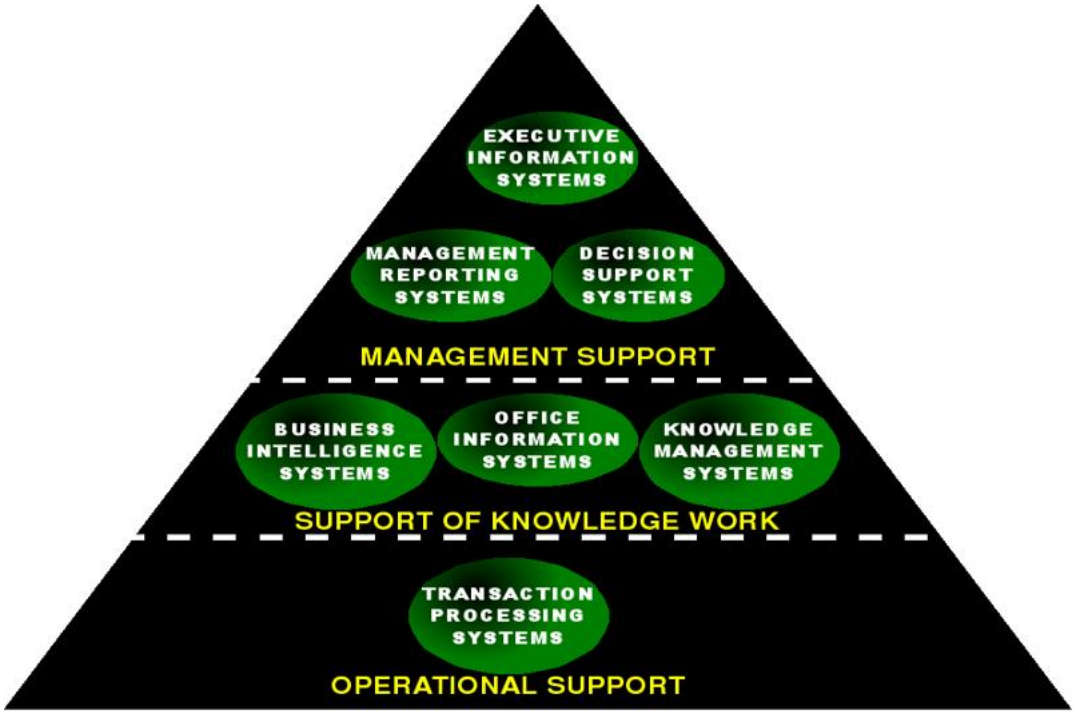


Characteristics of MIS

- **Management-oriented:** The basic objective of MIS is to provide information support to the management in the organization for decision making.
- **Management directed:** When MIS is management-oriented, it should be directed by the management because it is the management who tells their needs and requirements more effectively than anybody else.
- **Integrated:** It means a comprehensive or complete view of all the subsystems in the organization of a company.

an informed user is someone who relies on the data and reports provided by the MIS to make informed decisions, monitor performance, and carry out their responsibilities effectively.

CBIS stands for "Computer-Based Information System." It is a broad term that encompasses various computer systems and technologies used to collect, store, process, and disseminate information within an organization. CBIS includes both hardware and software components, databases, nw, dss that work together to support the management and decision-making processes of an organization.

Data vs info vs knowledge

1. Data:
- Data is the raw and unprocessed facts and figures
- Data, on its own, lacks context and meaning. It's typically not very useful until it is processed or interpreted.
- Examples : "12345," "John," or "35 degrees."

U run a bakery shop

A customer comes in and says “I’d like 3 pls”. 3 what?????? no sense.

2. Information:
- complete, unambiguous, concise, correct.
- Information is data that has been processed, organized, and given context to make it meaningful and useful.
- Information provides answers to "who," "what," "where," "when," and "how" questions, and it often has relevance or significance.
- Turning data into information involves analyzing, structuring, and presenting it in a way that can be easily understood and used.
- sanj earned 80k in a month

A customer comes in and says “I’d like 3 cupcakes pls”

3. Knowledge: KD - discovery
- It often includes the "why" aspect.
- deeper understanding and insight derived from information and experience.
- avg annual salary of sanj

A customer comes in and says “regular order pls”

To summarize, data is the raw material, information is the processed and contextualized form of data, and knowledge is the The transformation from data to knowledge involves a progression from simple facts to meaningful insights that can inform decision-making and problem-solving.

IS-
set of interconnected components that work together to collect, store, process, and distribute information to support decision-making, coordination, control, analysis, and visualization within an organization. Information systems are used to manage and manipulate data, turning it into useful information
Info blood, mis heart

Components of mis : Marketing research system, intelligent system, internal record system
Types: tps, operation info system, dss, es
Elements: hw sw people nw application db
Op: kpi (critical), reports: scheduled, demand, exception

- Management Information Systems (MIS): MIS systems provide managers with reports and data to support decision-making and business operations. Types:
- Decision Support Systems (DSS): DSS systems help individuals and organizations make decisions by providing interactive analysis and modeling tools.
- Executive Information Systems (EIS): EIS systems are designed for senior executives and provide high-level summaries and key performance indicators (KPIs).

- Transaction Processing Systems (TPS): TPS systems handle routine, day-to-day transactions and data processing tasks.
- Enterprise Resource Planning (ERP) Systems: ERP systems integrate various business functions like finance, human resources, and inventory management.
- Customer Relationship Management (CRM) Systems: CRM systems help manage interactions with customers, track sales, and improve customer satisfaction.

File system approach: separate files managed for every dept. So there could be diff data for the sae customers (inconsistency)

Dec making at diff levels
Operational- day to day, short term effect
Tructured
Tactical
Semi structured
Strategic : long term

Phases:
Intelligence… identify prblm
Design.. brute solns
Choice…
Implem.
Verify test, feedback , examine

Casestudy : plane arrival time prediction

Satellite based navigation helps atc : real time , less human error : signal interfence
Smart assistants(auto pilots): reduced pilot workload : but over dependence harmful, technical failure
Vs analytics: process historical flight data, weather data, and other relevant information to identify patterns and trends that impact arrival times.

Casestudy : cardlytics analyzes customer buying patterns

targeted advertisements
customer engagement
Freq mining patterns.

DSS
Sensitivity Analysis: impact of changes in dm model

What if analysis : predict impact of assumptions

Goal-seeking analysis : backward approach, what inputs will give desired ops

Multidimensional	vs.	NoSql
Olap:drill down		Oltp
Sql		

Geographic information system: digitized maps
Every obj has a geog locn
Spatial data
Gps info

bi
report
visualize
mine
etl
predic

Shodan: good or bad tool casestudy

scan internet for connected devices. kinda like network packet tracer
to identify vulnerabilities in my own nw
hackers use it to identify unprotected devices, connected devices(privacy gone)

Information security

Degree of protection against….
Threat ..danger
Exposure
Vulnerability.
Cybercrime

Deliberate threats to is

1. Espionage/Trespass
   Unauthorized access or intrusion into information systems and networks to steal sensitive data or gain intelligence.

2. Extortion
   Threatening to disclose sensitive information or disrupt systems unless a ransom is paid.

3. Sabotage/Vandalism
   Deliberate acts to damage, disrupt, or destroy information systems or data, often with malicious intent.

4. Theft of Equipment
   Physically stealing computer hardware or devices containing valuable data.

5. Theft of Identity
   Stealing personal or user credentials to impersonate individuals or gain unauthorized access to systems.

6. Alien Software (Malware)
   Introducing malicious software (malware) into systems to compromise data, disrupt operations, or gain control.

7. Cyberterrorism
   Using cyberattacks with the intention of causing fear, harm, or disruption to critical infrastructure or society.

8. Cyberwarfare
   Conducting cyberattacks on the infrastructure, military, or government systems of another nation in the context of a conflict or war.

9. Compromise of intellectual property like copyright strike, trade secret, patent

Protection

- Firewalls : monitor nw traffic, filter traffic

- Vpn: create encrypted tunnels over public networks, such as the internet, to ensure secure communication and data privacy. They are commonly used to protect sensitive information while transmitting it between remote locations or devices.
- Blacklisting whitelisting : blocking known malicious entities, allowing only trusted
- Anti malware system
- Encryption
- Digital signatures

Physical controls
Doors
Locks
Fences
Gates

Business Continuity Planning (BCP) is like having a backup plan for your business. Imagine if something unexpected happens, like a big storm, a computer crash, or even a virus outbreak. BCP helps businesses figure out how to keep running smoothly during these tough times.

IS AUDIT

1. Audit: A systematic examination and assessment of information systems, processes, and controls to ensure they meet defined standards, comply with regulations, and operate effectively.

2. Risk Assessment: The process of identifying potential threats, vulnerabilities, and risks that could affect the security or performance of information systems.

3. Compliance: Adherence to laws, regulations, industry standards, and organizational policies to ensure that information systems and practices meet legal and regulatory requirements.

4. Control: Measures, policies, or procedures put in place to safeguard information assets, ensure data accuracy, and mitigate risks.

5. Evidence: Documentation, records, and data collected during an audit to support findings and conclusions.

6. Security Controls: Mechanisms, such as firewalls, access controls, encryption, and intrusion detection systems, implemented to protect information systems from threats.

7. Audit Trail: A chronological record of events, actions, or transactions within an information system, used for monitoring and accountability.

8. Vulnerability: Weaknesses or flaws in information systems or processes that can be exploited by attackers to compromise security.

9. Penetration Testing: Ethical hacking activities performed to identify and exploit vulnerabilities in a controlled manner to assess system security.

10. Incident Response: The process of managing and mitigating the impact of security incidents or breaches, including detection, analysis, containment, and recovery.

11. Patch Management: The practice of keeping software and systems up-to-date with the latest security patches and updates to address known vulnerabilities.

12. Backup and Recovery: Procedures and systems for creating and restoring copies of data and applications in the event of data loss, disasters, or system failures.

13. Audit Report: A formal document that summarizes the findings, conclusions, and recommendations resulting from an information system audit.

14. Risk Mitigation: Actions taken to reduce or eliminate risks identified during the audit, typically through the implementation of security controls or process improvements.

15. Continuous Monitoring: Ongoing surveillance and assessment of information systems to detect and respond to security threats and vulnerabilities in real-time.

16. Independent Auditor: An unbiased and impartial professional or team responsible for conducting information system audits to ensure objectivity and accuracy.

These basic terms provide a foundation for understanding the key concepts and processes involved in information system auditing and cybersecurity.

The "Careto" malware, also known as "The Mask" or "Operation High Roller," was a sophisticated and highly targeted cyber espionage /trespass.

Stealing cash from ATM with text msgs

ext Message Command: The attacker sends a text message from their own phone to the secret phone number associated with the ATM malware. The text message likely contains a predefined command or code that the malware recognizes as an instruction to dispense cash. thus it executes and dispenses money

reasons why some ATMs still use Windows XP:

Cost and Investment
Compatibility
Legacy Software
Regulatory Compliance
Maintenance and Downtime
Phased Upgrades
Risk Mitigation

Google Glass was a pioneering wearable technology developed by Google. It featured a small, head-mounted display that could provide users with information in a hands-free format, similar to augmented reality

Mannequin Cameras:

Advantages of Mannequin Cameras:
1. Enhanced in-store security.
2. Theft deterrence.
3. Real-time surveillance.
4. Remote monitoring capabilities.

Disadvantages of Mannequin Cameras:
1. Privacy concerns.
2. Potential for misuse.
3. Invasion of personal space.
4. Ethical considerations regarding consent.
5. Consumer discomfort in fitting rooms.

Case Study: The Turnitin Database and Academic Integrity

ABC University has implemented Turnitin, a widely used plagiarism detection tool, to maintain academic integrity and prevent plagiarism among its student body. Turnitin compares submitted assignments to a vast database of academic content, including student papers, published research, and online sources.

students have raised concerns about the use of Turnitin, believing that it invades their privacy by storing their submitted work in a database. They also express concerns about the potential for false positives in plagiarism detection.

Tapad

Cross-device tracking refers to the practice of monitoring and collecting data about an individual's online activities and interactions across multiple digital devices, such as smartphones, tablets, laptops, and desktop computers. The primary purpose of cross-device tracking is to create a unified and comprehensive profile of a user's behavior and preferences across all their devices. This profile can then be used by marketers and advertisers to deliver more targeted and personalized advertising experiences.

customised user behaviour dependesnt content

How much rent can u charge

- Location
- Property features
- Market conditions
- Comparable properties
- Operating costs
- Competitive pricing
- Rent flexibility
- Tenant screening
- Regular rent reviews

Telecommuting: yahoo ceo bans it : wfh

, also known as remote work or telework, is a work arrangement in which employees are allowed to work from a location other than the traditional office, often from their homes or other remote locations. Telecommuting typically involves the use of technology, such as computers, the internet, and communication tools, to perform work tasks and stay connected with colleagues and employers.

Advantages:
- Flexibility in work location.
- Reduced commuting time and costs.
- Improved work-life balance.
- Access to a broader talent pool.
- Potentially increased productivity.
- Reduced office space and overhead costs.

Disadvantages:
- Isolation and lack of social interaction.
- Potential for work-life boundary issues.
- Communication challenges.
- Difficulty in monitoring employee performance.
- Security and data privacy concerns.
- Dependence on technology and internet connectivity.

Network portals are digital gateways or entry points that provide access to various resources and services within a computer network. These portals serve as central hubs for users to connect, interact, and access information and applications

An affinity portal
online platform or website
caters to a specific interest group or community with shared affinities, hobbies, or interests to connect
tailored content and services to members based on their shared affinities.

A corporate portal, also known as an enterprise portal or business portal, is a web-based platform or intranet designed to serve as a central gateway to various resources, tools, and information within a corporation or organization.

An industrywide portal is a web-based platform or online hub that serves as a centralized resource and communication channel for an entire industry or a specific sector within an industry. These portals aim to bring together various stakeholders, including businesses, professionals, organizations, and individuals, within a particular industry to share information, collaborate, and access industry-specific resources.

An intranet is a private network or a restricted-access portion of the internet that is used exclusively by an organization, company, or group of individuals. It serves as an internal communication and information-sharing platform, allowing employees or members to access company resources, collaborate, and share information securely.

An extranet is a controlled private network that extends the functionality of an organization's intranet to specific external users, such as business partners, suppliers, customers, or other authorized parties. Extranets are designed to facilitate secure communication, collaboration, and data sharing between an organization and its exter

internet access in Cuba was limited and heavily regulated by the government.
Internet cafes and Wi-Fi hotspots for access.
Home connections not widely available.
High costs for internet access.
Content filtering and censorship of certain websites

adv: Control over information flow.
Enhanced security.

Network processing types
1. Distributed
2. Client server
3. P2p

Client-Server Processing can be compared to a traditional restaurant where customers (clients) visit and place their orders with waitstaff (servers). In this analogy:

The clients (customers) make requests for food and services.
The servers (waitstaff) act as intermediaries, taking orders, relaying them to the kitchen (server-side), and serving the prepared dishes to the clients.
The kitchen (server-side) is responsible for processing orders, preparing food, and managing resources to fulfill the requests.

The restaurant's management (administrators) oversees the overall operation, including staffing, inventory

Distributed Processing can be likened to a large company with multiple departments and a centralized management team. Each department handles specific tasks, but the central management ensures that resources are allocated efficiently and that the company's overall operations run smoothly. It's like a corporation where different branches work together under the guidance of a central headquarters.

Peer-to-Peer (P2P) Processing, on the other hand, is similar to a group of friends organizing a potluck dinner. Each friend brings a dish to share, and there is no single host or central authority. Instead, everyone contributes and communicates directly with others. This decentralized approach allows for flexibility, but the quality of the dinner may depend on what each friend brings and their individual availability.

In the corporate world, a distributed processing model might be suitable for a large multinational corporation with multiple offices worldwide, while a P2P model might be more fitting for a small startup where everyone collaborates directly without a formal hierarchy.

Google's Knowledge Graph is a structured database or knowledge base developed by Google to enhance its search engine's understanding of information on the web. It stores information about entities, such as people, places, and things, as well as their relationships. This knowledge base enables Google to provide more relevant and context-aware search results to users by connecting and interpreting information in a meaningful way. In essence, it helps Google's search engine "understand" information on the web, making search results more informative and accurate.

Eg. College db hierarchy. Student faculty. Studnmea major….
Certainly, here are the key points in bullet format:

- Google's Knowledge Graph is a knowledge base.
- It contains structured data about entities and their relationships.
- Knowledge Graph is used for enhancing Google's search engine.
- It allows for structured query and retrieval of information.
- Data is integrated from various web sources.
- Semantic search techniques are employed.
- It has a graph-like structure with nodes and edges.
- Knowledge Graph represents knowledge beyond simple keywords.
- It serves a specialized role in enhancing search results.

New York City's Open Data Policy is an initiative aimed at making government data more accessible to the public, fostering transparency, and encouraging innovation.
Advantages:

- Transparency
- Innovation
- Civic Engagement
- Accountability
- Economic Growth
- Collaboration

Disadvantages:

- Privacy Concerns
- Data Quality
- Resource Intensive
- Accessibility Barriers
- Data Security
- Misuse of Data

Flurry is a mobile app analytics and advertising platform owned by Yahoo (now part of Verizon Media). It collects data from smartphone users primarily for the purpose of analyzing app usage and delivering targeted advertisements.

Advantages:

- Analytics Insights
- App Monetization
- Improved User Experience
- Revenue Generation
- Targeted Advertising

Disadvantages:

- Data Privacy Concerns
- Data Collection Practices
- User Data Usage
- Opt-Out Options
- Potential Intrusiveness

Porter's Value Chain Model is a framework that helps analyze a company's internal operations and activities to identify areas where it can create value and gain a competitive advantage. It was developed by Michael Porter and is often used in strategic management and business analysis. Here are the key components in brief:

Porter's Five Forces Model is a framework developed by Michael Porter to analyze the competitive forces within an industry that affect a company's profitability and competitive position. The model helps businesses assess the attractiveness of an industry and make strategic decisions. Here are the five forces in brief:

1. Threat of New Entrants:
   - This force assesses the ease with which new competitors can enter an industry.
   - High barriers to entry, such as high capital requirements or strong brand loyalty, deter new entrants.
   - Low barriers make it easier for new competitors to join, increasing competition.

2. Bargaining Power of Suppliers:
   - Suppliers' ability to influence prices and terms can impact a company's profitability.
   - If suppliers have high bargaining power, they can demand higher prices or better terms.
   - Companies with multiple supplier options have more negotiating power.

3. Bargaining Power of Buyers:
   - Buyers' ability to influence prices and demand concessions from companies is evaluated.
   - If buyers have strong bargaining power, they can negotiate lower prices or better deals.
   - Companies with a unique product or service may have more power over buyers.

4. Threat of Substitutes:
   - The availability of substitute products or services that can meet the same needs is considered.
   - A high threat of substitutes can limit a company's pricing power and market share.
   - Companies must differentiate their offerings to mitigate this threat.

5. Rivalry Among Existing Competitors:
  - The level of competition within the industry is examined.
  - Intense rivalry often leads to price wars and reduced profitability.
  - Companies strive to gain a competitive advantage to outperform rivals.

Advantages of Porter's Five Forces Model:

- Provides a structured framework for industry analysis.
- Helps identify key factors affecting a company's competitive position.
- Informs strategic decision-making by assessing industry attractiveness.

Disadvantages of Porter's Five Forces Model:

- May not account for all industry dynamics, such as disruptive innovation.
- Doesn't consider macroeconomic factors like economic trends or government regulations.
- Application can be time-consuming and requires data collection.

Overall, Porter's Five Forces Model is a valuable tool for analyzing the competitive forces within an industry. However, it should be used alongside other strategic frameworks and a broader strategic analysis to make well-informed business decisions.

I apologize for any confusion. Porter's Value Chain Model and Porter's Five Forces Model are two distinct frameworks developed by Michael Porter.

- Porter's Value Chain Model: This model focuses on analyzing a company's internal operations and activities to identify areas where it can create value and gain a competitive advantage. It breaks down a company's activities into primary and support activities to understand how value is generated and delivered.

- Porter's Five Forces Model: This model assesses the competitive forces within an industry that affect a company's profitability and competitive position. It examines the threat of new entrants, bargaining power of suppliers, bargaining power of buyers, threat of substitutes, and rivalry among existing competitors within the industry.

Both models are important tools in strategic management and analysis, but they serve different purposes. The Value Chain Model is primarily concerned with internal operations, while the Five Forces Model focuses on external industry dynamics.

Bring ur own device

Certainly, here are the advantages and disadvantages of Bring Your Own Device (BYOD) for employees in bullet points:

Advantages:

- Cost Savings
- Increased Productivity
- Employee Satisfaction
- Flexible Work Environment
- Familiarity with Devices

Disadvantages:

- Security Risks
- Data Privacy Concerns

- Device Compatibility Issues
- Support and Maintenance Challenges
- Potential for Overuse

Thomas Friedman's "The World Is Flat" describes how globalization and technology have transformed the world, making it more interconnected and "flat" in terms of opportunities and competition. The book identifies ten key forces or "flatteners" that have contributed to this phenomenon:

1. The Fall of the Berlin Wall: The end of the Cold War removed barriers between Eastern and Western Europe, opening up new markets and connections.

2. Netscape IPO: The growth of the internet and the Netscape web browser revolutionized information access and communication.

3. Work Flow Software: Advancements in software allowed businesses to streamline their processes and collaborate more effectively.

4. Uploading: User-generated content and open-source collaboration platforms enabled the sharing of knowledge and ideas on a global scale.

5. Outsourcing: Companies began to delegate non-core tasks to other countries, taking advantage of lower labor costs.

6. Offshoring: Businesses moved entire operations and manufacturing processes to countries with lower production costs.

7. Supply-Chaining: Improved logistics and supply chain management made global sourcing and distribution more efficient.

8. Insourcing: Companies focused on their core competencies and outsourced non-core functions to specialized service providers.

9. In-Forming (Google and Search Engines): Search engines like Google revolutionized access to vast amounts of information on the internet.

10. The Steroids (Wireless and Mobile Technology): The widespread adoption of mobile devices and wireless technology allowed people to connect and work from anywhere, accelerating globalization.

These flatteners have collectively transformed the world's economic, social, and technological landscape, making it more interconnected and competitive. Friedman's book explores the implications of this flattening phenomenon for individuals, businesses, and nations in the 21st century.

Imagine the world as a large, interconnected puzzle where each piece represents a different aspect of our global society and economy. These pieces used to be separated by high walls and obstacles, making it difficult for them to fit together smoothly. However, over time, various forces (the ten flatteners) have come into play, like a powerful magnet pulling these puzzle pieces closer together.

The fall of the Berlin Wall is like removing a massive barrier that separated two parts of the puzzle, allowing them to connect.

The Netscape IPO is akin to discovering a superhighway that enables the puzzle pieces to move quickly and easily.

Workflow software acts as a tool that helps fit the puzzle pieces together neatly, making the connections more efficient.

Uploading and user-generated content are like people freely sharing their ideas and solutions, creating more pieces for the puzzle.

Outsourcing and offshoring represent moving certain puzzle pieces to locations where they fit better, reducing costs.

Supply-chaining is similar to designing a seamless transportation system for the puzzle pieces to move around the globe.

Insourcing focuses on perfecting the design of specific puzzle pieces rather than trying to create everything from scratch.

In-forming through search engines is like having a map to quickly find and access the right pieces of the puzzle.

The "steroids" of mobile technology are akin to providing each puzzle piece with wheels, making them mobile and flexible.

Globalization, in simple terms, means that the world is becoming more connected and interdependent. It's like a big neighborhood where people, businesses, and countries are closely linked and can easily interact with each other. Here's a straightforward explanation:

"Globalization is like making the world smaller. It means that things from one part of the world can affect and reach people in other parts. It's when we all share ideas, trade goods, and work together more than ever before."

Market technology and societal legal and political pressure are three distinct factors that can significantly influence business operations and decision-making. Here's a brief explanation of each:

Market Forces:

- Market dynamics: These include factors like supply and demand, competition, consumer preferences, and economic conditions. Market forces can affect a company's pricing strategies, product development, and market positioning.

- Market technology: Advancements in technology, such as digitalization and e-commerce, have transformed the way businesses operate and interact with customers. Companies need to adapt to these changes to remain competitive.

Technology:

- Technological advancements: Rapid developments in technology impact various aspects of business, from production processes to data analytics. Staying up-to-date with the latest tech trends can enhance efficiency and innovation.

- Digital transformation: Companies are increasingly adopting digital technologies to streamline operations, improve customer experiences, and gain a competitive edge.

Societal, Legal, and Political Pressure:

- Societal expectations: Businesses are under increasing pressure to align with societal values and address social and environmental concerns. Consumers and investors are more likely to support companies that demonstrate ethical and responsible practices.

- Legal and regulatory changes: Governments enact laws and regulations that can directly impact industries. Compliance with these rules is essential to avoid legal issues and maintain a positive reputation.

- Political influences: Political decisions and policies at the national and international levels can affect trade, taxation, and global business operations. Companies must adapt to these changes to mitigate risks and seize opportunities.

In summary, market forces, technology, and societal, legal, and political pressures are critical factors that businesses must consider in their strategic planning. Adapting to these influences is crucial for long-term success and sustainability in today's rapidly changing business landscape.

Grubhub Seamless (now officially known as Grubhub) operates in the food delivery and online food ordering industry. In the context of Porter's Generic Strategies for Competitive Advantage, Grubhub typically pursues a strategy known as "Cost Leadership."

Cost Leadership Strategy:
- Cost leadership involves becoming the lowest-cost provider in the industry.
- Companies following this strategy aim to offer products or services at lower prices than their competitors while maintaining acceptable quality.
- In the case of Grubhub, the focus is on providing an efficient and cost-effective platform for restaurants and customers to order and deliver food.

To gain a competitive advantage, Grubhub can consider the following strategies:

1. Operational Efficiency: Continuously optimize its operations, such as order processing, delivery logistics, and customer support, to reduce costs.

2. Pricing Strategies: Offer competitive pricing to both restaurants and customers to attract and retain users on the platform.

3. Market Expansion: Explore new markets and regions to increase its customer base and leverage economies of scale.

4. Technology Innovation: Invest in technology and data analytics to improve efficiency in food delivery and order management.

5. Partnerships: Collaborate with restaurants to negotiate favorable terms, volume discounts, and exclusive partnerships.

6. Customer Loyalty: Implement customer loyalty programs and incentives to encourage repeat business.

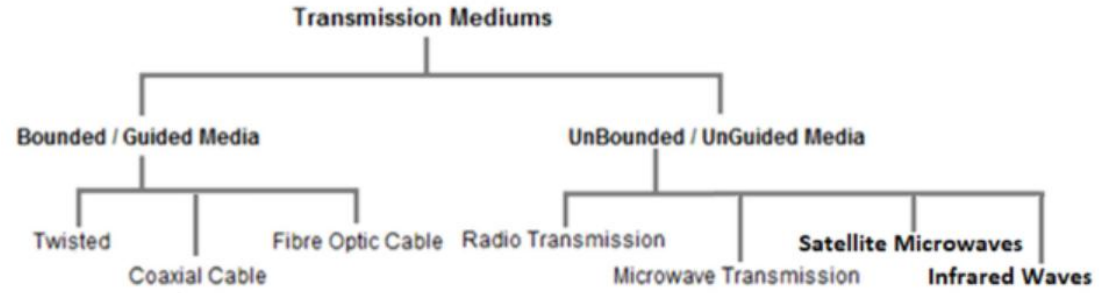
7. Cost Control: Continuously monitor and control operational costs, including marketing expenses and overhead.

By effectively executing these strategies, Grubhub can maintain its cost leadership position in the food delivery industry and continue to offer competitive prices to customers while serving a broad network of restaurants.

Op of mis
Scheduled reports… timely
Key indicator … each day summarization, basis of next day
Demand report
Exception report : unusal actions

Metlife wall:
Using MongoDB, MetLife built the 'Wall', a customer service application that allows MetLife to see a 360-degree view of its customers. The Facebook style interface captures all of the relationships and interactions that a customer has with MetLife instantaneously. The interface keeps a record of all the past interactions each customer may have had with MetLife across all its omni-channel touch points, such as the call centre, in-person interactions with agents, as well as claims and policy updates. Since the software platform provides a complete timeline of customers' transactions – claims, records, status, etc., it also enables MetLife's agents to quickly retrieve and cross-sell solutions.

Bigdata
Dirty noise
Micro segm
Integrated, time varaint, non volatile, multidim, data cubes



Certainly, here's a brief overview of TCP/IP:

TCP/IP (Transmission Control Protocol/Internet Protocol):
- TCP/IP is a set of networking protocols that form the foundation of the Internet and most modern computer networks.
- It was developed in the 1970s and 1980s by the U.S. Department of Defense to connect different computer networks and ensure communication reliability.
- TCP/IP provides a standardized way for devices to communicate over a network, regardless of their hardware or software.
- It's often referred to as a protocol suite because it consists of two main protocols: TCP (Transmission Control Protocol) and IP (Internet Protocol).

TCP (Transmission Control Protocol):
- TCP is responsible for reliable, error-checked data transmission.
- It breaks data into packets, numbers them, and ensures they arrive at their destination in the correct order.
- It uses a three-way handshake for establishing and terminating connections.
- TCP is connection-oriented, making it suitable for applications that require guaranteed data delivery, such as web browsing and email.

IP (Internet Protocol):
- IP is responsible for addressing and routing packets of data so they can travel across networks.
- It assigns a unique IP address to each device on a network, enabling data to be sent to the correct destination.

- There are two versions of IP in use: IPv4 (Internet Protocol version 4) and IPv6 (Internet Protocol version 6).
- IPv6 was introduced to address the limited address space of IPv4 and support the growing number of Internet-connected devices.

Other Protocols:
- TCP/IP also includes other important protocols, such as UDP (User Datagram Protocol) for connectionless, lightweight data transmission, and ICMP (Internet Control Message Protocol) for network troubleshooting and error reporting.
- It defines how data is encapsulated for transmission and how routers and switches route data between networks.

Hierarchy:
- TCP/IP operates in a hierarchical manner, with different layers responsible for different aspects of network communication.
- The TCP/IP protocol stack consists of four primary layers: the Link Layer, Internet Layer, Transport Layer, and Application Layer, with each layer having its specific functions.

TCP/IP is the backbone of the Internet and plays a fundamental role in enabling devices to communicate and share data across networks worldwide. It's a critical technology for modern networking and is used in a wide range of applications and devices, from web browsing to email, streaming, and more.

Packet switching is a networking technology used for transmitting data over computer networks. Here's a brief explanation of packet switching:

- Packet Switching: Packet switching is a method of digital data transmission where data is divided into small packets or chunks for transmission. Each packet contains a portion of the data, as well as addressing information that helps routers and switches determine the path the packet should take to reach its destination.

- Key Characteristics:
  - Divided Data: Data is divided into packets, which are typically small units of data ranging from a few bytes to several kilobytes.
  - Store-and-Forward: Routers and switches in the network receive, store, and then forward each packet independently based on its destination address.
  - Efficiency: Packet switching allows multiple packets from different sources to share the same network resources (such as bandwidth) efficiently.
  - Robustness: It's a robust and fault-tolerant method, as damaged or lost packets can be retransmitted.

- Advantages:
  - Efficiency: Packet switching allows for efficient use of network resources, as it enables multiple data streams to share the available bandwidth.
  - Scalability: It's highly scalable and can accommodate a large number of devices and data traffic.
  - Resilience: Packet switching networks are resilient to network failures, as data can be rerouted dynamically.
  - Versatility: It supports various types of data, including voice, video, and text, making it suitable for multimedia applications.

- Applications:
  - Packet switching is the foundation of the modern Internet, where data is broken into packets and transmitted across diverse networks, including local area networks (LANs), wide area networks (WANs), and the global Internet.
  - It's used for a wide range of applications, including web browsing, email, video streaming, online gaming, and more.

- Comparison to Circuit Switching: Packet switching is contrasted with circuit switching, where a dedicated communication path is established between two parties for the duration of a conversation. Packet switching is more flexible and efficient for data communication, especially in scenarios with variable data rates and multiple users.

Packet switching plays a critical role in modern networking, enabling the efficient and flexible transmission of data across diverse networks, from small local networks to the global Internet.

……..
A data warehouse plays a crucial role in providing a "single version of truth" for organizations like Nordea Bank. Here's a brief explanation:

Data Warehouse: A data warehouse is a centralized repository for storing and managing large volumes of data from various sources within an organization. It is designed for efficient data retrieval, analysis, and reporting.

Single Version of Truth: This concept refers to having a unified, consistent, and reliable source of data within an organization. It means that all employees, departments, and systems can access the same data and trust its accuracy.

Tacit knowledge refers to the knowledge that is difficult to codify or articulate explicitly. It is the kind of knowledge that individuals possess but may find challenging to transfer to others through written or verbal communication. Tacit knowledge is often based on personal experiences, insights, intuition, and expertise developed over time. Here's a brief overview:

- Personal Experience: Tacit knowledge is often gained through personal experiences, practice, and hands-on learning. It's the knowledge that individuals acquire by doing things rather than reading about them.

- Unconscious Competence: Sometimes, individuals are so skilled at something that they perform tasks automatically without consciously thinking about the steps involved. This form of expertise is considered tacit knowledge.

- Intuition: Tacit knowledge can manifest as intuition or a "gut feeling" that individuals rely on when making decisions. It's knowledge that can't always be explained but is often accurate.

- Skills and Expertise: Proficiency in a particular field, craft, or skill often involves a significant amount of tacit knowledge. Artisans, athletes, and experts in various domains possess this kind of knowledge.

- Contextual: Tacit knowledge is highly contextual and may not be directly transferable to different situations or individuals.

- Challenging to Share: Because tacit knowledge is deeply embedded in an individual's experiences and thought processes, it can be challenging to share or teach to others.

In organizations, recognizing and leveraging tacit knowledge is crucial for problem-solving, innovation, and expertise development. Strategies such as mentorship, apprenticeship, and communities of practice are often used to facilitate the transfer of tacit knowledge within a workplace.

The Knowledge Management System (KMS) cycle is a framework that outlines the processes involved in managing an organization's knowledge effectively. It typically includes several key stages or phases. Here's a brief overview of the KMS cycle:

Certainly, here's a brief overview of three common communication media used in networking and telecommunications:

1. Coaxial Cable:
   - Design: Coaxial cable consists of a central copper conductor, an insulating layer, a metallic shield, and an outer insulating layer.
   - Advantages: Coaxial cables are known for their durability, resistance to interference, and ability to carry high bandwidth signals.
   - Use Cases: Coaxial cables have been traditionally used for cable television (CATV) and broadband internet connections. They are also used in some networking applications.

2. Fiber Optic Cable:
   - Design: Fiber optic cables use thin strands of glass or plastic fibers to transmit data using light signals. They have a core for signal transmission, a cladding layer, and an outer protective jacket.
   - Advantages: Fiber optic cables offer high data transmission speeds, long-distance capabilities, and immunity to electromagnetic interference.
   - Use Cases: Fiber optic cables are commonly used in telecommunications networks, long-distance data transmission, internet backbones, and high-speed internet connections.

3. Twisted Pair Cable:
   - Design: Twisted pair cables consist of pairs of copper wires twisted together. They come in two main categories: unshielded twisted pair (UTP) and shielded twisted pair (STP).
   - Advantages: Twisted pair cables are cost-effective, flexible, and easy to install. They are suitable for short to medium-distance connections.
   - Use Cases: Twisted pair cables are widely used in Ethernet networks, telephone lines, and local area networks (LANs). UTP is the most common type for Ethernet connections.

Each of these communication media has its own strengths and weaknesses, making them suitable for different applications and environments. The choice of communication media depends on factors such as bandwidth requirements, distance, susceptibility to interference, and cost considerations.

In the context of networking and telecommunications, "bounded" and "unbounded" typically refer to different types of network transmission:

1. Bounded Transmission:
   - Bounded transmission refers to a network transmission medium with a limited or finite capacity to carry data signals.
   - In bounded transmission, data signals are transmitted over a physical medium that has a predefined bandwidth or capacity.
   - Examples of bounded transmission media include copper cables (such as twisted-pair cables and coaxial cables) and fiber optic cables. These media have specific bandwidth limitations based on their design and characteristics.
   - The bandwidth of bounded transmission media can be measured and is usually expressed in terms of Hertz (Hz) or megahertz (MHz).

2. Unbounded Transmission:
   - Unbounded transmission, on the other hand, refers to a network transmission medium that doesn't have a fixed or predefined capacity for carrying data signals.
   - In unbounded transmission, data signals are typically transmitted wirelessly through the air, and the transmission medium doesn't have a physical boundary or fixed bandwidth.
   - Examples of unbounded transmission media include radio waves, microwaves, and other wireless communication technologies.
   - Unbounded transmission media rely on modulation techniques and frequency allocation to transmit data wirelessly.

In summary, "bounded transmission" refers to data transmission over physical media with fixed bandwidth limitations, while "unbounded transmission" involves wireless communication without a fixed physical medium or bandwidth constraints. The choice between these transmission methods depends on factors such as the required data rate, distance, and environmental conditions.

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behavioral actions + computer based actions = protected assets
dont provide persn info
ssn dont share
use credit cards w ur pics
write photo id nec to use credit card
virtual credit card
check bills regularly
receive bills electronically
limit use of debit card
shred ur docs
------file a complaint/report/alert, keep record of communication----------

computer based:
websites people visit vs surf anonymously
website history to stalk vs delete history
virus in pc
no pswd vs strong pswd
reposting priv fam photos
hacked: pc normal start ni hota, pgms time lete, shut down hojata khudse, memory(mm, disk) khtm thus install anti malware or firewall or monitoring sw that filters content detects worms trojan horses fake websites, patch ur sw
loss by personal mistake: keep encrypted backup in cloud or drive, maintain pswds. autolock, dont share locn, dont download anything

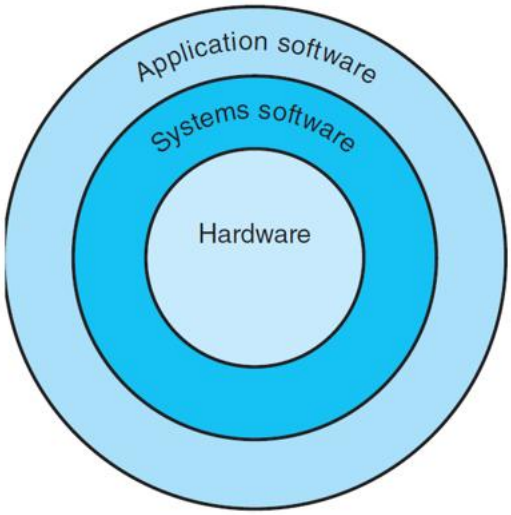
wireless security:
Change default passwords.
Enable WPA3 or WPA2 encryption.
Use a strong SSID.
Implement MAC address filtering.
Disable remote management.
Regularly update firmware.
Disable WPS.
Use a strong pre-shared key.
Enable a guest network.
Configure your router's firewall.
Disable SSID broadcast.
Monitor connected devices.
Use a VPN.
Ensure physical security.
Educate users about security practices.

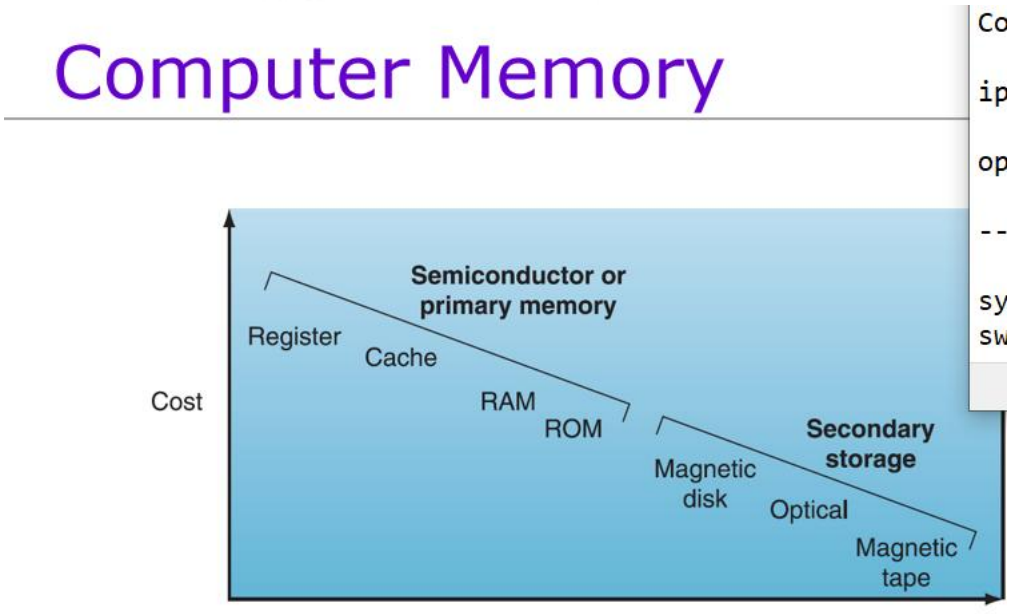
PROJECT MANAGEMENT (pm) process (proj management body of knowledge) pmbok

proj initiation (identify and define prob, goals + resources figure out + cost +profit benefits + risks identif.), planning (tasks ordered, PERT, CPM, GANTT), execution (prototype), monitoring (where are we + where we should be + how to?) & control, completion (documn +submis)

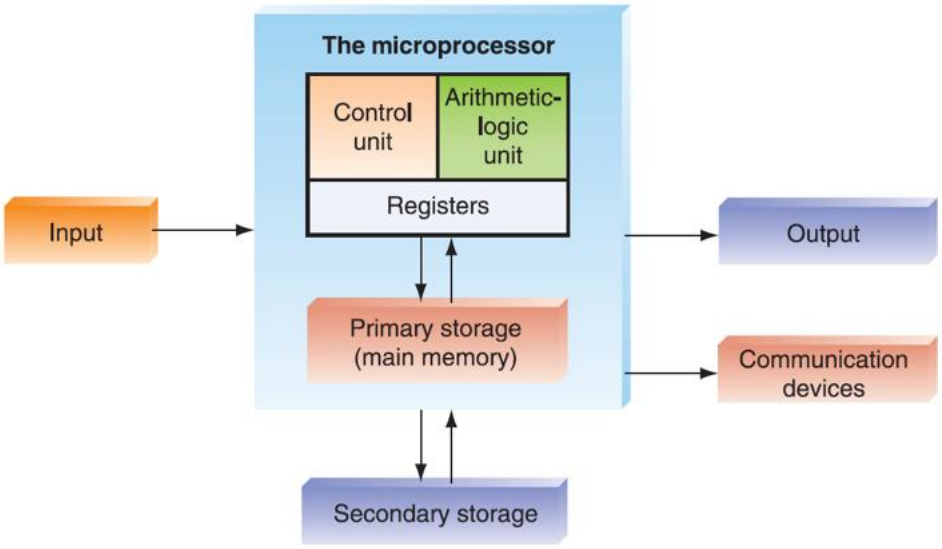
issues causing failures vs gain success
unclear obj/ lack of focus vs maintain strategy
content issue
skill issue vs acquire talent and build good teams
execution issues

9 knowldege areas for pmbok:
proj integration, scope management, time management, cost, quality, hr, communi, risk, procurement

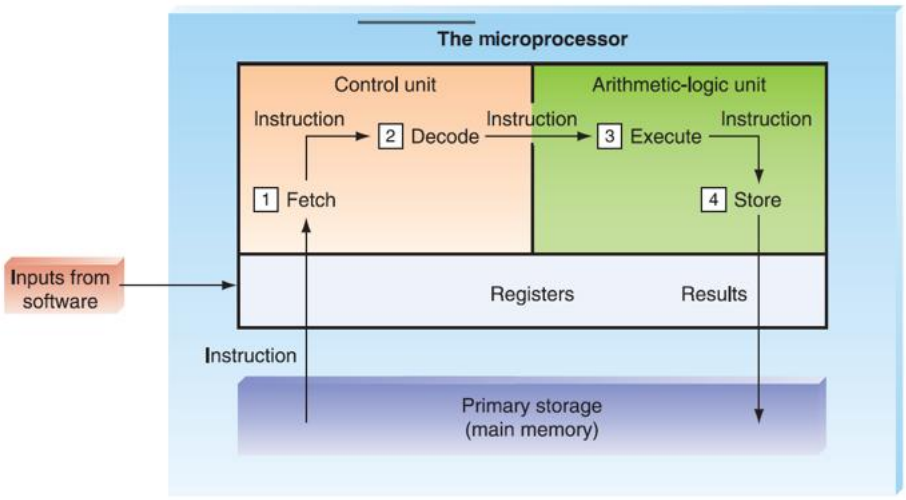




Central Processing Unit



Central Processing Unit



Hw:CPU, mm, sm, ip, op, peripherals

strategic hw issues:
How do organizations keep up with the rapid price reductions and performance advancements in hardware?
How often upgrade?
is upgrade beneficial for productivity?
How can you measure productivity increases?
wfh beneficial or no
byod is managed how

computer hierarchy:
Supercomputers, Mainframe Computers, Midrange Computers, Microcomputers, Desktop PC, Thin-client systems, Laptop and Notebook Computers, Netbooks, Tablet Computers, wearable Computers

ips: joystick, stylus, digital pen, webcam, gestures, voice, touch screen, sensor

ops: monitor, crt, lcd (liquid crystal display), led (light emitting diodes)

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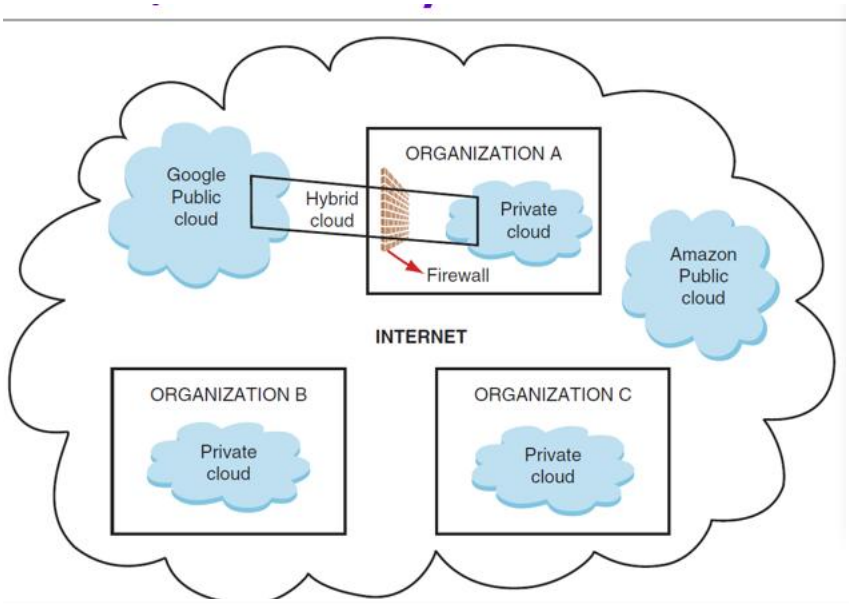
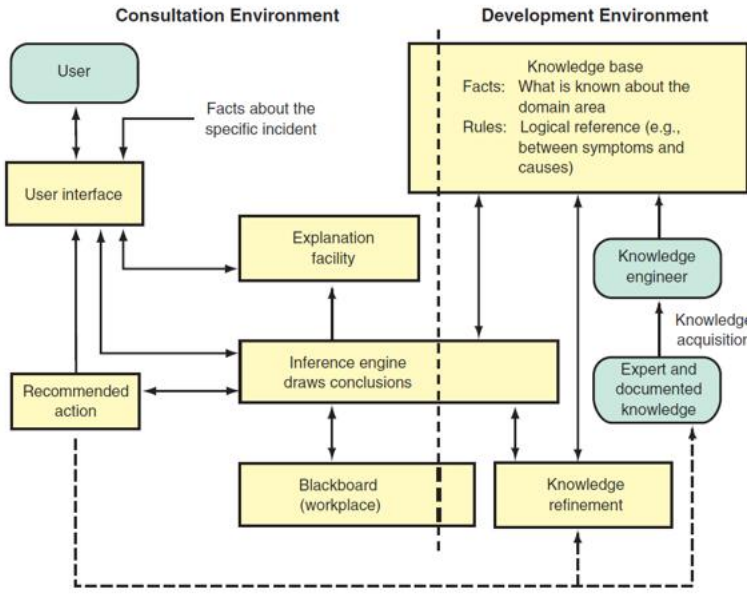
system sw: os, gui,
sw issues: defects, license, open source system



ON-PREMISE SOFTWARE	INFRASTRUCTURE-AS-A-SERVICE	PLATFORM-AS-A-SERVICE	SOFTWARE-AS-A-SERVICE
CUSTOMER MANAGES: Applications, Data, Operating system, Servers, Virtualization, Storage, Networking	CUSTOMER MANAGES: Applications, Data, Operating system VENDOR MANAGES: Servers, Virtualization, Storage, Networking	CUSTOMER MANAGES: Applications, Data VENDOR MANAGES: Operating system, Servers, Virtualization, Storage, Networking	VENDOR MANAGES: Applications, Data, Operating system, Servers, Virtualization, Storage, Networking
Examples	Amazon, IBM, Google, Microsoft, Rackspace	Mircosoft Windows Azure, Google App Engine, Force.com	Salesforce.com, Google Apps, Dropbox, Apple iCloud, Box.net

Capabilities	Natural Intelligence	Artificial Intelligence
Preservation of knowledge	Perishable from an organizational point of view	Permanent
Duplication and dissemination	Difficult, expensive, takes time	Easy, fast, and inexpensive of knowledge in a computer
Total cost of knowledge	Can be erratic and inconsistent, incomplete at times	Consistent and thorough
Documentability of process and knowledge	Difficult, expensive	Fairly easy, inexpensive
Creativity	Can be very high	Low, uninspired
Use of sensory experiences	Direct and rich in possibilities	Must be interpreted first; limited
Recognizing patterns and relationships	Fast, easy to explain	Machine learning still not as good as people in most cases, but in some cases better than people
Reasoning	Making use of wide context of experiences	Good only in narrow, focused, and stable domains

Expert System (Figure PI5



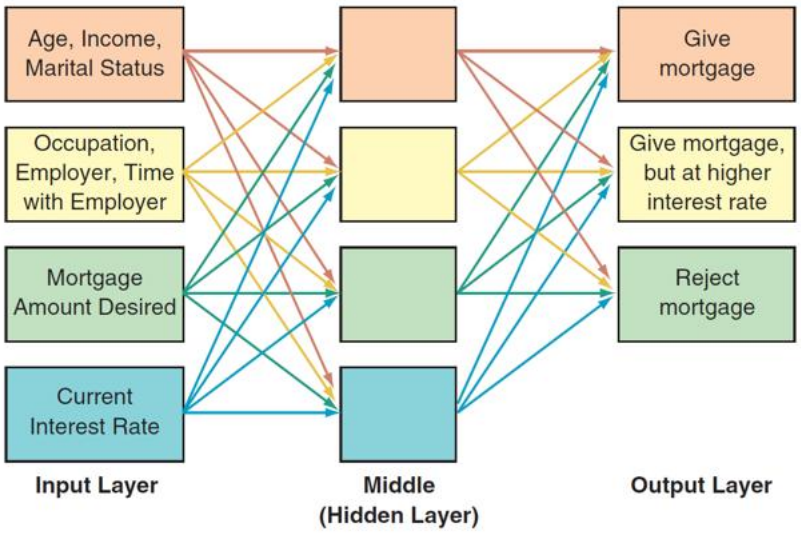


Figure PI5.2 Neural network.

business processes:
bpr (reengineer) : define, measure, analysis, improve, control
bpm (management) : BPMS (bpm suites) + SBPM (social bpm)..process modeling, monitor activity
bpi (improvement)

Amazon, whose online music store competes with Apple's, has "moved music into it's cloud" to solve two problems.
1. Music Libraries have typically been scattered
2. Amazon wants more people to buy music from its proprietary store instead of from Apple's iTunes.

Six Stages of IT Infrastructure Evolution
Stand-alone Mainframes
Mainframe & Dumb Terminals
Stand-alone Personal Computers
Local Area Networks
Enterprise Computing
Cloud Computing and Mobile Computing

cc: virtual service, pay as u use, on demand, self service

webservices: html, xml, service oriented archi (SOA)
types:
soap: Simple Object Access Protocol
rest (Representational State Transfer)

eg. checking for blood blank online website

Natural science encompasses various disciplines that study the natural world and physical universe. Scientists in these disciplines use empirical methods to understand the physical and biological processes that govern the natural world.
- Physics: Studies matter, energy, and fundamental forces.
- Chemistry: Explores the composition and behavior of matter.
- Biology: Investigates living organisms and their interactions.
- Astronomy: Focuses on celestial objects and the universe.
- Earth Science: Examines the Earth's structure and processes.
- Environmental Science: Addresses environmental issues and sustainability.
- Ecology: Studies relationships in ecosystems.
- Geography: Explores the Earth's features and human-environment interactions.
- Botany: Focuses on plant life.
- Zoology: Investigates animal biology and behavior.

(AI): AI is a technology driven subfield of computer science that deals with creating intelligent systems pgms and algorithms that can simulate human-like reasoning and decision-making. uses ml, nlp, computer vision

----------expertise transfer from expert to pc
k acquisistion, repre, infere, transfer

es: k base, inf engine, ui, workspace/blackboard, explaination/justifier

Knowledge Base: Contains domain-specific information, rules, and heuristics.
Inference Engine: Core component for reasoning and decision-making.

User Interface: Allows interaction and input/output with users.
Explanation Facility: Provides explanations for system decisions.
Learning and Adaptation: Some systems can learn and improve over time.
Narrow Domain of Expertise: Specialized for specific problem domains.

An expert system is a type of artificial intelligence (AI) computer program or software that is designed to mimic the decision-making and problem-solving abilities of a human expert in a specific domain or field. Expert systems are built to capture and apply the knowledge and expertise of human specialists, allowing them to provide valuable advice, make decisions, or solve complex problems in their area of expertise.

Expert systems have several limitations:

1. Limited Domain Knowledge: Expert systems are constrained by the depth and breadth of the knowledge in their knowledge base. They may not perform well outside their predefined domain.

2. Knowledge Acquisition: Acquiring and updating the knowledge base can be time-consuming and expensive, requiring constant input from human experts.

3. Inflexibility: Expert systems rely on predefined rules and heuristics, which may not adapt well to rapidly changing environments or novel situations.

4. Lack of Common Sense and Context: Expert systems lack common-sense reasoning and may struggle with understanding context or making judgments that humans find intuitive.

5. Scalability: Scaling expert systems to handle a wide range of problems can be challenging, as it requires extensive knowledge engineering.

6. Difficulty in Handling Uncertainty: Expert systems often struggle with handling uncertain or incomplete information, which is common in real-world scenarios.

7. High Development Costs: Building and maintaining expert systems can be expensive due to the need for domain experts and software development expertise.

8. User Resistance: Users may be skeptical of expert system recommendations, especially when transparency is lacking.

9. Over-Reliance: Users may over-rely on expert system recommendations, potentially neglecting their own critical thinking.

10. Ethical Concerns: In some cases, expert systems may make decisions with ethical implications that raise questions about responsibility and accountability.

11. Integration Challenges: Integrating expert systems with existing software or databases can be complex.

12. Limited Learning Capabilities: While some expert systems can learn and adapt, they may not do so as effectively as humans or other AI approaches.

13. Maintenance and Updates: Keeping expert systems up-to-date and accurate can be a significant ongoing challenge.

Understanding these limitations is essential for effectively utilizing expert systems and recognizing when other AI or decision-making methods may be more suitable for a particular task or problem domain.

Neural networks are a type of computational model inspired by the structure and function of the human brain. They consist of interconnected nodes or "neurons" that process and transmit information

nn applican: ocr, face recog, topic identi, fraud detect, cust segm
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Fuzzy logic in AI is a mathematical framework that handles imprecise or uncertain information by allowing variables to have degrees of truth. Unlike binary logic, it accommodates the notion of partial truth, making it valuable in decision-making systems, control systems, and AI applications where uncertainty or vagueness is present. nlp, handwriting, pattern recog

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Genetic algorithms (GAs) mimic the process of natural selection and evolution, much like biological systems. Here's a simplified explanation:

1. Initial Population: Imagine a population of creatures with different traits. In GAs, these creatures are potential solutions to a problem. Each solution is represented as a set of parameters or "genes."

2. Fitness Evaluation: In nature, creatures with beneficial traits have a higher chance of survival and reproduction. Similarly, in GAs, each solution is evaluated for its fitness based on how well it solves the problem. Solutions that perform better have a higher fitness score.

3. Selection: Just as in nature, where individuals with better traits are more likely to pass on their genes, in GAs, solutions with higher fitness have a better chance of being selected for the next generation. This mimics the natural selection process.

4. Crossover (Recombination): Similar to how offspring inherit a mix of traits from their parents, GAs combine the genes of selected solutions to create new solutions. This "crossover" mixes and matches the parameters of parent solutions.

5. Mutation: Occasionally, genetic material undergoes random changes in nature, leading to genetic diversity. In GAs, a small percentage of the population undergoes random changes (mutations) to introduce diversity in the gene pool.

6. Repeat: Steps 2 to 5 are repeated over multiple generations. Over time, the population evolves, and the solutions tend to improve in fitness. GAs keep iterating until a stopping condition is met (e.g., a solution is found, or a maximum number of generations is reached).

7. Optimal Solution: The goal of GAs is to find the best solution, which may be the fittest individual in the final generation or one of the best solutions encountered during the process.

In essence, genetic algorithms use principles of selection, recombination, and mutation to evolve and improve a population of potential solutions to a problem, similar to how biological evolution shapes species over time.

A user agent, also known as a "UA," is a term primarily associated with web browsers and web technology.
It refers to the software or application that acts on behalf of a user when interacting with web servers and websites.

User agents include web browsers (e.g., Google Chrome, Mozilla Firefox), web crawlers (used by search engines to index websites), and other software that accesses and displays web content. User agents identify themselves to web servers by sending a user agent string, which informs the server about the type and capabilities of the software making the request.

dss-
a manager deciding whether or not sanction a loan to a person
after looking at the db: cust credit history, income level, assests possessed

ess is for senior managers at strategic levels for dec making.
reporting tool, has a gui menu to access stuff from & create meaningful summaries for costing vs scheduling or reports drill down etc
assess cash flow, perf by charts plotting

erp-
integrates all business processes into one module thus increase accuracy. help in fais and office automation systems (the middle level actors or managers to schedule meetings or making docs) like college management system online. attendance marks etc
integrates all fns. single source for all depts. eg. tr wants to check for defaulters, or rankers. = hr, sales and marketing, inventory, purchase, engineering, productiom, finanace & accounting, crm (customer relationship management), scm (supply change management)

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customers have more power if they have alot of options

suppliers have more power if buyers have limited options

organizations try to build up strategies in correspondence w the porter's five forces model

Example: College Admissions at Harvard University

Harvard University has a limited number of spots available for its incoming class, and many highly qualified applicants seek admission. The admissions committee must decide whom to admit.

- **Utilitarian Approach**:
prefer those w higher grades, iq, etc

- **Rights Approach**:
everyone same opportunity

- **Fairness Approach**:
being fair, giving more opportunity to the unpriviledged

- **Common Good Approach**:
inclusive envi, sab type ke honge diversity ke liye.

1. **Types of Knowledge:**
   - **Explicit Knowledge:** Tangible and codified information, such as data, facts, and documented procedures.
   - **Tacit Knowledge:** Intangible and personal knowledge gained through experience, intuition, and know-how.

2. **Modes of Knowledge Conversion:**
   - **Socialization:** Sharing tacit knowledge through interpersonal interactions and observation.
   - **Externalization:** Converting tacit knowledge into explicit knowledge, often through documentation or models.
   - **Combination:** Combining and reorganizing explicit knowledge to create new knowledge.
   - **Internalization:** Learning by doing, where individuals internalize new knowledge through practice.

3. **Impact of Information Systems:**
   Information systems streamline operations, enhance decision-making, and enable global connectivity. They affect organizations by improving efficiency, decision quality, and competitiveness. In society, they influence communication, privacy, and access to information.

4. **Social Computing and Customer Service:**
   Social computing leverages social media and online communities to engage customers. It inspires customer service by enabling real-time communication, feedback collection, and personalization, fostering stronger customer relationships.

5. **Tools Augmenting SDLC:**
   - **Prototyping Tools:** Create interactive prototypes for early user feedback.
   - **Version Control Systems:** Manage code and document changes in collaborative development.
   - **Project Management Software:** Track and manage project tasks and resources.
   - **Automated Testing Tools:** Verify software functionality and quality.

6. **Types of CRM (Customer Relationship Management):**
   - **Operational CRM:** Focuses on customer-facing processes like sales, marketing, and service.
   - **Analytical CRM:** Analyzes customer data for insights and better decision-making.
   - **Collaborative CRM:** Facilitates interactions between the organization and customers to enhance relationships.

7. **MIS for Educational System:**
   - **Data Collection:** Gather information on students, teachers, and resources.
   - **Data Analysis:** Analyze academic performance, resource utilization, and other metrics.
   - **Reporting:** Generate reports for educators, administrators, and stakeholders.
   - **Student Information System:** Manage student records, attendance, and grades.
   - **Learning Management System:** Facilitate online learning and course management.
   - **Analytics Tools:** Provide insights to improve educational outcomes and resource allocation.