

# Enterprise Systems

Enterprise computing refers to business-oriented information technology that's critical to a company's daily operations.

## WHAT'S DIFFERENT?

- *Enterprise computing* is the use of technology, information systems and computers within an organization or business
- *Personal computing* is the use of technology by an individual for business or personal activities

Enterprise computing can be applied broadly across an organization and then further customized by users within each business function. This computing means the analytics, reporting, database management and other applications are standard across the system, while the application packages used and the data accessed in each business function, may be different. It's ideal for combining robust software and hardware solutions to meet the needs of large global organizations.

Enterprise computing is sometimes seen as a collection of centralized computing hardware combined with big business software solutions to common problems, such as resource management and streamlining processes.

## LET'S DIVE INTO THIS DEEPER

In a centralized structure, the management of technology is centered in the IT department, and everyone within the organization works with standardized technology solutions in their everyday work.

Common components in enterprise computing include:

1. Enterprise Resource Planning (ERP)
2. Customer Relationship Management (CRM)
3. Sales Force Automation (SFA).

Enterprise storage systems include:

- CD and DVD jukeboxes
- Blu-ray optical libraries
- Storage Area Networks (SAN)
- Network-Attached Storage (NAS)

Unlike personal computers, enterprise storage is generally built and managed external to the computers - a bit like a monster home NAS unit. In an enterprise IT department, there's usually a team dedicated to building, maintaining and protecting storage devices, largely independent of the systems that use them.

Enterprise-wide technologies that provide a competitive edge in today's business environment include:

- Grid computing
- Cloud computing
- Blade servers
- Thin clients
- Web portals
- Electronic data interchange
- Intranets
- Extranets
- Virtual Private Networks (VPNs)
- Computer-based and Web-based training
- Teleconferencing
- Telecommuting
- Workgroup computing

## **FOR EXAMPLE**

Web portals provide a centrally managed information service for employees, giving them access to data and applications that are related to their jobs.

Employees in an enterprise tend to have little choice in the computer equipment and applications they can use, compared to home computing where the user can choose to install and use any software package they think might be useful

## **HISTORICALLY**

Imagine how package delivery from a website would work without information being shared between the e-commerce site, the warehouse, transport and logistics providers.

*Companies discover quickly that they need to share information with other companies.*

Point-to-point data exchanges were initially created with custom formats and networks. These formats were progressively converted into standards like Electronic Data Interchange for Administration, Commerce and Transport (EDIFACT).

EDIFACT is a standard developed by the United Nations. The EDIFACT standard provides an internationally agreed upon message format, directories and guidelines for multi-country and multi-industry electronic data interchange (EDI) communications. EDI enables business processes to run more efficiently, reduces errors, allows for remote submissions and avoids paper from being physically misplaced and changing hands.

Large-scale enterprise computing powers all major transactions, and the mainframe is responsible for:

- 87% of all credit card transactions
- Supporting 71% of all Fortune 500 companies.

Mainframes are fundamental on how we do business, and the IBM Z® mainframe is the only production mainframe sold today. Virtually everyone depends on it.

## WHAT MAKES THIS SYSTEM WORK?

To be able to operate enterprise systems there needs to be some essential technology characteristics:

- **Availability.** All those transactions flying around the world - all day, every day - are what drives the world's economies. Interruptions to that flow could be hugely disruptive; enterprise systems need to be available to service transactions at rates of five 9s or better. Five 9s or 99.999% available means no more than 5 minutes offline per year. Six 9s means no more than ~30 seconds outage in a year.
- **Security.** Encrypt data in flight and at rest to ensure privacy and integrity. The data flowing within the transactions can be stock trades, patient diagnostic information, house purchase transfers or payroll. The loss, damage, or corruption of these could have a severe effect on people lives.

Enterprise systems are built to ensure the security, privacy and integrity of the data they handle, and to minimize and eliminate the chance of data being compromised.

- **Performance.** The system must be able to process 10s of billions of encrypted transactions every day, at speeds necessary to support the transaction volumes and velocity. Enterprise systems are built with specialized processors and equipment to handle data transmission from networks and storage devices. These components ensure that the central processors are able to work continuously against data to and from memory.

IBM Z systems can be configured to achieve seven 9s, which equates to less than 3 seconds of outage in a year), incorporates hardware-based crypto services, and has been rated at 19 billion transactions per day. It's why IBM Z mainframes continues to be at the heart of the world's transaction networks.