Use of Computers and IT in Management Control

Learning Outcomes

After the completion of this lecture, the students will be able to

- Explain the key concepts of direct and preventive control
- Advantages and limitations

IT in Control Process

Computers and IT systems aid in the **four-step control process**:

1. Setting standards: Using software to establish measurable benchmarks.
2. Measuring performance: Automating data collection for precise tracking.
3. Comparing actual performance with standards: Using analytics tools to identify deviations.
4. Taking corrective action: Generating alerts for immediate managerial intervention.

IT in Control Process

Enhancing Planning and Forecasting

1. IT tools like Enterprise Resource Planning (ERP) systems integrate data to align plans with organizational objectives.
2. Advanced forecasting models supported by IT provide insights for long-term planning, aligning the principle of goal-oriented control.

Decision-Making Support

1. Decision Support Systems (DSS) use data analysis and simulation techniques to predict outcomes and assist managers in making informed decisions.
2. Decision-making should be a central aspect of control, where IT reduces uncertainty.

IT in Control Process

Monitoring and Reporting

1. IT systems enable real-time monitoring through dashboards and Key Performance Indicators (KPIs).
2. Reports generated by computers ensure timely and accurate information delivery, vital for effective control.

Cost Control and Efficiency

1. Automation of routine tasks minimizes human error and operational costs.
2. IT systems manage inventory, optimize supply chains, and monitor resource utilization to control costs.

IT in Control Process

Cybernetics and Feedback Loops

1. For feedback in control systems, IT creates automated feedback mechanisms to identify and correct deviations promptly.
2. Example: Manufacturing systems that adjust production rates based on real-time demand data.

Risk Management

1. IT supports predictive analytics to identify risks before they escalate.

2. Cybersecurity systems protect data integrity, aligning with the focus on safeguarding organizational assets.

IT in Control Process

Benefits

- Improved accuracy and efficiency in control processes.
- Faster response to changes in organizational performance.
- Enhanced transparency and accountability.

Challenges

- High initial investment in IT infrastructure.
- Requires adaptation to technological advancements.
- Dependency on skilled personnel to manage and interpret data.

Opportunities created by Information Technology

Enhanced Decision-Making
IT systems provide managers with real-time data and analytics, enabling informed decisions.
Decision Support Systems (DSS) and Artificial Intelligence (AI) on improving managerial efficiency.

Improved Communication and Collaboration
IT facilitates instant communication through tools like emails, video conferencing, and collaboration platforms (e.g., Microsoft Teams, Slack).

Streamlined Control Systems
Automation of control processes (e.g., performance tracking and reporting) enhances efficiency.
IT supports real-time monitoring.

Opportunities created by Information Technology

Global Reach and Connectivity
IT breaks geographical barriers, allowing businesses to operate globally.
This supports the idea of adapting management strategies to dynamic environments.

Cost Reduction and Efficiency
Automation reduces operational costs and increases productivity.
IT-driven resource planning ensures efficient allocation, supporting resource management principles.

Innovation and Growth
IT fosters innovation through data-driven insights, enabling new product development and market expansion.

Challenges created by Information Technology

1. High Initial Investment
Implementing IT systems requires substantial financial resources.
Smaller organizations may struggle to adopt advanced technologies, creating a gap in managerial effectiveness.

2. Dependency on Technology
Over-reliance on IT can reduce human oversight and adaptability.
Balancing automation with human judgment.

3. Data Security and Privacy Concerns
IT systems are vulnerable to cyber threats, potentially compromising sensitive data.
Managers must integrate robust cybersecurity measures to safeguard organizational assets.

Challenges created by Information Technology

4. Workforce Adaptation and Training
Employees require training to use IT tools effectively.
Resistance to change can hinder the adoption of new technologies, a challenge acknowledged in change management.

5. Ethical Concerns
The misuse of IT (e.g., surveillance or AI bias) can lead to ethical dilemmas.
Ethics is a cornerstone of effective management.

6. Rapid Technological Changes
Keeping up with the fast-paced evolution of IT is challenging for organizations.
Managers must be proactive and flexible, as advocated in dynamic environments.

Case Study Example

Walmart, one of the largest retail corporations globally, faced challenges in managing its extensive supply chain, ensuring inventory accuracy, and maintaining cost efficiency across thousands of stores.

To address these issues, Walmart integrated advanced Information Technology (IT) systems into its management control processes.

IT Systems Implemented

Case Study Example

Retail Link System:

A proprietary software system that allows Walmart to monitor inventory levels in real-time.

Provides suppliers access to sales data, enabling them to replenish stock proactively.

Radio Frequency Identification (RFID):

Used to track products throughout the supply chain.

Offers real-time updates on inventory movement and stock levels.

Data Analytics and Business Intelligence (BI):

Advanced analytics tools process massive amounts of sales and operational data.

BI dashboards provide actionable insights to managers for decision-making.

Automated Replenishment System:

Ensures shelves are stocked efficiently by automating orders based on demand forecasts.

Customer Feedback System:

IT tools collect and analyze customer feedback to improve service quality and product offerings.

Case Study Example

Outcomes

Customer Satisfaction:
Improved product availability and better shopping experiences boosted customer loyalty.

Increased Revenue:
Streamlined operations and reduced inefficiencies contributed to higher profitability.

Global Scalability:
The IT systems supported Walmart's global expansion by ensuring consistent operational control.

Test your skills

- Summarise the use of IT in effective management and control.
- Give case study examples