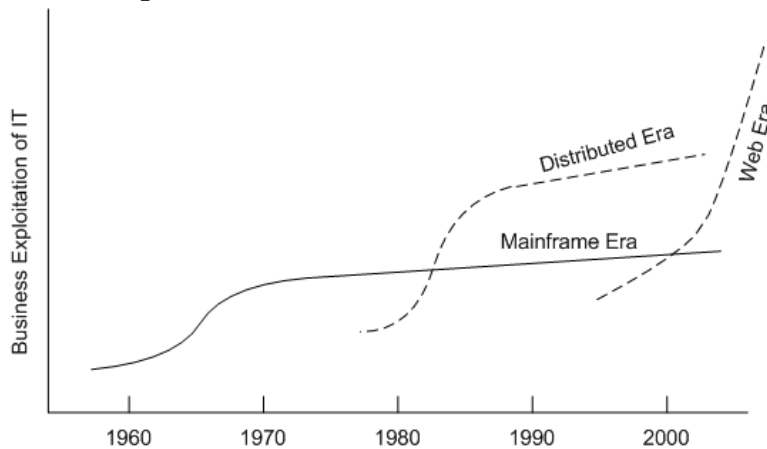


## Change for the Emphasis of the Top IS Job

<b>Before mid 1980s</b>	IT infrastructure
<b>Late 1980s</b>	Addressing business issues, helping formulate corporate policy by creating a vision of IT
<b>Early 1990s</b>	IT as a catalyst for revamping the way enterprises worked (CIO appeared)
<b>Late 1990s</b>	Revamping business operations using IT continued with the Internet
<b>Beginning of 2000s</b>	The “Technical Member” of top management, ensuring e-business
<b>2004</b>	Emphasis on justifying IT investments, IT portfolio management
<b>Today</b>	the cost emphasis remains, outsourcing continues to grow, CIO are expected to do much more with not much more money

## Majors IT Eras

- Relationship between CEO and CIO vary along a wide spectrum



## CIO Roles in Three Eras

<b>The Mainframe Era</b>	<ul style="list-style-type: none"> <li>■ Predominated 1960s – early '80s</li> <li>■ Supporting role: data processing, IS manager, application delivery</li> </ul>
<b>Distributed Era</b>	<ul style="list-style-type: none"> <li>■ From the end of '70s (PC, LANS and WANS)</li> <li>■ Took on 4 more roles:                             <ul style="list-style-type: none"> <li>◆ Organizational designer</li> <li>◆ Technology advisor</li> <li>◆ Technology architect</li> <li>◆ Informed buyer</li> </ul> </li> </ul>
<b>The Web Era</b>	<ul style="list-style-type: none"> <li>■ Arose from the emergence of the Internet, and especially the Web as a business tool</li> <li>■ This era is still in its infancy but add to the CIO's job – the role of business visionary                             <ul style="list-style-type: none"> <li>◆ The Internet is about fundamental business change, not technology</li> <li>◆ New business models</li> </ul> </li> </ul>

## Four Aspects of the CIO Role

1. Leading
  - ◆ Creating a vision by understanding the business
2. Governing
  - ◆ Establishing an IS Governance structure
3. Investing
  - ◆ Shaping the IT portfolio
4. Managing
  - ◆ Establishing credibility and fostering change

## 1. Leading: Creating a Vision by Understanding the Business

- Seven approaches to Understanding the Business and its environment:
  1. Encourage Project Teams to Study the Marketplace
  2. Concentrate on Lines of Business
  3. Sponsor Weekly Briefings
  4. Attend Industry Meetings with Line Executives
  5. Read Industry Publications
  6. Hold Informal Listening Sessions
  7. Partner with a Line Executive

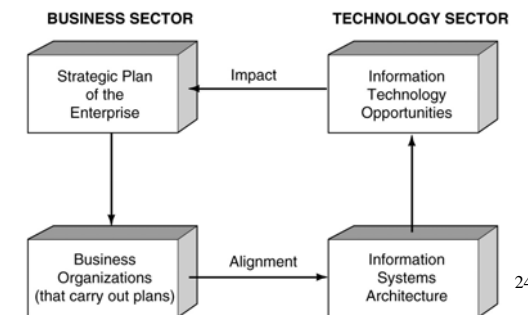


## Understanding the Business

- Encourage Project Teams to Study the Marketplace
  - ◆ Gather the following information about the company and its industry:
    - ◆ Current industry environment
    - ◆ Business goals and objectives
    - ◆ Major practices of competitors
    - ◆ Pertinent government regulations
    - ◆ The inputs, outputs, and resources of the firm

## Understanding the Business

- Concentrate on Lines of Business
  - ◆ IT needs to server individual lines of business rather than the entire company
  - ◆ Supporting current operations (Alignment)
  - ◆ Using systems to influence future ways of working (Impact)



## Understanding the Business

- Sponsor Weekly Briefings
  - ◆ To understand the business, one needs to understand the marketplace
  - ◆ By sponsoring short presentations by the people closest to a business, IS management can help fix the problem of employees not being given exposure to the marketplace without cutting into working time too greatly

## Understanding the Business

- Attend Industry Meetings with Line Executives
  - ◆ Attending meetings with a line executive can be even more enlightening because he or she can explain what the company is or is not doing in areas discussed by the speakers
  - ◆ It is also likely to foster new friendships

## Understanding the Business

- Read Industry Publications
  - ◆ News publications provide information on new products, current issues, company changes, and so on
  - ◆ They provide better analyses of industry trends, discussions of ongoing research, and projections about the future

## Understanding the Business

- Hold Informal Listening Sessions
  - ◆ Employees learn a lot by listening to each other's needs
  - ◆ Meetings are held in a setting that is not charged with tension, participation is voluntary, and their purpose is to just chat

## Understanding the Business

- Partner with a Line Executive
  - ◆ The Society for Information Management presents an award each year to honor an IS executive business team who have achieved significant business results through their alliance
  - ◆ It reinforces partnering which is needed to successfully guide and deploy IT today

## Creating a Vision of the Future and Selling it

- Technology now has more influence in business.
  - ◆ CIO need to create a vision of the enterprise's future and its use of IT and sell those ideas to others



- In today's volatile environment, direction setting and short-term exploration are more appropriate than multiyear plans.
  - ◆ Most corporate vision today has an IT underpinning

## Encouraging Champions of IT Projects

- A **Champion** is someone with a vision who gets it implemented by obtaining the funding, pushing the project over hurdles, putting his or her reputation on the line, and taking the risk of the project
- The first step in encouraging champions is to find them
  - ◆ They are opinion leaders, and they have a reputation for creative ideas or being involved with innovations
  - ◆ They have developed strong ties to others in their organization, and they command respect within the firm
  - ◆ They have the organizational power to get strategic innovations implemented

## Encouraging Champions of IT Projects

- Information systems champions need 3 things from IS Management:

<b>Information</b>	<ul style="list-style-type: none"> <li>■ Champions need information, facts, and expertise for persuading others that the technology will work</li> <li>■ Information systems people can help them find the information they are lacking</li> </ul>
<b>Resources</b>	<ul style="list-style-type: none"> <li>■ Giving champions free staff time is especially helpful during the evaluation and persuading portions of a project</li> <li>■ Champions are likely to need material resources, such as hardware and software</li> </ul>
<b>Support</b>	Champions need people who approve of what they are doing and give legitimacy to their projects



## 2. Governing: Establishing an IS Governance Structure

- IT Governance
  - ◆ The assignment of decision rights and the accountability framework to encourage desirable behavior in the use of IT
    - ◆ Governance is about deciding who makes decisions whereas management is about making decisions once decision rights have been assigned
- Driving force for a better IS governance structure
  - ◆ Financial scandals
  - ◆ Large and diverse IT expenditure
    - ◆ Centralizing all IT decisions is not a solution

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Read Case Example P.78-79

## IT Governance Arrangements Matrix

Decision Domain / Style	IT Principles		IT Infrastructure Strategies		IT Architecture		Business Application Needs		IT Investment and Prioritization	
	Input	Decision	Input	Decision	Input	Decision	Input	Decision	Input	Decision
Business Monarchy										Cap appr comm
IT Monarchy				IT leaders		IT leaders				
Feudal										
Federal	Exec comm Biz leaders		Exec comm Biz leaders		Biz leaders Biz proc own					Exec comm Biz leaders
Duopoly		Exec comm IT leaders					Biz leaders Biz proc own Biz/IT rel mgs	Biz leaders Biz proc own		
Anarchy										

Governance mechanisms

☐ Input rights    ■ Decision rights

Exec comm: Executive committee/C-levels  
 Biz leaders: Business unit heads/presidents  
 IT leaders: CIO, CIO offices and biz unit CIOs  
 Cap appr comm: Exec comm subgroup includes CIO  
 Biz proc own: Business process owner  
 Biz IT rel mgs: Business/IT relationship managers

© 2003 Gartner, Inc. and MIT Sloan Center for Information Systems Research (Weill), drawing on the framework of Weill and Woodham (2002).

Source: Marianne Broadbent and Peter Weill, *Tailor IT Governance to Your Enterprise*, Gartner EXP Club Report, October 2003.

## Six Governance Styles

<b>Business Monarchy</b>	C-level executives (CEO, CIO..) hold the right to make decisions
<b>IT Monarchy</b>	IT executives hold the right to make decisions
<b>Feudal</b>	Business unit leaders (or delegates) have decision or input rights
<b>IT Architecture</b>	The rights are shared by C-level executives and one other tier of the business hierarchy
<b>Duopoly</b>	One IT group and one business group share a right
<b>Anarchy</b>	Individual process owners or end users hold a right

## Five Decision Areas

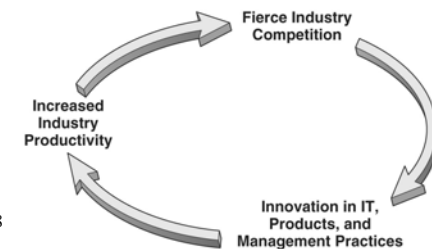
<b>IT Principles</b>	High-level statements about how IT will be used to create business value
<b>IT Infrastructure Strategies</b>	State the approach for building shared and standard IT services across the enterprise
<b>IT Architecture</b>	States the technical choices that will meet business needs
<b>Business Application Needs</b>	The business defines its application needs
<b>IT Investment and Prioritization</b>	Defines the process for moving IT-based investments through justification, approval and accountability

### 3. Investing: Shaping the IT Portfolio

- IT investments has gained increased attention
  - ◆ CIO were usually falsely blamed for making poor IT investment
- Two key IT investment topics
  - ◆ What to invest in? (Strategic)
  - ◆ How to make investment decision? (Tactical)
- IT portfolio management
  - ◆ Systematic management of large classes of planned IT initiatives, projects, and ongoing IT services etc.

### A Strategic View of Making IT Investments

- Intense competition in non-regulated industries forced executives to innovate by investing in IT, improving their business processes and offering new products and services
  - ◆ These innovations, in turn, increased productivity, thus forming a virtuous circle



### A Strategic View of Making IT Investments

- IT investments best contribute to productivity increase if
  - ◆ Investing in main levers of productivity
  - ◆ Getting the investment sequence and timing right
  - ◆ Pairing new systems with new processes and work practices that take advantage of the new IT capabilities

### Targeting IT Investments

- Concentrate IT spending on "levers that matter"
  - ◆ Either increase output or decrease input
  - ◆ "Levers that matter" differ among industry
    - ◆ E.g. Data warehouse for Wal-Mart

#### **IT Investments in Wal-Mart**

- (1) Automating the flow of products in its internal supply chain
- (2) Turning outward to suppliers coordinating its own operations with theirs
- (3) Turning to customers to better plan its merchandising mix and replenishment
- (4) Data warehouse

## Complementing IT Investments

- Accompanying management practices must also be changed to unlock the potential of IT investments
- Most companies have far more opportunities than they can fund
- Must find a way to prioritize the possibilities to best support their business' strategic objectives
  - ◆ Prioritization
  - ◆ Maximize the business value of their IT investments

IT is not the only contributor to increased productivity

## Complementing IT Investments

- Sy Aslan offers the following lessons in strategic planning, decision making, and IT project prioritization:
  - ◆ Realize that the benefits come more from the discussions than the prioritizations
  - ◆ Put projects into categories where they are comparable
  - ◆ Address project risks
  - ◆ Prioritize quarterly, and apportion your budget accordingly
  - ◆ Be consistent

## 4. Managing: Establishing Credibility and Fostering Change

- CIO is in the change business
- But before a CIO and the IS organization will be heard as a voice for change, they must be viewed as being successful and reliable
- To foster change, a CIO must establish and then maintain the credibility of the IS organization

## Establishing Credibility

- The key to credibility is to manage today operation well
  - ◆ Computer operations
  - ◆ Technical support (including networks)
  - ◆ The help desk
  - ◆ Maintenance and enhancement of existing systems
  - ◆ Delivery oriented with a high level of service
  - ◆ Outsourcing IT support functions

## Fostering Change

- ‘Techies’ presume a technically elegant system is a successful one
  - ◆ Not so. Many technically sound systems have turned into implementation failures because the people side of the system was not handled correctly
- IT is all about managing change
  - ◆ New systems require changing how work is done
  - ◆ Focusing on the technical aspects is only ‘half’ the job. The other job is change management

## Working across Organizational Lines

- CIO now find that systems they implement affect people outside their firm
  - ◆ Supply Side: fewer suppliers but deeper relationships
  - ◆ Customer Side: need to get credibility from customer executives to build and use inter-business systems

## The Office of the CIO

- The work of the CIO has become so broad and complex that it should be handled by a team
  - ◆ Chief Information Officer (CIO)
    - ◆ Heads IS and works with top management, customers and suppliers
  - ◆ Chief Technology Officer (CTO)
    - ◆ Heads IT planning, which involves architecture and exploration of new technologies
  - ◆ Chief Operations Officer (COO)
    - ◆ Heads day-to-day IS operations
  - ◆ Chief Project Officer (CPO)
    - ◆ Oversees all projects and project managers

## Whither CIO?

- Different periods of recent history have seen executives with different backgrounds “running the show”
  - ◆ Manufacturing in the early 1900s
  - ◆ Sales and Marketing in 30s to 50s
  - ◆ Finance in 70s to 90s
    - ◆ Problems and scandals
  - ◆ Future perhaps now CIO have the most appropriate backgrounds to run companies