

Session 1

World Med MBA

Introduction

- World med MBA ...
 - To make informed decisions in a responsible manner, encompassing ethical, social, environmental dimensions.
- This course ...
 - To give you an understanding of the relationship between information systems / information technology strategy and business strategy that you can apply to any situation.

Introduction

- The course involves:
 - Developing concepts and thinking conceptually.
 - Developing frameworks and models to make sense of examples from the real world.
 - Applying your knowledge to specific instances of real world and drawing inferences and conclusions from them.

Introduction

- Concepts provide an internally coherent set of assumptions about the world. They are templates that you use make sense of your environment.
 - Concepts are built on past experience; they are used to classify objects and to allow you to interpret them and take appropriate action.
 - Normally concepts are built up intuitively and over time.

Introduction

- This course will provide a framework for you to model the relationship between IS/IT and strategy.
 - Framework = a conceptual structure that is developed in order to be able to build coherent models of the real world.
 - Model = a representation of the real world that is created by only focusing on those aspects of it that are considered to be important

Overview

- Basic terminology
 - Organizations and Work
 - Data, Information and Knowledge
 - Technology, Information Technology and Information Systems
 - Strategy, Corporate Strategy and Business Strategy
- The alignment of IS and business strategies
 - Types of IS
 - Convergence
 - Business Models

Organizations and Work



Organizations and Work

- We have all said "I work for ..." but what do we mean by this?
- How do we describe what work is and the organizations we work in?

Organizations

- Some definitions
 - Organizations are closed social arrangements for the controlled execution of collective goals.
 - Organization: a group of people brought together for the purpose of coordinating their activities to achieve a shared objective.
 - The basic unit of an organization is the role rather than the person; an organization can remain in place despite changes in its membership.

The meaning of organization

- A typical definition of an organization might say it has:
 - a boundary, so that some are considered inside while others are considered outside
 - a goal, purpose or objective which is, to some extent, shared by its members
 - a structure which is, to some extent, independent of its members

Work

Work involves individuals:

- Collaborating with each other to ensure that their activities are coordinated
- Expend their time and their physical, intellectual and emotional energy
- Work also involves groups that:
 - Define identities, provide principles and give meaning to actions
 - Are political and the source of disputes and conflicts

Organizations and Work

- Organizations and work are not as straightforward as they might seem
 - constructed by people but existing independently of any one individual
 - consisting of individuals but acting as a collective
 - existing to achieve shared objectives but also the source of conflict
 - existing within boundaries but influencing life outside those boundaries

Data, Information and Knowledge



Data, Information and Knowledge

- Data are a set "facts" without context: meaningless characters
- 'A series of observations, measurements, or facts'
 - Collins concise dictionary

Data, Information and Knowledge

- Information is data which has been processed to turn it into a useful statement: something that informs
- 'The meaning given to data by the way it is interpreted'
 - Collins concise dictionary

Data, information and knowledge

– Explicit Knowledge

- "... formal and systematic ... easily communicated and shared in a product ... or a computer program."

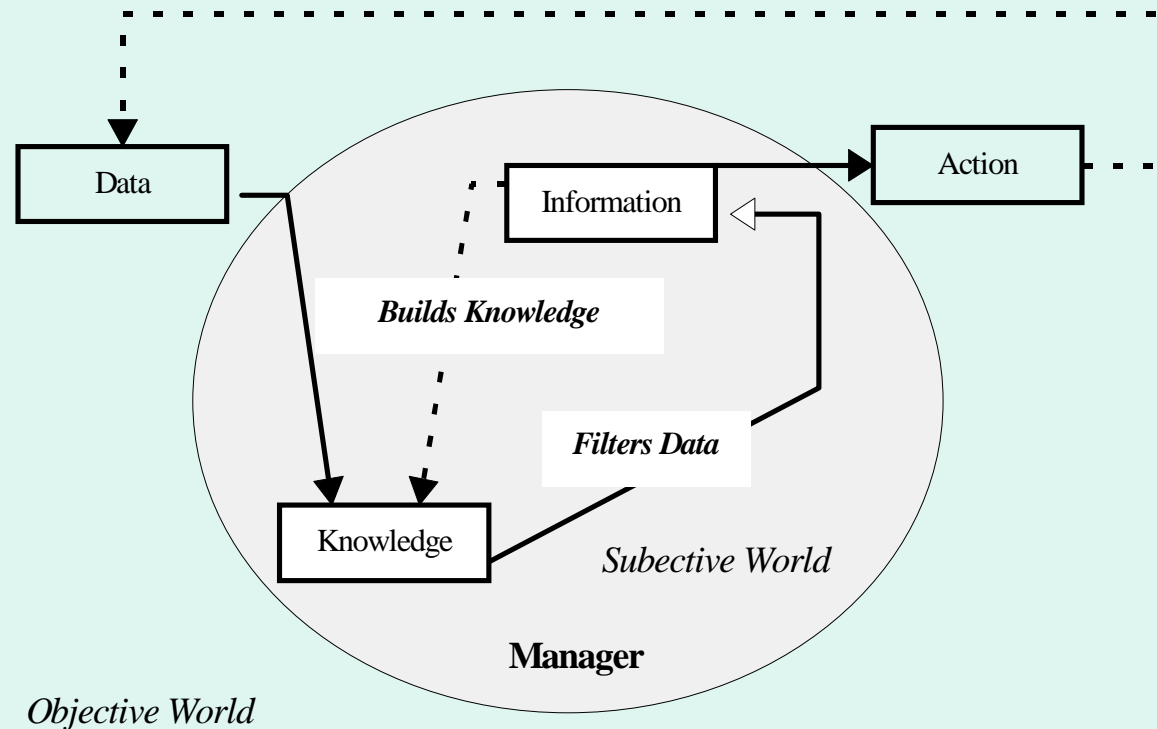
» Ikujiro Nonaka, The knowledge Creating Company.
HBR, Dec 1991, pp. 96 - 104

– Tacit Knowledge

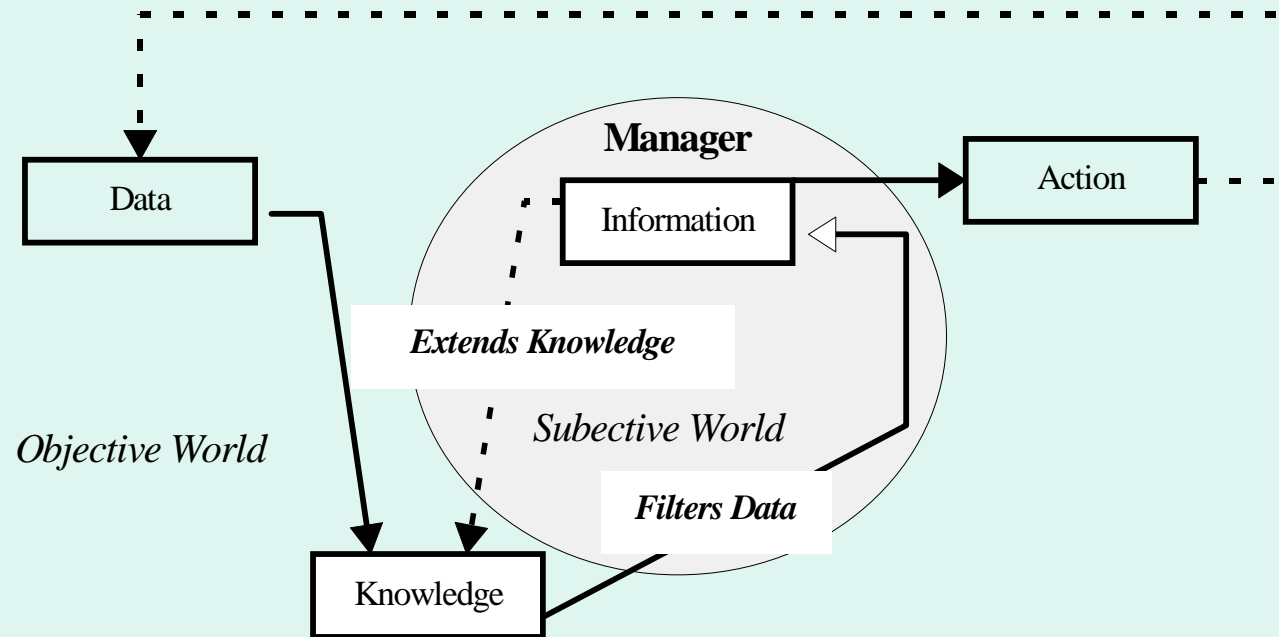
- "... highly personal ... hard to formalize and therefore difficult to communicate."

» Ikujiro Nonaka, The knowledge Creating Company.
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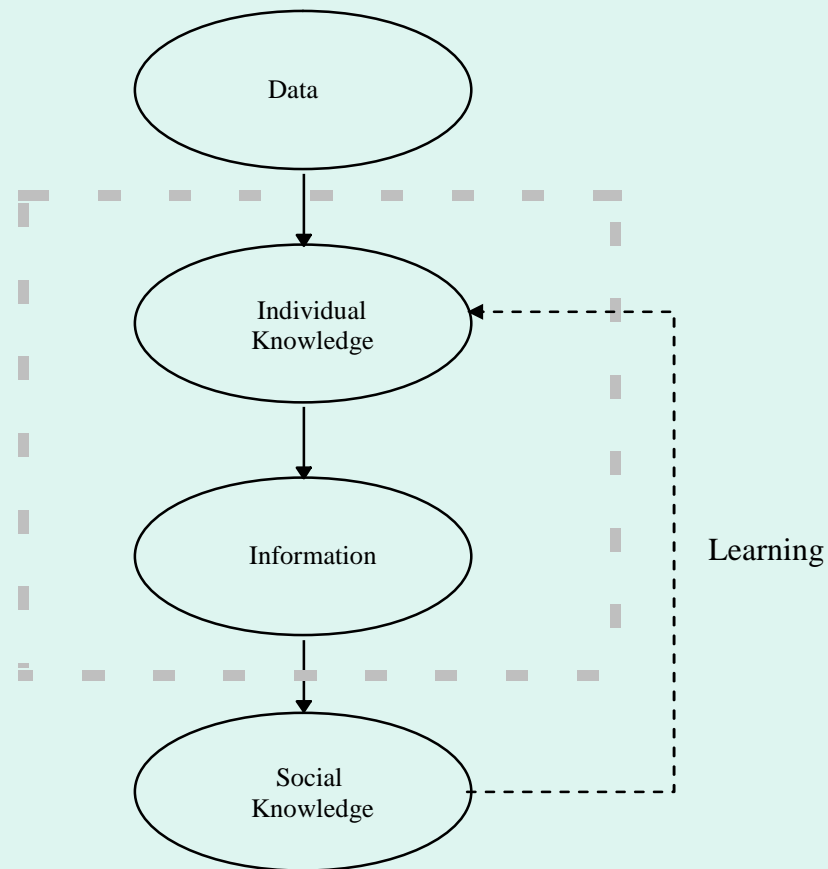
Data, Information and Knowledge: View 1



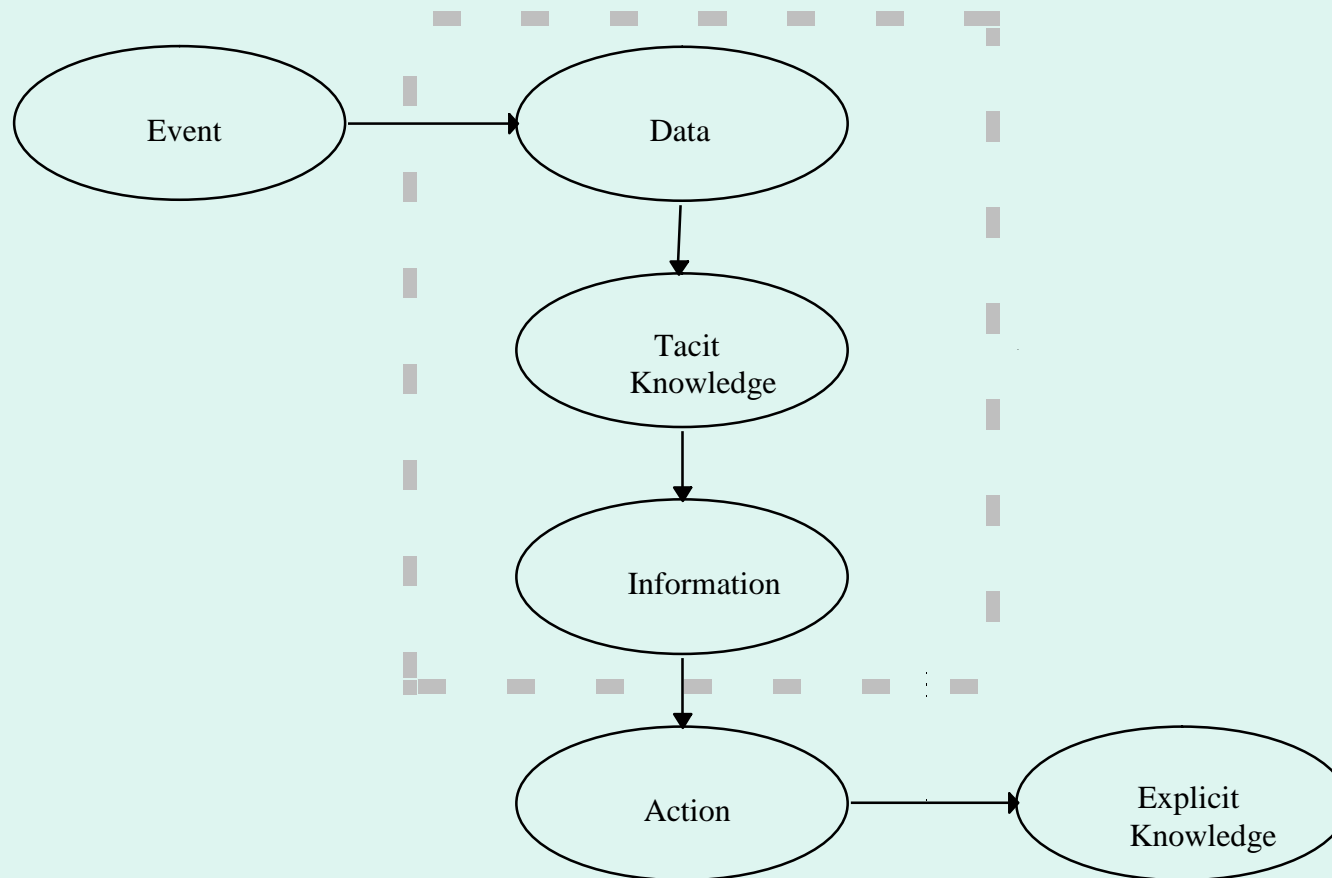
Data, Information and Knowledge: View 2



Data, Information and Knowledge: View 3



Data, Information and Knowledge: View 4



Technology, Information Technology and Information Systems



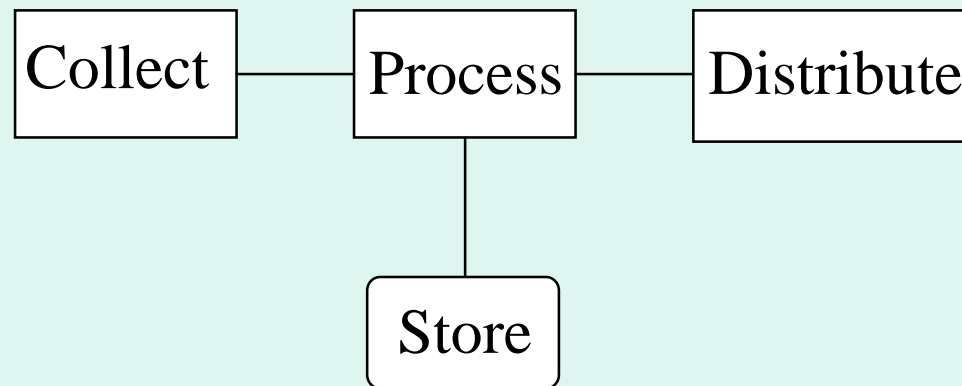
Tools and Techniques

- Probably the broadest definition of technology is "the way things are done"
 - "The sum of knowledge, received information, which allows things to be done" (technology beyond machines, Macdonald 1985)
- Thus, technological developments become the addition of new knowledge to old: a process:
 - "... of which the encapsulation of information in machinery can be only a part" (technology beyond machines, Macdonald 1985)
- Technology is a blend of tools and techniques

Information Technology

What is information Technology?

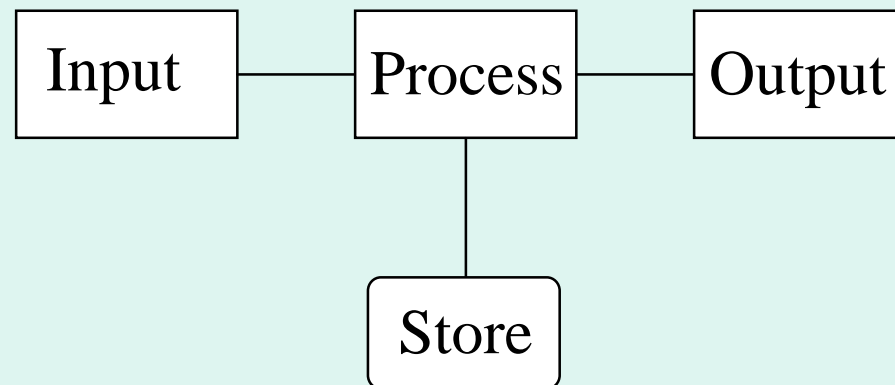
- "Any means by which information is created, manipulated and distributed to a recipient."



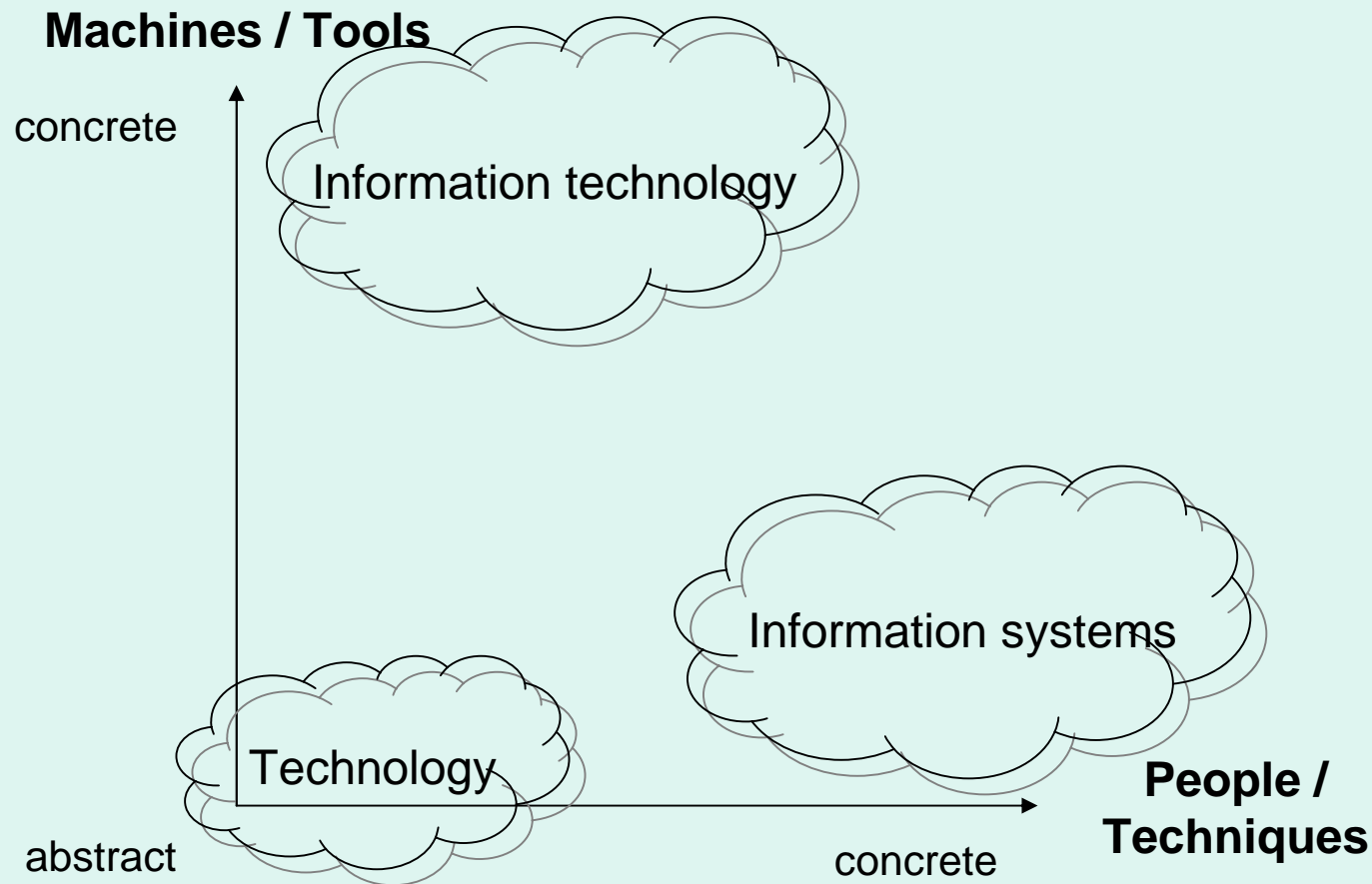
Information Systems

What is an Information system?

- "An Information System is any related set of elements that collect data, process, store it and disseminate it"



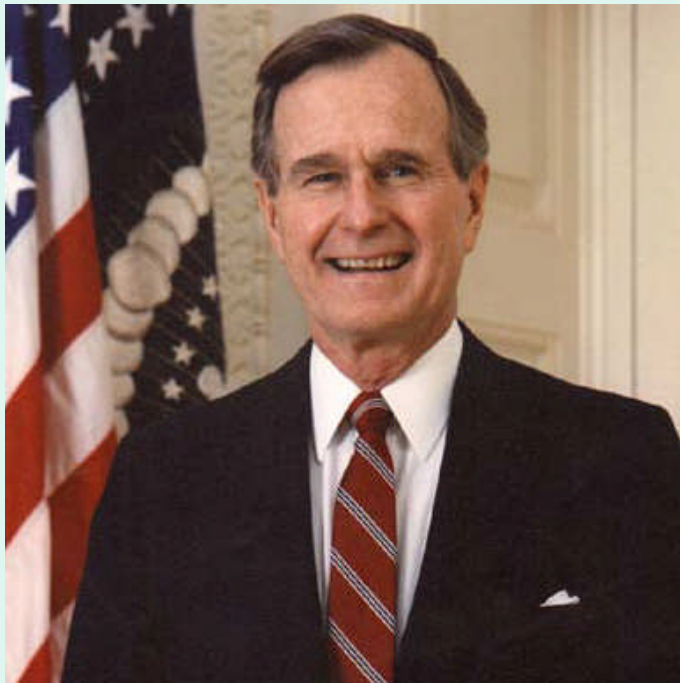
Technology, Information Technology and Information Systems



Strategy, Corporate Strategy and Business Strategy



The vision thing

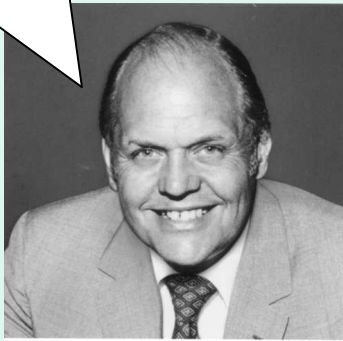


- George H Bush admitted in 1987 that he lacked "the vision thing" – meaning that he found it hard to see past the immediate tactics of the campaign to the longer term objectives.
- One way to think of strategy is that it is a "vision thing" knowing where you want to be and planning how to get there.

The vision thing ...

*"There is no reason
anyone would want a
computer in their home."*

Ken Olson, President,
Chairman and Founder of
Digital Equipment
Corporation, 1977



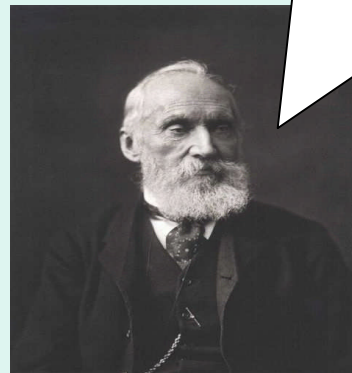
*"I think there's a world
market for maybe five
computers."*

Thomas Watson,
Chairman of IBM, 1943



*"Heavier-than-air flying machines
are impossible."*

Lord Kelvin, President of The
Royal Society, 1895



... and events

Strategy is more than just vision



The Right Honourable
Harold Macmillan,
The Earl of Stockton
(1894 – 1986)

Harold Macmillan was the Prime Minister of the UK from 1957 until 1963 during a period that saw several political scandals and policy debacles.

When he resigned he was asked by a reporter what the greatest challenge was that he had faced as the leader of the country, he was alleged to have said:

*"Events dear boy,
events"*

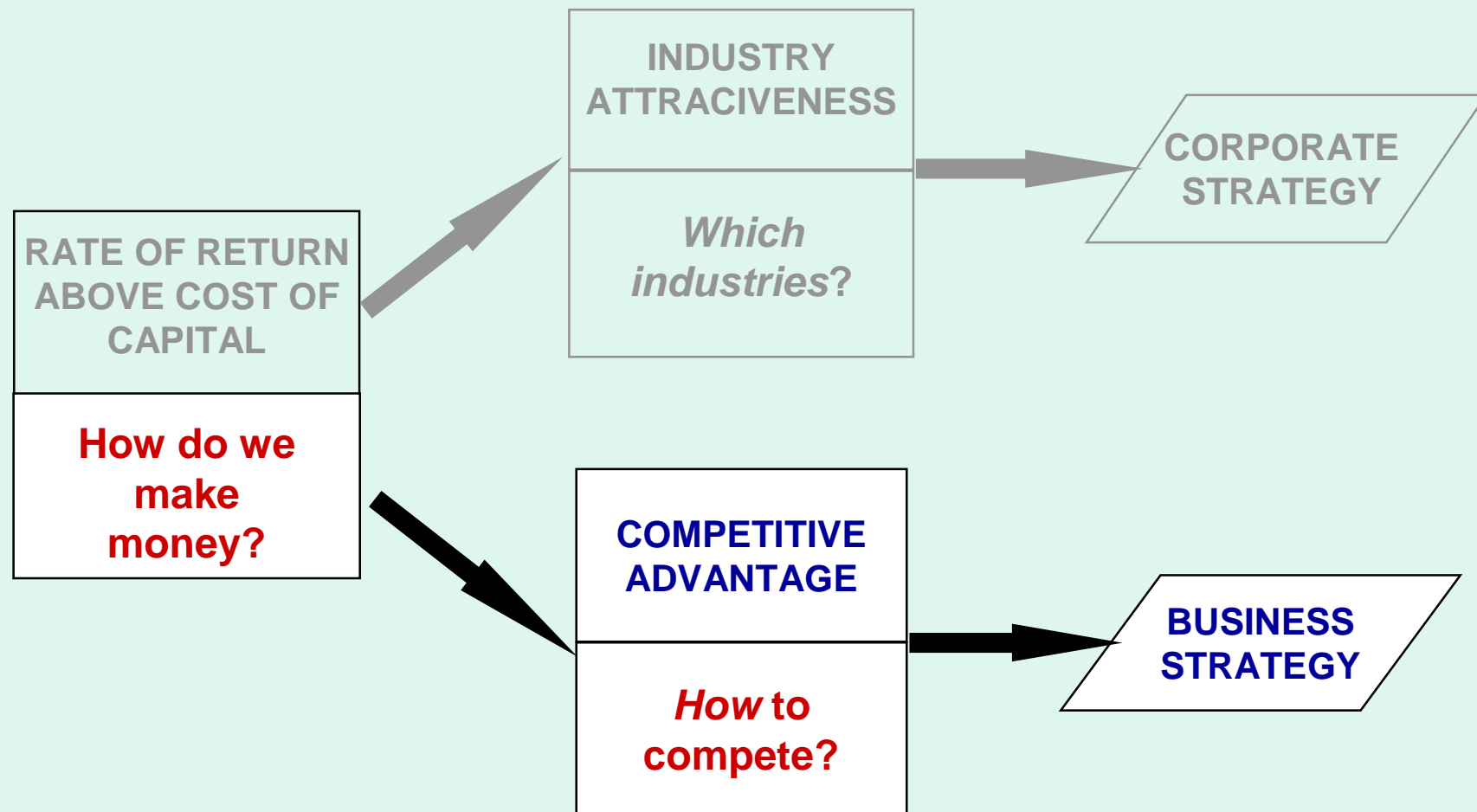
What is strategy?

- Strategy
 - The determination of long term objectives, actions, alternatives and resources
 - A set of actions to accomplish a particular high level objective
 - A programme that sets out objectives, policies and resource allocations

Corporate and Business Strategy

- Corporate strategy
 - which industries and markets to compete in, growth, diversification or retrenchment, acquisitions, new ventures, divestments ...
- Business strategy
 - how firm competes within a particular industry or market and how to achieve a competitive advantage over rivals, cost leadership, differentiation, added value ...

Corporate and Business Strategy



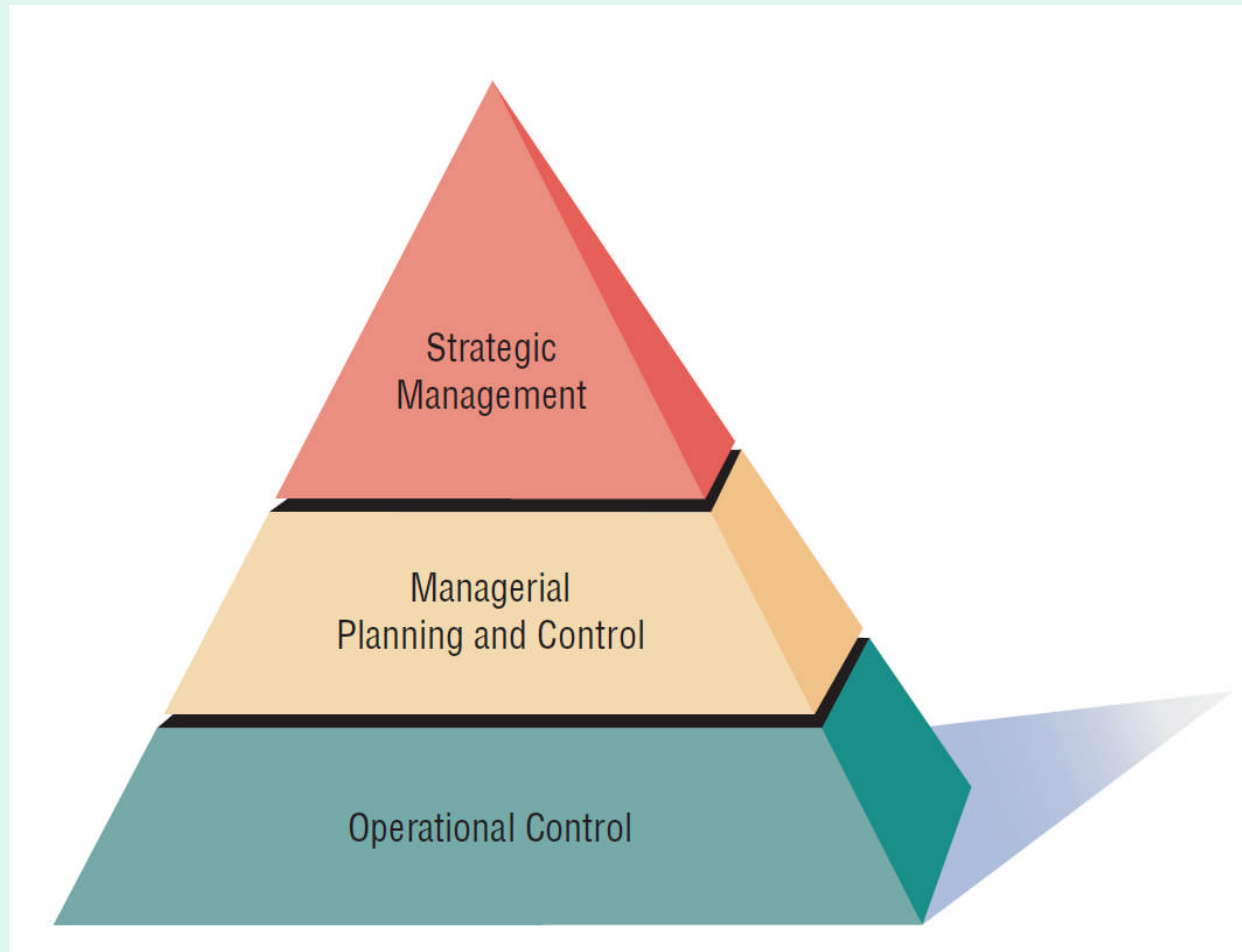
Corporate and Business Strategy

- We will focus on Business Strategy and in particular the links between information technology and information systems and the setting and achieving of a businesses strategic objectives.

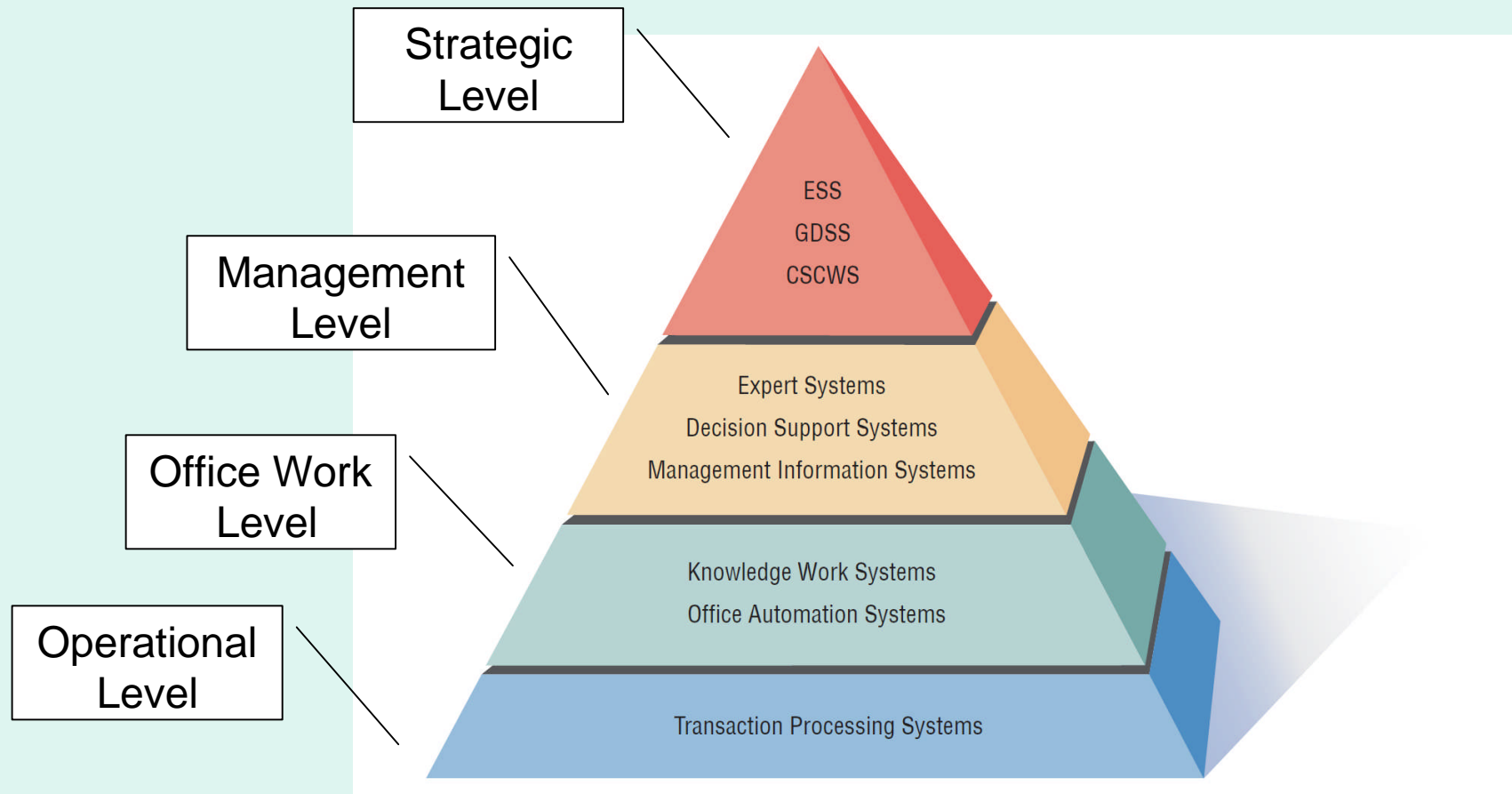
Types of Information Systems



The organization as a pyramid



Systems and levels



The 'classic' information systems

Operational level (Data)

- Transaction Processing System
 - Process large amounts of data for routine business transactions
 - Boundary-spanning
 - Support the day-to-day operations of the company

The 'classic' information systems

Office level (Information)

- Office Automation System (OAS)
 - Supports workers who share information, but do not usually create new knowledge
- Knowledge Work System (KWS)
 - Supports professional workers who need to manage complex and interrelated information such as scientists, engineers or doctors

The 'classic' information systems

Management level (Information / knowledge)

- Management Information System (MIS)
 - Support a broad spectrum of organizational tasks including decision analysis and decision making
- Decision Support System (DSS)
 - Aids decision makers in creating scenarios and making of decisions

The 'classic' information systems

Strategic level (Knowledge)

- Executive Information System (EIS)
 - Provides up to date overview of firm's position with the ability to 'drill down'
 - Used for non-routine decisions requiring judgment, evaluation and insight
 - Helps executives to make strategic decisions in a structured and informed way

The 'classic' IS



The 'classic' IS just as much an invention as the classic malts, but like the classic malts it does help to highlight the key features of how IS are used in organizations.

Convergence



Early computers (Manchester mark 1, 1948)



Early computers (Ferranti Mark 1, 1951)

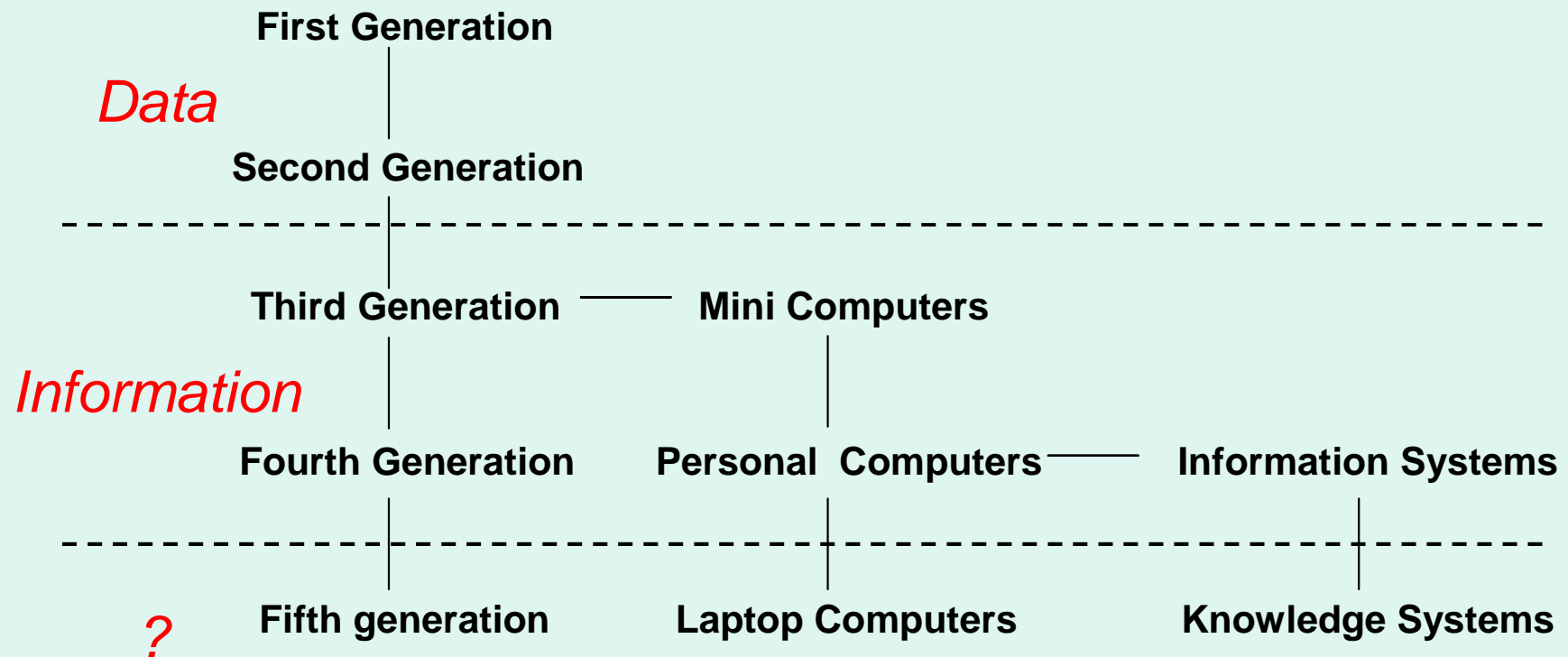


Changing Technology

– Computers

- 1st generation (1950's) - Large (30 tonnes), unreliable (mean time between failures < 15 min), expensive (\$400,000 at 1946 prices)
- 2nd generation (1960's) - Smaller, faster and more reliable but still expensive. Services often rented, use restricted to large businesses
- 3rd generation (1970's) - Smaller, faster and more reliable. Low cost mini-computer stimulates many new business applications
- 4th Generation (1980's) - Development of personal computing erodes mainframe market. Low cost, "user friendly" computing for all
- ...

Generations in a family tree



Convergence

- A term used to describe the coming together of IT, telecoms, content, and other related industries because of common technology developments and market aspirations.
 - IMO secretariat, European Commission.

Convergence

- IT and telecommunications
 - Client level convergence: Handhelds / Cell phones
 - Server / network level convergence: Skype, Internet telephony
 - Cloud Computing: Network become the source of computing power

Convergence



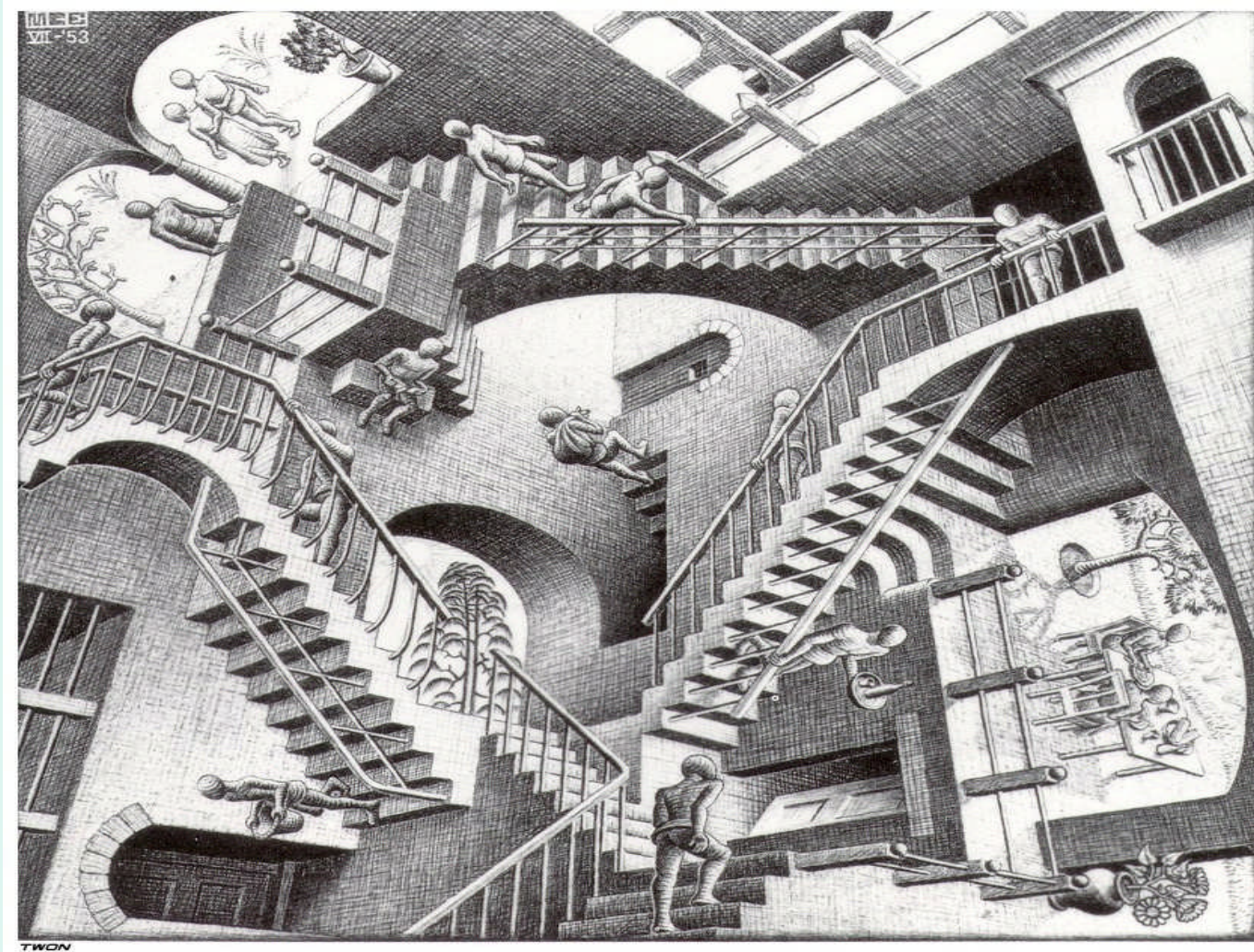
Business Models



Change and Complexity

- The rate of technological change is continuing and accelerating
- There is also an unprecedented growth in technological complexity in terms of
 - Range and diversity of applications
 - Interdependence of applications

How to deal with complexity?



Business Models

- A 'narrative with numbers' which originated in the dot-com era and was used to:
 - "... to glorify all manner of half-baked plans. A company did not need a strategy or a special competence, or even any customers, all it needed was a web-based business model that promised wild profits in some distant, ill defined future" (Magretta, 2002)

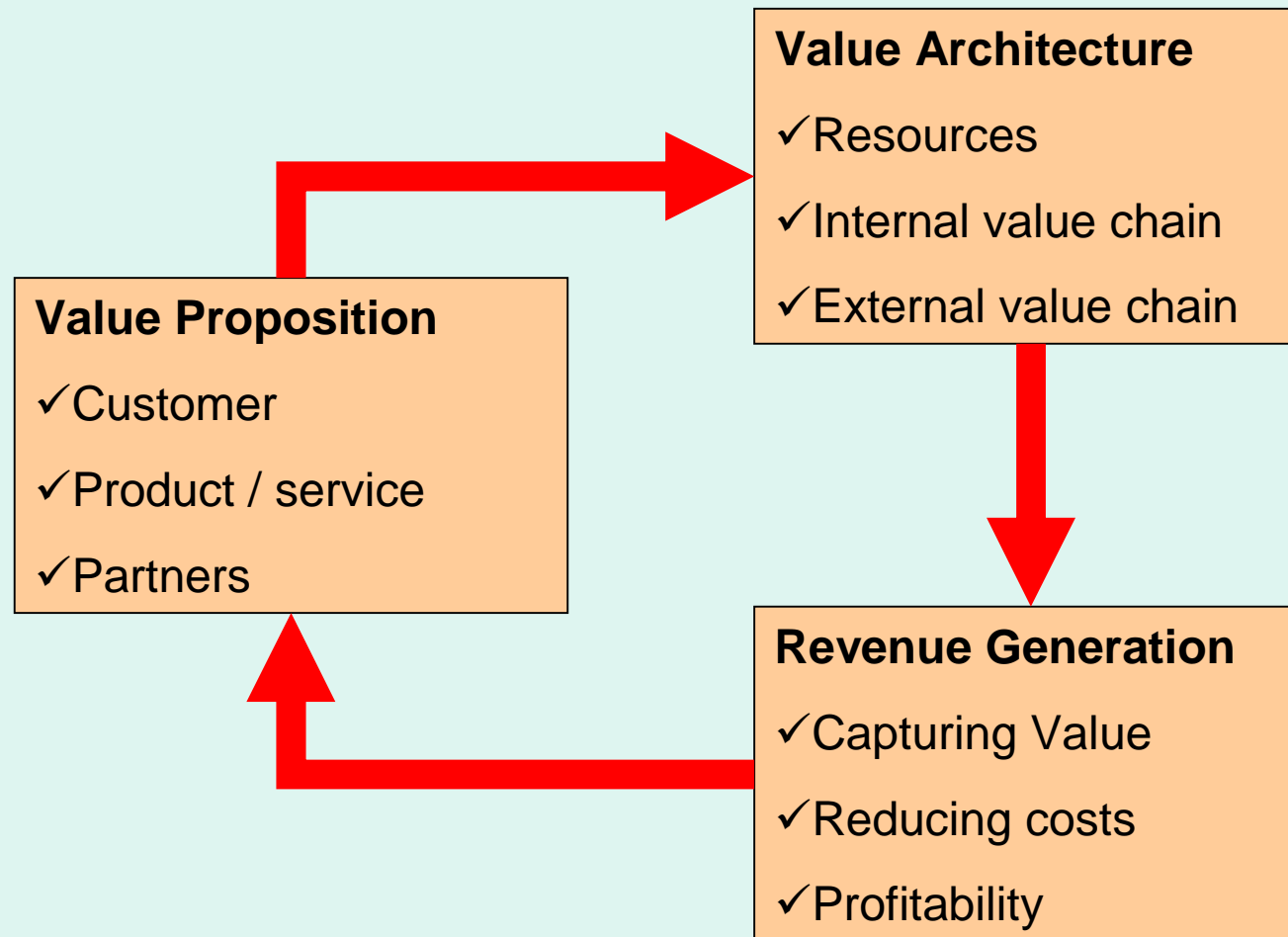
Models

- A model is a substitute for a real system that is easier to work with than the actual system.
- They are simplified and abstract constructs created to help us understand real world systems by only representing certain aspects of the actual system that are deemed to be important.

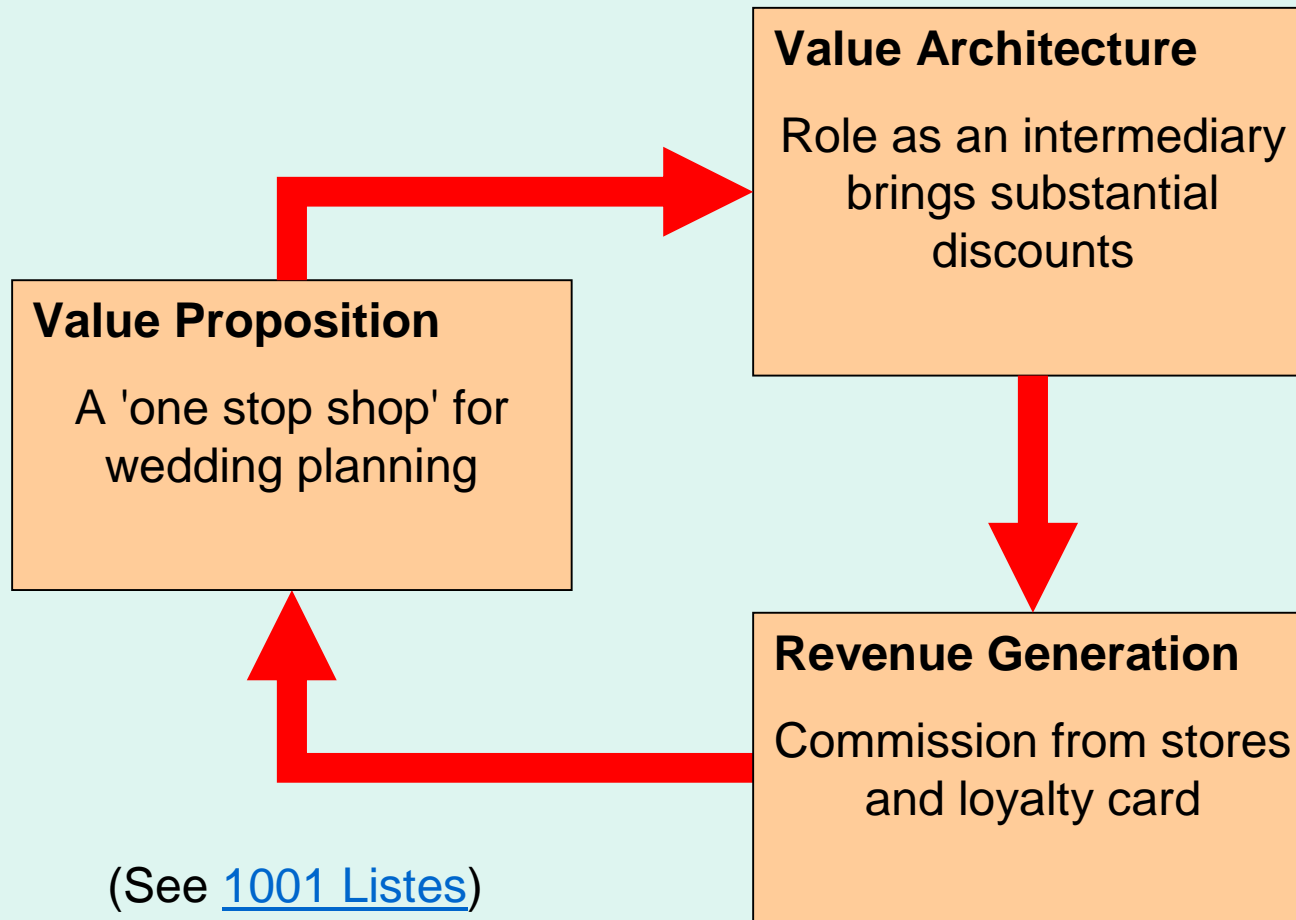
Business Models

- Business models are an effective way for people to plan and to communicate goals, ideas and objectives
- Business models also capture the 'business logic' of a company in a way that makes it easier to translate into IS models

A Simple Model of a Business Model



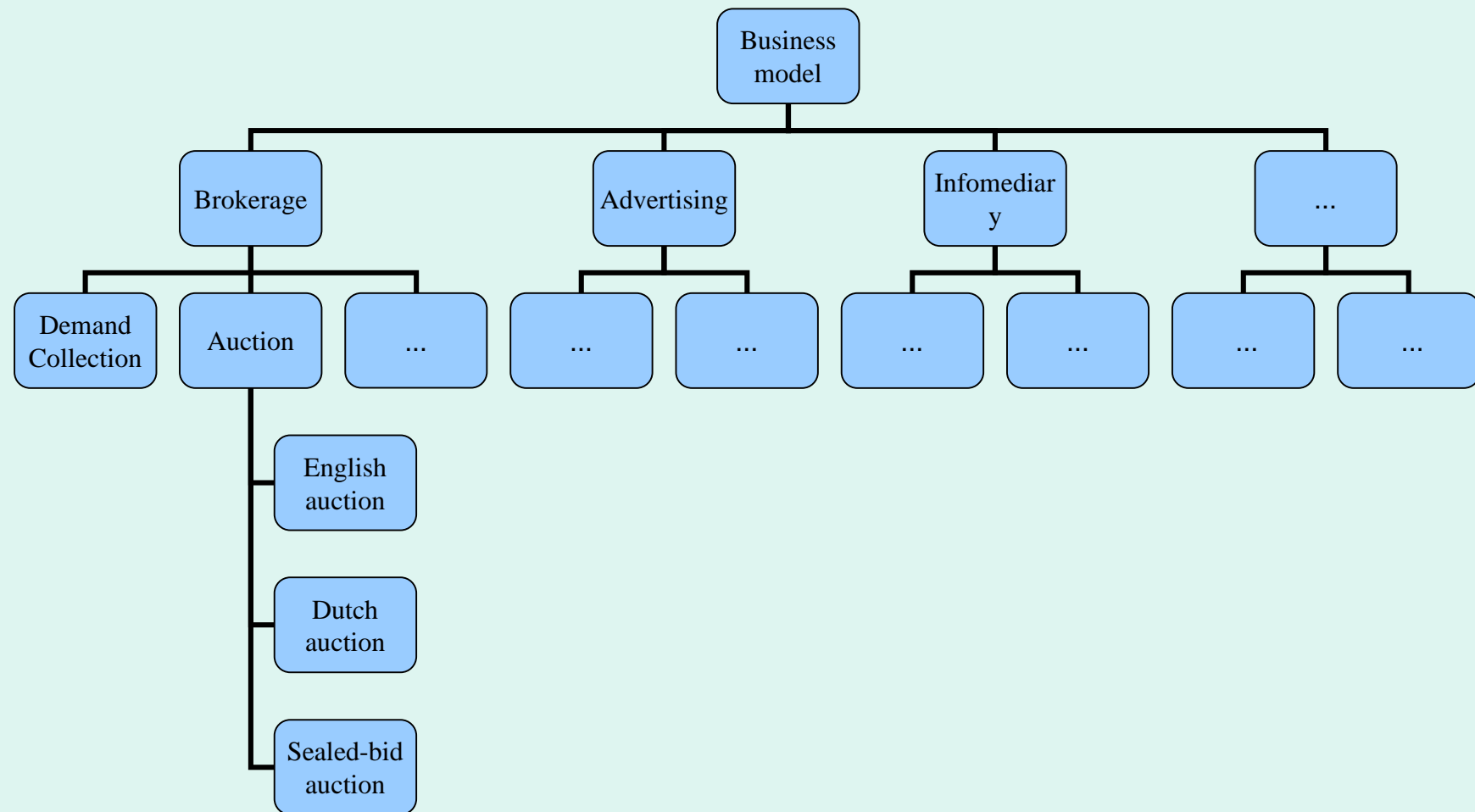
An example of a Business Model



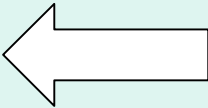
Types of Business Model

- Just like Information systems, there have been many attempts to classify business models into different types of model that can be adapted for and used in different situations
- These are often expressed as a hierarchy where one type of model is broken down into subcategories

Types of Business Model



Brokerage

- Marketplace Exchange
- Buy/Sell Fulfilment
- Demand Collection System
- Auction Broker 
- Transaction Broker
- Distributor
- Search Agent
- Virtual Marketplace

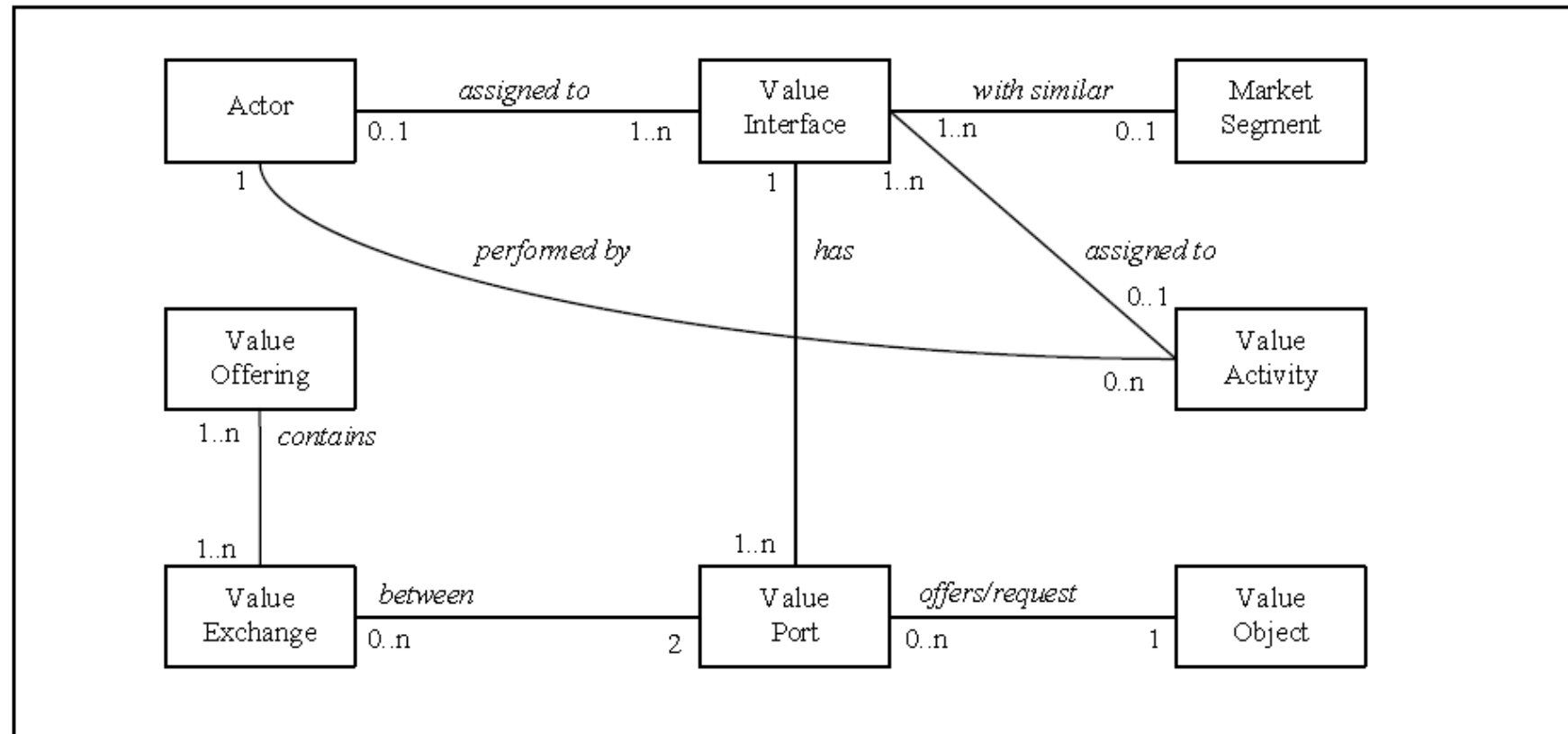
Brokerage

- Auction Broker
 - English auction
 - Dutch auction
 - Sealed-bid auction
 - Combinatorial auction

Business Models

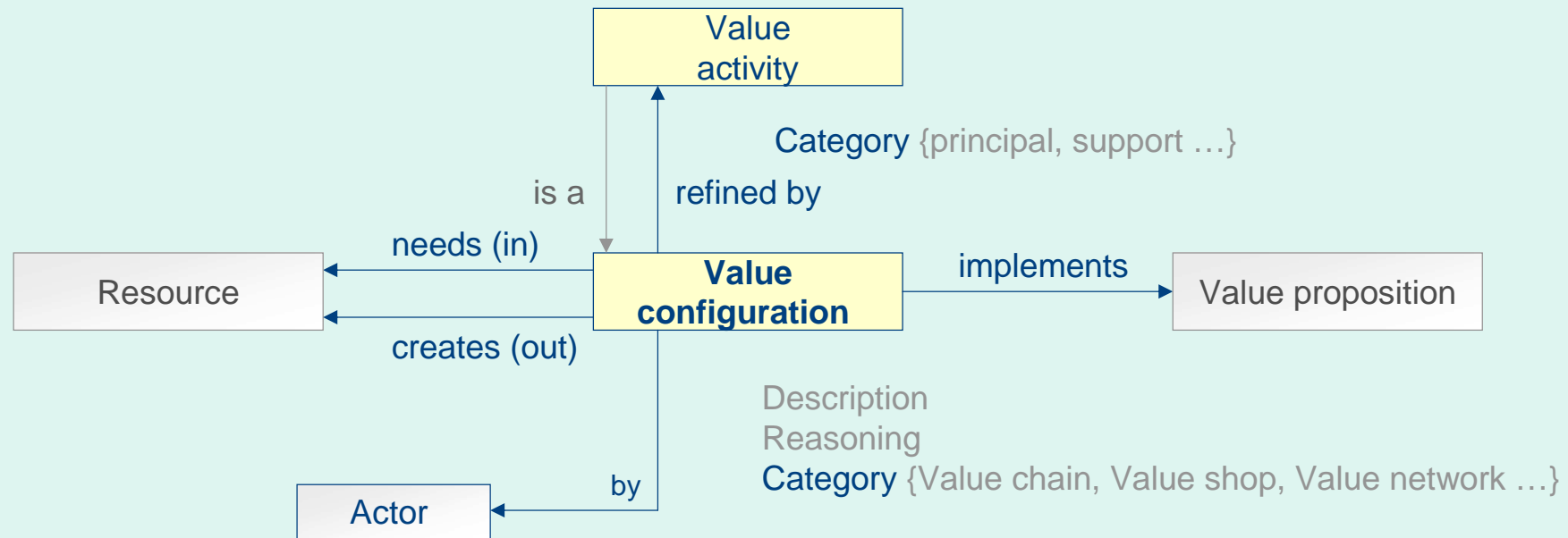
- The use of business models within IT:
 - "A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm." (Osterwalder et al. 2005)

Another view of a Business Model



(Gordijn, Akkermans et al. 2001)

Another view of a Business Model



(Osterwalder and Pigneur, 2006)

Next session

- Evaluation of the different types and categories of information system available
- Review of the different approaches and techniques for the acquisition of information systems
- An analysis of the choices (strategic / tactical / social / ethical) faced when investing in IS / IT