

Information management functions in national economies

An analysis of the information sector in Austria

Robert M. Hayes*

Karin Karlics**

Christian Schlögl**

*Department of Information Studies, University of California at
Los Angeles, USA

**Institute of Information Science and Information Systems,
University of Graz, Austria

Information management functions

- Is there a need for these occupations?
 - Information management functions are often performed by management or research staff
 - Jobs of knowledge workers usually better remunerated → less efficiency
 - Information management functions are often performed inexpertly
- Increasing awareness of demand for information specialists

Overview

- 1 Motivation
- 2 Theoretical background
- 3 Definitions
- 4 Assumptions
- 5 Methods & data sources
- 6 Total model
- 7 Results & further research

Information economy & information workers

- Three-sector model:
 - Primary sector: agriculture
 - Secondary sector: manufacturing
 - Tertiary sector: services
 - +
 - Information sector as a fourth sector?
- Occupations
 - Knowledge workers
 - Information workers
 - OECD information worker scheme

Information management functions (IMF)

- information selection
- information acquisition
- information description (metadata creation)
- information preservation
- information product creation
- information services

Information subsectors (Hayes)

- 1. Information technology industries:**
produce hardware and software for telecommunications, computers, and a variety of other technologies that acquire, communicate, and process data.
- 2. Information transaction industries:**
in which the primary emphasis is on the processing of transactions which represent actions taken but have substantive value only in that processing.
- 3. Knowledge industries:**
in which the substantive content of the information is significant.

Assumptions

1. Universities are representatives of “Knowledge industries”.
2. At universities IMF are primarily performed by the university library.
3. Data about staffing for information management functions and expenses for media acquisitions are readily provided by university libraries.
4. Knowledge industries and universities (incl. libraries) are comparable with regard to costs for media acquisition and staffing for IMF.

Methods

- Library Planning Model (Hayes)
 - a tool for estimating staffing requirements to meet identified workloads on information management functions in
 - Media Services (selection, acquisition and metadata creation of journals, data bases, books) and
 - User services (information competence, trainings, etc.) at an average Austrian university library.
- Input-Output System
 - The national input-output matrix is a classical model that represents the purchases by each industry from each industry within a national economy.

Input-output system: USE table

	Agriculture	Manufacturing	Services	Information
Agriculture	1.935.873	4.355.937	582.975	39.468
Manufacturing	1.809.744	83.772.646	20.040.513	11.971.699
Services	190.357	10.747.308	24.663.852	12.662.588
Information	316.092	10.040.247	12.633.853	32.137.395
Total industry purchases	4.252.066	108.916.138	57.921.193	56.811.150
Value added	3.549.944	59.465.041	82.418.502	73.982.819
Total output by industry	7.802.010	168.381.179	140.339.695	130.793.969

Values in 1000 €; Austria 2005

Data sources

- Austrian library statistics (Statistics Austria)
- Data warehouse uni:data (Austrian Federal Ministry of Science and Research)
- Input output tables (Statistics Austria)
- Occupational statistics by ISCO and NACE (Statistics Austria)

6 Total model

NATIONAL ECONOMY CONTEXT KNOWLEDGE INDUSTRIES SEGMENT

UNIVERSITIES

≈ KNOWLEDGE INDUSTRIES (KI)

FTE Technical services staff

FTE Technical services staff

⋮

=

Media purchases

Purchases of publications

=

×

FTE Technical services staff/
mil. € Media purchases

≈

FTE Tech. services staff/
mil. € Purchases of
publications

FTE Reader services staff

FTE Reader services staff

⋮

=

Primary library users

Knowledge workers

=

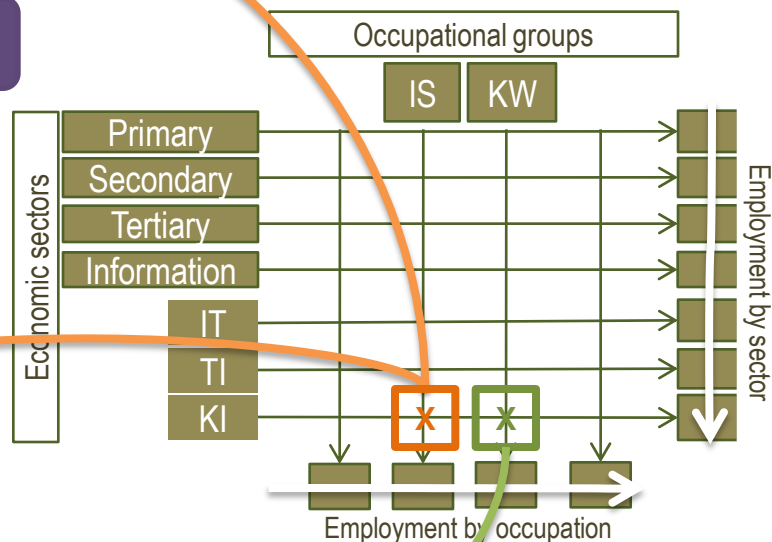
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FTE Reader services staff/
Primary library users

≈

FTE Reader services staff/
Knowledge workers

Occupational statistics by ÖNACE and occupation
Source: Statistics Austria



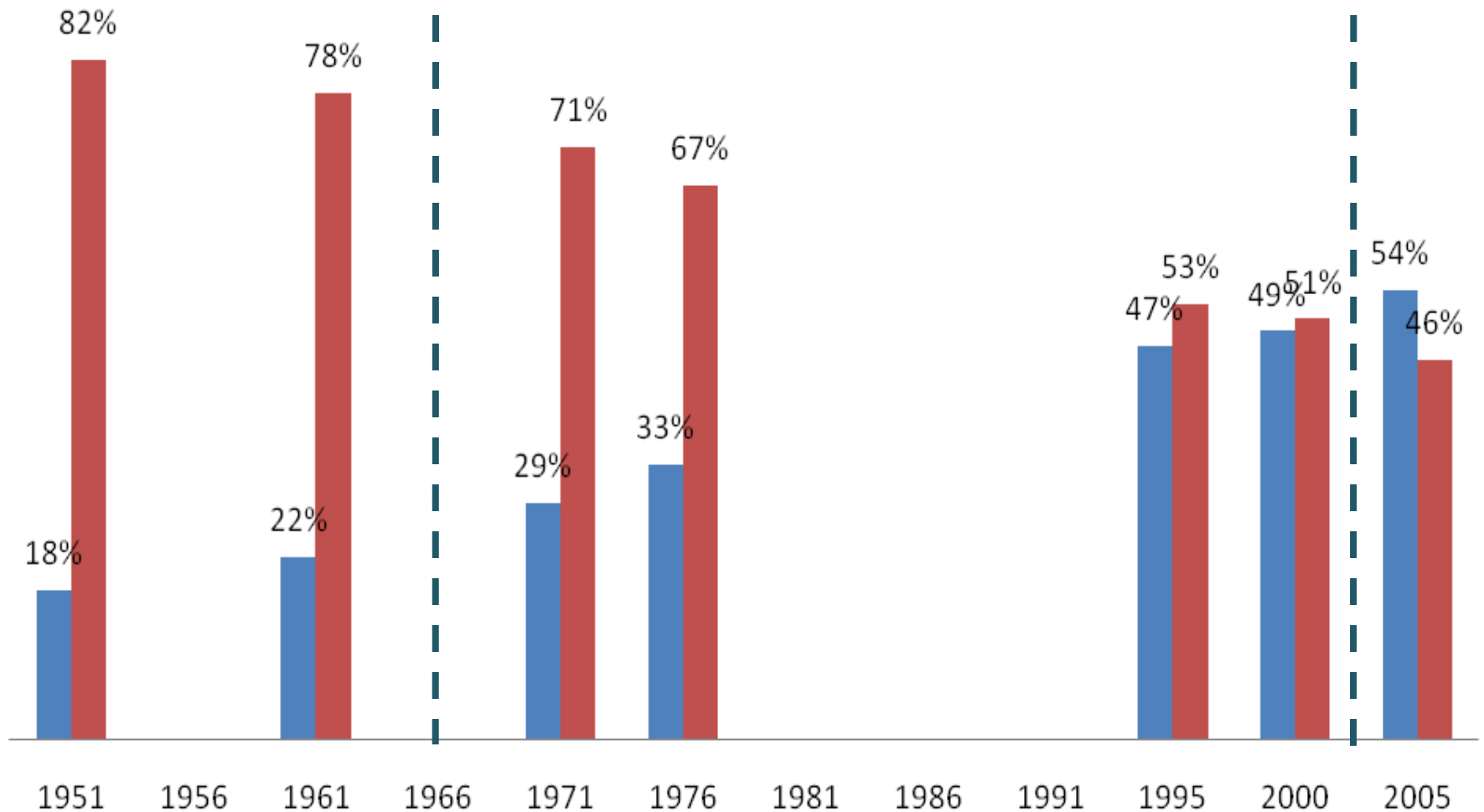
Results – Occupational part analyses

- Development of information and knowledge workers and information specialists
- Share of knowledge workers
- Shortcomings

7 Results

Information vs. Non-information workers

■ Information workers ■ Non-information workers



Knowledge workers

	1951	KW*	1995	KW*	2005	KW*
Knowledge workers	102,704		397,546		461,656	
Information workers	599,251	17%	1,739,220	23%	2,068,526	22%
Total workforce	3,347,115	3%	3,664,680	11%	3,816,211	12%

Knowledge workers by economic sector

	1995	%	2005	%
Agriculture	521	0.1%	1,214	0.3%
Manufacturing	23,856	6.0%	33,411	7.2%
Services	53,930	13.6%	57,025	12.4%
Information technology industries	9,830	2.5%	17,066	3.7%
Information transaction industries	6,028	1.5%	15,185	3.3%
Knowledge industries	303,381	76.3%	337,755	73.2%
Total knowledge workers	397,546	100%	461,656	100%

Information management occupations

	1995	2000	2005	%
Knowledge industries	1,179	2,240	3,477	71%
Total information management occ.	1,557	2,762	4,867	100%

Shortcomings

- Micro census – labor force survey
- Change of survey design
- ISCO limitations

7 Future research

NATIONAL ECONOMY CONTEXT KNOWLEDGE INDUSTRIES SEGMENT

UNIVERSITIES

≈

KNOWLEDGE INDUSTRIES (KI)

FTE Technical services staff

FTE Technical services staff

⋮

=

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Purchases of publications

=

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FTE Technical services staff/
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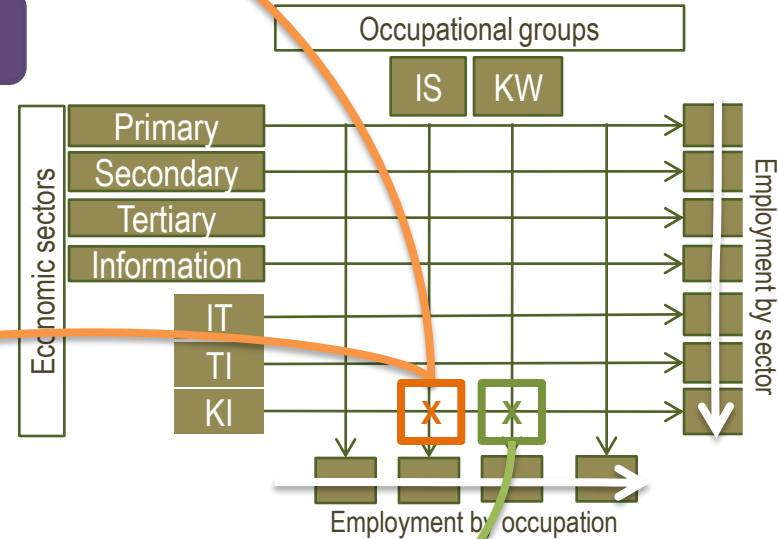
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FTE Reader services staff/
Primary library users

≈

FTE Reader services staff/
Knowledge workers

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Thank you very much for your
attention.