IT Auditing

Lecture - 6

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b) Distributed Data Processing

- An alternative to the centralized model is the concept of distributed data processing (DDP).
- The topic of DDP is quite broad, touching upon such related topics as end-user computing, commercial software, networking, and office automation.
- DDP involves reorganizing the central IT function into small IT units that are placed under the control of end users.
- The IT units may be distributed according to business function, geographic location, or both.

b) Distributed Data Processing

- All or any of the IT functions represented in centralized approach (Lecture 5) can be distributed.
- The degree to which they are distributed will vary depending upon the philosophy and objectives of the organization's management.
- There are two alternative DDP approaches.
  - Approach A
  - Approach B

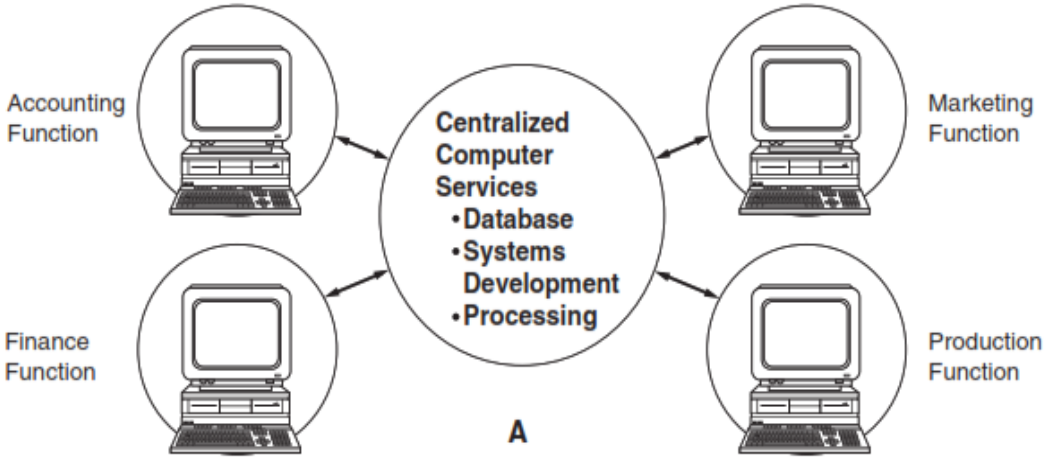
b) Distributed Data Processing

- Approach A

- ✓ Alternative A is actually a variant of the centralized model; the difference is that terminals (or microcomputers) are distributed to end users for handling input and output.
- ✓ This eliminates the need for the centralized data conversion groups, since the user now performs this tasks.
- ✓ Under this model, however, systems development, computer operations, and database administration remain centralized.

b) Distributed Data Processing

- Approach A



A

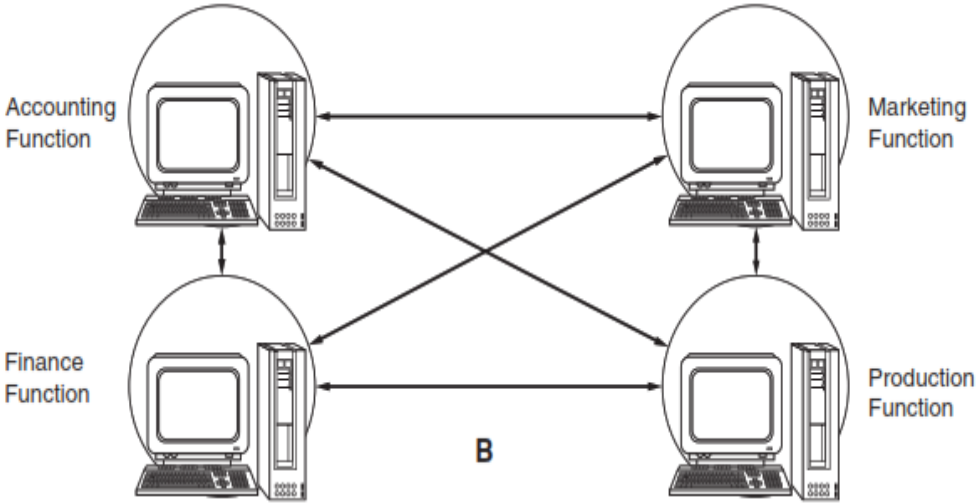
b) Distributed Data Processing

- Approach B

- ✓ Alternative B is a significant departure from the centralized model.
- ✓ This alternative distributes all computer services to the end users, where they operate as standalone units.
- ✓ The result is the elimination of the central IT function from the organizational structure.

b) Distributed Data Processing

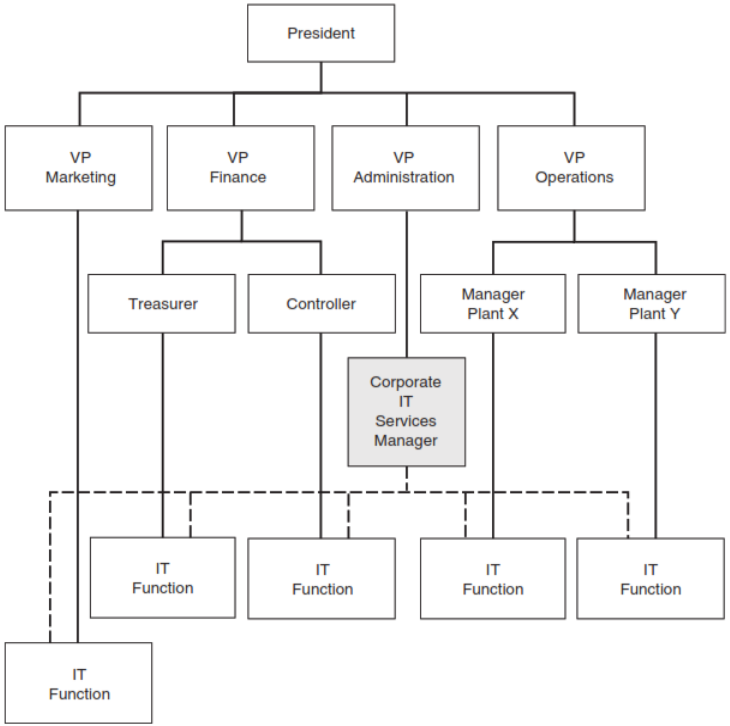
- Approach B



b) Distributed Data Processing

- Possible organizational structure reflecting the distribution of all traditional data processing tasks to end-user areas.

b) Distributed Data Processing



b) Distributed Data Processing

- Risks Associated with DDP

✓ Potential problems include

I. **the inefficient use of resources,**
II. **the destruction of audit trails,**
III. **inadequate segregation of duties,**
IV. increased potential for programming errors and systems failures, and
V. the lack of standards.

b) Distributed Data Processing

- Risks Associated with DDP

I. The inefficient use of resources

- ✓ DDP can expose an organization to three types of risks associated with inefficient use of organizational resources.
- ✓ First, is the risk of mismanagement of organization-wide IT resources by end users.
- ✓ Second, DDP can increase the risk of operational inefficiencies because of redundant tasks being performed within the end-user committee.
- ✓ Third, the DDP environment poses a risk of incompatible hardware and software among end-user functions.

b) Distributed Data Processing

- Risks Associated with DDP

II. The destruction of audit trail

- ✓ An audit trail provides the linkage between a company's financial activities (transactions) and the financial statements that report on those activities.
- ✓ Auditors use the audit trail to trace selected financial transactions from the source documents that captured the events, through the journals, subsidiary ledgers, and general ledger accounts that recorded the events, and ultimately to the financial statement themselves.
- ✓ The audit trail is critical to the auditor's attest service.

b) Distributed Data Processing

- Risks Associated with DDP

II. The destruction of audit trail

- ✓ In DDP systems, the audit trail consists of a set of digital transaction files and master files that reside in part or entirely on end-user computers.
- ✓ Should an end user inadvertently delete one of the files, the audit trail could be destroyed and unrecoverable.
- ✓ Similarly, if an end user inadvertently inserts transaction errors into an audit trail file, it could become corrupted.

b) Distributed Data Processing

- Risks Associated with DDP

III. Inadequate segregation of duties

- ✓ Achieving an adequate segregation of duties may not be possible in some distributed environments.
- ✓ For example, within a single unit the same person may write application programs, perform program maintenance, enter transaction data into the computer, and operate the computer equipment.
- ✓ Such a situation would be a fundamental violation of internal control.

b) Distributed Data Processing

- Advantages of DDP

I. cost reductions,
II. improved cost control,
III. improved user satisfaction, and
IV. backup.

Next Lecture

- The computer center