

Information, Organization, and Management

Prof. Dr. Martin Hepp

<http://www.heppnetz.de>

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<http://www.heppnetz.de/teaching/img/>

Textbook: Wigand/Picot/Reichwald: *Information, Organization and Management*, John Wiley & Sons, 1997

About the instructor: Martin Hepp

- Professor of Computer Science and head of the research unit „Semantics in Business Information Systems“ at DERI, University of Innsbruck, Austria.
- Professor of General Management and E-Business at the University of the German Federal Armed Forces, Munich, Germany.
- Ph.D. in Management Information Systems, Bayerische Julius-Maximilians-Universität, Würzburg, Germany (2003); M.B.A., ditto, Würzburg, Germany (1999)



See <http://www.heppnetz.de> for current papers and presentations.

Course Overview

- This class will introduce the fundamental economic effects and theories that explain the diffusion of Electronic Business, especially new institutional economics, and map these to core concepts of management science.

Learning Goal

The overall learning goal of the course is an in-depth understanding of the interplay of

- economics,
- communication and information research, management science,
- applied computer science,
- the underlying social and technical processes, and
- their implications for business and management.

Logistics

- **Lecture**
 - Tuesdays, 16:45 - 18:15, room 2116, building 33
- **Exam**
 - To be announced

Office Hours and Contact

Prof. Dr. Martin Hepp

- By appointment only (Tuesdays 15:00 – 16:00)
- Building 36, Room 2204
- Phone: +49 (89) 6004-4217

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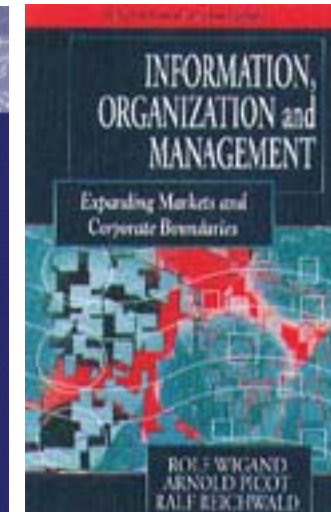
Alexander Richter

- Building 36, Room 2205
- Phone: +49 (89) 6004-4218
- a.richter@unibw.de



Learning Resources

- Strongly recommended textbooks
 - Rolf Wigand, Arnold Picot, Ralf Reichwald:
Information, Organization and Management, 458 pp., John Wiley & Sons, 1997 (ISBN: 0471964549).
 - Arnold Picot / Ralf Reichwald / Rolf Wigand:
Die Grenzenlose Unternehmung.
Information, Organisation und Management. 5th edition, Gabler, 2003.



PDF available at

http://www.ciando.com/shop/book/index.cfm/fuseaction/show_book/bok_id/2812/cat_id/0/cat_nav/0

Learning Resources (2)

- Course Web page
 - <http://www.heppnetz.de/teaching/img/>
 - **Not yet online**, but within this week
- All slides will be put on-line the night before the lecture
- Some materials may be password protected
 - User:
 - Password:

Attendance Policy

- I need you 😊
- This is a graduate course; **the exam will cover materials presented in class**, not just what's on the slides or in the textbook!

Assignments and Grading

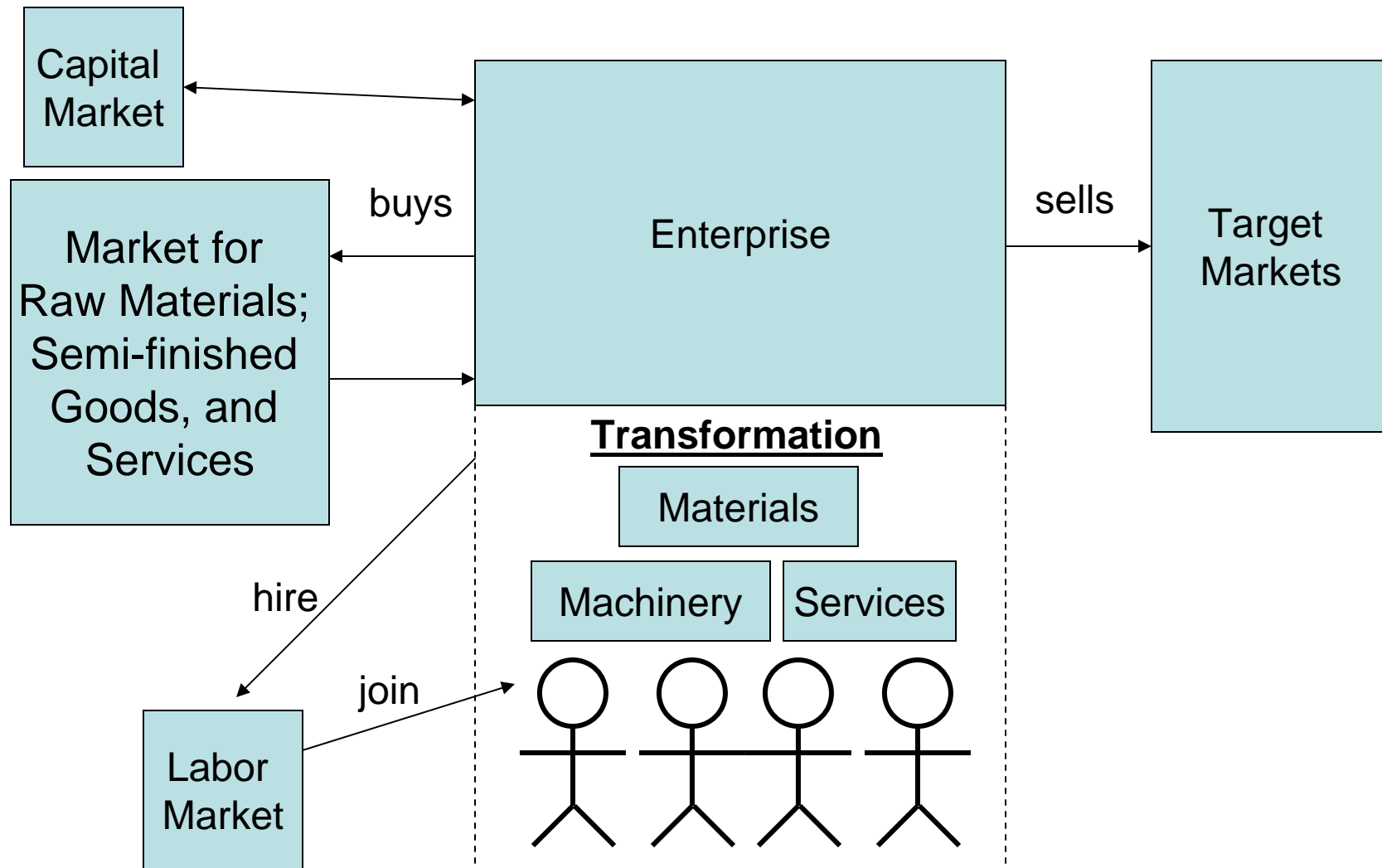
- **One Exam (100 %)**

Covers textbook and additional materials presented and discussed in class

Unit 1: Overview

- Management
- Fundamental Changes in the Markets
- Changes in the Value Systems
- Implications of Information and Communication Technology
- Innovative Organizational Arrangements
- Tayloristic Industrial Organizations
- Decentralization and Modularization
- Human Resources Management
- Models of Coordination and Task Specificity
- The Border-less Enterprise

The Core of Any Enterprise



Management

- “The process of and/or the personnel leading and directing all or part of an organization (often a business) through the deployment and manipulation of resources (human, financial, material, intellectual or intangible).” [1]

[1] <http://en.wikipedia.org/wiki/Management>

Decision-Making and Coordination

What shall be produced?

Which quantities shall be produced?

Which input factors shall we use?

How much capital will we need?

Who shall do what, how, and when?

What price shall we sell at?

Make or Buy?

- **Buy:** Call Pizza Service and order one pizza.
 - **Coordination by the market**
- **Make:** Hire somebody. Have him/her grow wheat. Have the wheat grinded. Grow tomatoes. Grow olives. Make olive oil. (...). Have him or her make a pizza.
 - **Coordination by order and hierarchy**

Division of Labor and Productivity

- The greatest improvement in the productive powers of labor, ... seem to have been the effects of the division of labor.... To take an example, therefore, the trade of the pin-maker; a workman not educated to this business, nor acquainted with the use of the machinery employed in it, could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving, the head; to make the head requires two or three distinct operations; to put it on is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some factories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them.*



Adam Smith:
The Wealth of Nations, 1776

Babbage Effect

- Reduction of labor cost by differentiation in wages per individual skill / task.

Fundamental Changes in the Markets

- Shift towards buyer markets
 - No need for buyers to accept organization-related limitations
- Ever-changing market demands
- Omnipresence of global competition
- Dynamics at all levels
 - speed of processing of innovation and advancement

cf. Wigand/Picot/Reichwald (1997)

Changes in the Value Systems

- Reluctance to subordination and pure execution of tasks after 1960s/1970s
- Scarcity of resources, namely space, environment, highly-qualified labor,...

cf. Wigand/Picot/Reichwald (1997)

Implications of Information and Communication Technology

- Dramatic increase in the enterprise's ability to receive, process, and transmit information
 - Automation: -> less costs, more consistent, faster
- Speed of innovation makes machinery age faster.
- Overcoming rigid organizational structures that were created mainly for information processing purposes.

Innovative Organizational Arrangements

- Regional border decreasingly important
- Technical integration of external parties into business processes
- Facilitated coordination in time and space
- Capacity restrictions vs. flexible integration of required resources

cf. Wigand/Picot/Reichwald (1997)

Tayloristic Industrial Organizations

- Hierarchy, Functional division of labor
- „One best way conceptualization of labor“
- Core Principles:
 - maximal work specialization
 - separation of managerial from operational work
 - physical exclusion of planning, steering, controlling from the manufacturing areas

cf. Wigand/Picot/Reichwald (1997)
- Classics: Frederick Winslow Taylor: *The Principles of Scientific Management, 1911.*
 - <http://www.eldritchpress.org/fwt/taylor.html>

Tayloristic Industrial Organizations

- Was successful in the early 20th century
 - comparatively long life-cycles of products
 - relatively stable consumption and preferences
 - limited and stable number of competitors with known strengths and weaknesses
 - high entrance barriers for new participants
 - low costs of natural resources and low environmental burdens
 - high supply of motivated, skilled or easily qualifiable staff
- cf. Wigand/Picot/Reichwald (1997)

New Models of Labor and Division of Labor

- Telecooperation
- Virtual Enterprises
- Symbiotic Arrangements

cf. Wigand/Picot/Reichwald (1997)

Decentralization and Modularization

- Problems with Tayloristic Organizations: Adapts slowly to change in circumstances
- Organizational arrangements that enable agile adaptation and evolution
 - re-integration of production and service functions into self-contained processes focussing on customer value
 - direct communication between all participants
 - capture and processing of market feedback by employees
 - new roles for managers and employees in less hierarchical organizations.

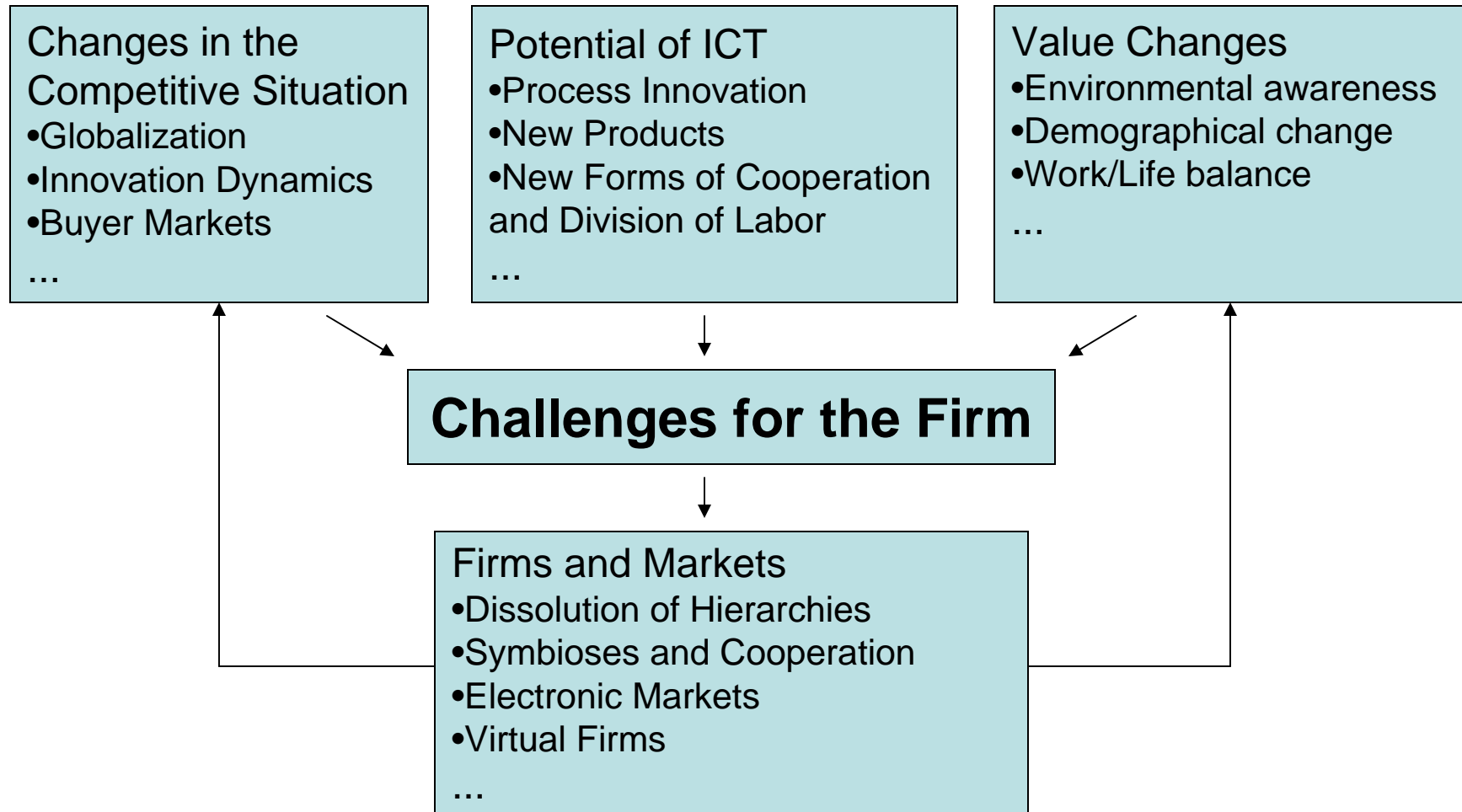
cf. Wigand/Picot/Reichwald (1997)

Human Resources Management

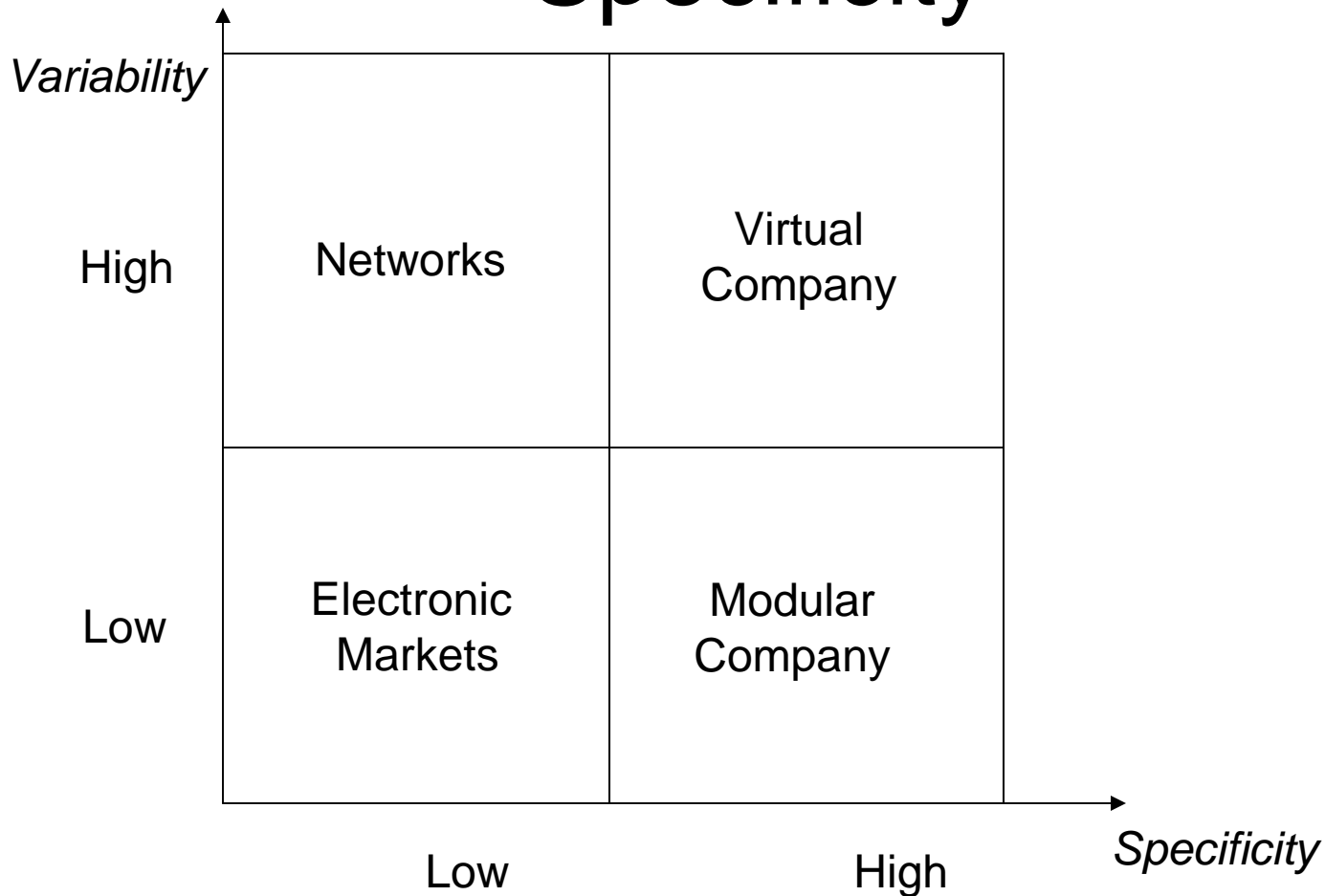
- Idea: One cannot „force“ people to excellence (creativity and performance) – only create an environment where an employee's potential can unfold.
- Aspects
 - meaningful job content
 - quick feedback to results
 - autonomy and responsibility

cf. Wigand/Picot/Reichwald (1997)

Potential for and Drivers of Innovation



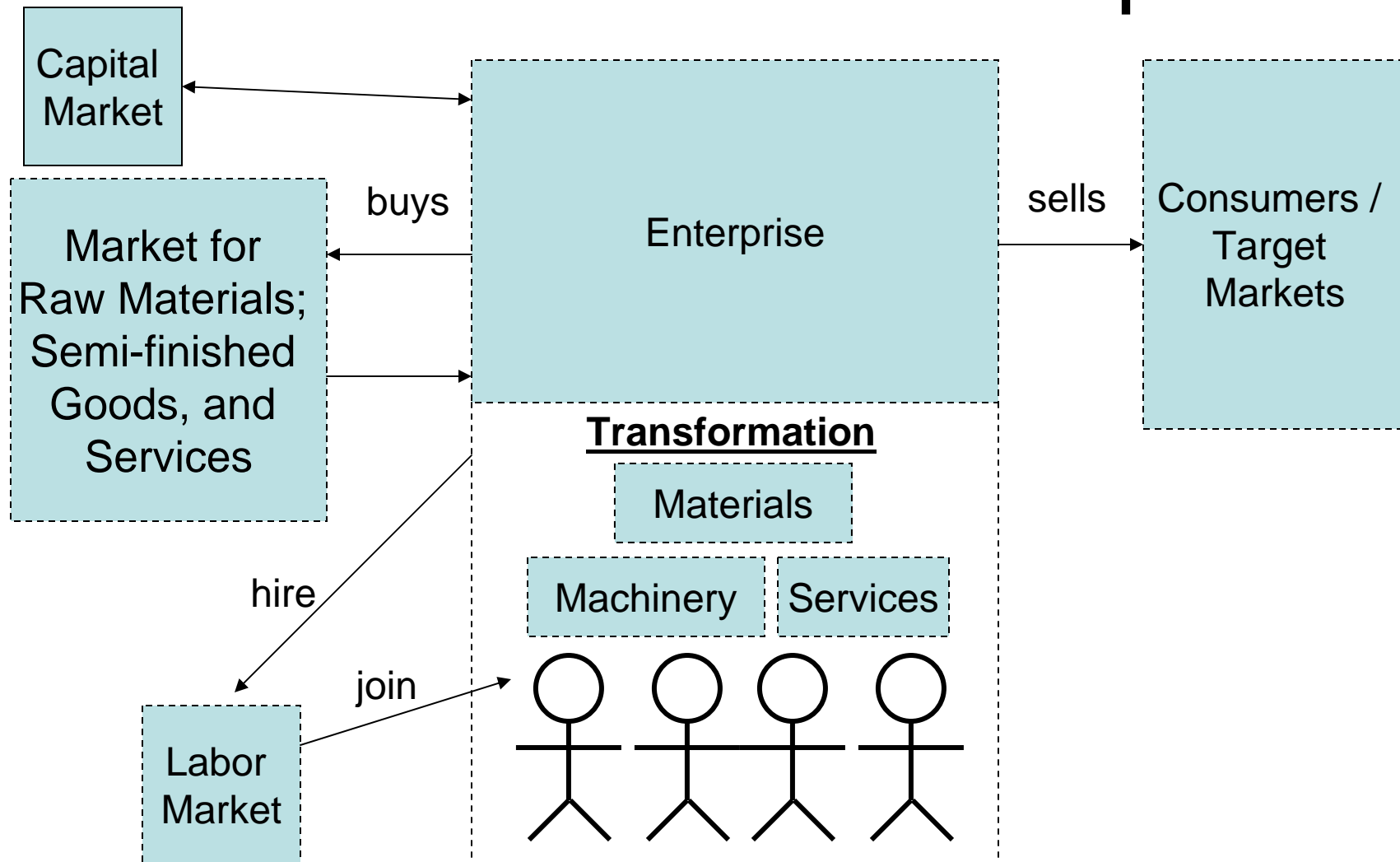
Models of Coordination and Task Specificity



Martin Hepp: Information Management

cf. Wigand/Picot/Reichwald (1997)

The Border-less Enterprise



Review Question 1

- What are Tayloristic Industrial Organizations and under which environmental characteristics did they become popular?

Review Question 2

- Why have Tayloristic Industrial Organizations difficulties with environmental change? (also: spotting environmental change)

Review Question 3

- Why does Division of Labor increase productivity?

Review Question 4

- How does the advancement in ICT enable and demand new forms of work and enterprise organization?

Review Question 5

- What is meant by the term „border-less enterprise“?

Additional Reading

- Leonard E. Read: “I, Pencil. My Family Tree as told to Leonard E. Read”, Dec. 1958
 - <http://www.econlib.org/library/Essays/rdPncl1.html>
- Wikipedia: Management
 - <http://en.wikipedia.org/wiki/Management>
- Wikipedia: Taylorism
 - <http://en.wikipedia.org/wiki/Taylorism>
- Charles Babbage: Economy of Machinery and Manufactures
 - <http://socserv2.socsci.mcmaster.ca/~econ/ugcm/3ll3/babbage/index.html>
- Frederick Winslow Taylor: *The Principles of Scientific Management*, 1911.
 - <http://www.eldritchpress.org/fwt/taylor.html>

Reading Assignment for Next Unit

- Read chapter 2: „Market Dynamics and Competition: The Fundamental Role of Information“, pp. 17-55, in:
Rolf Wigand, Arnold Picot, Ralf Reichwald:
Information, Organization and Management, John Wiley & Sons, 1997

Thank you!

The slides of today's class will be available
at <http://www.heppnetz.de/teaching/img/>
shortly.