Learning Outcomes

At the end of this module, the student should be able to:

1. Identify system integration challenges.

2. Identify the functional silos and relate it to system integration.

Systems Integration

- Systems integration means that you allow a heterogeneous Information System (IS) to communicate or integrate and share information (or data) ***seamlessly*** with one another. It is a key issue for an organization for its growth.
- Binds information systems
  - at information and service levels
- Supports information exchange
- Provides ability to do business in real-time
- Technical as well as strategic value
- Need integration solutions to support
  - Electronic markets, supply chain enablement, web visibility, customer relationship management (CRM)
- Success and value of application integration depends on
  - how well you understand the problem domain
  - the architecture you employ
  - technology you leverage

Benefits and Limitations of Systems Integration

- ✓ Increased Revenue and Growth
- ✓ Levelling the Competitive Environment
- ✓ Enhanced Information Visibility
- ✓ Increased Standardization

- ❖ High Initial Set-up Costs
- ❖ Power and Interdepartmental Conflicts (due to the sharing of information)
- ❖ Long-term and Intangible ROI (Usually several years)
- ❖ Creativity Limitations (Restricts Creativity and Independence)

Functional Silos

- Silos are basically compartmentalized operating units isolated from their environment.
  Horizontal Silos

  – Classification of organizations into departments like Accounting and Human Resources, reflects the breaking of complex tasks into smaller manageable tasks that could be assigned to a group of people who could then be held responsible.

  Vertical Silos

  – Organizations also divided roles in hierarchical layers from strategic planning to management control and operation control.

  – CEOs and Presidents plan long-term strategy, midlevel management focuses on tactical issues and on the execution of organizational policy whereas the lower-level management task is to focus on the day-to-day operations of the company.
- As organizations get big and complex they tend to break functions into smaller units and assign staff the responsibility for these activities allowing them to manage complexity as well as specialize in activities that enhance productivity and efficiency.

Information Systems in Organizations

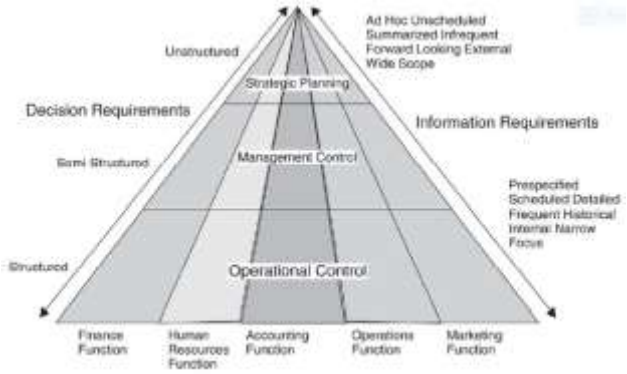
- Information Systems are a critical component of a successful organization today.
- Information Systems play a major role in primary and secondary activities of an organization's value chain.
- Information Systems provide a high level of computer automation to support business functions such as: Accounting, Finance, Marketing, Customer Service, Human Resource Management, Operations, Manufacturing
- Information systems provide analytical and decision making support for management, which is generally categorized into three levels- Strategic, Middle, and Operational.
- Each business functions and management levels has different information requirements.

Functional Silos in Organization

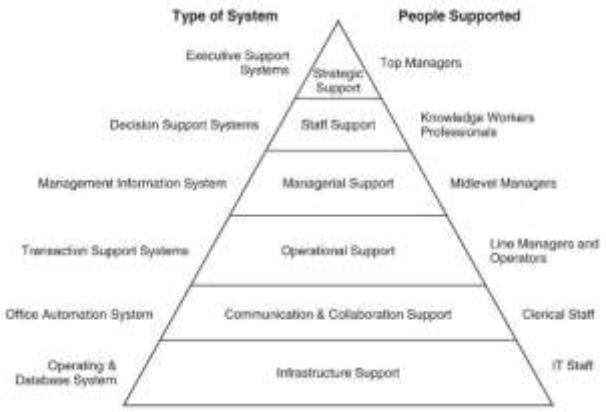
- Each functional area has different information needs and report requirements.
- Each functional area in an organization also has multiple levels of management, each requiring different levels of analysis and details of information.

Management Pyramid with Information Requirements

Each management level has different information requirements.



IS as Categorized by Functional and Hierarchical Models



Information Silos and Systems Integration

- Over time, organizations created a hodgepodge of independent non-integrated systems ultimately creating bottlenecks and interfering with productivity.
- Organizations need to be agile and flexible and will require their information systems to have integrated data, applications, and resources from across the organization.
- A silo information system is inefficient, inaccurate, and expensive.
- To compete effectively, organizations have to be customer focused.
- The cross-functional integration can involve people and resources from various functional departments working together, sharing information at any level of the organization.

Logical or Human Level

• Develop information systems that allow organizations to share data with all of its stakeholders based on need and authorization.

• Management needs to change organizational structures, processes, and employee roles and responsibilities.

Physical or Technical Level

• Provide seamless connectivity between heterogeneous systems.

• Business process reengineering involves changing the mind-set of the employees in the organization, encouraging and enabling them to do their tasks in a new way.

Implications for Management

- **Silos do not work.**

  Most organizations lose out in the long-term when information is not shared in real time across the functional boundaries within the company.

- **System integration has many hidden benefits.**
  - Allows decision making to be cascaded to all departments
  - Allows employees at lower-levels to make better decisions while interacting with clients or partners.
- **System integration has many challenges.**
  - Replacing old hardware and software
  - Working with IT consultants
  - Human challenges, such as impact on IT staff, department heads losing control of data, and rumors of layoffs
- **Systems integration raises many new ethical issues.**
  - Possibility of some employees exploiting information for personal advantage and illegal access of information.
  - Remedies can consist of:
    - Develop policies on ethical usage of information.
    - Install proper security software and hardware (like firewalls).
    - Allocate resources for training and education on accessing information.

Reference:

Enterprise Systems for Management, 2nd ed.

Next Generation Application Integration