Chapter 8
Governance of the Information Systems Organization

Managing and Using Information Systems: A Strategic Approach

by Keri Pearlson & Carol Saunders
Learning Objectives

• Define the role of the CIO.
• Understand what a manager should expect from the MIS organization.
• Describe why a manager must know the organizations particular needs.
• Define what a lean, competitive enterprise looks like and how IT plays a role.
• Understand how decision rights are allocated.
• List alternative structuring approaches.
• Identify the risks of a global MIS organization.
Real World Examples

• When the new CEO of 3M came on board he broke up the Information Systems Steering Committee (ISSC) that decided on major IS directions and projects.
• The CIO wanted corporate IT priorities decided at the highest business level, not just by IT.
• Now 3M’s IT governance structure starts at the business process level.
  – Each division is responsible for documenting the productivity of its IT projects.
  – Must be in line with the divisions cost reduction targets.
  – Business unit leadership is responsible to top executives.
  – Business units are more motivated to devote resources to make sure that their IT projects are successful.
UNDERSTANDING THE IS ORGANIZATION
CIO

• The CIO (Chief Information Officer) is at the helm of the IS organization.
• CIO’s primary goal is to manage IT resources to implement enterprise strategy.
• Provide technology vision and leadership for developing and implementing IT initiatives to help the enterprise maintain a competitive advantage.
• As the importance of technology has increased so has the position of the CIO.
• Must work effectively with ALL units of the company, not just IS.
Twelve Main CIO Responsibilities

- The following responsibilities often define the role of the CIO:
  1. Championing the organization.
  2. Architecture management.
  4. Business technology planning.
  5. Application development.
  6. IT infrastructure management.
  7. Sourcing.
  8. Partnership developer.
 11. Training.
CIO

- Must have both technical and business skills.
- Must see the business vision and how IT can help facilitate that vision.
- Is both a strategist and operations manager.
- Some organizations do not have a CIO.
  - They hire someone to “run” their computer systems and do not give them much decision-making authority.
CTO, CPO, and Other Roles

• The CIO, particularly in larger organizations, cannot guide the enterprise toward the future alone.

• Other strategic areas require more focused guidance.

• The CTO is a critical role.
  – Works alongside the CIO.
  – Needs business savvy and communication skills.
  – Must be able to create an organizational vision.

• New positions created to deal with this growing need.
  – Figure 8.1 shows a list of other IT managers and their responsibilities.
<table>
<thead>
<tr>
<th>Title</th>
<th>Responsibility</th>
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</thead>
</table>
| Chief technology officer (CTO)            | Track emerging technologies  
Advise on technology adoption  
Design and manage IT architecture to insure consistency and compliance |
| Chief knowledge officer (CKO)             | Create knowledge management infrastructure  
Build a knowledge culture  
Make corporate knowledge pay off |
| Chief telecommunications officer (CTO)    | Manage phones, networks, and other communications technology across entire enterprise                                                    |
| Chief network officer                     | Build/maintain internal and external networks                                                                                               |
| Chief resource officer                    | Manage outsourcing relationships                                                                                                             |
| Chief information security officer        | Insures information management practices are consistent with security requirements                                                        |
| Chief privacy officer                     | Responsible for processes and practices that insure privacy concerns of customers, employees and vendors are met                             |

**Figure 8.1 The CIO’s lieutenants**
WHAT A MANAGER CAN EXPECT FROM THE IS ORGANIZATION
Eight Core Activities

• Anticipating new technologies.
  – IT must keep an eye on emerging technologies.
  – Work closely with management on decisions.

• Participating in setting strategic direction.
  – IS can act as consultants to management.
  – Educate managers about current technologies/trends.

• Innovating current processes.
  – Review business processes to innovate.
  – Survey best practices.

• Developing and maintaining systems.
  – Build or buy software.
Eight Core Activities
(continued)

• Supplier management.
  – Carefully manage outsourced IT.
• Architecture and standards.
  – Be aware of incompatibilities.
  – Inconsistent data undermines integrity.
• Enterprise Security
  – Important to all general managers.
  – Much more than a technical problem.
• Business continuity planning
  – Disaster recovery.
  – “What if” scenarios.
Business Continuity Plan

• Approved set of preparations and sufficient procedures for responding to a variety of disaster events.
  – What do we do in case of an emergency such as 9/11?
• Three major stages of BCP:
  – Pre-planning - management’s responsibility is defined, possible risks are evaluated, and a business impact analysis is performed.
  – Planning - alternative business recovery operating strategies are determined.
  – Post-planning - familiarizes employees with the plan through awareness and training programs.
Managing Data, Information and Knowledge

• Managing information and knowledge in the enterprise is of particular concern to IS.

• Database administration.
  – Includes the collecting and storing the actual data created, developed, or discovered.
  – Deciding on format, location, and indexing of stored data.

• Knowledge management is covered in detail in chapter 12.
Managing Internet and Network Services

• Intranets, extranets, Web pages, and e-mail are becoming essential in most business environments.

• General managers must interact with the Web master, Web designers, and Web developers.

• Networking groups design, build, maintain, and manage the network architecture.

• Managers must be concerned with telecommunications and their costs.
Managing Human Resources

- IS must manage its own resources.
- Provide business and technical training.
- Hiring and firing of staff.
- Tracking time, managing budgets, etc.
- Maintain skills inventory.
- Individual managers are responsible.
Operating Data Center

• Houses large mainframe computers or rows of servers on which the company’s data and business applications reside.
• Managers rarely have direct contact with data center staff.
• Many organizations outsource data center operations.
Providing General Support

• Providing support for users of IS.
• Support requests are normally centralized.
• Centralized help desk – first contact point.
  – Forward requests to knowledgeable staff.
• Many companies outsource this function.
  – Not uncommon to call support and speak to someone in another country.
• Figure 8.2 provides a framework for traditional and newer IS activities that are considered the responsibility of the IS organization.
<table>
<thead>
<tr>
<th>Traditional IT Activities (often supplied through alliances with vendors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Data Center Management</td>
</tr>
<tr>
<td>• Network Management</td>
</tr>
<tr>
<td>• Application Design, Development and Maintenance</td>
</tr>
<tr>
<td>• Desktop Hardware Procurement, Installation, and Maintenance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The New IT Activities (often supplied by MIS organization)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Architecture, Standards and Technology Planning</td>
</tr>
<tr>
<td>• IT Strategic Planning</td>
</tr>
<tr>
<td>• Process Innovation</td>
</tr>
<tr>
<td>• Vendor Management</td>
</tr>
<tr>
<td>• Training and Internal Consulting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User’s Activities (Supplied by IS person on payroll in end user department)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technology scanning and development</td>
</tr>
<tr>
<td>• Applications Strategy</td>
</tr>
<tr>
<td>• Choose and maintain Desktop, Laptop, Personal Digital Assistant or other Personal Devices</td>
</tr>
<tr>
<td>• Implementation</td>
</tr>
</tbody>
</table>

**Figure 8.2** User management activities
WHAT THE IS ORGANIZATION DOES NOT DO
What IS Does Not Do

• Does not perform core business functions such as:
  – Selling
  – Manufacturing
  – Accounting.

• Does not set business strategy.
  – General managers must not delegate critical technology decisions.
IT GOVERNANCE
Centralized vs. Decentralized Organizational Structures

- Centralized – bring together all staff, hardware, software, data, and processing into a single location.

- Decentralized – the components in the centralized structure are scattered in different locations to address local business needs.

- Federalism – a combination of centralized and decentralized structures.
  - Figure 8.3 shows the continuum of where these structures fall.
Figure 8.3 Organizational continuum
The 5 Eras of Information Usage

1. 1960s - mainframes dictated a centralized approach.
2. 1970s - remained centralized due in part to the constraints of mainframe computing.
3. 1980s - advent of the PC and decentralization.
4. 1990s - the Web, with its ubiquitous presence and fast network speeds, shifted some businesses back to a more centralized approach.
5. 2000+ - the increasingly global nature of many businesses makes complete centralization impossible.
Federalism

• Most companies would like to achieve the advantages derived from both centralized and decentralized organizational paradigms.

• This leads to federalism – a structuring approach which distributes, power, hardware, software, data and personnel between a central IS group and IS in business units.
The federal IT attempts to capture the benefits of centralized and decentralized organizations while eliminating the drawbacks of each.

**Centralized IT**
- Unresponsive
- No Business Unit Ownership of Systems
- No Business Unit Control of Central Overhead Costs
- Doesn't Meet Every Business Unit's Needs

**Decentralized IT**
- Users Control IT Priorities
- Business Units Have Ownership
- Responsive to Business Unit's Needs
- Excessive Overall Costs to Group
- Variable Standards of IS Competence
- Reinvention of Wheels
- No Synergy and Integration

**Federal IT**
- IT Vision and Leadership
- Groupwide IT Strategy and Architecture
- Scale Economies
- Control of Standards
- Critical Mass of Skills
- Strategic Control
- Synergy

**Figure 8.5** Federal IT
Another Perspective on IT Governance

• Weill and his colleagues define IT governance as “specifying the decision rights and accountability framework to encourage desirable behavior in using IT.”

• The focus is not what, but who.

• Good IT governance provides a structure to make good decisions.
  – The assignment of decision-making authority and responsibility
  – The decision-making mechanisms
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Examples of Affected IS Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Principles</td>
<td>High-level statements about how IT is used in the business</td>
<td>Participating in Setting Strategic Direction</td>
</tr>
<tr>
<td>IT Architecture</td>
<td>An integrated set of technical choices to guide the organization in satisfying business needs. The architecture is a set of policies and rules for the use of IT and plots a migration path to the way business will be done</td>
<td>Establishing architecture and standards</td>
</tr>
<tr>
<td>IT Infrastructure Strategies</td>
<td>Strategies for the base foundation of budgeted-for IT capability (both technical and human) shared throughout the firm as reliable services, and centrally coordinated</td>
<td>Managing internet and network services; providing general support; Managing data; Managing human resources</td>
</tr>
<tr>
<td>Business Application Needs</td>
<td>Specification of the business need for purchased or internally developed IT applications</td>
<td>Developing and maintaining information systems</td>
</tr>
<tr>
<td>IT Investment &amp; Prioritization</td>
<td>Decision about how much and where to invest in IT including project approvals and justification techniques</td>
<td>Anticipating new technologies</td>
</tr>
</tbody>
</table>

**Figure 8.6 - Five major categories of IT decisions**
Decision-Making Mechanisms

• Policies may be used.
• The steering committee is common and works well in the federal archetype.
• IT Governance Council – steering committee at the highest level.
  – Reports to board or CEO.
  – Comprised of top-level executives.
  – Provides strategic direction and funding authority.
• Lower level steering committees are responsible for effectively allocating scarce resources.
  – Companies usually have one or the other.
Managing the Global Considerations

• Large global MIS organizations face many of the same organizational issues as any other global department.
• For IS, a number of issues arise that put the business at risk beyond the typical global considerations.
• Table 8.9 summarizes how a global IT perspective affects six information management issues.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Global IT Perspective</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Stability</td>
<td>How risky is investment in a country with an unstable government?</td>
<td>India, a country that faces conflict with Pakistan</td>
</tr>
<tr>
<td>Transparency</td>
<td>Domestically, an IT network can be end-to-end with little effort compared to global networks</td>
<td>SAP-R3 can be used to support production processes but only if installed</td>
</tr>
<tr>
<td>Business Continuity Planning</td>
<td>When crossing borders, it is important to make sure that contingency plans are in place</td>
<td>Concern when crossing boarders is will data center be available when/if needed</td>
</tr>
<tr>
<td>Cultural Differences</td>
<td>IT systems must not offend or insult those of a different culture</td>
<td>Using images or artifacts may be insulting to another culture</td>
</tr>
<tr>
<td>Sourcing</td>
<td>Some technologies cannot be exported or imported into specific countries</td>
<td>Exporting it to some countries, especially those who are not political allies is not possible</td>
</tr>
<tr>
<td>Data Flow across Borders</td>
<td>Data, especially private or personal data, is not allowed to cross some borders.</td>
<td>For example: Brazil</td>
</tr>
</tbody>
</table>

**Figure 8.9 - Global Considerations for the MIS Organization**
FOOD FOR THOUGHT: CIO LEADERSHIP PROFILES
CIO Leadership Profiles

• The work of the CIO has grown in scope and complexity.
  – 1/3 of CIOs manage an additional corporate function
  – ¾ of the CIOs report to the CEO, president or COO
  – over ½ listed corporate strategy as a top responsibility

• Recent study shows four profiles that characterize the CIOs leadership role:
  – **IT Orchestrator** (32%) – an effective IS leader involved in strategic decision making.
  – **IT Advisor** (18%) – possesses the strategic and IT skills to be effective, but not adequately funded.
  – **IT Laggard** (18%) – high-level of decision making authority but doesn’t have business or strategic skills.
  – **IT Mechanic** (32%) - low levels of strategic effectiveness, business skills and decision making authority.
SUMMARY
Summary

• The CIO is a high-level IS officer.
• There are a variety of key job titles in the IS organization.
• IS organizations can be expected to anticipate new technologies, set strategic direction, etc.
• Managers must work with IT leaders to develop a lean, competitive enterprise, where IT acts as a strategic enabler.