

UNESCO Training Workshop



ICS: The Next Big Thing? Intellectual Capital Management to support the development of Knowledge Economy

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Fraunhofer

Institut
Produktionsanlagen und
Konstruktionstechnik



Intellectual Capital Statements

Discussion of the basics

- 1. Initial Situation**
- 2. Evidence from German ICS Project
Made in Germany**
- 3. Intellectual Capital Statement –
Made in Europe**
- 4. Summary and Lessons Learned**

Globalization and Low Labour Cost Countries

Production Relocation is affecting European Companies

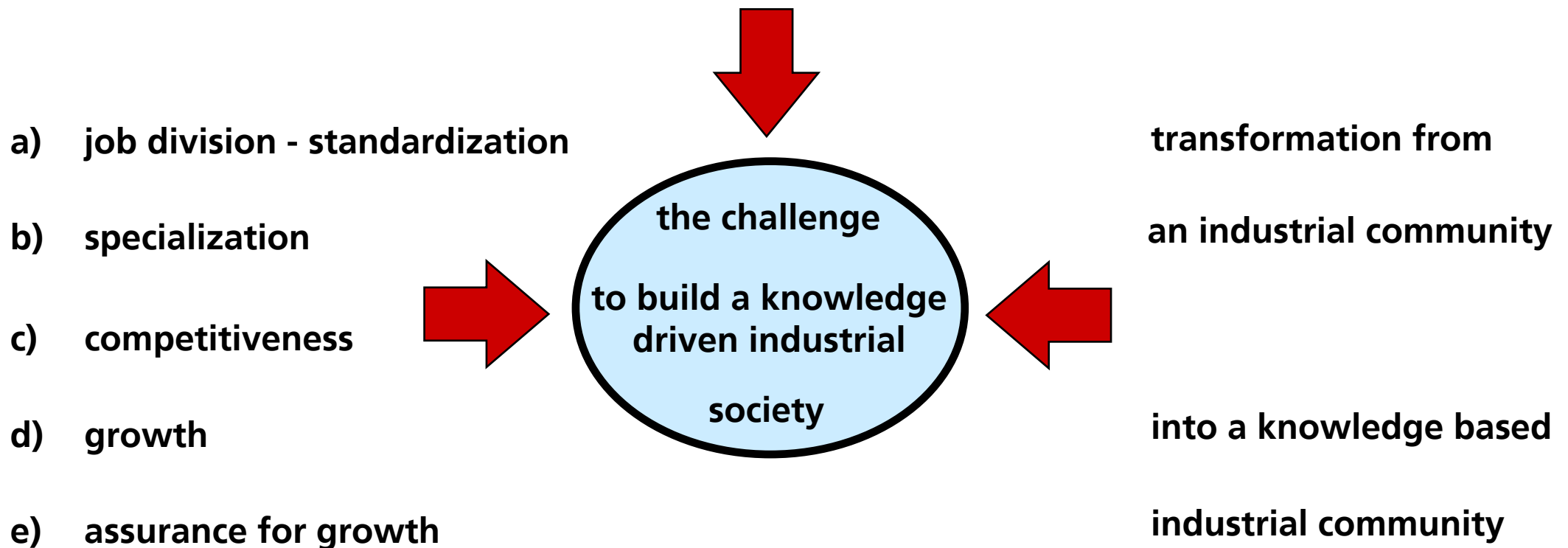
Competition on Productivity and Cost Efficiency is rather short-term oriented than Innovation by Research



**For European Companies,
Innovation becomes more important than
Cost Leadership**

The Way to the Third Millennium

1. Production of „high“ added value products and services
2. The involvement and systematic development of more participants in the process of added value.



What are the needs for the Industry?

Product and Production Process Optimization, including equipment !

Stronger Focus on Research and Development !

Establishment of Supplier Networks for joint development !

Creation of Knowledge in terms of Market and Customer Needs !

Systematic Development of Intellectual Capital !



Why Measuring Intellectual Capital (IC) in SMEs?

- The **organizational value** consists of tangible and intangible assets, which are mostly undocumented in traditional accounting systems
- **Investors** (Rating according to Basel II) demand plausible evidence of corporate values. Companies in knowledge-intensive fields have difficulties in proving their value to investors.
- **Legal regulations** commit organisations to legitimate their intangible assets. (Austrian UOG, IAS 38, DRS 12 and 5)

Would you have invested?



Microsoft Corporation 1978

Development of Economy

National Wealth

Innovation

**World standard
products**

**Competitive
production**

Intellectual Capital

Human Capital

Use technology

Structural Capital

Manage technology

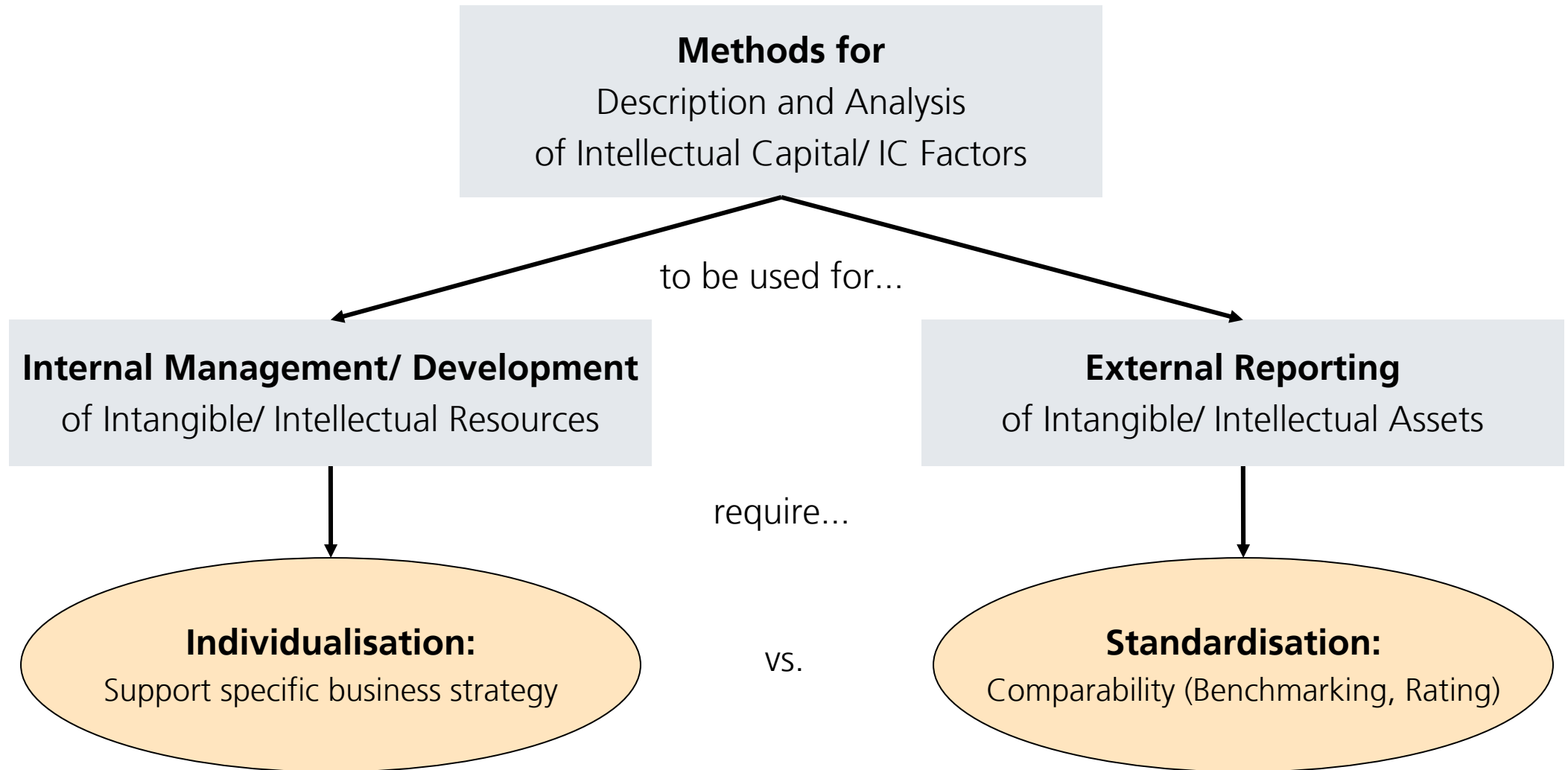
Relational Capital

Communicate technology

Innovation Systems

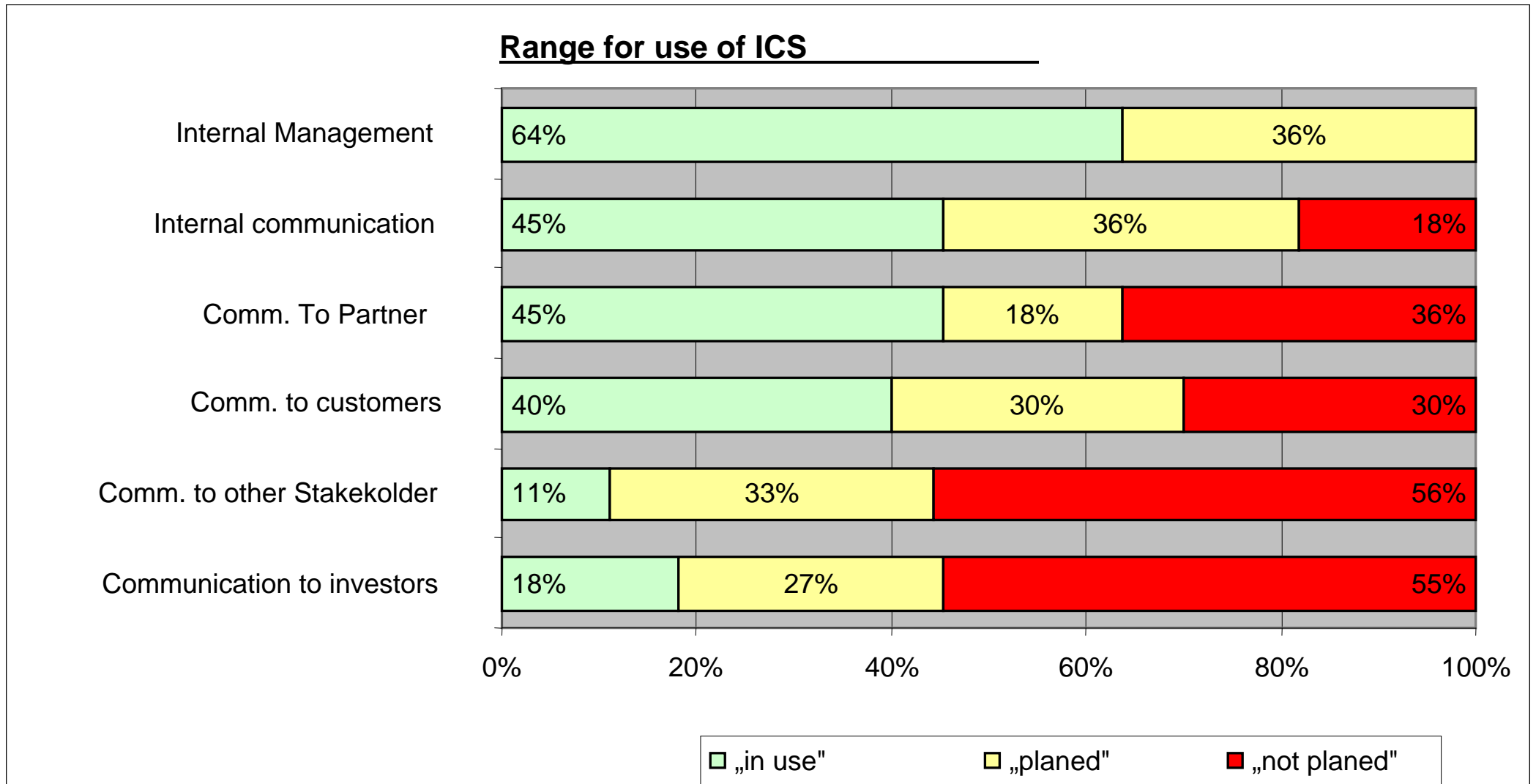
ICS

Two Basic Fields of Use for Intellectual Capital Statements (ICS) in SMEs



General SME requirement: economic procedure (costs-benefit)!

Range for use: internal before external



source: Befragung der deutschen Wissensbilanz-Pilotanwender (2005), Fraunhofer IPK (n=11)

Classification Criteria of ICS Approaches

ICS models can be classified in at least four perspectives:

Holistic view on IC

IC is considered being one single summable unit

vs.

Detailed view on IC

IC is subdivided into separate parts/ elements

Monetary

e.g. market-to-book-ratio, income approach, cost approach

vs.

Non-Monetary

Qualitative (e.g. narrative) and quantitative/ non-monetary indicators

External instrument

Reporting tool

vs.

Internal instrument

Management tool

Measurement

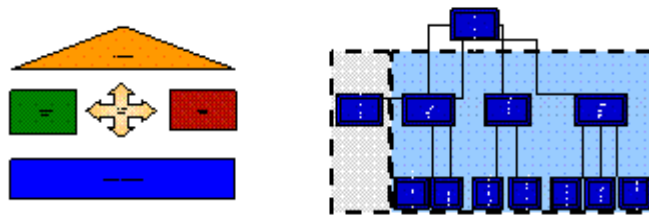
Measurement of Indicators

vs.

Assessment

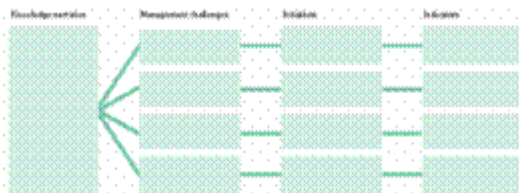
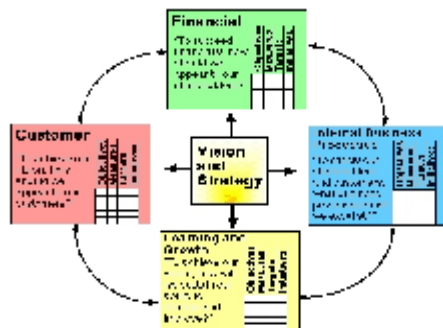
Analysis of strengths/weaknesses

Selection of Existing IC Management Approaches



Intangible Assets Monitor

		Market Value		
Tangible Assets	Intangible Assets			
	Brand Reputation	Human Resources	Customer Loyalty	
Growth				
Innovation				
Efficiency				
Stability				



Skandia Navigator and IC-Rating according to Edvinsson:

- Established, widely spread structure model
- Rating procedure for the evaluation of IC

Intangible Asset Monitor:

- Integrated management information system
- Focus on change and flows of knowledge indicators

Balanced Scorecard:

- Strategic approach and performance measurement system
- Four perspectives: Financial, customer, business process, and learning and growth perspective

Danish Guideline for IC-Statements:

- Management and communication of KM also in SMEs
- Detailed description of approach with guideline

Overview: Existing Non Financial ICS Frameworks and Guidelines

Institution / Country	Initiative	Scope	Application	Year	Reference
European Union	Public	All companies	Mandatory	2003	Modernisation Directive
		Listed Companies	Mandatory	2004	Transparency Directive
Australia	Public	Listed Companies	Mandatory	2003	ASX Listing Rule 4.10.17, Australien Stock Exchange
Canada	Public	Listed Companies	Mandatory	2003	Management Discussion and Analysis under NI 51-102, Continuous Disclosure Obligations, Securities Administrator
Germany	Public	All companies	Mandatory	2004	GAS 15 Management Reporting, DRSC
United Kingdom	Public	Quoted companies	Under Discussion	2005	Operating and Financial Review, Department of Trade and Industry
United States	Public	Listed Companies	Mandatory	2003	Management Discussion and Analysis, Securities and Exchange Commission
International Accounting Standards Board (IASB)	Private	Accounting Standard Setters IFRS		2005	Management Commentary Discussion Paper, IASB
European Union	Public	All companies	Voluntary	2002	Guidelines for Managing and Reporting on Intangibles, MERITUM Project
Australia	Public	All companies	Voluntary	2002	Australian guiding principles on Extended Performance Management, Society and Culture
Austria	Public	Public Universities	Mandatory	2002	Austrian Universities Act, Federal Ministry of Education, Science and Culture
Denmark	Public	All companies	Voluntary	2003	Intellectual Capital Statements - The new guideline, Ministry of Science, Technology and Innovation
Germany	Public	SME	Voluntary	2004	Intellectual Capital Statements - Made in Germany, Federal Ministry of Economics and Labour / Fraunhofer IPK, Berlin

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Source:
OECD - Preliminary Report, March 2006

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Motivation and Benefits on the macro-economic and political level in Germany



- **Development of the Intellectual Capital** in Germany to secure and enhance the **capability to compete on international level**.
- **Motivate German Enterprises** by time to use knowledge as a strategic resource.
- **Preparation for coming legal changes** in accounting rules (see more Qualitative Factors in International Accounting Standard Board (IASB)).
- Visualize the Intellectual Capital of German Enterprises and their innovation and future potential for **government decision making to support selected industry**
- **Enhance productivity and competitiveness** by activating unused potentials.

History and result of the German pilot project

Supported by the BMWA within the initiative *"Fit for the knowledge competition !"*

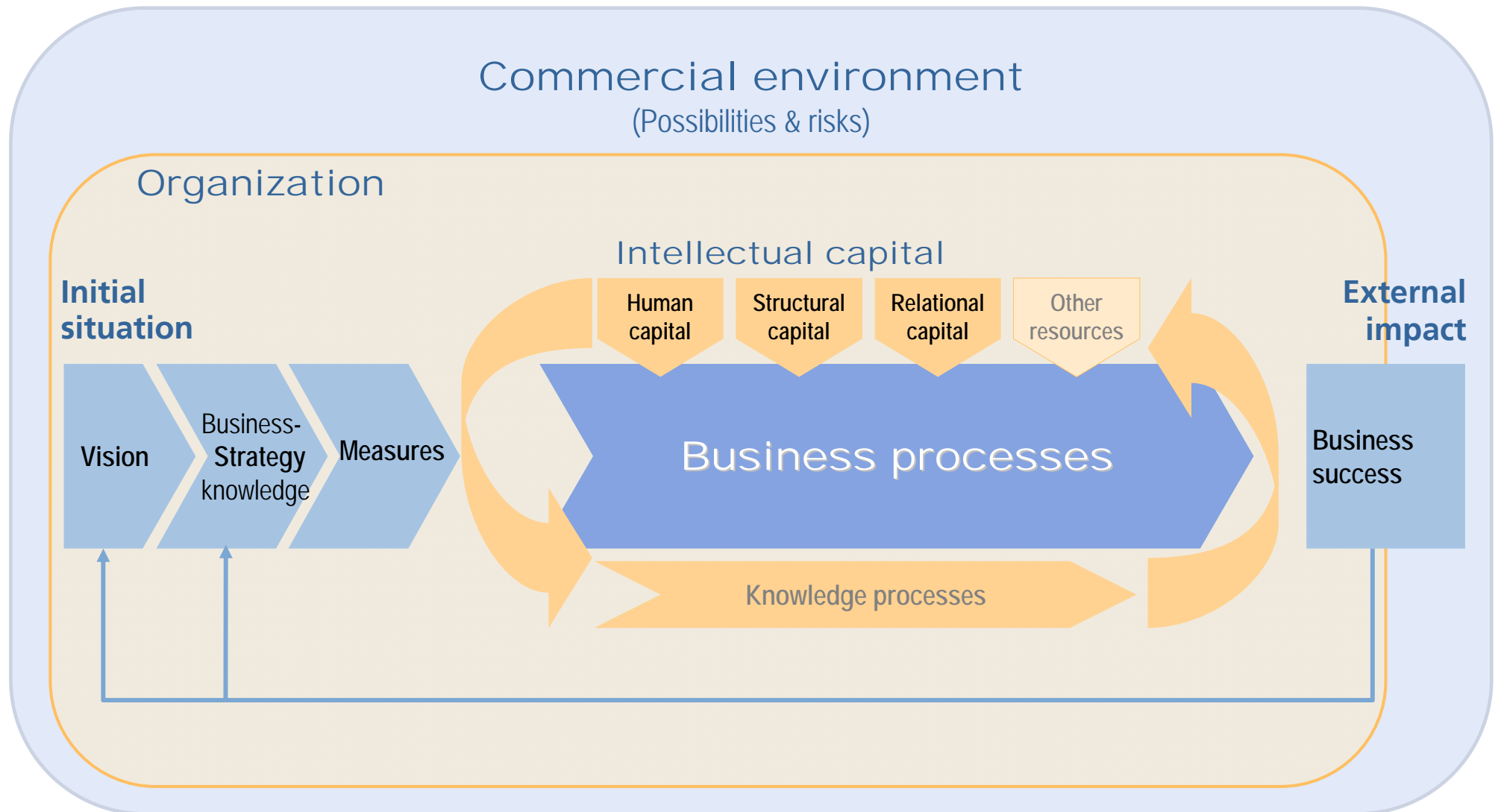
[AK-WB]



Discussion Group ICS

- Summer 2003 Foundation of the **Intellectual Capital Statement Project Group** as international consortium.
- **Review of international experiences** and adaptation to the requirements of German SMEs.
- In January 60 companies could be inspired for this idea. Finally **14** were chosen to be involved as **pilot companies**.
- **Maximum efficiency at the realisation of the project:**
Within 3 months the project was set up and a model for Intellectual Capital Statements was developed. The project consortium could successfully implement **Intellectual Capital Statements in 14 SMEs within only 6 months** (from February till July 2004).

The Framework: ICS Structural Model



What is an Intellectual Capital Statement in the German Definition?



Definition Intellectual Capital Statement:
An Intellectual Capital Statement is an instrument for the focused **description and development of the Intellectual Capital** in an organisation.

It shows the interdependencies between the organisational aims, the business processes, the Intellectual Capital (IC) and the business success and describes these elements by means of **indicators**.

Source:

Guideline Intellectual capital statement –
Made in Germany.
Federal Ministry of Economics and Labour
in cooperation with the Intellectual Capital
Statement Project Group
www.akwissensbilanz.org

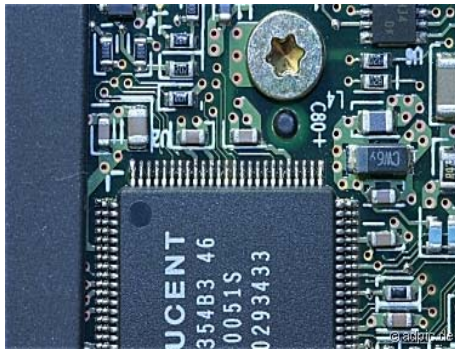


Human Capital

- Employee qualification and experience
- Leadership and social skills
- Employee motivation

Structural Capital

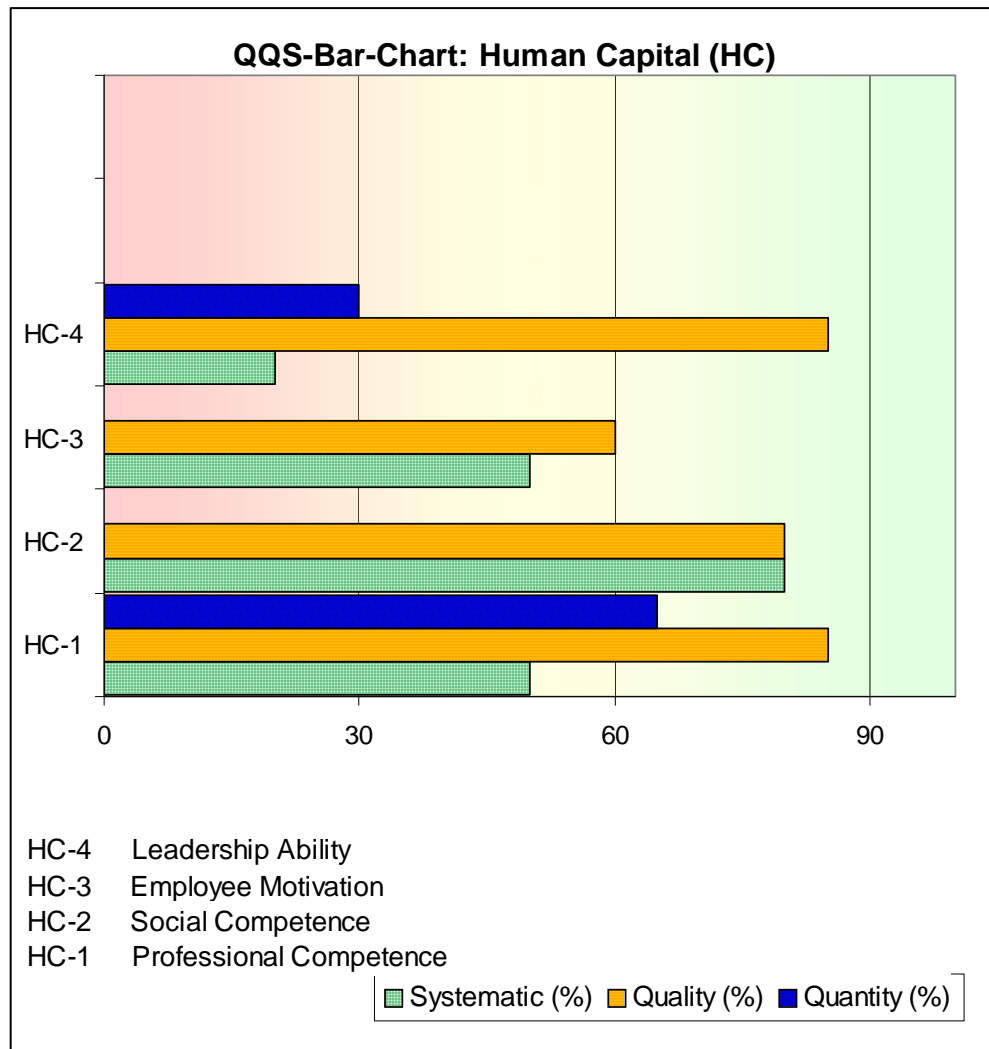
- Corporate culture
- Internal co-operation and organisation
- Product innovation
- Process innovation and optimisation
- Knowledge transfer and storage



Relational Capital

- Relations to customers, suppliers and investors
- External co-operation and knowledge acquisitions
- Social commitment and public relations

Results: Identify Strengths & Weaknesses



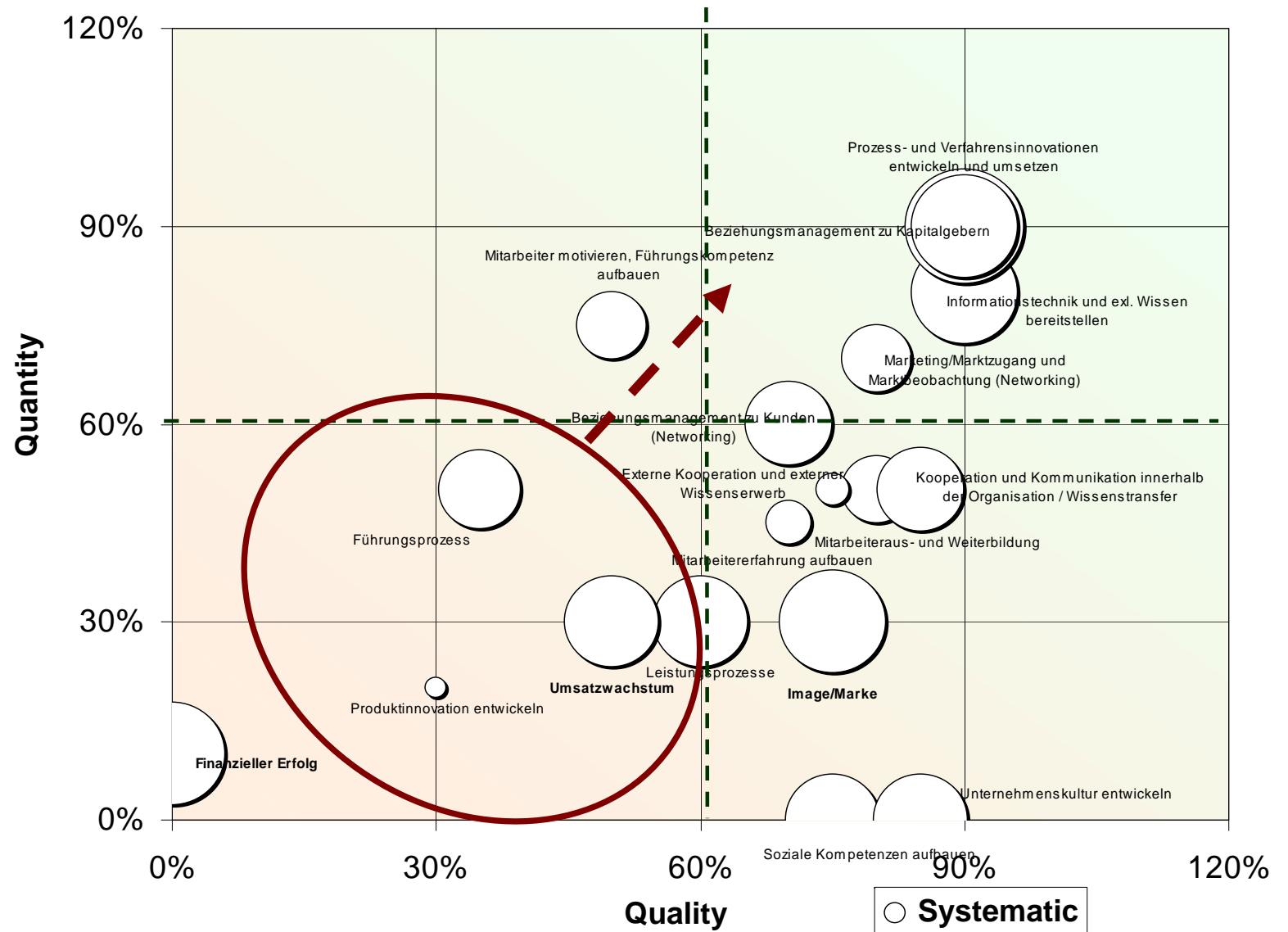
Example:

Human Capital Factors evaluated regarding their potential to support achievement of strategic objectives.

Dimensions:

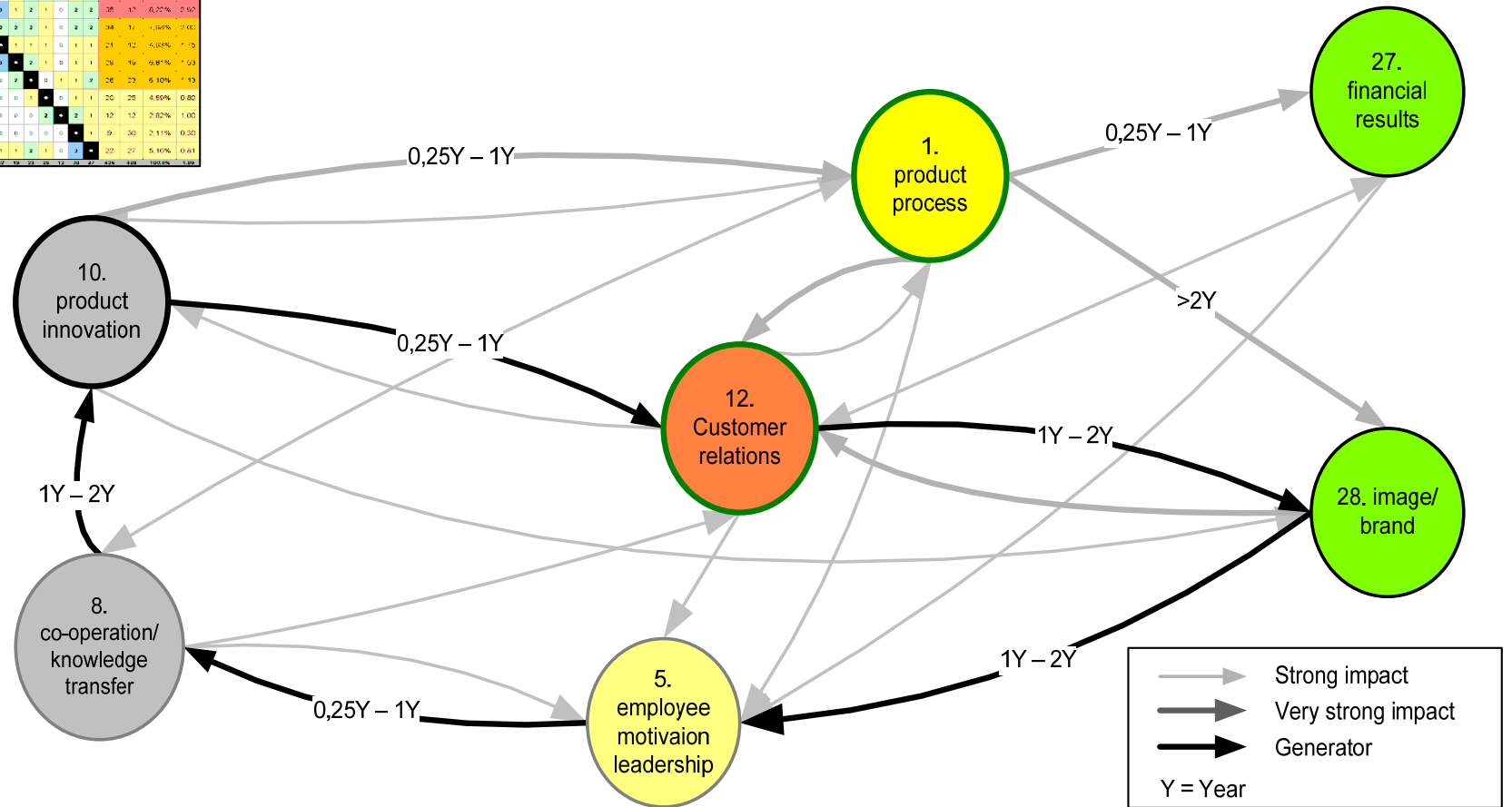
- Quantity:
Do we have enough of the factor to achieve our strategic objectives?
- Quality:
Is the factor good enough to achieve our strategic objectives?
- Systematic:
Do we manage this factor systematically to ensure its future quality and quantity?

Assessment portfolio

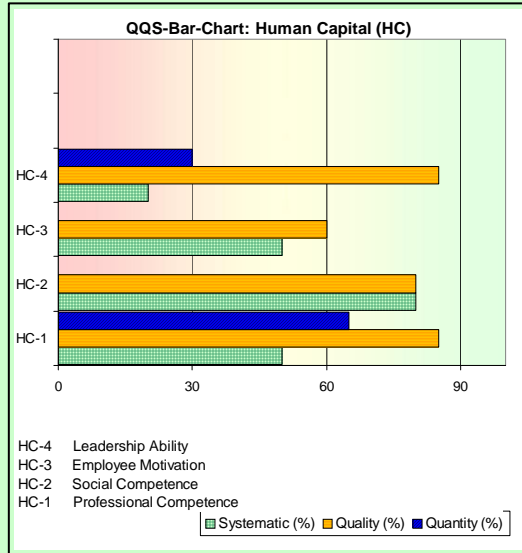


Monitoring Success of KM Measures in Cause-and-Effect-Chains by the means of ICS

No.	IC Factor	BP-1	BP-2	BP-3	BP-4	HC-1	HC-2	HC-3	HC-4	EC-1	EC-2	EC-3	EC-4	PC-1	PC-2	PC-3	PC-4	Active Sum	Relative Sum	Relative Balance	Compatibility
BP-1	Acquisition	3	2	1	3	3	2	2	2	0	3	0	2	1	2	1	1	26	35	5,81%	0,83
BP-2	Product development and innovation	3	2	2	3	3	0	0	2	0	1	2	1	2	2	2	2	26	27	6,10%	0,96
BP-3	Customer service	2	0	1	3	1	1	0	0	1	2	2	3	0	0	0	0	16	24	4,22%	0,72
BP-4	Financial Results	3	2	2	3	3	0	0	2	0	1	2	1	2	2	2	2	25	28	5,07%	0,40
BP-5	Image/ Customer Satisfaction	3	0	2	3	2	0	1	2	0	0	0	0	3	2	2	2	22	35	5,16%	0,63
BP-6	Growth	1	2	0	2	2	0	0	0	0	0	0	1	1	1	1	1	16	31	4,22%	0,28
HC-1	Professional Competence	2	3	3	3	3	1	0	1	1	1	1	1	2	0	0	0	30	18	7,54%	1,57
HC-2	Social Competence	3	0	3	0	0	0	1	1	0	0	0	0	3	3	3	3	23	21	9,40%	1,10
HC-3	Personal Motivation	3	2	3	2	1	1	2	1	0	1	2	2	2	2	1	2	27	25	8,34%	0,83
HC-4	Teamwork Ability	3	2	3	3	3	2	3	3	1	2	1	1	2	1	0	2	35	17	6,22%	2,50
EC-1	Internal Communication & Knowledge Transfer	2	3	1	3	3	2	2	2	2	2	1	0	2	2	1	0	34	17	1,84%	0,40
EC-2	Management Instruments	1	1	0	1	1	2	2	2	3	1	1	1	0	1	1	1	21	12	4,02%	1,15
EC-3	Relationship Technology & Explicit Knowledge	2	2	2	1	2	3	1	2	3	3	1	0	1	0	1	1	23	19	6,81%	1,50
EC-4	Process Innovation	3	3	1	2	2	2	1	2	1	0	2	1	1	1	1	1	26	22	6,10%	1,12
PC-1	Customer Relationships	3	0	2	3	2	0	2	2	1	0	0	0	1	1	1	1	20	25	4,66%	0,80
PC-2	Public Relationships	2	0	0	1	0	2	2	0	0	0	0	0	2	0	1	1	12	12	2,82%	1,00
PC-3	Relationships to investors/providers of capital/equity	1	2	0	2	0	0	1	0	0	0	0	0	0	0	0	0	9	30	2,11%	0,30
PC-4	Relationship to cooperation partners	1	2	1	1	1	2	2	1	0	2	1	2	0	0	0	1	22	29	5,10%	0,61



Result: Defining Major Areas for Intervention



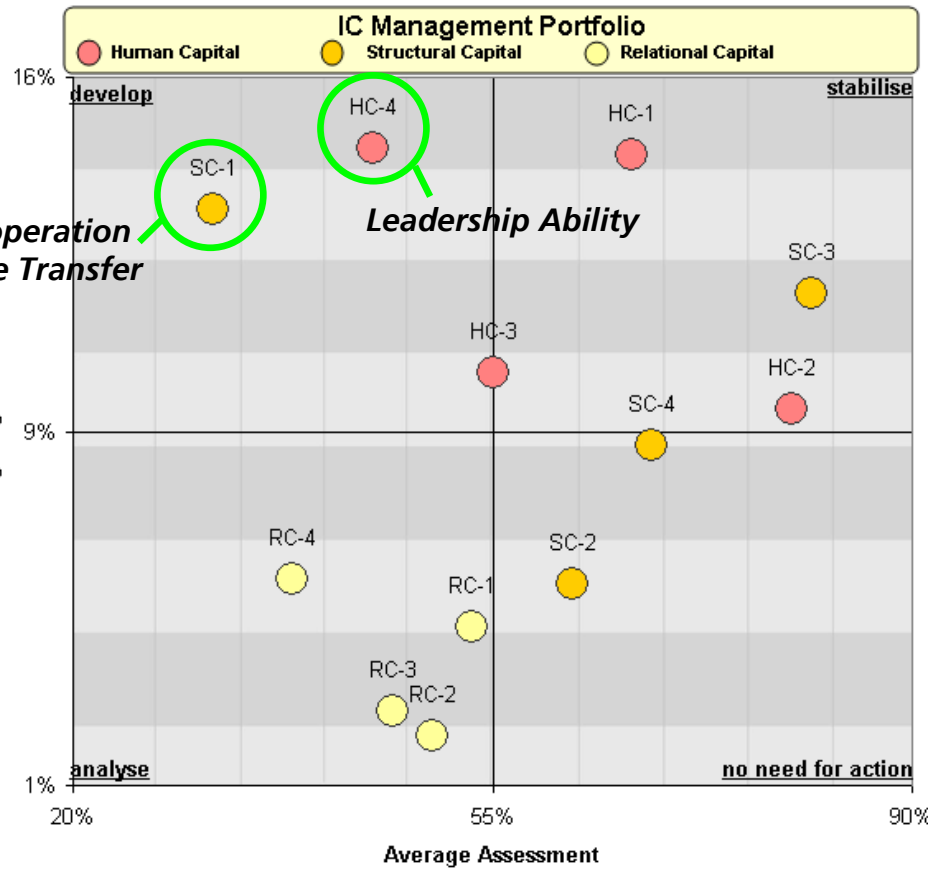
Cross Impact Matrix

IC Type	IC Factor	BP-1	BP-2	BP-3	BP-4	HC-1	HC-2	HC-3	HC-4	SC-1	SC-2	SC-3	SC-4	RC-1	RC-2	RC-3	RC-4	Relative Influence	Relative Involvement			
Business Process	BP-1 Acquisiton	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	35	0.81%	0.83	
	BP-2 Product development and innovation	3	2	1	3	2	2	2	2	2	2	2	2	2	2	2	2	28	27	9.10%	0.95	
	BP-3 Customer service	2	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	18	25	4.23%	0.72
	BP-4 Financial Results	3	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	25	26	5.07%	0.85
	BP-5 Image/ Customer Satisfaction	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	22	35	5.10%	0.83
Human Capital	HC-1 Professional Competence	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	30	18	7.04%	1.51	
	HC-2 Social Competence	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	23	21	5.40%	1.13	
	HC-3 Employee Motivation	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	27	26	5.34%	0.95	
	HC-4 Leadership Ability	3	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	35	12	8.22%	2.02	
Structural Capital	SC-1 Internal Co-operation & Knowledge Transfer	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	34	11	5.06%	2.33	
	SC-2 Management instruments	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	21	12	4.93%	1.15	
	SC-3 Information Technology & Explicit Knowledge	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29	19	3.84%	1.53	
	SC-4 Processinnovation	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	28	23	5.10%	1.13	
Relational Capital	RC-1 Customer Relationships	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	20	25	4.66%	0.87	
	RC-2 Public Relationships	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	12	12	2.02%	1.00	
	RC-3 Relationships to investors/providers of capital/owner	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	30	2.11%	0.50	
	RC-4 Relationship to co-operation partners	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22	27	5.10%	0.91	

Internal Co-operation & Knowledge Transfer

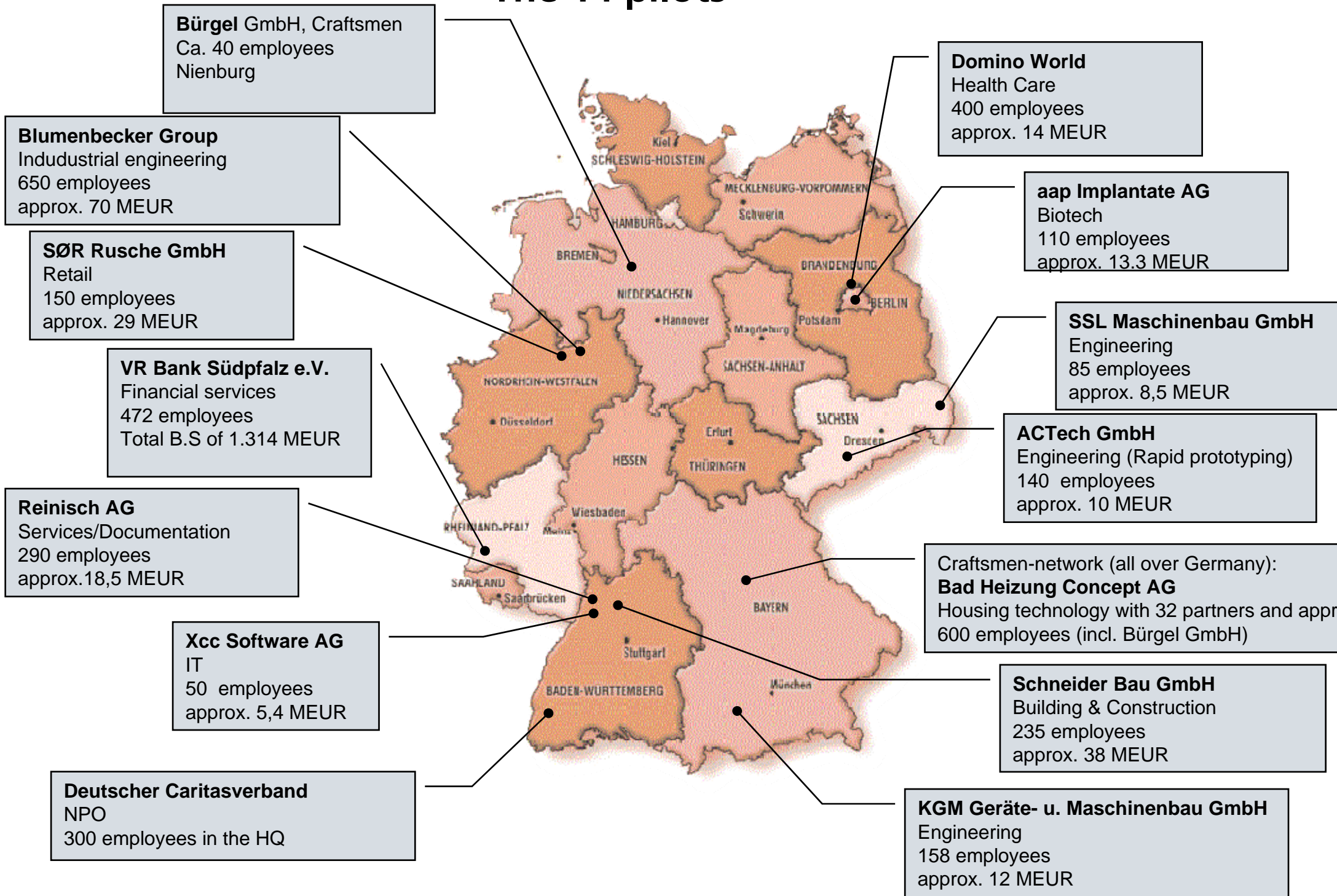
Leadership Ability

Weighting Score



HC-1 Professional Competence	SC-1 Internal Co-operation & Knowledge Transfer	RC-1 Customer Relationships
HC-2 Social Competence	SC-2 Management instruments	RC-2 Public Relationships
HC-3 Employee Motivation	SC-3 Information Technology & Explicit Knowledge	RC-3 Relationships to investors/providers of capital/owner
HC-4 Leadership Ability	SC-4 Processinnovation	RC-4 Relationship to co-operation partners

The 14 pilots



Main Results of the German ICS Pilot Project

www.akwissensbilanz.org



- **Efficient method** to start IC Management in SMEs.
- **Intellectual Capital Statements** were implemented in 50 SMEs from different regions and sectors.
- **Guideline for the implementation** of an ICS in German and English language published (more than 50.000 copies distributed)
- **Software “Wissensbilanz-Toolbox”** available since July 2006, more than 25.000 copies distributed.
- **Financial Times and Commerzbank Award 2005** for one of the first 14 Pilot-Partners
- **25 Roadshows** for entrepreneurs with more than 500 participants.
- More than **200 users and trainers** trained

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Strategic Objectives:

- Strengthen European SMEs' competitiveness and innovation potential
- Establish ICS as management tool for knowledge driven economy

Scientific Objectives :

- Consolidate existing national ICS approaches
- Develop harmonised European ICS framework
- Provide practical ICS guideline, simple implementation procedure
- Implement and evaluate ICS framework for “proof of concept”

Technological Objectives :

- Develop supporting software “ICS toolbox”



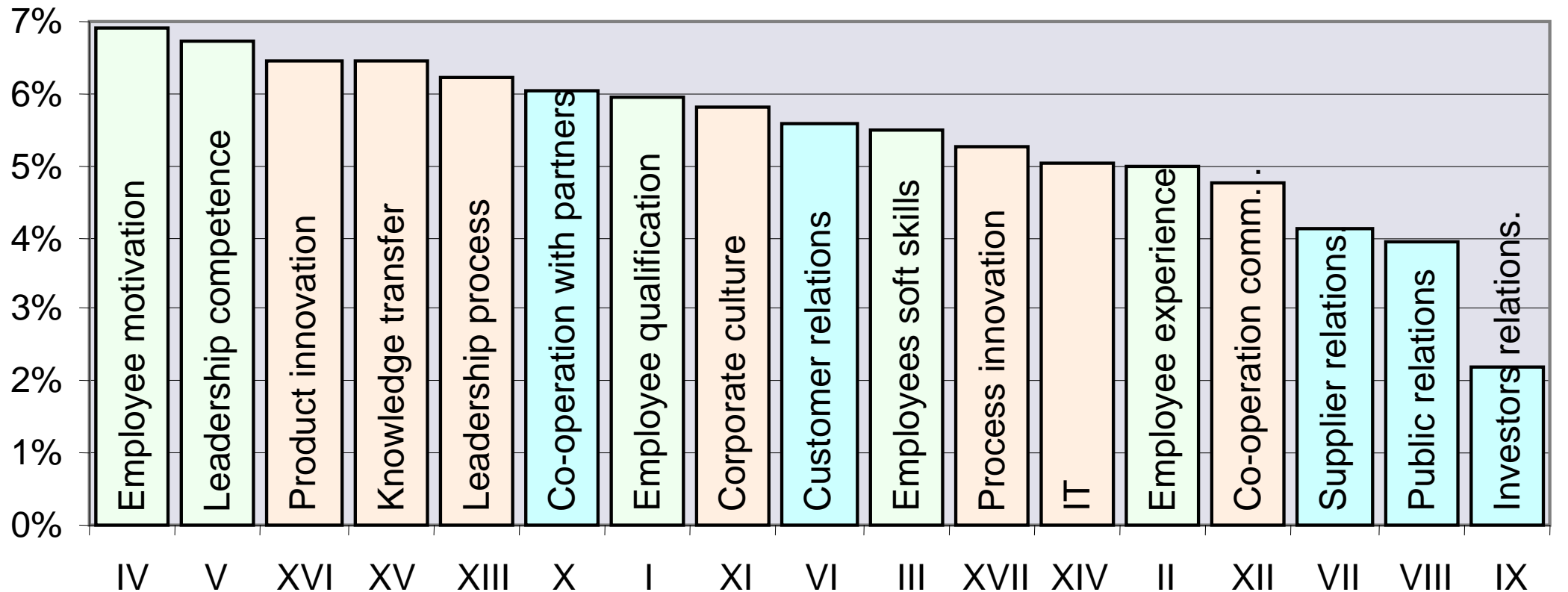
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The most important intellectual capital drivers within German SME

Ranking of the most important intellectual capital factors according to their influence
(aggregated for all 14 Pilot-SME)

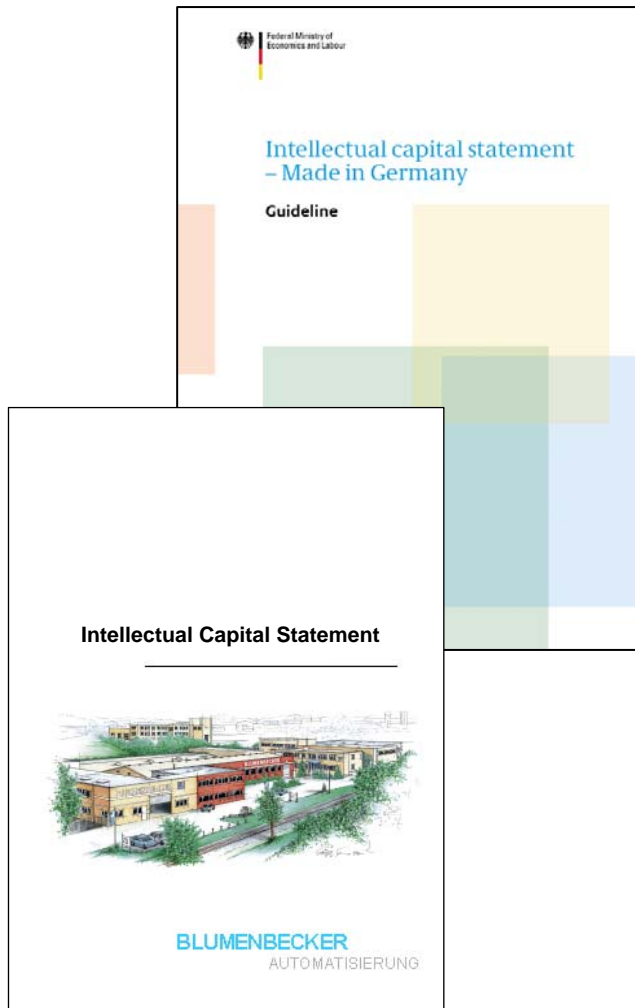


Summary and Experiences



- Step-by-step process with distinct quick-wins is important
- A bottom-up approach is best to achieve a sustained impact in the organization
- Second step is usually external communication to banks and customers
- External reporting to stakeholders without links to internal management is not considered credible in most of the firms
- Pull (from SME) instead of Push (from investors) is recommended

Benefits of Intellectual Capital Statement– Summary of companies` experiences



Improved management

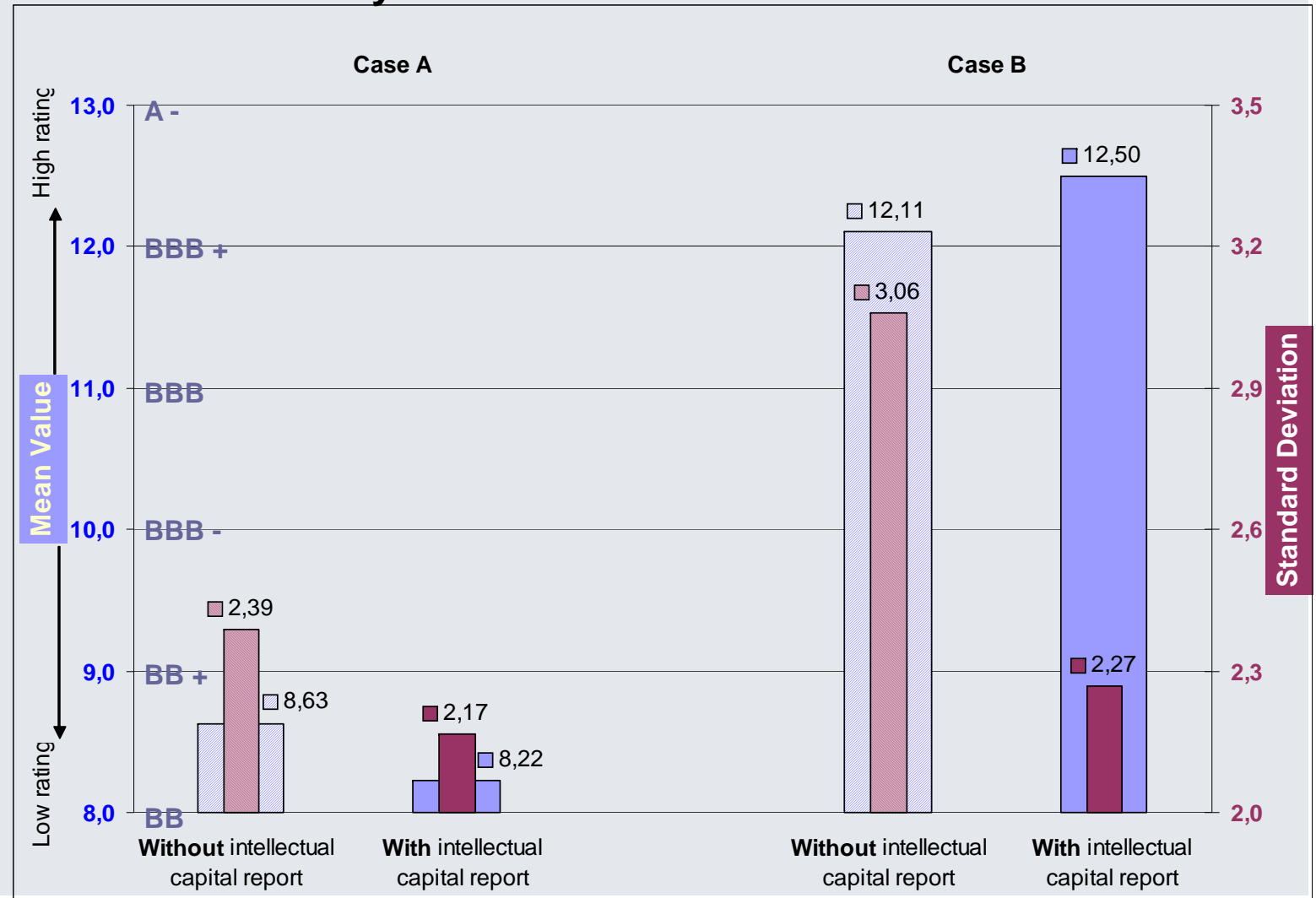
- Increases transparency according to knowledge and competences
- Well-founded basis for decision making and organisational development
- Discovers improvement opportunities and innovation potentials.
- Supports the well-aimed development of high potential components of intellectual capital

Improved external communication

- Improved relationship to stakeholders by higher transparency about the sources of organisation's performance
- Improved negotiating basis with investors and customers

Other Possible Applications

Financial market study



Thanks for Attention



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