Information systems, strategy and governance:

# Business Information systems

You need three components to create a system (see system les 1), difference with a business information system

* Elements
* Relations: collect, search, process, store and distribute information.
* Purpose: control decision making processes and coordination.

Input of the system is raw data without context and the system will process this to create relevant information for the business.

A business information system is a carbon copy of a business system but they don’t exist physically anymore, they exist in IT.

* The copy of the business system must be perfect or the business information system will fail!

# Types of information systems

In many organizations are a lot of business information systems separate from each other.

* Example: Sales and Production

## Management level

* Strategic: Long term decisions
* Tactical: Mid long term decisions (more internal)
* Operational: Daily operations and decisions with immediate results.

## Operational information systems

This is typically information from inside the company (see slides for info)

Example: Online Transaction system: Monthly pay check for employees

## Enterprise resource planning systems (ERP)

For any functional area (Sales, Finance, Human recourses, Production), you will use the same centralised database so the systems are not separated.

A lot of companies use the same information to run the company. Plain vanilla ERP systems are such “off the shelf” systems that almost every company can use without any configuration specific for the company.

You need this type of system to support the next systems which are more advanced (Management systems and executive systems)

## Information systems on tactical levels

Tactical decisions that are decided every month, like do we need to change something? Do we need to adept?

This information is not always “clear”, you often need humans to make tactical decisions. It is also possible that you need external information for a tactical decision.

Management information system:

* A system that covers almost the complete company to make decisions
* Outputs reports, charts or a summary which is often used by managers to create a decision or track the decisions that they made before.
* The output is often in real-time for quick decision making

Decision support system:

* A system that covers a specific area of the company
* Makes special reports of simulations of what may happen with the current course of business model. These are tailored to a specific system.
* Example: How to ship your product to the client? Is it cheaper by plane, boat or maybe truck? The system will recalculate to make adaptions. These are not everyday calculations.

## Strategic information systems

These systems are difficult to make and are really advances because you need a lot of information.

The system needs to process a lot of information and get the information to make a decision to maybe change your production plan (very drastic decision).

Executive support system:

* Communication and calculations on strategic levels
* Looks like a management information system but is far more advanced because it searches and uses the correct information to make a decision. (a lot of information processing)

## Other systems

Office Automation Systems:

* Is used by almost all people in the company
* Office, email client, …

Knowledge work systems:

* Specialized systems for a specific job

# Information systems strategy

## How are information systems developed?

### Porter priority model:

* Threat of new entrants
  + How difficult it is to access an industry
  + Create a new pizza company: fairly easy
  + Create a new chip company: almost impossible because of a lot of research, knowledge and money
* Bargaining power of suppliers
  + Many types of companies with a lot of competition vs monopoly
  + Consequence: different prices and quality
  + The company needs to have a system that is profitable.
* Bargaining power of buyers
  + How sensitive costumers are to buy a product
  + If costumers are willing to pay a high price, the company can sell their product for a high price (example: Apple)
* Threat of substitute products or services
  + New services may cause a huge problem for current organisation because the new service is a lot more efficient.
  + Example: Airlines vs collaborative video meeting solutions
  + Example: Taxi companies vs Uber
* Rivalry among existing competitors
  + How do you compete with the current competitors?
  + Can the organisations avoid competing about the price, if this is the case it may destroy the industry because the prices aren’t profitable anymore.
  + Counter-logical strategy: Colruyt => lowest price, by saying this they avoid a price wars because they say that they will always have the lowest price.

### Porter’s competitive forces theory: Summary

* + : Generic, applicable to any company in any industry
* + : Provides detailed explanations for firm/industry profitability
* + : Reason about an organisation’s strategic position with respect to its external environment
* – : Of limited use for determining future strategy
* – : Few concrete guidelines on how to operationalize

# Competitive advantage and information systems

## Value chain model

Sequence of activities through which inputs are transformed into more valuable outputs.

This value chain doesn’t exist on its own, you don’t only need to look internally also externally. You need a value chain system which brings together the value chain of the suppliers, customers and your own. And also the value chains of your competitors.

A value chain on its own is useless and thus cannot be used to create efficient decisions.

Value Chain + Information system

* Create and sustain your current business model without losing to the competition.