EXM_prep_TDT4175_

H19
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Basics

What are the differences between data, information, and knowledge?

Data: Raw facts, e.g: numbers, letters, video, sounds, etc.

Information: Data transformed/arranged in a meaningful manner become information, i.e information is a collection of facts organized in such a way that they have value beyond the facts themselves. E.g. number of hours an employee has worked for a specific month.

Knowledge: Gained from the information. It is awareness and understanding of a set of information held by a human. E.g. what an employee is capable of doing by working a number of hours for a specific month.

Which types of gain can IT use give?

- Ensure personal gain
- Ensure organizational (business) gain
- Ensure societal gain
- Ensure economic gain

What are the stages of problem-solving?

- Intelligence
- Design
- Choice
- Implementation
- Monitoring

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

- Establishing a niche market
- Reduce cost
- Low price

Describe Proter "5 Powers" model

Porters Five Forces Model

RIVALRY AMONG EXISTING COMPETITORS:
- Number of competitors
- Diversity of competitors
- Industry concentration
- Industry growth
- Quality differences
- Brand loyalty
- Barriers to exit
- Switching costs

THREAT OF NEW ENTRANTS

THREAT OF NEW ENTRANTS:
- Barriers to entry
- Economies of scale
- Brand loyalty
- Capital requirements
- Cumulative experience
- Government policies
- Access to distribution channels
- Switching costs

BARGAINING POWER OF SUPPLIERS

RIVALRY AMONG EXISTING COMPETITORS

BARGAINING POWER OF BUYERS

BARGAINING POWER OF SUPPLIERS:
- Number and size of suppliers
- Uniqueness of each supplier's product
- Focal company's ability to substitute

THREAT OF SUBSTITUTE PRODUCTS:
- Number of substitute products available
- Buyer propensity to substitute
- Relative price performance of substitute
- Perceived level of product differentiation
- Switching costs

THREAT OF SUBSTITUTE PRODUCTS

BARGAINING POWER OF BUYERS:
- Number of customers
- Size of each customer order
- Differences between competitors
- Price sensitivity
- Buyer's ability to substitute
- Buyer's information availability
- Switching costs

Computer-based information System

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

A computer-based information system consists of hardware, software, databases, networks (telecommunications), people and procedures that are configured to collect, store, manipulate, and process data into information.

E-commerce

Which different types of e-commerce are there? Give an example for each type you distinguish.

- Business to Customer (B2C)
    - E.g. Amazon, BestBuy
- Business to Business (B2B)
    - E.g. Apple selling phones to telecommunication businesses such as Telia
- Customer to Customer (C2C)
    - E.g. Airbnb, Finn.no
- Government to Business or Government to Customer (G2B/G2C/e-Government)
    - E.g. Government providing service for tax payment

Describe the multistage model of e-commerce. Explain how a well-known e-commerce solution (for example Amazon) has implemented the stages you distinguished in the previous task.

A successful e-commerce system addresses the stages that customers experience in the sales life cycle. It applies to B2B and B2C.

The stages: Buyer, 1. Search and Identification, 2. Selection and negotiation, 3. Purchasing, 4. Product and service delivery, 5. After-sales service.

E.g. Amazon enables both "normal" customers and business customers to buy from Amazon.

Knowledge Management System

What are the characteristics of a knowledge management system?

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

Decision Support System

What is a decision support system and what are its characteristics?

Decision Support System is an organized collection of people, procedures, software, databases and devices to support problem-specific decision making. They can support structured and semi-structured decisions.
->They often have a database containing information on the specific problem, e.g. medical data on a patient, and a model base that encodes the knowledge to be applied in the decision making.

A DDS sifts through and analyzes massive amounts of data, compiling comprehensive information that can be used to solve problems and in **decision-making**.

Two main components:
-   problem data
-   model base.

How does an executive support system differ from a support system?

It is used by higher management, operating at the strategic level. It focuses on representing so-called "what-if" scenarios. The focus of such systems is to show what the effects of a decision are, not so much on designing/suggesting the decision.

Business process Management

What is the difference between reengineering and continuous improvement?

Reengineering involves radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results. Continuous improvement, on the other hand, aims to do improvements in small and gradual changes, often motivated by the intention to improve one or more performance indicators.

What is reengineering and what are the potential benefits of performing a process redesign?

Reengineering is completely changing the way processes are organized and the way organizations are structured. Realizing break thoughts that are difficult to realize using continuous improvements.

Supply Chain

What are the business processes included within the scope of supply chain management?

*Encompasses all the activities required to get the **right product** into the **right consumer's hands** in the **right quantity** at the **right time** and at the **right cost**.*

Planning, execution, and control of all activities involved in raw material sourcing and procurement, conversion of raw material to finished products, and the warehousing and delivery of finished products to customers.

Supply chain management (SCM) is a system that includes planning, executing, and controlling all activities involved in:
- Sourcing and procurement of raw materials
- Converting raw materials to finished products

- Warehousing and delivering the finished product to customers

Transaction Processing Systems

What basic transaction processing activities are performed by all transaction processing systems?

- Data collection
- Data editing
- Datta correction
- Data manipulation
- Data storage
- Document production and reports

Enterprise Architecture

Which two problems were addressed by the field of Enterprise Architecture when it was established?

1. System complexity: Organizations were spending more and more money on building IT systems.
2. Poor business alignment: Organizations were finding it more and more difficult to keep those expensive IT systems aligned with business needs.

Identify the four types of architectures that are part of TOGAF's enterprise architecture framework. Give a brief description of each type.

- Business Architecture: Business activities:
    - Processes, assets and organization structure
- Application Architecture: Blueprint:
    - Individual application system to be deployed, their interactions, and their relationships to core business processes of the organization.
- Data/Information Architecture: Information value chain:

- - Key information artefacts, information flows
- Technology Architecture: Infrastructure and technology platforms:
    - Enabling rapid engineering, solutions development and technical innovation.

Describe the area of Enterprise Architecture, mentioning main frameworks and modelling approaches

- An EA is a formal description of an enterprise, a detailed map of the enterprise at component level to guide its changes.
- Provides the structure of an enterprise's components, their inter-relationships, and the principles and guidelines governing their design and evolution over time.
- EA is meant to bridge business and IT strategy.

- Important frameworks:
    - Zachman providing the taxonomy of possibly relevant models
    - TOGAF presenting a process for architecture development (ADM).

- EA can be divided into different sub-architectures:
    - Business Architecture
    - Application Architecture
    - Data Architecture
    - Technology Architecture.

- Archimate is a modelling approach supporting modelling according to the different sub-architectures that are described in TOGAF, in a way making it possible to integrate the different sub-architectures.

Modelling

Give at least three reasons for the use of modelling in Information Systems Development

- Cheaper to make a model than what the model models
- Overview of how the different parts of the system interact
- View of potential errors of potential solutions
- **Communication**
- **Sensemaking**
- **Quality assurance**
- **Model Deployment**

Process Mining

Process mining is an example of data science with the objective to use data from information systems to get insight into business processes. Which kind of data is central in process mining?

Event log containing time-stamped events related to cases.

Information quality is of critical importance in process mining. If the information used is of low quality, so will be the acquired insight into the processes. Discuss at least two dimensions of valuable information that are of critical importance to process mining.

There are diverse possibilities here but the most obvious dimensions are: <u>accurate</u> and <u>complete</u>.