Wirtschaftsinformatik

Universität Münster
Institut für Wirtschaftsinformatik
Lehrstuhl für Wirtschaftsinformatik
und Interorganisationssysteme
Prof. Dr. Stefan Klein
www.wi-ios.de
mail@wi-ios.de

Inter-Organisational Systems
Introduction

Dr. Hans-Dieter Zimmermann
Lehrstuhl für Wirtschaftsinformatik und
Interorganisationssysteme
Institut für Wirtschaftsinformatik
Universität Münster

Agenda

A. Motivation and Context
B. Course Outline and Goals

A. Motivation

- What are IOS?
- Why are IOS important?
- How did IOS become a research topic?
- How have IOS been implemented in organisations?
- What is the context of IOS?
- Why should we study IOS?

Markets and Organisations

- Traditionally
  - Companies as units
  - Physical location
  - Property
  - Interactions with other companies
  - Distinction between managerial and operational tasks
  - Clear hierarchies
  - Long life-cycles of products
  - Seller markets
  - Known set of competitors

Markets and Organisations

- Now / Changes
  - Global markets
  - More competition
  - More interactions with other companies
  - Less closed groups/networks/markets
  - Integration of managerial and operational tasks
  - Buyer markets
  - Shorter life-cycles of products

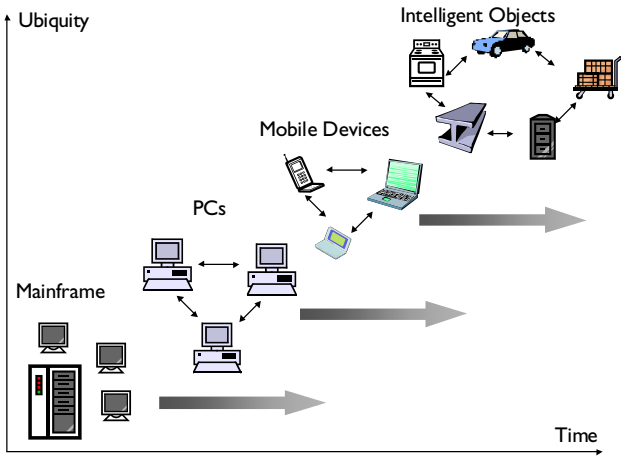
Information and Communication Technology

- Traditionally
  - Closed networks
  - Proprietary systems
  - Central data storage
  - Structured data
  - Interaction via specific formats
  - Structured processes

Information and Communication Technology

- Now / Changes
  - Distributed systems
  - Inter-organisational exchange technology
  - Semi- or unstructured data
  - Integrated technology
  - Cooperative work
  - Mobility
  - Ubiquity

ICT Developments



The vision: Ubiquitous Computing

- "ubiquitous computing is fundamentally characterised by the connection of things in the world with computation"
- "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it."
- "There is more information available at our fingertips during a walk in the woods than in any computer system, yet people find a walk among trees relaxing and computers frustrating. Machines that fit the human environment instead of forcing humans to enter theirs will make using a computer as refreshing as taking a walk in the woods".

[Mark Weiser 1991]

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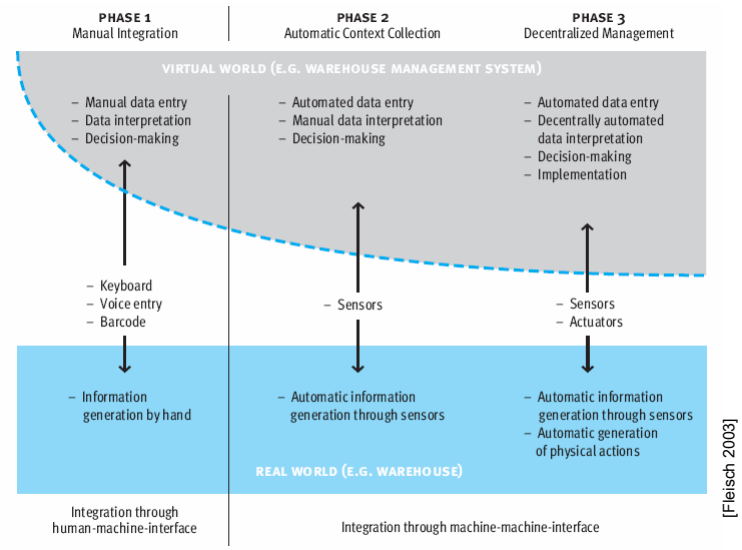
Realizing Weiser's vision through UbiComp applications



[Fleisch 2003]

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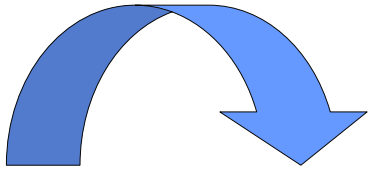
Markets, Organisations and ICT



- New information channels
- Mass communication
- New structures
- New processes
- Flexibility, adaptability

New Trend: Networking, Partnering

Recent studies indicate a trend towards

- **Blurring boundaries**
  - of companies
    - knowledge boundaries
    - hierarchical boundaries
    - company boundaries
  - of locations
    - information boundaries
    - regional and national boundaries
- **Partnering** as alternative to mergers and acquisitions
  - particularly for SMEs
- Emergence of **networked organisations**
  - e.g. virtual organisations, value webs, value nets etc.
- Proliferations of global **ICT-based infrastructures**
  - e.g. SWIFT

Trend towards Organisational Phenomena

- Specialisation, focus on core competencies
  - Autonomous groups
  - Specific work competencies
  - Problem?
- Division of labor
  - New forms due to organisational issues
  - New forms due to technical issues
- Interorganisational cooperation and coordination, e.g. supply chain management

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Relations between Organisational Phenomena

- Autonomous groups
  - Clear responsibilities
  - Clear view of contribution
- Forming of groups
  - Project-dependent
- Integration of groups
  - Organisational context
- Modularisation of company
  - More flexibility
  - Less strictly predefined structures

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Trend towards Technical Aspects

- Global ICT infrastructures
- Standards and protocols
  - EDIFACT
  - XML
  - Three-tier architecture
- Distributed applications

Numerous Questions and Challenges arise

- IOS are heterogeneous organisational forms
  → classification
- precarious organisational forms
  → management
- What is the economic and strategic rationale for IOS?
  → transaction costs
- How can they be built and operated?
  → organisation and ICT
- How do they emerge? Are they organisationally, strategically or technologically driven?
- What is the relationship between organisational and technical drivers?
- What are determinants and contingencies for design and success?
  → industry, market structure

Perspectives on IOS

- **The historian**
  development of IOS within the context of industrial transformation
- **The organisational theorist**
  theoretical explanations for the interrelationship between IOS and industrial organisation
- **The manager**
  evaluation of IOS embedded in the coordination strategy, managing interdependencies

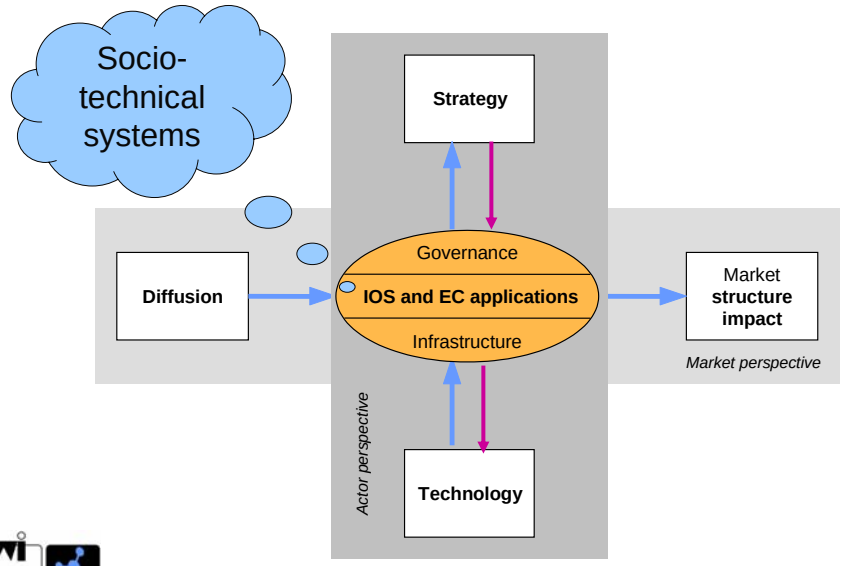
Perspectives on IOS (2)

- **The builder**
  building blocks of IOS
- **The technician**
  process of implementation, requirements of IOS regarding technical infrastructure
- **The user**
  advantages to be expected from shift towards IOS

Views on IOS

- Actors and markets
- The context: economic layers

The role of technology



The context: The New Competition

- Comparison of traditional organisational principles of old competition with newly emerging structures of new competition (Best 1990)
- Emphasis
  - of strategic dimension of decisions
  - of institutional context
- Concept of new competition consists of four dimensions
  - Company
  - Production chain
  - Sector or branch
  - Government

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New Competition

The New Competition - the dialectic of cooperation and competition as a foundations of international competitiveness (Best 1990)

the firm	the collective entrepreneur (organisational flexibility, time competition etc.)
the production chain	consultative coordination amongst mutually interdependent firms
the sector	extra-firm infrastructure, institutions of inter-firm cooperation to enforce individual responsibility to the common interest
the government	strategic industrial policy ("cooperation alone can ensure that commitments are made to the long-term infrastructural development of a sector; competition alone can ensure that business enterprises remain innovative and responsive to new challenges and opportunities.")

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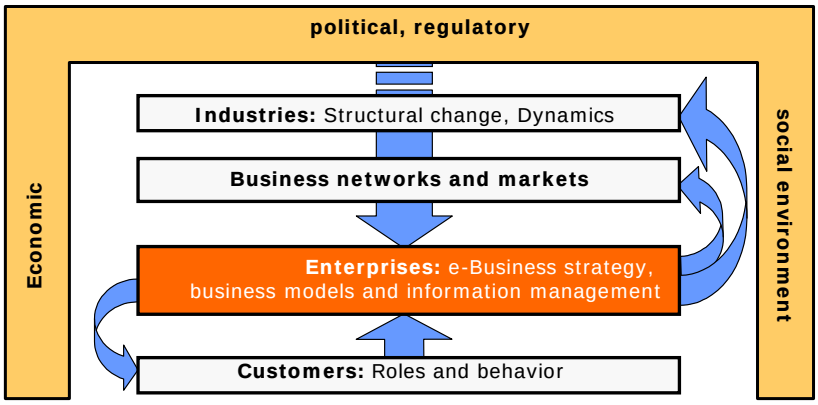
New Competition: Integration

- New competition needs all four levels
  - Innovative companies
  - Inter- and extra-firm structures
  - Regulations

The context (2)



New Competition and IOS

- Close connection between

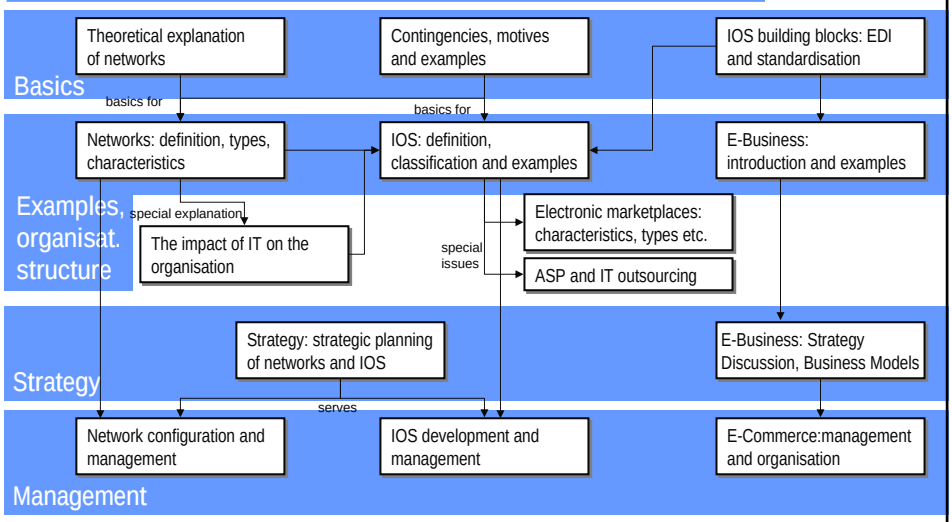
  emerging business networks and

  changing competition infrastructures

B. Course Goals

Learning Objectives	Specific Topic
Origins of Networks and IOS	Drivers and motives, Emerging networked organisations
Building blocks	EDI, XML, communication networks, Internet based developments
IOS in practice: Management issues	Business Process Redesign Network Redesign Relationship management Co-operation and competition
Theoretical perspectives on IOS	Transaction cost economics, Strategic management, Organisation Theory
Implications	Market Structure Impact

B: Course Outline



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