Information Management & Technology of Enterprise software

Background

- Modern information technologies focuses on integration of information from multiple functional areas

- Based on Enterprise wise service platform - provides great degree of cross functional integration

- Service platform integrates multiple applications from various business sectors

Background contd…

- Example : order - to - cash process
  - Customer Relationship Management system handles lead generation, marketing campaign, order entry
  - once order received Enterprise s/w prepares manufacturing schedule & verifies parts availability
  - Order is then handled by processes for distribution planning , warehousing, order fulfillment & shipping which is the responsibility of SCM
  - Enterprise financial application handles billing of order to customer
  - If the purchase at some point required customer service CRM system handles
  - To accomplish above firms need a business process management plan & application integration software that ties the various pieces together.

Contd..

- Business process management(BPM) deals with the org's need for business process change to remain competitive
- BMP includes tools for creating models of improved processes that can be translated into s/w systems
- CRM,SCM,ES, home grown legacy system can be used as a building block for BMP

Contd…

- Existing Enterprise system like SAP has tools for building cross application service named xApps.
- xApps uses web services standards to pull together data from
  - the firm's SAP s/w suite,
  - from internal legacy systems or
  - from external system for use in new business processes that span multiple functions & application areas

Contd…

- The s/w synchronizes the existing business processes embedded in these system
- SAP(system application & products) now has prepackaged xApps for merger & acquisitions, new product launches & resource & program management
- Besides SAP similar tools from other vendors are Seibel's Universal application network & PeopleSoft's AppConnect etc.
- These new services are then delivered through portals
- Portals provides framework for building new composite services
- Presenting it to users through a web interface which appears to be coming from a single source

Business and IT

As the 21st century unfolds, many companies are transforming themselves into global powerhouses via major investments in...
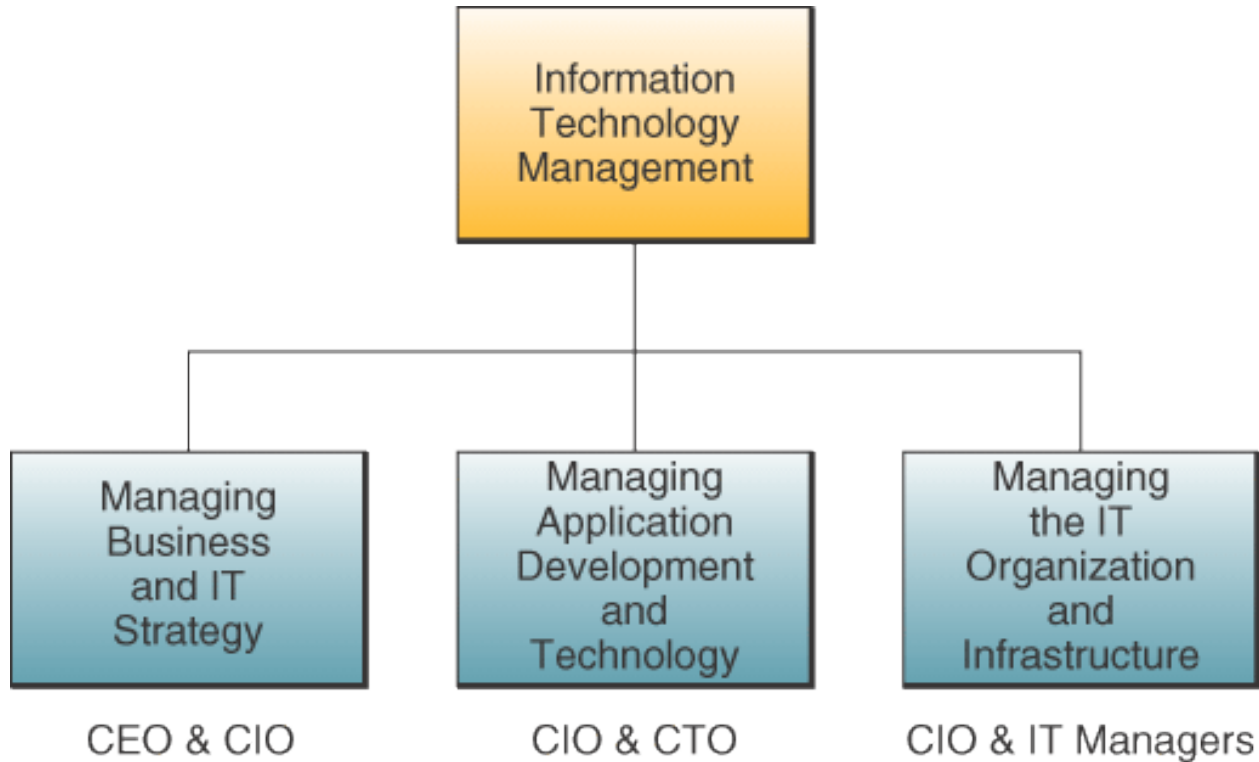
Global e-business

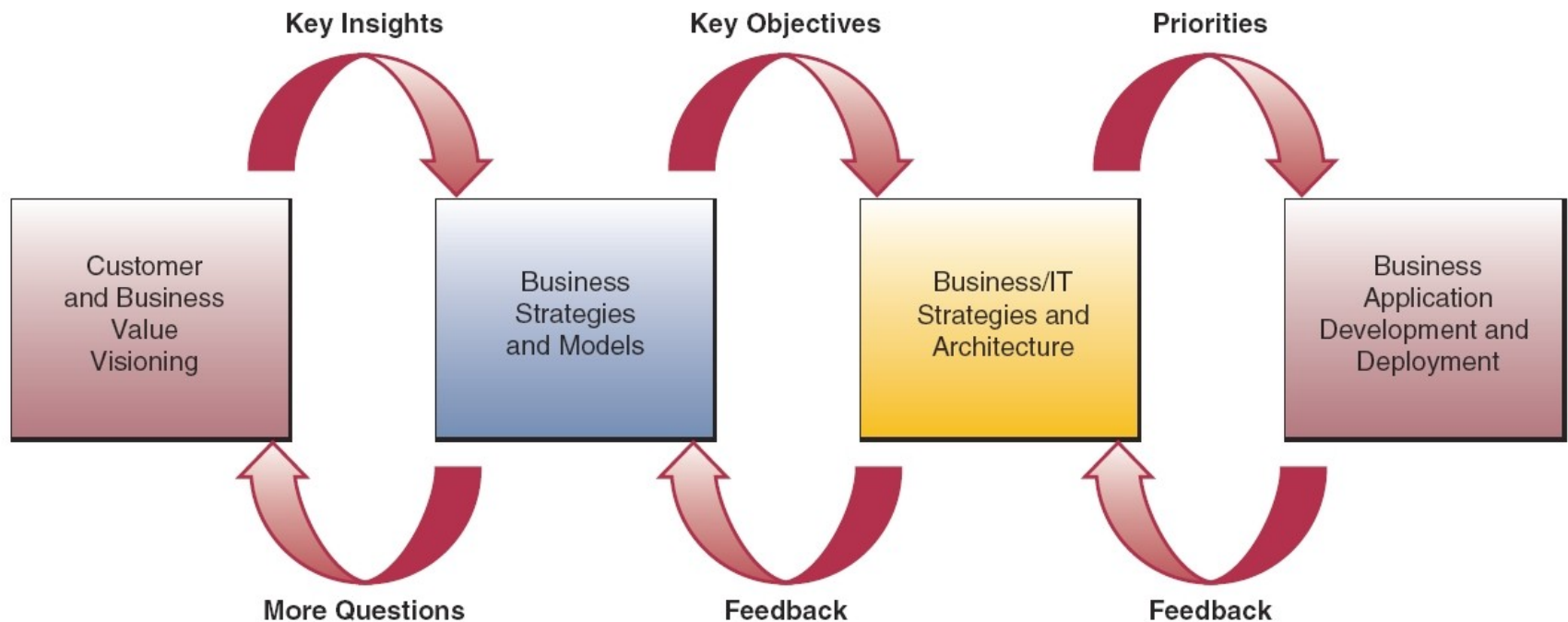E-commerce

Other IT initiatives

Business managers and professionals must know how to manage this vital organizational function

Components of IT Management

Information Technology Management

Managing Business and IT Strategy

Managing Application Development and Technology

Managing the IT Organization and Infrastructure

CEO & CIO

CIO & CTO

CIO & IT Managers

The Business/IT Planning Process

The Business/IT Planning Process

Major components of business/IT planning

Strategic development

Resource management

Technology architecture

Information Technology Architecture

The IT architecture is a conceptual design that includes these major components

Technology platform

Data resources

Application architecture

IT organization
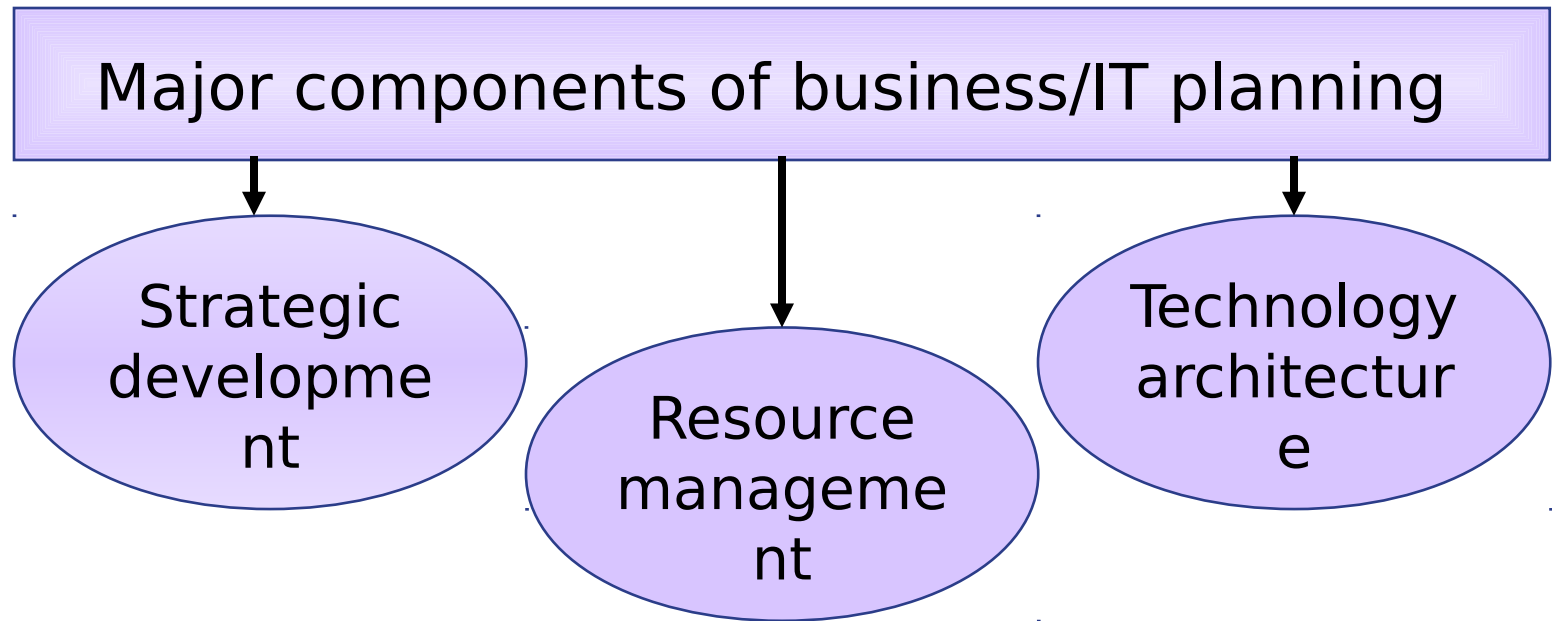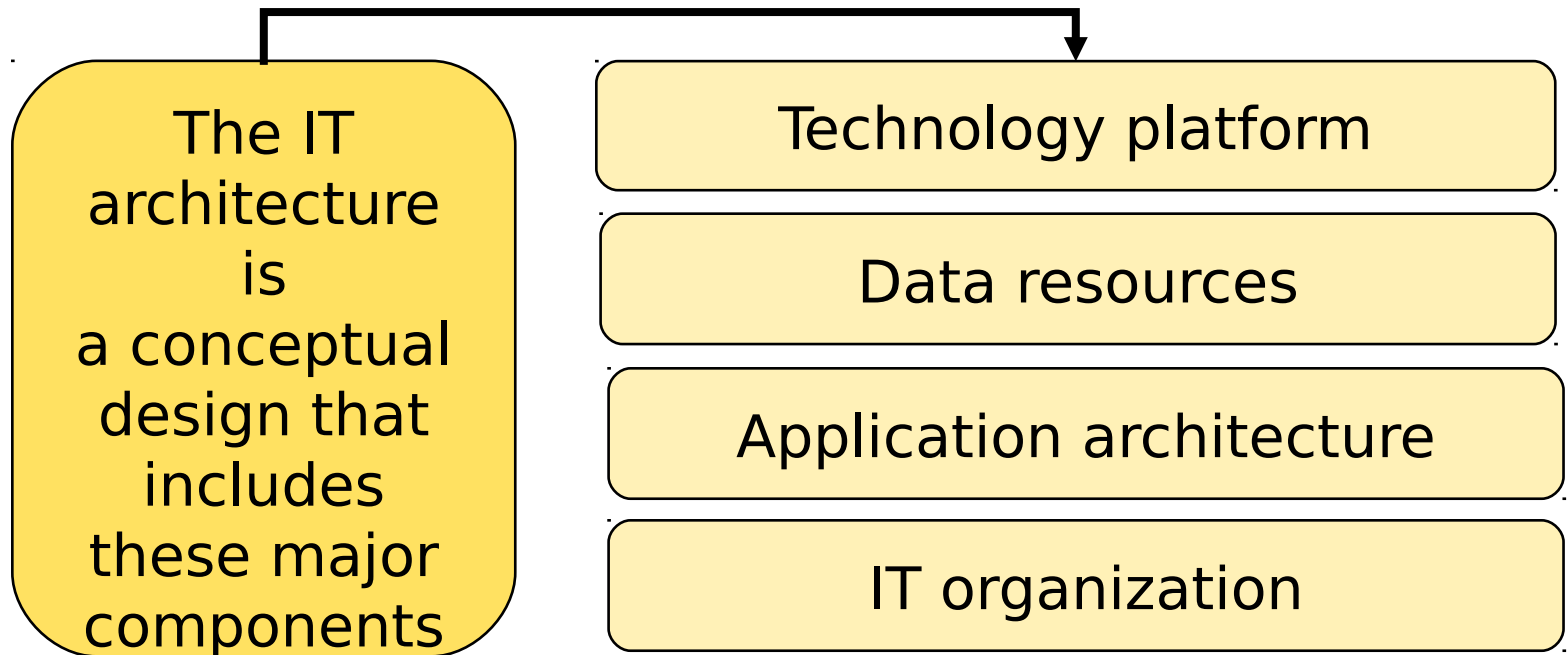
Managing the IT Function

Three things recently happened

The Internet boom inspired businesses to connect their networks

Companies have essential applications on their intranets, without which they cannot function

It became apparent that maintaining PCs on a network is very, very expensive

Created an urgent need for centralization

Organizing IT

Early Years	Next	Current
Centralization of computing with large mainframes	Downsizing and moving back to decentralization	Centralized control over the mgmt of IT Serving the strategic needs of business units Hybrid of centralized and decentralized components

Managing Application Development

Systems analysis & design

System maintenance

Prototyping

Application development involves...

Quality assurance

Applications programming

Project management

Managing IS Operations

- IS operations management
  - Concerned with the use of hardware, software, network, and personnel resources in data centers

- Operational activities that must be managed
  - Computer system operations
  - Network management
  - Production control
  - Production support

System Performance Monitors

Software packages that...

Optimize computer system performance

Monitor computer job processing

Facilitate capacity planning and control
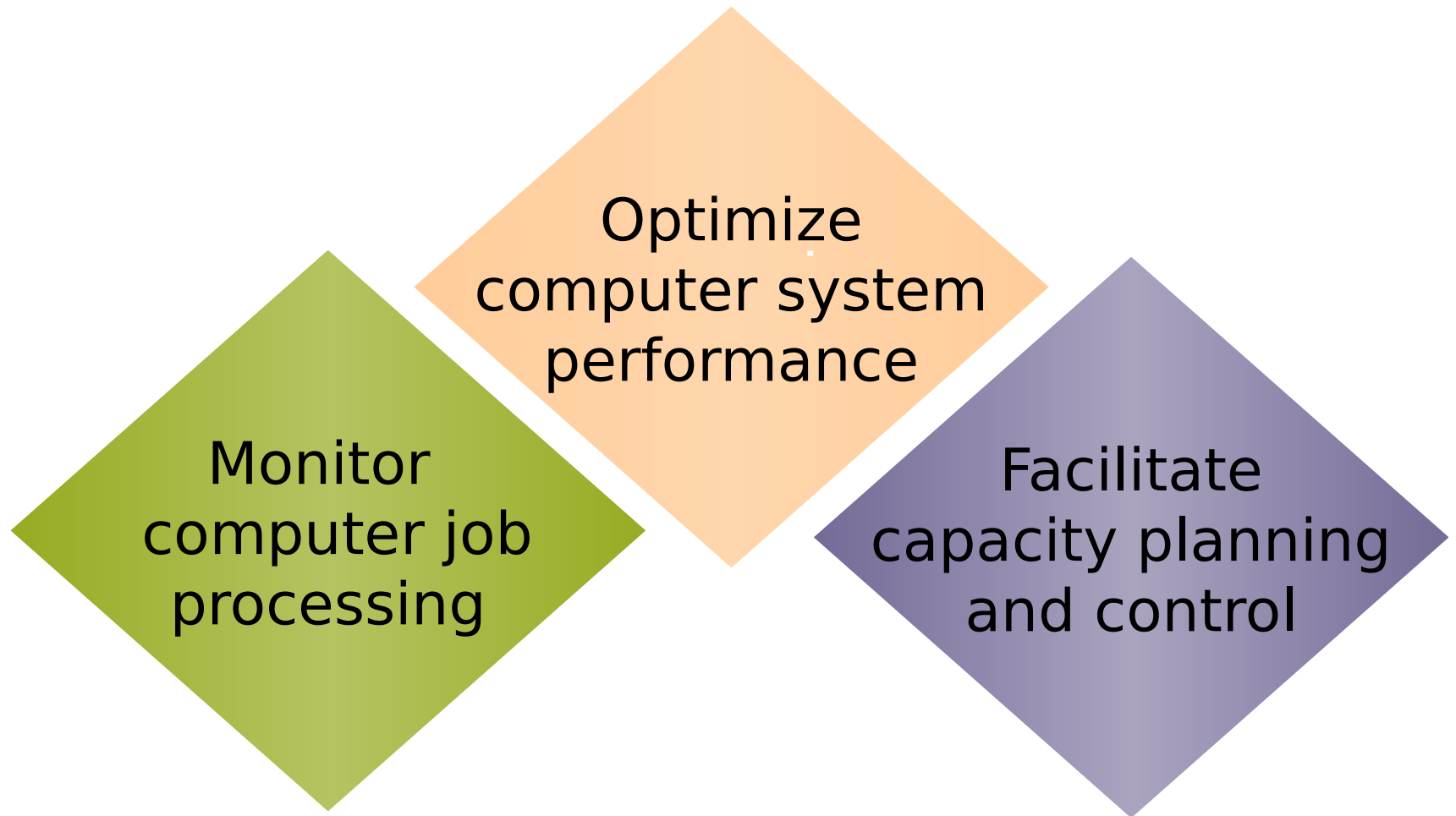
Features of System Performance Monitors

Chargeback Systems

Allocates costs to users based on the information service rendered

Process Control Capabilities

Systems that monitor and automatically control computer operations at large data centers

IT Staff Planning

Recruiting, training, and retaining qualified IS personnel

Evaluating employees and rewarding good job performance with salary increases, promotions

Setting salary and wage levels

Designing career paths

IT Executives

Chief Information Officer (CIO)

- Oversees all uses of IT
- Aligns IT with strategic business goals

Chief Technology Officer (CTO)

- In charge of all IT planning/deployment
- Manages the IT platform
- Second in command
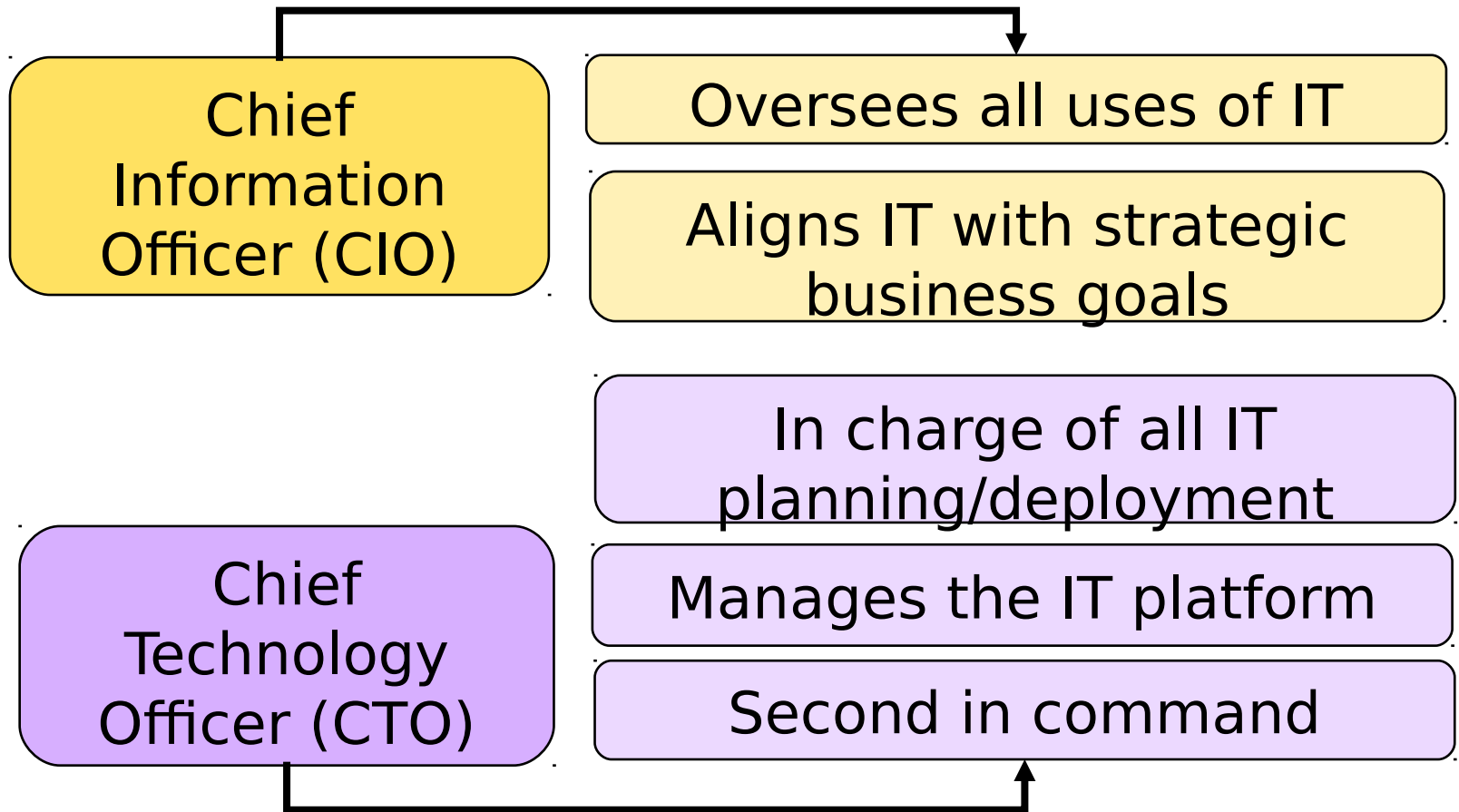
Other IT Positions

E-commerce architect

Systems analyst

Technical team leader

Chief Security Officer

Technology Management

- All IT technologies must be used as a technology platform for integrating business applications

  - Both internally or externally focused

  - Includes Internet, intranets, electronic commerce, collaboration technologies, CRM software, enterprise resource planning, and supply chain management

- Often the primary responsibility of a chief technology officer

Managing User Services

- Business units that support and manage end-user and workgroup computing
  - Can be done with information centers staffed with user liaison specialists or with Web-enabled intranet help desks

- Key roles
  - Troubleshooting problems
  - Gathering and communicating information
  - Coordinating educational efforts
  - Helping with end-user application development

Outsourcing

The purchase of goods or services
from third-party partners
that were previously provided internally

Failures in IT Management

IT not used effectively

Computerizing traditional business processes instead of developing innovative e-business processes

IT not used efficiently

Poor response times

Frequent downtime

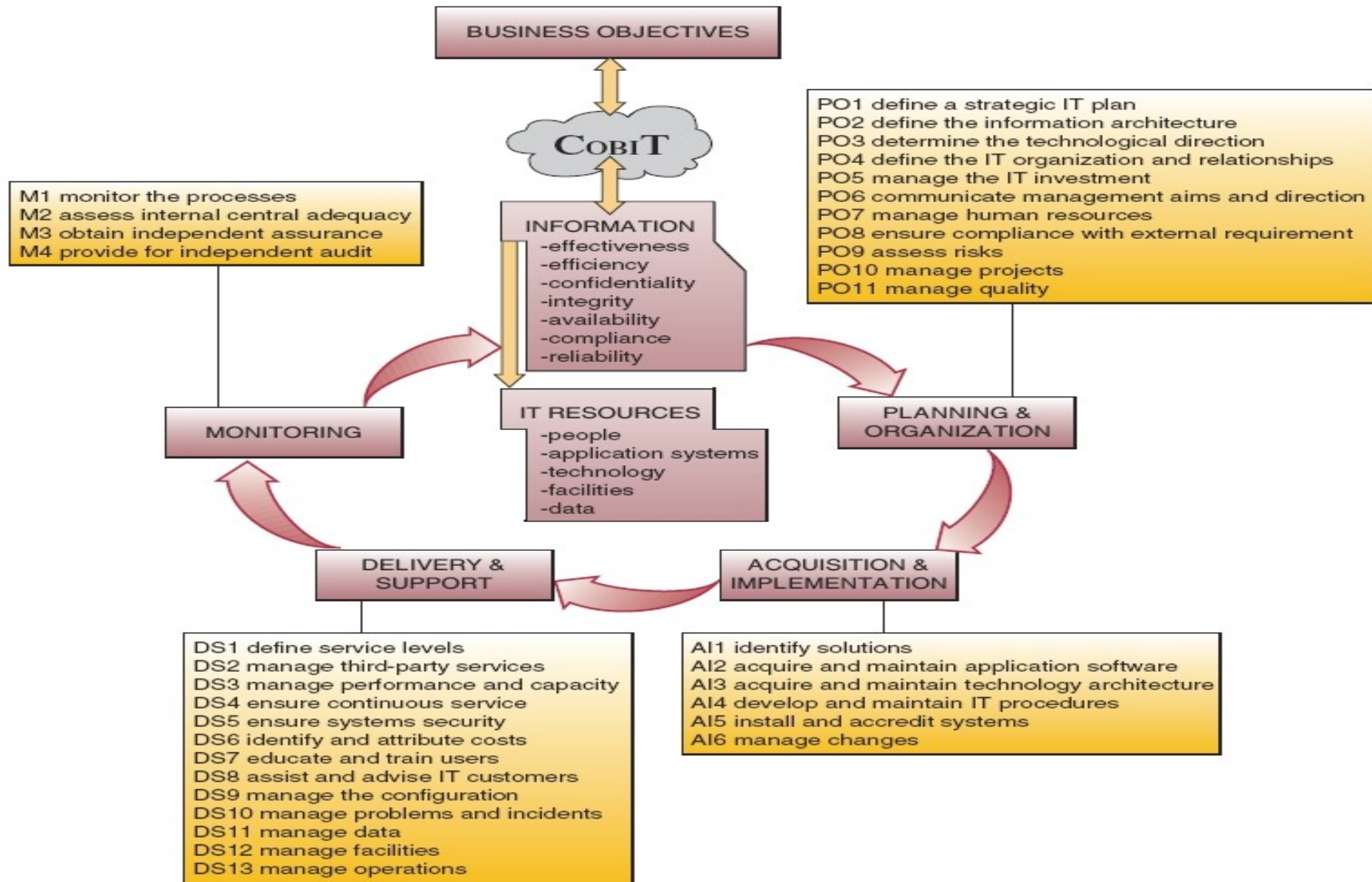Poorly managed application development
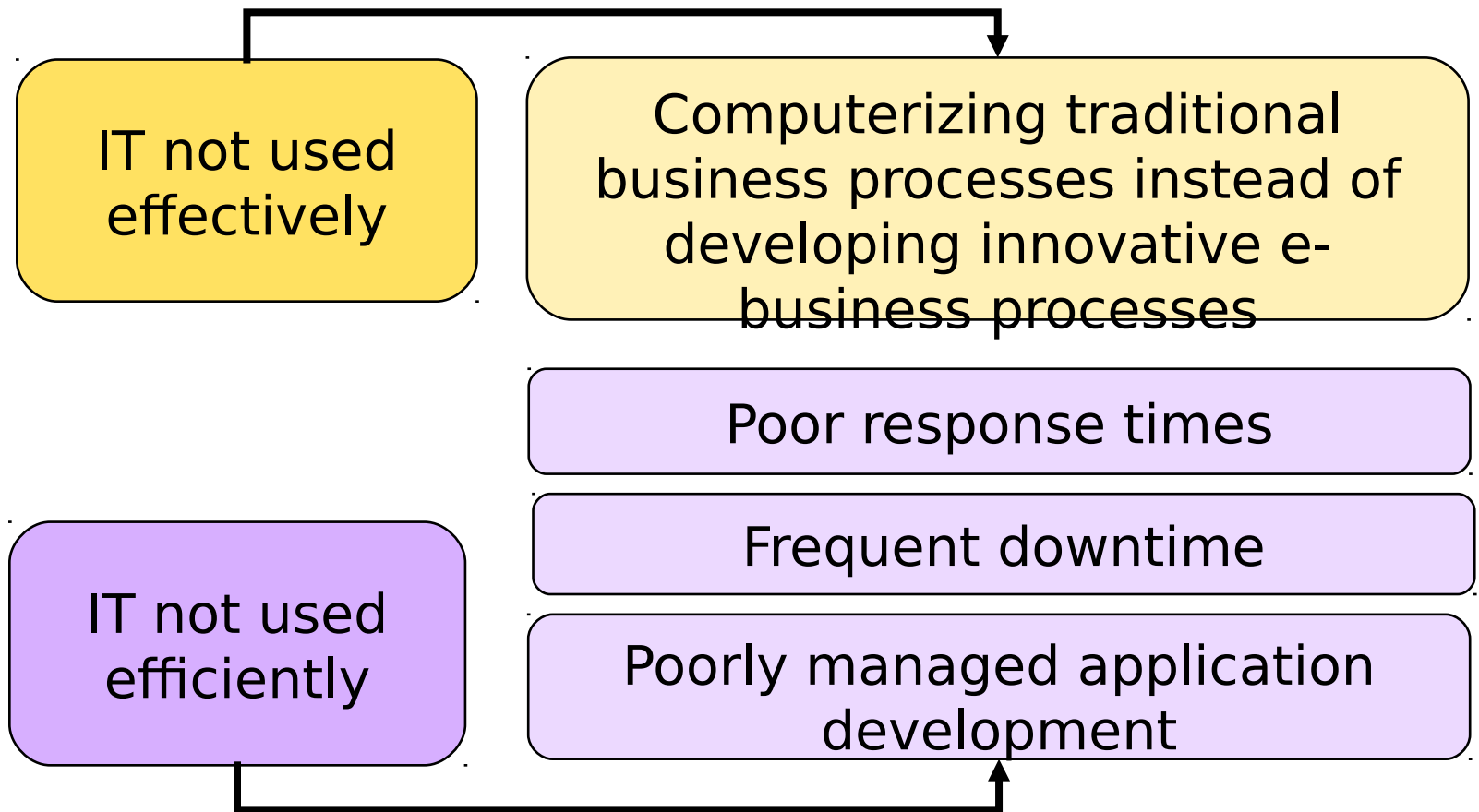
Management Involvement & Governance

- Managerial and end user involvement
  - Key ingredient to high-quality information system performance
  - Optimizes business value of IT

- Governance structures
  - Steering committees, executive councils
  - Encourages active participation in planning and controlling business uses of IT
  - Helps avoid post-development problems

IT Governance Approaches

- Control Objectives for Information and Technology (COBIT)
  - Framework for IT management
  - Set of generally accepted measures, indicators, processes, and best practices

- Covers four domains
  - Planning and organization
  - Acquisition and implementation
  - Delivery and support
  - Monitoring

COBIT in Action

BUSINESS OBJECTIVES

CoBiT

INFORMATION
- effectiveness
- efficiency
- confidentiality
- integrity
- availability
- compliance
- reliability

IT RESOURCES
- people
- application systems
- technology
- facilities
- data

M1 monitor the processes
M2 assess internal central adequacy
M3 obtain independent assurance
M4 provide for independent audit

PO1 define a strategic IT plan
PO2 define the information architecture
PO3 determine the technological direction
PO4 define the IT organization and relationships
PO5 manage the IT investment
PO6 communicate management aims and direction
PO7 manage human resources
PO8 ensure compliance with external requirement
PO9 assess risks
PO10 manage projects
PO11 manage quality

MONITORING

PLANNING & ORGANIZATION

DELIVERY & SUPPORT

ACQUISITION & IMPLEMENTATION

DS1 define service levels
DS2 manage third-party services
DS3 manage performance and capacity
DS4 ensure continuous service
DS5 ensure systems security
DS6 identify and attribute costs
DS7 educate and train users
DS8 assist and advise IT customers
DS9 manage the configuration
DS10 manage problems and incidents
DS11 manage data
DS12 manage facilities
DS13 manage operations

AI1 identify solutions
AI2 acquire and maintain application software
AI3 acquire and maintain technology architecture
AI4 develop and maintain IT procedures
AI5 install and accredit systems
AI6 manage changes

The International Dimension

Companies around the world are developing new models to operate competitively in a digital economy

These models are structured, yet agile, global, yet local

Concentrates on maximizing risk-adjusted return from both knowledge and technology assets

Global IT Management Dimensions
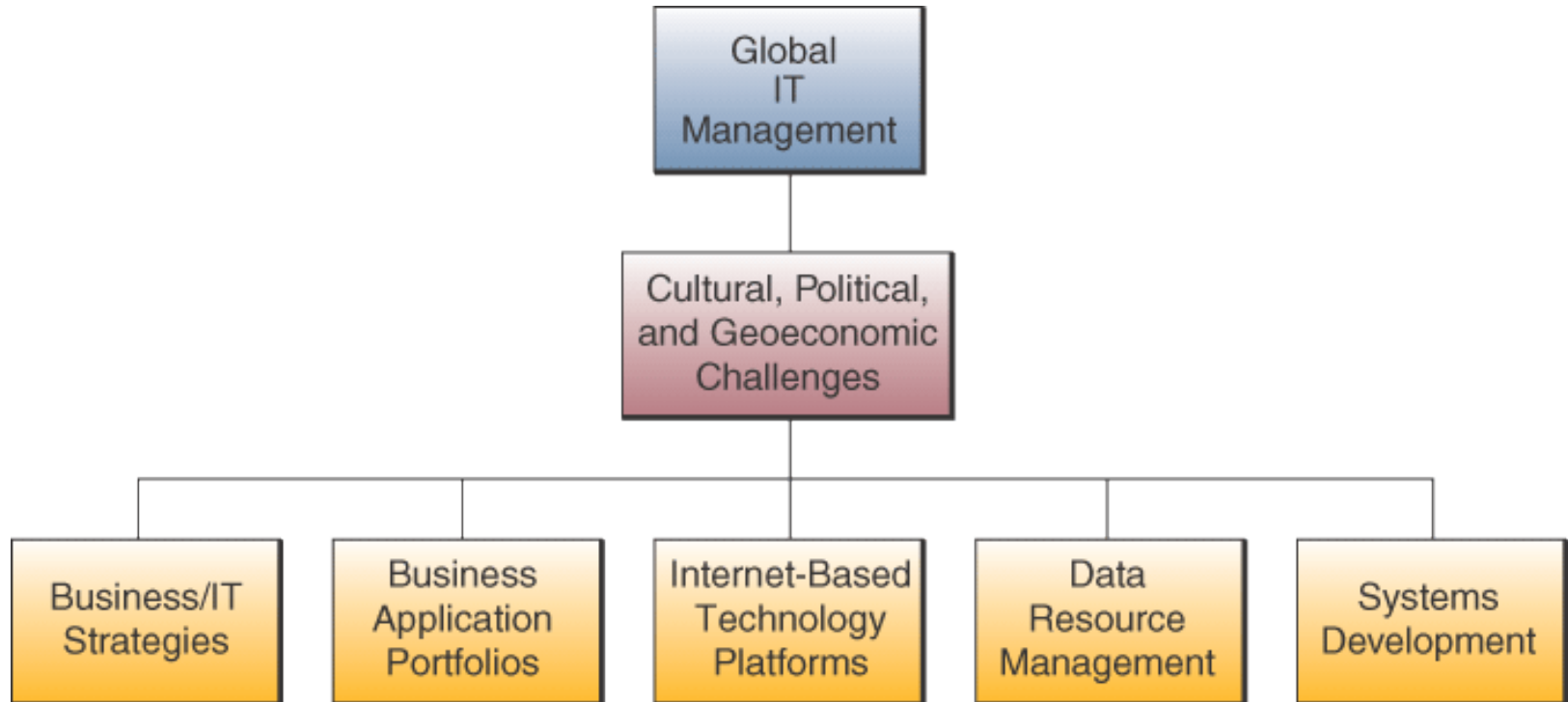
Global IT Management Challenges

Political Challenges

Many countries regulate or prohibit the transfer of data across their national boundaries

Others severely restrict, tax, or prohibit imports of hardware and software

Some have local content laws that specify the portion of the value of a product that must be added in that country if it is to be sold there

Others require a business to spend part of the revenue they earn in a country in that nation's economy

Global IT Management Challenges

Geo-economic Challenges

Physical distances still a major problem

Takes too long to fly in specialists

Hard to communicate in real time across time zones

Poor telephone and telecommunications services

May be hard to find skilled local workers

Differences in the cost of living and labor costs

Global IT Management Challenges

Cultural Challenges

Language and cultural interests

Religions and customs

Political philosophies

Cultural training needed before assignments

Work styles and business relationships

Transnational Strategies

**Companies are moving toward
a transnational strategy**

Business depends heavily on
information systems and Internet
technologies to help integrate global
business activities

This requires an integrated and
cooperative worldwide IT platform

Global Business Drivers

- Business requirements caused by the nature of the industry and its competitive or environmental forces

- Examples of global drivers
  - Customers
  - Products
  - Operations
  - Resources
  - Collaboration

Global IT Platforms

Hardware Difficulties

High prices

High tariffs

Import restrictions

Long lead times for government approvals

No local service or spare parts

Lack of "localized" documentation

Global IT Platforms

Software Difficulties

Packages developed in Europe may be incompatible with American or Asian versions

Software publisher may refuse to supply markets that disregard software licensing and copyright agreements

International Data Communications Issues

International Data Communications Issues

Network Management Issues

- Improving the operational efficiency of networks.
- Dealing with different networks.
- Controlling data communication security.

Regulatory Issues

- Dealing with transborder data flow restrictions.
- Managing international telecommunication regulations.
- Handling international politics.

Technology Issues

- Managing network infrastructure across countries.
- Managing international integration of technologies.

Country-Oriented Issues

- Reconciling national differences.
- Dealing with international tariff structures.

Source: Adapted from Vincent S. Lai and Wingyan Chung, "Managing International Data Communications," *Communications of the ACM*, March 2002, p. 91.

The Internet as a Global IT Platform

The Internet

An interconnected matrix that reaches tens of millions of users in over 100 countries

Business environment free of traditional boundaries and limits

Without incurring massive cost outlays for telecommunications, companies can...

Expand markets

Reduce communications and distribution costs

Improve profit margins

Internet-Enabled IT Development