# Chapter 1:
# Review questions:

### 1. What is an information system? What are some of the ways information systems are changing our lives?

An information system is a set of interrelated components that collect, manipulate, store and disseminate data and information and provide feedback to meet an objective.
Information systems has made information flow and sharing of information between persons and/or other entities much simpler and streamlined.

### 2. How is data different from information? Information from knowledge?

- Data is raw facts.
- Information is a collection of facts organized in such a way that they have value beyond the facts themselves.
- Knowledge is the awareness and understanding of a set of information and ways that information can be made useful to support a specific task or reach a decision.

### 3. Describe the various types of data

- Alphanumeric data - Numbers, letters and other characters
- Image data - graphic images and pictures
- Audio data - sound, noise or tones
- Video data - moving images or pictures

### 4. What is the differences between efficiency and effectiveness?

Efficiency: Measure of what is produced divided by what is consumed.
Effectiveness: Measure of the extent to which a system attains its goals. Achieved goals divided by total goals.

### 5. What are the components of any information system?

- Input - Activity of gathering and capturing raw data
- Processing - Converting data into useful outputs
- Output - Production of useful information, usually in the form of documents and reports
- Feedback - Information from the system that is used to make changes to input or processing activities

**6. What is feedback? What are possible consequences of inadequate feedback?**

Important information could be lost.

**7. How is a system performance measured?**
Efficiency and effectiveness.
System performance standard - A specific goal, like reduce costs by x dollars, reduce paper usage by x%, etc.

**8. What is knowledge management system? Give an example.**

A system for managing knowledge in organizations for supporting creation, capture, storage and dissemination of information. Sharepoint and google docs are examples for document based KMS.

**9. What is a computer-based information system? What are its components?**

- Hardware
    - Consists of computer equipment used to perform input, processing, and output activities
- Software
    - Consists of the computer programs that govern the operation of the computer
- Database:
    - Organized collection of facts and information, typically consisting of two or more related data files
- Telecommunications, networks, and the Internet
    - The electronic transmission of signals for communications
- People
    - The most important element in most computer-based information systems
- Procedures
    - Includes strategies, policies, methods and the rules for using the CBIS

**10. Describe the characteristics of a decision support system.**
- decision support systems - those that assist user(s) in making a decision
- the interactive nature of decision support systems
- the nature of decision support systems which enable situations to support human decision making such as the use of
    - models
    - graphs
    - charts

**11. What is the difference between an intranet and an extranet?**

Internet - World's largest computer network, consisting of thousands of interconnected networks, all freely exchanging information

Intranet - Internal network that allows people within an organization to exchange information and work on projects

**12. What is m-commerce? Describe how it can be used.**

The ability to conduct commerce using a mobile device, such as a mobile phone or PDA. A good example now would be the ATB ticket system for bus tickets using mobile phones in Trondheim.

**13. What are the most common types of computer-based information systems used in business organizations today? Give an example of each.**

**14. Describe three applications of virtual reality.**

**15. What are computer literacy and information systems literacy? Why are they important?**

Computer literacy: Knowledge of computer systems and equipment and the ways they function

Information systems literacy: Knowledge of how data and information are used by individuals, groups, and organizations. This is important to know how to apply systems to business to increase revenue, reduce costs, increase efficiency, etc.

**16. What are some of the benefits organizations seek to achieve through using information systems?**

Increase revenue, reduce costs, increase information flow and/or availability, increase security.

**17. Identify the steps in the systems development process and state the goal of each.**

1. Systems Investigation
    a. Understand problem
2. Systems analysis
    a. Understand solutions

3. System design
    a. Select and plan best solution
4. Systems implementation
    a. Place solution into effect
5. Systems maintenance and review
    a. Evaluate results of solution

# Chapter 2:
# Review questions:

**1. What is the difference between a value chain and a supply chain?**

Value chain: Series (chain) of activities that includes inbound logistics and warehouse and storage
Supply chain: The link between value chains. Wiki says: A **supply chain** is a system of organizations, people, technology, activities, information and resources involved in moving a product or service from supplier to customer.

**2. What is customer relationship management?**

– Help companies manage all aspects of customer encounters
– Can get customer feedback to help design new products and services

**3. What role does an information system play in today's organizations?**

Bla bla bla

**4. What is reengineering? What are the potential benefits of performing a process redesign?**

Reengineering involves radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results.

**5. What is user satisfaction?**

Is the attitude of a user to the computer system he/she employs in the context of his/her work environments.

**6. What is the difference between reengineering and continuous improvement?**

Continuous improvement are gradual, continuous improvements, driven bottom-up, usually led by workers close to the business, are narrow in scope, usually focus on a small area and are routine actions. Data from IS is a guide for development team.

Reengineering are strong actions taken to solve a serious problem, driven by executives, done by external companies, cuts across several departments done to achieve major breakthroughs. IS is integral to the solution.

**7. What is the difference between technology infusion and technology diffusion?**

Diffusion: Measure of how widely technology is spread throughout an organization
Infusion: Extent to which technology permeates a department

**8. What is quality? What is total quality management(TQM)? What is Six Sigma?**

Quality: Ability of a product or service to meet or exceed customer expectations

Total quality management involves a keen awareness of customer need, adopting a strategic vision for quality, empowering employees, and rewarding employees and managers for producing high-quality products.

Six Sigma is a business management strategy, originally developed by Motorola. It is a statistical term that means products and services will meet quality standards 99,9997% of the time. In a normal distribution curve used in statistics, six standard deviations is 99,9997% of the area under the curve.

**9. What are organizational change and organizational learning?**

Learning: The adaptations to new conditions or adjustments based on experience and ideas over time.
Change: How for-profit and nonprofit organizations plan for, implement and handle change.

**10. List and define the basic organizational structures.**

- Traditional:
    - Hierarchy of decision making and authority flows from the strategic management at the top down to operational management and non-management employees.
- Flat:
    - An organizational structure with a reduced number of management layers.
- Empowerment
    - Giving employees and their managers more responsibility and authority to make

decisions, take cerain actions and have more control over their jobs.

- Project
  - A structure centered on major products or services.
- Team
  - A structure centered on work teams or groups
- Virtual
  - A structure that uses individuals, groups or complete business units in geographically dispersed areas; these groups can last for a few weeks or years, often requiring telecommunications and the internet

**11. Sketch and briefly describe the three-stage organizational change model.**

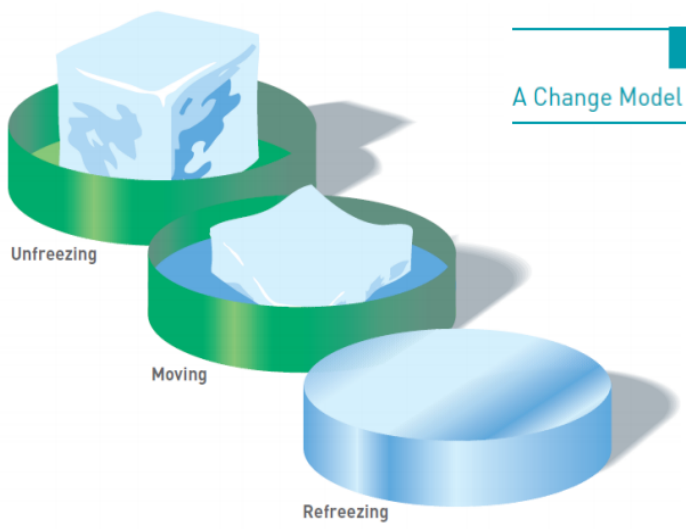


Figure 2.7
A Change Model

The three stages of the three-stage organizational change model is:
• Unfreezing: Ceasing old habits and creating a climate that is receptive to change
• Moving: Learning new work methods, behaviors, and systems
• Refreezing: Involves reinforcing changes to make the new process second nature, accepted, and part of the job

**12. What is downsizing? How is it different from outsourcing?**

Downsizing: – Reducing number of employees to cut costs.
Outsourcing: – Contracting with outside professional services.

**13. What are some general strategies employed by organizations to achieve competitive advantage?**

The five forces model:
• Rivalry among existing competitors:
– Industries with stronger rivalries tend to have more firms seeking competitive

advantage
• Threat of new entrants:
– Threat appears when:
• Entry and exit costs to an industry are low
• Technology needed to start and maintain a business is commonly available
• Threat of substitute products and services:
– The more consumers can obtain similar products and services that satisfy their needs, the more likely firms are to try to establish competitive advantage
• Bargaining power of customers and suppliers:
– When customers have a lot of bargaining power, companies increase their competitive advantage to retain their customers

Strategies:
– Cost leadership
– Differentiation
– Niche strategy
– Altering the industry structure
– Creating new products and services
– Improving existing product lines and service
– Growth in sales
– First to market
– Customizing products and services
– Hiring the best people
– Innovation

**14. List and describe popular job-finding strategies.**

Developing an online résumé can be critical to finding a good job
• Job search approaches:
– On campus visits
– Referrals from professors, friends, and family members
– The Internet:
• Online job sites
• Company Web sites
• Social networking sites
• Blogs

**15. Define the term “productivity”. How can a company best use productivity measurements?**

• A measure of output achieved divided by input required
• Higher level of output for a given level of input means greater productivity
• Lower level of output for a given level of input means lower productivity

• Productivity = (Output / Input) × 100%

**16. What is on-demand computing? What two advantages does it offer to a company?**

– Also called on-demand business or utility computing
– Rapidly responding to the organization's flow of work as the need for computer resources varies

**17. What is the total cost of ownership?**

The sum of all costs over the life of the information system

**18. Describe the role of the CIO.**

Chief information officer (CIO): Employs the IS department's equipment and personnel to help the organization attain its goals.

## Chapter 8:
## Review questions:

**1. What is buy-side e-commerce? What is sell-side e-commerce?**

• An organization will use:
  – Buy-side e-commerce to purchase goods and services
  – Sell-side e-commerce to sell products to its customers

**2. State two reasons for the steady growth of online purchases as a percent of total retail sales.**

Shoppers find that many goods and services are cheaper when purchased online.
They can easily compare to other similar goods and services. WWW is more accessible.

**3. What is a key benefit for producers of using B2C e-commerce to sell directly to the consumer, thus eliminating middlemen?**

It squeezes costs and inefficiencies out of the supply chain. This can lead to higher profits and/or lower costs for the consumer.

**4. Identify the six stages consumers experience in the sales life cycle that must be supported by a successful e-commerce system.**

1. Search for and identify items for sale
2. Select those items and negotiate prices, terms of payment and delivery date
3. Send an order to the vendor to purchase the items
4. Pay for the product or service
5. Obtain product delivery
6. Receive after-sale support

**5. Identify three key challenges that an organization must overcome to convert its business processes from the traditional form to e-commerce processes.**

- Defining an effective e-commerce model and strategy
- Dealing with consumer privacy concerns
- Overcoming consumers' lack of trust
- Overcoming global issues

**6. What is identity theft? Provide several tips for online shoppers to avoid identity theft.**

Someone using your personally identifying information without your permission to commit fraud

**7. Outline at least three specific trust-building strategies for an organization to gain the thrust consumers.**

- Provide brand-endorsements from well-known experts or respected individuals
- Demonstrate that the company has been in business for a long time.

**8. What is mobile commerce? How big is the mobile commerce market in the U.S?**

Commerce conducted on mobile devices. Grew from $369 million in sales in 2008 to $1.2 billion in 2009.

**9. What is electronic retailing? What is an electronic exchange?**

E-tailing: Direct sale from business to consumer through electronic storefronts

Electronic exchange: Electronic forum where manufacturers, suppliers, and competitors buy and sell goods, trade market information, and run back-office operations

**10. What is market segmentation? What has happened recently that makes it easier for B2B marketers to perform market segmentation?**

Market segmentation: Identification of specific markets to target them with advertising messages
To make it easier, Nielsen, the marketing and media corporation has developed its Business-Facts database that provides information for more than 13 million businesses

**11. What is the Wireless Application Protocol? Is it universally accepted? Why or why not?**

Standard set of specifications for Internet applications that run on handheld, wireless devices. Today mostly used in Japan. Never took off in US and disappointed users in Europe. Today mostly replaced by handheld devices using HTML.

**12. Why is it necessary to continue to maintain and improve an existing Web site?**

To keep up with competition and technological advances so people will keep visiting your site.

**13. What role to digital certificates and certificate authorities play in e-commerce?**

Certificates og certificate authorities har en veldig viktig rolle innen e-commerce. Elektronisk betaling er en nøkkelkomponent innen e-commerce infrastruktur, og dette må være veldig sikkert. Et digitalt sertifikat er et vedlegg i en epost eller et et dataelement i en webside som verifiserer og identifiserer senderen. Certificate authority er en tredjeparts organisasjon som deler ut sertifikater.

**14. Briefly explain differences among smart, credit, charge, debit, and p-cards?**

- *Credit card:* Har en beløpsgrense basert på brukerens credit-historie. Brukeren betaler tilbake beløpet i etterkant, men må betale renter dersom dette ikke skjer raskt nok.
- *Charge card:* Nesten det samme som kredittkort, men har ikke beløpsgrense.
- *Debit card:* Som et kredittkort, men trekker pengene med en gang fra konto.
- *Smart card:* Som kredittkort, men med microchip for bedre sikkerhet.
- *P-Card:* Et kort som vanligvis gies til utvalge ansatte som kan inneholde en beløpsgrense eller andre restriksjoner. Betalingsoversikten blir overvåket pga økende risiko for uautorisert bruk.

**15. Because e-commerce and m-commerce systems are global systems, what are some of the global challenges that they face?**

– Cultural challenges
– Language challenges
– Time and distance challenges
– Infrastructure challenges
– Currency challenges
– State, regional, and national law challenges

**16. Identify the key elements of the technology infrastructure required to successfully implement e-commerce within an organization.**

## Chapter 9
## Review questions:

**1. Enterprise information systems employ a single database of key data that can be shared by all. What problem associated with the use of multiple TPSs does this eliminate?**

**2. What basic transaction processing activities are performed by all transaction processing systems?**

- **Data collection:** capturing and gathering all data necessary to complete the processing of transactions.
- **Data editing:** the process of checking data for validity and completeness.
- **Data correction:** the process of reentering data that was not typed or scanned properly.
- **Data manipulation:** the process of performing calculations and other data transformations related to business transactions.
- **Data storage:** the process of updating one or more databases with new transactions.
- **Document production:** the process of generating output records and reports.

**3. Provide an example for which the use of a batch processing system to handle transactions is appropriate. Provide an example for which the use of online transaction processing is appropriate?**

Batch: Healthcare claims, payroll, billing
Online: Order entry, dispatching, trip planning, etc

**4. What special needs does an SME have in selecting an ERP system that is different from a large organization?**

Easy to install and operate
Low cost

**5. Identify four complications that multinational corporations must address in planning, building and operating their ERP systems.**

1. Different languages and culture
2. Disparities in IS infrastructure
3. Varying laws and customs rules
4. Multiple currencies

**6. How does materials requirement planning support the purchasing process? What are some of the issues and complications that arise in materials requirement planning?**

**Materials requirement planning** (MRP) determines the amount and timing for placing raw material orders with suppliers. The types and amount of raw materials required to support the planned production schedule are determined by the existing raw material inventory and the "bill of materials", a sort of "recipe" of ingredients needed to make each item. **Purchasing** uses the information from **MRP** to place orders for raw materials with qualified suppliers.

**7. What is the role of a CRM system? What sort of benefits can such a system produce for a business?**

The role of a Customer Relationship Management (CRM) system is to help a company manage all aspects of customer encounters, including marketing and advertising, sales, customer service after the sale and programs to keep loyal customers.
Benefits can be improved customer satisfaction, increased customer retention, reduced operating costs and the ability to meet customer demand.

**8. What are the business processes included with the scope of supply chain management?**

**Supply chain management** (SCM) includes the planning, execution, and control of all activities involved in raw material sourcing and procurement, conversion of raw materials to finished products, and the warehousing and delivery of finished product to customers.

**9. Why is the general ledger application key to the generation of accounting information and reports?**

The general ledger is the main accounting record of a business.

**10. What is the difference between managerial and financial accounting?**

**Financial accounting** consists of capturing and recording all the transactions that affect a company's financial state and then using these documented transactions to prepare financial statements to external decision makers, such as stockholders, suppliers, banks, and government agencies. These financial statements include the profit and loss statement, balance sheet, and cash flow statement.
**Managerial accounting** involves using "both historical and estimated data in providing information that management uses in conducting daily operations, in planning future operations, and in developing overall business strategies".
**Managerial accounting** provides data to enable the firm's managers to assess the profitability of a given product line or specific product, identify underperforming sales regions, establish budgets, make profit forecasts, and measure the effectiveness of marketing campaigns.

**11. What is the role of the general ledger system in keeping track of the financial transactions of the organization? How is it used?**

**12. List and briefly describe the set of activities that must be performed by the sales ordering module of an ERP system to capture a customer sales order.**

The key features of a CRM system include the following:

- contact management
- sales management
- customer support
- marketing automation
- analysis
- social networking
- access by smartphones
- import contact data

# Chapter 10

## Review questions:

**1. What is a satisficing model? Describe a situation when it should be used.**

A model that will find a good, but not necessarily the best, solution for a problem.

Satisficing is used when modeling the problem properly to get an optimal decision would be too difficult, complex, or costly.

**2. What is the difference between intelligence and design in decision making?**

The first stage in the problem-solving process is the **intelligence stage**. During this stage, you identify and define potential problems or opportunities. In the **design stage**, you develop alternative solutions to the problem and evaluate their feasibility.

**3. What is the difference between a programmed decision and a nonprogrammed decision? Give examples of each.**

Programmed decisions are made using a rule, procedure, or quantitative method. Nonprogrammed decisions deal with unusual or exceptional situations.

**4. What are the basic kinds of reports produced by an MIS?**

A *management information system* (MIS) is an integrated collection of people, procedures, databases, and devices that provides managers and decision makers with information to help achieve organizational goals.There are some basic reports produced by an **MIS**:

- **Scheduled report:** a report produced periodically, such as daily, weekly, or monthly.
- **Key-indicator report:** a kind of SR. A summary of the previous day's critical activities, typically available at the beginning of each workday.
- **Demand report:** a report developed to give certain information at someone's request rather than on schedule.
- **Exception report:** a report automatically produced when a situation is unusual or requires management attention.
- **Drill-down report:** a report providing increasingly detailed data about a situation.

**5. How can a social networking site be used in a DSS?**

*(Obs: Egen tanke)* Man kan hente inn mye objektiv data fra andre parter til hjelp i beslutningsprosesser.

**6. What are the functions performed by a financial MIS?**

A *financial MIS* provides financial information for executives and for a broader set of people who need to make better decisions on a daily basis. Most *financial MIS*s perform the following functions:

- integrate financial and operational information
- provide easy access to data for users
- make financial data immediately available

- enable analysis of financial data along multiple dimensions
- analyze historical and current financial activity
- monitor and control the use of funds over time
- profit/loss and cost sytems
- Auditing
- uses and management of funds

**7. Describe the functions of a manufacturing MIS.**

- *Design and engineering:* manufacturing companies often use computer-aided design with new or existing products.
- *Master production scheduling:* scheduling production and controlling inventory are critical for any manufacturing company.
- *Inventory control:* most techniques are is used to minimize inventory costs.
- *Process control:* managers can usa a number of technologies to control and streamline the manufacturing process.
- *Quality control and testing:* a process that ensures that the finished product meets the customers' needs.

**8. List and describe some other types of MISs.**

- *Marketing MIS:* an information system that supports managerial activities in product development, distribution, pricing decisions, promotional effectiveness, and sales forecasting.
- *Human resource MIS:* an information system that is concerned with activities related to previous, current, and potential employees of an organization, also called a personnel MIS.
- *Accounting MIS:* an information system that provides aggregate information on accounts payable, accounts receivable, payroll, and many other applications.
- *Geographic information system* (GIS): a computer system capable of assembling, storing, manipulating, and displaying geographic information, that is, data identified according to its location.

**9. What are the stages of problem solving?**

The stages of problem-solving include intelligence, design, choice, implementation, and monitoring.

**10. What is the difference between decision making and problem solving?**

*Decision making* is the first part of problem solving, including three stages: intelligence, design, and choice. *Problem solving* includes and goes beyond decision making. It also includes the implementation stage, when the solution is put into effect.

**11. How can location analysis be used in a marketing research MIS?**

Man kan promotere riktig reklame til personer når personene befinner seg ved de respektive stedene. F.eks kan en reklamere for en burger på en burgerrestaurant på telefonen hvis vedkommende er rett i nærheten.

**12. Describe the difference between a structured and an unstructured problem and give example of each.**

Structured problem: Are repetitive and routıne decisions and have a definite procedure for handling them.
Structured Decisions do not have to be treated as if they are new .

Unstructured problems: Nonroutine decisions in which the decision maker must provide judgment. Evaluation, and insights into the problem definition; There is no agreed upon procedures for making such decisions.

**13. Define *decision support system.* What are its characteristics?**

Dette er en organisert samling av personer, prosedyrer, software, databaser og enheter som brukes til å hjelpe å ta beslutninger som løser problemet.

Karakteristikker:

- Raskt tilgang til informasjon
- Behandler MYE data fra forskjellige kilder
- Tilbyr rapporter og presentasjoner når det trengs
- Tekstlig og grafisk fremstillinger
- Støtter “drill-down”-analyse

**14. Describe the difference between a data-driven and a model-driven DSS?**

Data-driven: Kvalitativ analyse basert på organisasjonens database.

Model-driven: Kvantitativ og matematiske analyser.

**15. What is the difference between a what-if analysis and goal-seeking analysis?**

**16. What are the components of a decision support system?**

1. Database
2. Model base
3. Dialogue manager**:** user interface that allows decision makers to:
   – Easily access and manipulate the DSS
   – Use common business terms and phrases
4. Access to the Internet, networks, and other computer-based systems

**17. State the objective of a group support system(GSS) and identify three characteristics that distinguish it from a DSS.**

GSS skal (som DSS) letteregjøre beslutningsprosesser, men her med fokus på gruppebsamarbeid og gruppebeslutninger.

Tre GSS-spesifikke karakteristikker:

1. Tillate anonym input
2. Reduksjon av negative gruppehandlinger (alle skal f.eks få være like synlige)
3. Parallell og sammenslått kommunikasjon (istedenfor at kun en og en må prate)

**18. How can social networking sites be used in a GSS?**

*(Obs: Egen tanke)* Samme som i DSS: Man kan hente inn mye objektiv data fra andre parter til hjelp i beslutningsprosesser.

**19. How does an executive support system differ from a decision support system?**
DSS: An organized collection of people, procedures, software, databases, and devices working to support managerial decision making.

ESS: Specialized decision support systems designed to meet the needs of senior management.
WIKIPEDIA: An *executive information system* (EIS) is a type of management information system intended to facilitate and support the information and decision-making needs of senior executives by providing easy access to both internal and external information relevant to meeting the strategic goals of the organization. It is commonly considered as a specialized form of decision support system (DSS).

**20. Identify three fundamentals uses for an executive support system.**

# Chapter 11:

**1. What is a knowledge management system?**

An organized collection of people, procedures, software, databases and devices used to create, store, share and use the organization's knowledge and experience.

**2. What is a community of practice?**

A group of people dedicated to a common discipline or practice, such as open-source software, auditing, medicine or engineering.

**3. What is chief knowledge officer? What are his/her duties?**

Top-level executive who helps the organization work with a KMS to create, store and use knowledge to achieve organizational goals. The CKO is responsible for the organization's KMS and typically works with other executives and vice presidents.

**4. What is a vision system? Discuss two applications of such a system.**

Also called "perceptive system". A system that approximates the way a person sees, hears and feels object. Vision system only sees.

**5. What is natural language processing? What are the three levels of voice recognition?**

NLP allows a computer to understand and react to statements and commands made in a "natural" language, either spoken or written.

**6. Describe three examples of the use of robotics. How can a microrobot be used?**

Painting and/or assembling cars
Bomb disarming
Surgery
Microrobot: monitor body in person's bloodstream

**7. What is a learning system? Give a practical example of such a system.**

A system that can change how it acts based on trial and error or other feedback.

**8. What is neural network? Describe two applications of neutral networks.**

An AI network that simulates how the brain functions. Can be used to predict prices of goods, stocks or weather. Can recognise patterns in how a customer behaves and what purchases they do.

**9. Under what conditions is the development of an expert system likely to be worth the effort?**

If it can do any of the following:

- Provide a high potential payoff or significantly reduce downside risk
- Capture and preserve irreplaceable human expertise
- Solve a problem that is not easily solved using traditional programming techniques
- Develop a system more consistent than human experts
- Provide expertise needed at a number of locations at the same time or in a hostile environment that is dangerous to human health
- Provide expertise that is expensive or rare
- Develop a solution faster than human experts can
- Provide expertise needed for training and development to share the wisdom and experience of human experts with many people

**10. Identify the basic components of an expert system and describe the role of each.**

1. Knowledge base
    a. Stores all relevant information, data, rules, cases and relationship that the expert system uses
2. Inference Engine
    a. Seeks information and relationships from the KB to provide answers, predictions and suggestions similar to the way a human expert would
3. Explanation facility
    a. Allows a user or decision maker to understand how the expert system arrived at certain conclusions or results
4. Knowledge acquisition facility
    a. Provide a convenient and efficient means of capturing and storing all components of the KB.
5. User interace
    a. Make expert system easier for users and decision makers to develop and use

**11. Describe several business uses of multimedia.**

- Graphics, video, sound and text to communicate with customers and inside the organization

**12. What is virtual reality? Give three examples of its use.**

A virtual representation of a real or fantasy world or environment in a 3D computer made environment.

1. Treatment of anxiery
2. Education (historical places)
3. Entertainment

**13. Expert systems can be build based on rules or cases. What is the differences between those two?**

Rules are IF-THEN statements, cases are examples of other similar happenings and the conclusion from those cases.

**14. Describe the roles of the domain expert, the knowledge engineer, and the knowledge user in expert systems.**

Domain Expert: Has expertise within the domain of the expert system.
Knowledge Engineer: Has experience and knowledge about creating expert systems.
Knowledge User: The end-user of an expert system

**15. What is informatics? Give three examples.**

Specialized system that combines traditional areas like medicine or science with computer systems and technology. Examples: Bioinformatics, Geoinformatics, etc.

**16. Describe game theory and its use.**

Game theory er bruk av informasjonssystemer til å utvikle konkurrerende strategier for mennesker, organisasjoner eller til og med land. Det er en matematisk modell med et sett med spillere, et sett med trekk (eller strategier), og payoffs for hver kombinasjon av strategier. Det brukes til å forutse hva som vil gi størst payoff i forhold til hvilke trekk eller strategier du velger å kombinere.

**17. Identify three special interface devices developed for use with virtual reality systems.**

Head mounted display: Et display som plasseres på hodet foran øynene slik at du ser en virtuell verden.
Haptic interface: følelse av berøring og andre fysiske ting som lukt og lignende.
CAVE: Et kubeformet rom med spesielle skjermer på hver vegg.

**18. Identify and briefly describe three specific virtual reality applications.**

Medisin: Virtually Better – Et system for behandling av nerve-sykdommer. Navigerer personene gjennom terreng som får tankene deres bort fra smerten.

Medisin: Second Life – Ble brukt til å konstruere et virtuelt sykehus da man startet å bygge et multimillion-dollar sykehus. Skulle vise stakeholderne mulighetene i det nye systemet.

Underholdning: CGI, computer generated image technology – Brukt i mange filmer som Avatar, Finding Nemo. Genererer for eksempel 3D-effekter.

**20. Give three examples of other specialized systems.**

RFID – Radio frequency identification er små chips som kan inneholde informasjon som raskt kan scannes. Kan for eksempel brukes til å merke varer i en container slik at man raskt for oversikt over innholdet.

Eagle eyes – Et system for å overkomme fysiske handikap. Man kan styre et elektronisk system med hodet eller øynene.

Segway – Elektronisk scooter som bruker programvare, gyro og sensorer for å frakte folk.

# Kap.12 System Development: Investigation and Analysis

**1. What is an IS stakeholder?**

Dette er folk som på en eller annen måte har noe risiko/verdier i utviklingprosjektet.

**2. What is the goal of IS planning? What steps are involved in IS planning?**

Målet er å omforme organisasjonens mål fra strategiplanen om til spesifikke systemutviklings-aktiviteter.

Stegene i IS-planleggning:

1. Strategic plan
2. Develope overall objectives

3. Identify IS projects
4. Set priorities and select projects
5. Analyze resource requirements
6. Set schedules and deadlines
7. Develop IS planning document

**3. What are the typical reasons to initiate systems development?**

1. Problemer med eksisterende system
2. Ønsker å utnytte nye muligheter
3. Øke konkurransefordelen
4. Vekst i organisasjonen
5. Effektivisering

**4. What is the difference between creative analysis and critical analysis?**

Creative analysis

Utforske nye fremgangsmåter for allerede eksisterende problemer

Critical analysis

En objektiv spørsmålsetting om system-elementene er satt sammen og brukt på de mest effektive måtene i systemet.

**5. What is the difference between a programmer and a systems analyst?**

Programmer

En spesialist med ansvar for å utvikle eller modifisere programmer slik at de tilfredstiller brukeren.

System Analyst

En profesjonell som er spesialisert i analyse og designing av business-systemer.

**6. What is the difference between a Gantt chart and PERT?**

Gantt-diagramm

Et grafisk verktøy som brukes til å planlegge, monitorere og koordinere prosjekter.

PERT

(Program Evaluation and Review Technique) er en formalisert fremgangsmåte for å utvikle en prosjektplan.

**7. What is the difference between systems investigation and system analysis? Why is it important to identify and remove error early in the systems development life cycle?**

System Investigation

Hensikten er å identifisere potensielle problemer og muligheter og vurdere dem i lys av målene til organisasjonen.

System Analysis

Systemanalyse er neste steget i å svare på spørsmålet "*hva må systemet gjøre for å løse problemet?*". Samlet fokus ligger på innsamling av data, avgjøre krav for det nye systemet og vurdere alternativ. Utfallet av analysen er en prioritert list med systemkrav.

Det er viktig å oppdage error tidlig i sykelen for å hindre store økonomiske tap, tid og ressurser brukt.

**8. What is end-user systems development? What are the advantages and disadvantages of the end-user system development?**

End-user system development

Dette er ethvert systemutviklingsprosjekt der det primært blir lagt inn innsats fra business managers og brukere.

Fordelen er at de lettere ser hvilke personlige mål som ønskes tilfredsstilt, men ulempen er at de ikke ser alt helt objektivt. I tillegg må de bruke mye av tiden til utvikling når organisasjonen har hovedfokus på andre ting.

**9. List factors that have a strong influence on project success.**

- Innvolvering av brukere
- Støtte fra toppledelse

- Klare mål for organisasjonen - mindre endringer underveis
- Tidlig avdekke problemer
- God planlegging

**10. What is the purpose of systems analysis?**

Hensikten er å finne svaret på: *"Hva systemet må gjøre for å løse problemet".*

**11. What are the steps of object-oriented systems development?**

1. Designing the system
2. Programming or modifying modules
3. Evaluation by users
4. Periodic review and modification

**12. Define the different types of feasibility that systems development must consider.**

Technical feasibility
Kan vi få tak i det tekniske som vi trenger?

Economic feasibility
Gir det økonomiske bilde noe mening? Vil vi tjene på dette?

Legal feasibility
Er det noe lover/regelverk som kan bli et problem?

Operational feasibility
Har vi mulighet til å sette dette prosjektet til verks?

Schedule feasibility
Klarer vi å fullføre dette prosjektet innen rimelig tid?

**13. What are the objectives of agile development?**

Hensikten er smidig utvikling av systemer gjennom iterativ og inkrementell utvikling. Denne smidigheten gjør at dokumentasjonen bygger seg gradvis opp. Testing og avdekking av feil kan gjøres tidlig, og så også fiksing av disse.

**14. What is the result or outcome of system analysis? What happens next?**

Det primære utfallet av en systemanalyse er en prioritert luste med systemkrav. Etter dette har blitt gjennomført begynner man på utviklingsprosessen.

# Kap.13

# Kap.14

**1. What does the CAN-SPAM Act specifically allow?**

CAN-SPAM tillater spam så lenge de følger regler om innhold, hvordan de sender og at mottaker kan unsubscribe.

**2. What is a potential danger of using spam filters?**

Det kan hende at spamfilteret blokkerer mailer som ikke skal blokkeres. Mange moderne spamfilter baserer spamfiltrene på hva du tidligere har arkivert eller markert som spam, og dermed kan andre mail bli markert som spam senere uten at du vil det. Spamfilter kan også kreve at du godkjenner mail fra folk som ikke er i kontaktlisten din, noe som kan være problematisk dersom du jobber i kundeservice der du stadig har kontakt med nye personer.

**3. According to the 2009 FBI Internet Crime Report, how much did computer crime increase between 2008 and 2009?**

I 2009 rapporterte FBI om 336.655 klager på internett-kriminalitet. Dette var en økning på 20% fra 2008.

**4. What is social engineering?**

Social engineering  går ut på å bruke sosiale evner for å få databrukere til å gi deg informasjon som tillater hackere å aksessere et informasjonssystem eller dens data.

**5. Briefly discuss the seriousness with which the U.S. federal government views cyberterrorism.**

U.S. federal government har opprettet ”National Infrastructure Protection Center”, som senere ble underlagt en avdeling i ”Homeland Security Department”. Suksessfulle cyberangrep mot bank, vannsystemer, nødberedskap, government og lignende kan

skape store sammenbrudd i samfunnet.

**6. How do you distinguish between a hacker and a criminal hacker?**

En hacker er en person som bruker teknologi, og bruker tid på å lære og bruke datasystemer. En kriminell hacker, også kalt cracker er en datakjent person som prøver å begy uautorisert aksess til systemer for å stjele passord, korrupere filer, eller overføre penger.

**7. Why are insiders one of the biggest threats for company computer systems?**

Insiders er den største trusselen fordi de har ekstra kunnskap. De kan login Ider, passord og prosedyrer som avslører innbrudd.

**8. What is a virus? What is a worm? How are they different?**

Et virus er et en fil som er kapabel til å angripe disker eller andre filer, og replikerer seg selv automatisk uten brukers aksept. En orm er et program som replikerer seg selv, men ulikt virus så sprer den seg ikke til andre programfiler. En orm kan sende kopier til andre maskiner i nettverket.

**9. What is phishing? What actions can you take to reduce the likelihood that you will be a victim of this crime?**

Phising er når man lager en fake nettside for å få folk til å oppgi personlig informasjon. Vishing er det neste det samme, men istede for å fake nettsider, så faker man telefonsamtaler. Man ringer gjerne med en fake ID slik at mottaker tror det er legitimt, og man prøver å fiske etter personlig informasjon som personnummer, kontonummer etc. Man skal aldri oppgi sensitive personalia, passord, pin-koder over telefon.

**10. What is filtering software? Why would organizations use such a software?**

Filtering software er programvare som filtrerer ut nettsider, nett-tjenester eller hva du har lov til å sende fra datamaskinen (personlig informasjon). Dette kan være filter for å hindre barn i å logge på porno! Organisasjoner kan også implementere slike filtre slik at ansatte ikke kan besøke nettsteder som ikke er jobbrelatert.

**11. What does intrusion detection software do? What are some of the issues with the use of this software?**

Et innbruddssystem holder oversikt over system- og nettverksresurser, og varsler når det tror det har oppdaget et mulig innbrudd. For eksempel ved gjentatte mislykkede innloggingsforsøk. Problemet er at det ofte er veldig mange falske alarmer.

**12. What is the difference between a patent and a copyright?**

Copyright beskytter kunst, bøker, filmer, musikk, verk som har en ”forfatter”. Patent beskytter prosesser, maskiner, objekter som er laget av mennesker eller maskiner, nye bruksområder for produkter.

**13. What is a John Doe Lawsuit? How would such a lawsuite arise?**

En John Doe Lawsuit er når man oppretter søksmål mot noen man ikke vet hvem er. For eksempel dersom noen har opprettet falske epostkontoer og sendt deg spam. Da kontakter man de lokale ISPene som gir deg IP-addresser, hvor de bor osv.

**14. What is ergonomics? How can it be applied to office workers?**

Ergonomi er lære om design av maskiner, produkter og systemer som maksimerer sikkerhet, komfort og effektivitet for menneskene som bruker dem. Dette kan være justerbare stoler og bord, at skjermen er i riktig høyde og lignende.

**15. What specific actions can you take to avoid spyware?**

Bruke antivirus.

**16. What is a code of ethics? Give an example.**

A code of ethics is a set of guidelines which are designed to set out acceptable behaviors for members of a particular group, association, or profession. Many organizations govern themselves with a code of ethics, especially when they handle sensitive issues like investments, health care, or interactions with other cultures. In addition to setting a professional standard, a code of ethics can also increase confidence in an organization by showing outsiders that members of the organization are committed to following basic ethical guidelines in the course of doing their work.