



Aalto-yliopisto

Ako-E3020 Knowledge Management in Practice (5 op)

Luento #2

31.1. 2019 – Eerikki Mäki eerikki.maki@aalto.fi

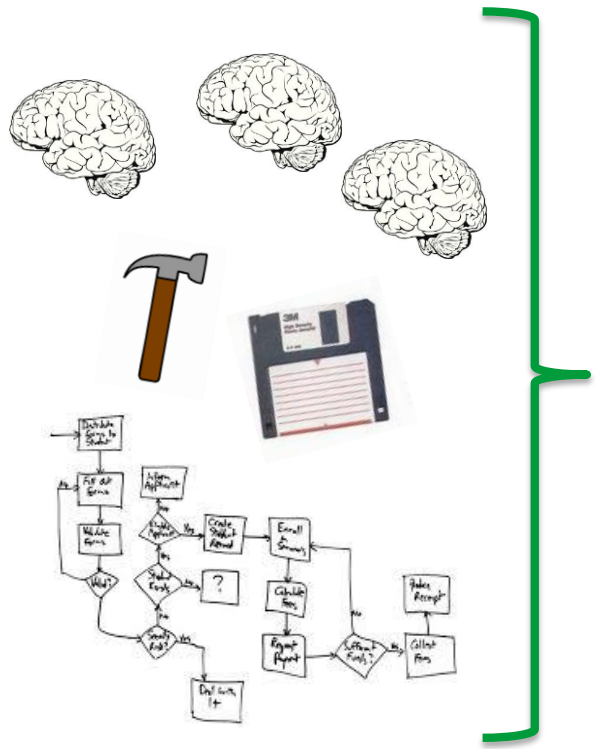
Agenda 31.1.2019

- **Luento #2**

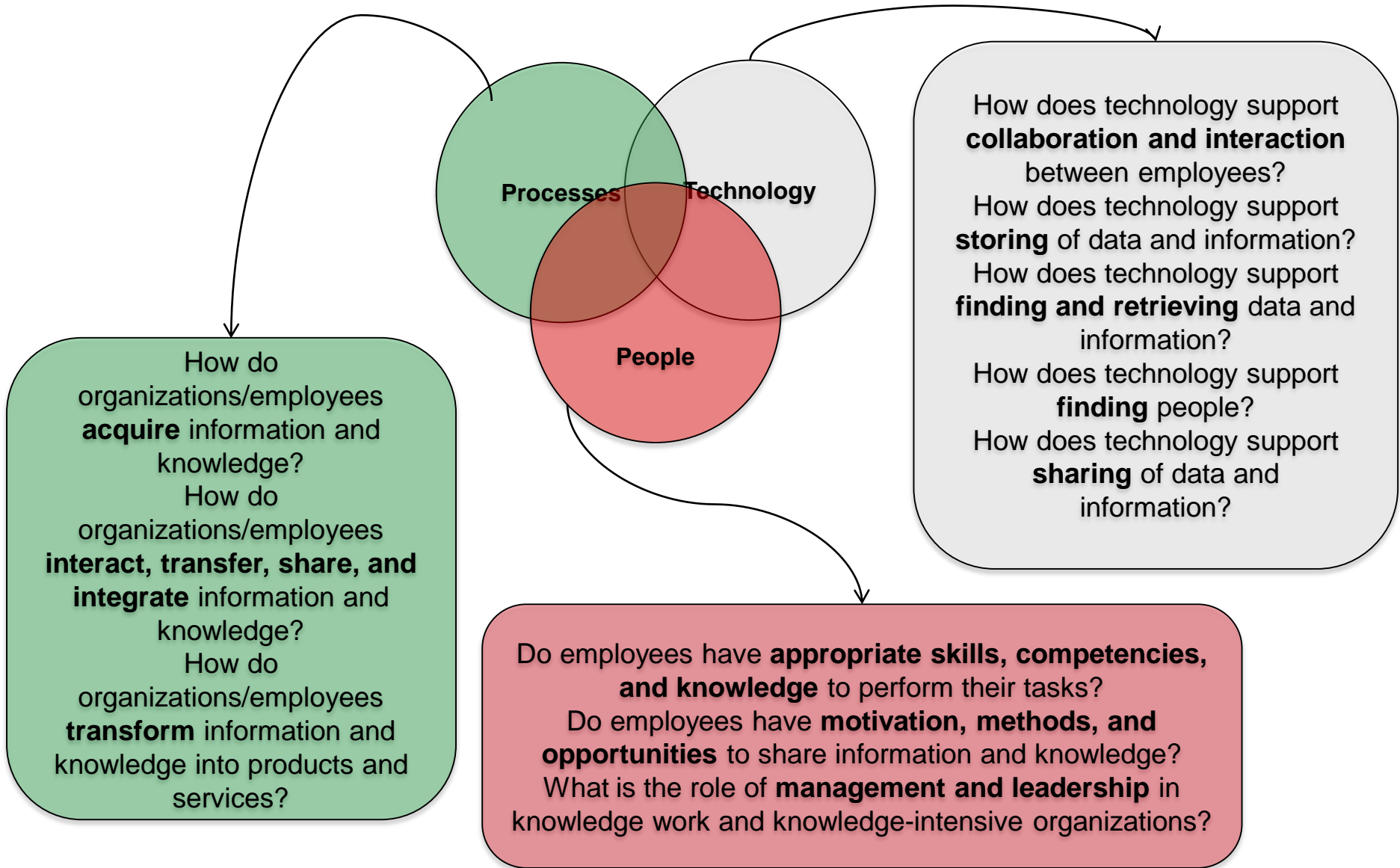
- Kurssin punainen lanka
- Tilanne ryhmätöiden suhteen
- Tietojohtamisen kehittäminen tietointensiivisissä organisaatioissa
- Erilaisia tietointensiivisiä organisaatioita ja niiden ominaispiirteistä
- Työskentelyä ryhmässä tehtävän harjoituksen parissa

Oppimispäiväkirja 2

- Reflektoi omia kokemuksiasi tietointensiivisessä organisaatiossa toimimisessa. Miten ”type of knowledge-intensive organization” vaikuttaa siihen, miten informaation, tieto ja osaaminen ovat hyödynnettävissä? Käytä luentomateriaalia ja artikkeleita liittääksesi kokemuksesi johonkin teoriaan tai tieteelliseen malliin. Esim:
 - Blackler F. (1995) Knowledge, Knowledge Work and Organizations: An Overview and Interpretation. *Organization Studies*, vol. 16(6), 1021-1046.
 - Lam A. (2000) Tacit knowledge, organizational learning, and societal institutions: An integrated framework. *Organization Studies*, Vol. 21 (3), 487-513



Tietoa, oppimista, tuotteita ja palveluita sekä asiakkaille että oman organisaation käyttöön



Tiedon ja osaamisen johtamisella tarkoitetaan...

- *...niitä menetelmiä ja käytäntöjä, joilla organisaatiossa mm. tunnistetaan, käsitellään, säilytetään, jaetaan, yhdistetään, jalostetaan, hyödynnetään ja kaupallistetaan tietoa ja osaamista.*
- Tiedon ja osaamisen johtamista voidaan tarkastella yhdessä tai erikseen mm. seuraavista näkökulmista:
 - Tiedon ja osaamisen johtamisen strategia
 - Tiedon jakamisen mahdollistajat ja esteet
 - Tiedon johtamisen prosessit ja käytännöt
 - Informaation ja tiedon dokumentoinnin käytännöt
 - Tiedon ja osaamisen johtamisen kulttuuri



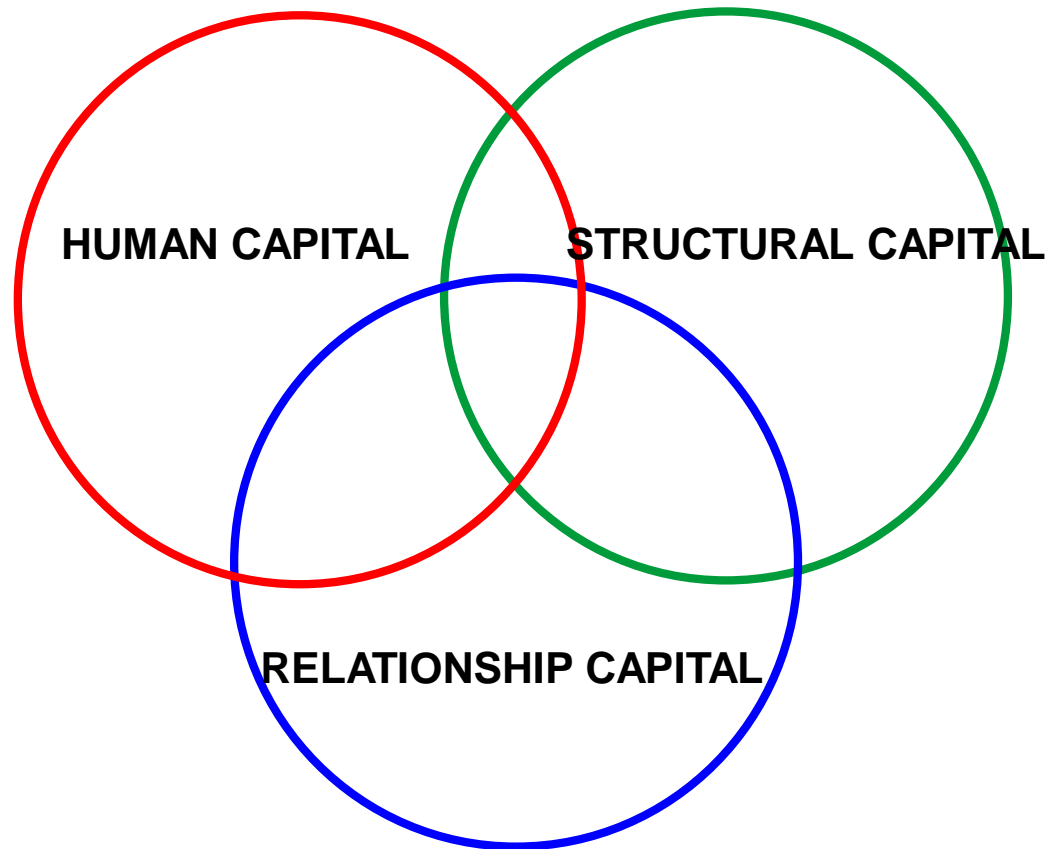
Intangible capital/assets

Tangible assets = something touchable e.g. buildings owned by the organizations, its machinery, its products in store, etc.

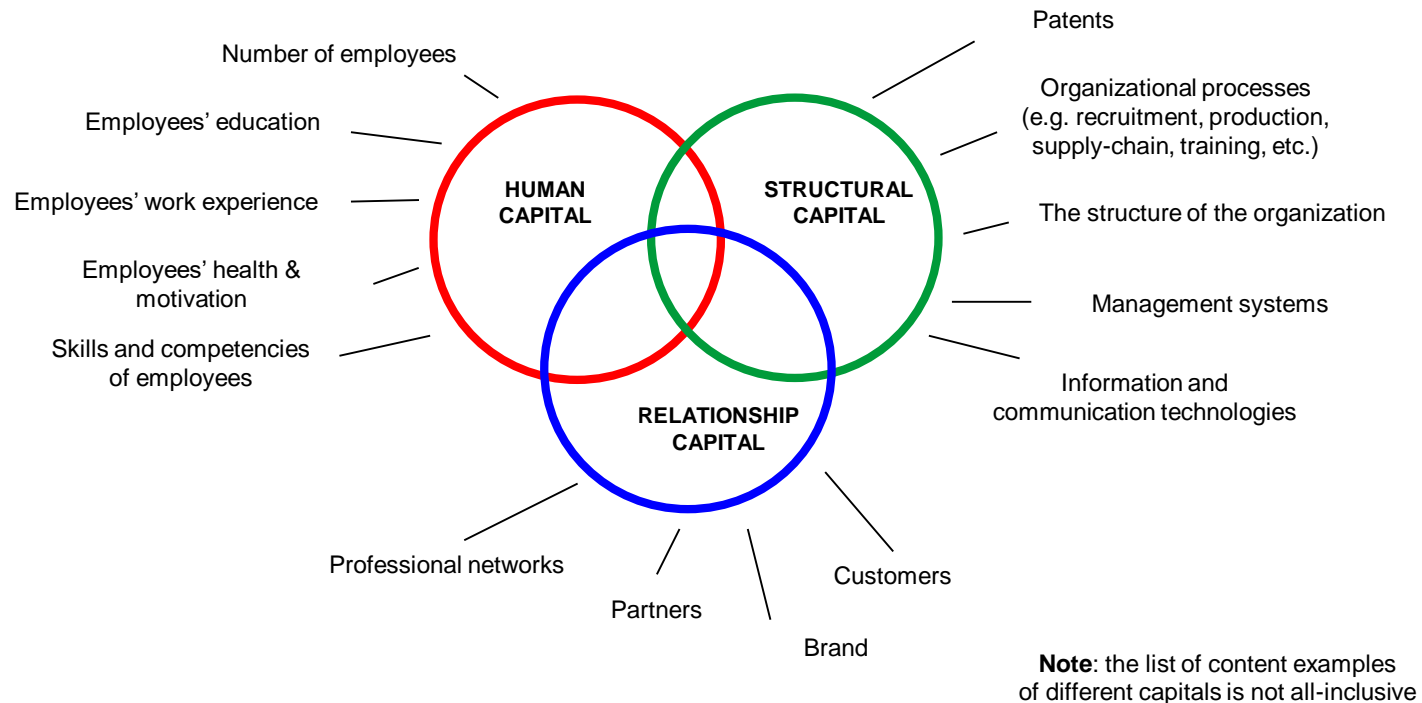
Intangible assets = e.g. brand, patents, know-how of the employee, etc.

Human capital + Structural capital + Relationship capital
= Intellectual capital

Intellectual capital



Intellectual capital



Assessing / measuring intellectual capital

- Assessing / measurement system is usually tailored to meet organization specific features
- Often difficult to get accurate numerical data
- Often difficult to compare key figures with key figures from other organizations (they are either not available or too context specific)
- However, measuring different aspects of intellectual capital can give directions for future development efforts

- Suomeksi: https://fi.wikipedia.org/wiki/Aineeton_p%C3%A4%C3%A4oma
 - **Aineeton pääoma** luokitellaan usein kolmeen pääryhmään (monia muitakin luokituksia on olemassa).
 - **Inhimillinen pääoma** viittaa henkilöstön osaamiseen ja muihin yksilön kykyihin liittyviin tekijöihin.
 - **Suhdepääoma kuvaa** organisaation ja sen sidosryhmien välisiä suhteita. Muun muassa asiakassuhteet ja [brandi](#) kuuluvat tähän ryhmään.
 - **Rakennepääoma** kattaa organisaation toimintaan ja järjestelmiin sitoutuneen osaamisen. Esimerkkeinä voi mainita [patentit](#) ja tietojärjestelmistä löytyvän informaation.
-

Social capital

- *“The sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or a social unit”* (Nahapiet & Ghoshal 1989).
- Social network (which describes how social structures are composed through nodes and ties between the members of the social network) and social capital can increase the opportunities and capabilities to find knowledge and expertise.
 - Social capital is one kind of glue that can connect dispersed knowledge and competence resources together.

Benefits of social capital

- Reduces the time to locate an expert within an organization
- Minimizes the costs associated with validating expertise
- Reduces the time and effort associated with developing and monitoring an agreement between individuals
- Enables an organization to better manage its knowledge resources
- Enables employees to combine and exchange knowledge resources

(Lesser and Prusak, 1999)

How is new knowledge created?

- Combination
 - **Incremental change** and development of existing knowledge by combining elements that were previously unconnected or by
 - **Radical change**: developing novel ways of combining elements previously associated: innovation
- Exchange
 - Complementary knowledge resources that are held and produced by different parties are exchanged and connected together
 - Transfer of explicit knowledge individually and/or collectively
- How to make combination and exchange possible?
 - Opportunity
 - Value expectancy
 - Motivation
 - Combination capability

Creation of intellectual capital (IC)

Social capital



Combination and exchange of IC



Creation of new IC

Structural dimension:

Network ties

Network configuration

Appropriable organization

Cognitive dimension:

Shared codes and language

Shared narratives

Relational dimension:

Trust

Norms

Obligations & expectations

Identification

Access to parties for combining/exchanging IC

Anticipation of value through combining/exchanging IC

Motivation to combine/exchange IC

Combination capability

New IC created through combination and exchange



Aalto-yliopisto

Adapted from Nahapiet & Ghoshal, 1998

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Types of knowledge work / knowledge-intensive organizations

- Models by Blackler (1995), Lam (2000), Bhatt (2002) differentiate knowledge work applying two dimensional model
- **First dimension** represents knowledge **exploration / exploitation**
 - Focus on **novel** vs. **familiar** problems
 - **Less** or **more** standardized knowledge and work
 - **Non-routine** and **non-specific** vs. **routine** and **specific** tasks
- **Second dimension** describes whether the work is based on individual or collective effort

Exploring and exploiting knowledge (Bhatt 2002)

Nature of interaction (i.e. between people) *How?*

		Independent	Interdependent	
<i>What?</i> Nature of tasks	Non-routine and non-specifiable	Individual expertise	Collaboration, informal coordination, and knowledge sharing	Focus on exploration
	Routine and specifiable	Individual discretion (within the specified limit)	Formal procedure, techniques, and rules	Focus on exploitation

Source: Bhatt G. (2002) Management strategies for individual and organizational knowledge. Journal of Knowledge Management, Vol. 6 (1), 31-39

Exploration and exploitation of knowledge

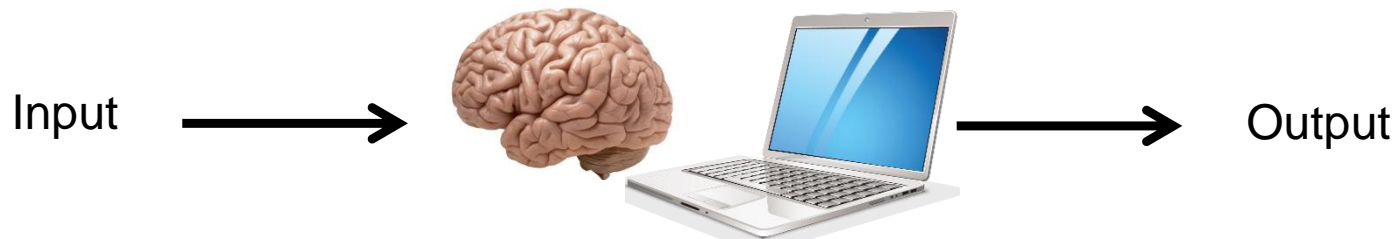
Table VII. Objectives of knowledge management.

Objectives of knowledge management	Reference
The aim that organizations should support knowing – the generation of meaning – amongst their employees	Thompson & Walsham (2004)
Knowledge creation, knowledge discovery, knowledge acquisition, knowledge storing, and identification of knowledge needs	Bouthillier & Shearer (2002)
Knowledge identification, knowledge diffusion, knowledge replication knowledge generation, and knowledge commercialization	Korac-Kakabadse et al. (2002)
Knowledge creation, knowledge storing/retrieval, knowledge transfer and knowledge application	Alavi & Leidner (2001)
Accessing information	Kelloway & Barling (2000)
Create knowledge repositories, improve knowledge access, enhance the knowledge environment, and manage knowledge as an asset	Davenport et al. (1998)
Generate new knowledge, access valuable knowledge from outside sources, use knowledge in decision making, embed knowledge in processes, products, and services; represent knowledge in documents, databases, and software; facilitate knowledge growth through culture and intensives, transfer existing knowledge into other parts of the organization, and measure the value of knowledge assets and/or the impact of knowledge management	Ruggles (1998)
Knowledge acquisition, creation, packaging, application, and reuse.	Davenport et al. (1996)
Knowledge conversion between explicit and tacit knowledge and creation of new knowledge	Nonaka (1994)

Knowledge flow

Knowledge flow **connects and transfers knowledge** and competencies from where it resides to where it is needed (Nissen 2002)

Knowledge flow is a **process of knowledge passing** between people or a knowledge processing mechanism (Zhuge 2002).



Knowledge flow

Accordingly... *“right knowledge,
at the right time,
in the right form,
in the right place”*

*“how to define right knowledge?,
how to define the right time?,
how to define the right form?,
how to define the right place?”*

Knowledge processes identified in KM literature

Knowledge processes include for example acquiring, organizing, sharing, disseminating, creating, utilizing, coordinating, filtering, transferring, applying, transforming, identifying, processing, converting, protecting, finding, etc. of knowledge (these are all verbs, describing action)

Most commonly cited processes include creating, transferring, sharing, applying, acquiring of knowledge

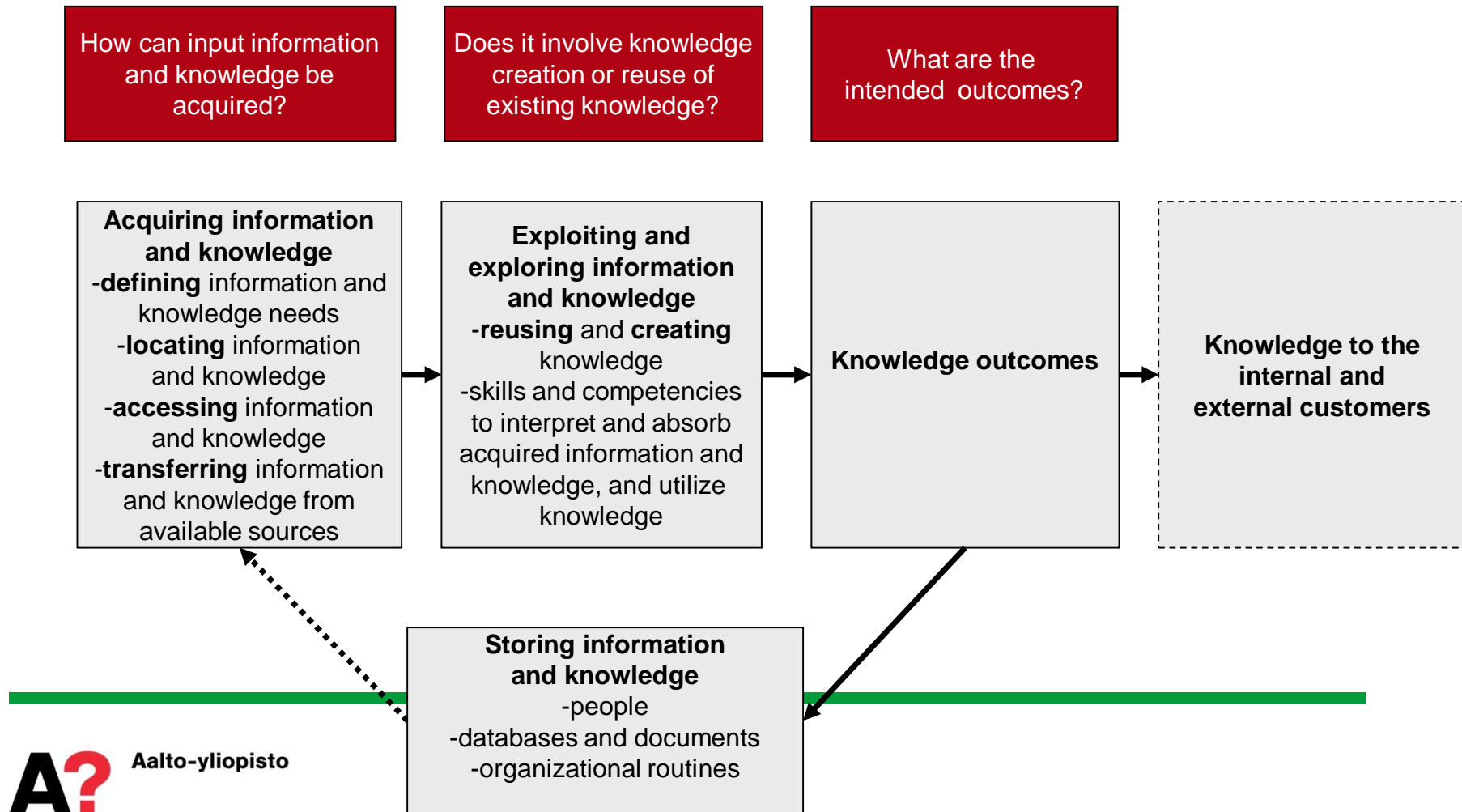
(Organizational) knowledge processes

Process approach (applied to cover knowledge processes) involves some challenges including **variety and uncertainty in inputs and outputs**, and **lack of separation among process**, and **difficulties in defining beginnings and ends** of knowledge processes

In real world different processes are overlapping and often difficult to separate from each other (e.g. knowledge sharing and knowledge creation in SECI model, to be discussed next lecture)

Despite the challenges, process approach applied to understand operations of knowledge-intensive organization and develop organizational knowledge management practices is common in knowledge management research and practice

A framework of (organizational) knowledge processes (Mäki 2008)



- Tauko 10-15 min

Lecture discussion – orientation

- Which of the following organizational forms seem more likely for knowledge-intensive organizations* in the future? Why?
- Candidates are
 - Operating adhocracy
 - J-form organization
 - Professional bureaucracy
 - Machine bureaucracy

*A knowledge-intensive organization refers to an organization where knowledge has more importance than other inputs (Starbuck 1992) (i.e., in contrast to labor-intensive or capital-intensive).

Lam 2000

Knowledge agent
(autonomy and control)

		Individual	Organization
Standardization of knowledge and work	Low	Operating adhocracy	J-form organization
	High	Professional bureaucracy	Machine bureaucracy

Professional bureaucracy

- Embodied knowledge
- Formal education and training
- Individuals are key knowledge agents
- Individual and functional specialization
- Autonomy within specialist areas
- Boundaries between jobs
- Tacit knowledge can be applied by an individual, in his own area of expertise
- Interaction and sharing of tacit knowledge between different occupational groups is limited
- E.g. hospital, university (?)

		Knowledge agent (autonomy and control)	
		Individual	Organization
Standardization of knowledge and work	Low	Operating adhocracy	J-form organization
	High	Professional bureaucracy	Machine bureaucracy

Machine bureaucracy

- Encoded knowledge
- Use of information systems is crucial
- Specialization, standardization, control
- Efficiency, formal operations, explicit rules and procedures
- Managerial hierarchy
- A clear dichotomy between generation and application of knowledge
- Knowledge is fragmented
- Dependency on individuals is minimized
- Role of tacit knowledge minimal
- Knowledge creation is slow and incremental
- Poor at novel situations
- E.g. some consulting companies, public administration (?)

Standardization of knowledge and work

Low

High

Knowledge agent
(autonomy and control)

Individual

Organization

Operating adhocracy	J-form organization
Professional bureaucracy	Machine bureaucracy

Operating adhocracy

- Embodied knowledge
- Little standardization
- Diverse know-how and skills of individuals, inter-dependent professionalism
- Speed of learning and unlearning is important
- Autonomy over work
- Generation of tacit knowledge through experimentation and interactive problem solving
- Tacit knowledge embodied to individuals
- Non-standard and creative problem solving, learning by doing
- Operates directly with customers
- Vulnerable of losing knowledge with people
- E.g. some consulting companies, university (?)

		Knowledge agent (autonomy and control)	
		Individual	Organization
Standardization of knowledge and work	Low	Operating adhocracy	J-form organization
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J-form (Japanese type) organization

- Embedded knowledge
- Knowledge resides within operating routines and culture
- Flexibility
- Organic, non-hierarchical, and cross-functional semi-autonomous team structures
- Vertical and horizontal knowledge flows
- Generated knowledge and learning is disseminated widely to organization
- Job rotation and cross-functional collaboration allows knowledge diffusion throughout the whole organization
- Generated tacit knowledge is captured in organizational level (embedded to organization)
- Adaptive and innovative, learning by doing
- Incremental (but not radical) innovations

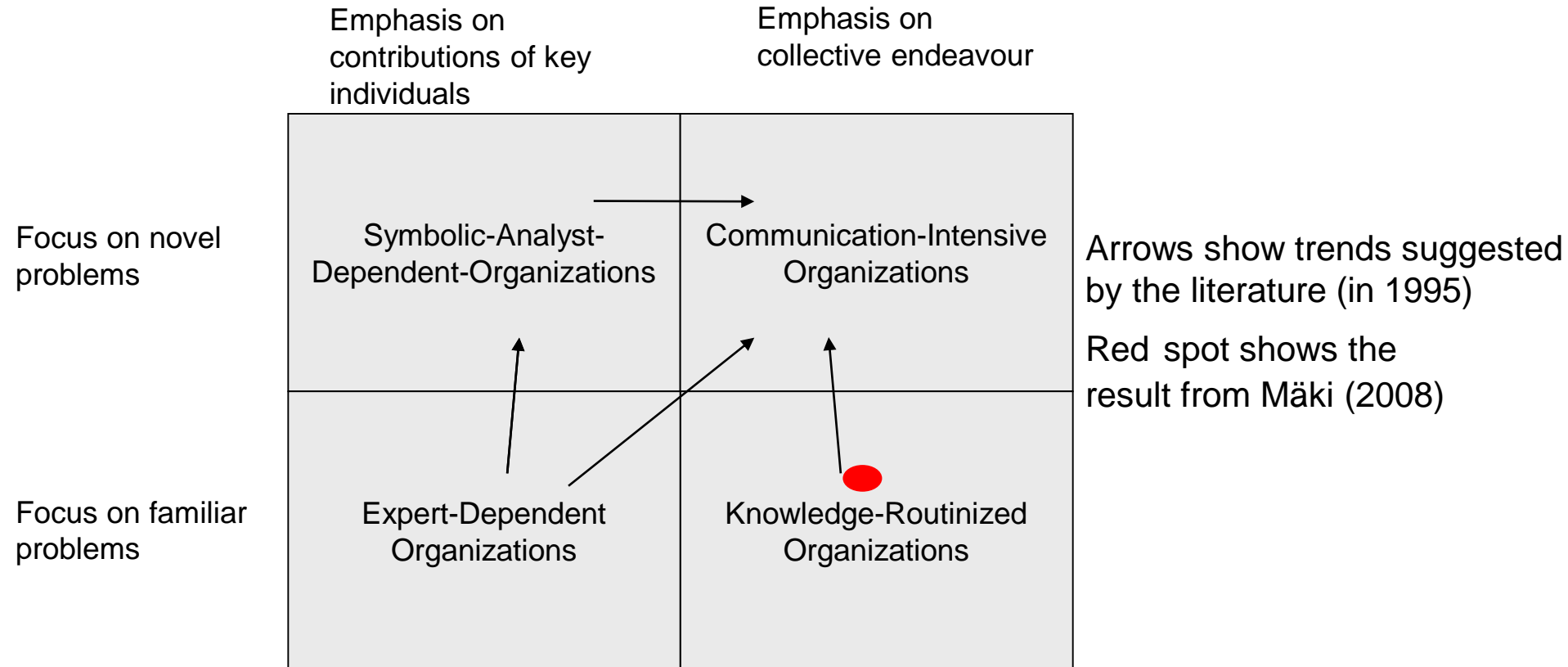
Standardization of knowledge and work

Low

High

		Knowledge agent (autonomy and control)	
		Individual	Organization
	Low	Operating adhocracy	J-form organization
	High	Professional bureaucracy	Machine bureaucracy

Blackler 1995



Blackler (1995) vs. Mäki (2008)

- Why did not Mäki find Communication-Intensive (or J-form) Organizations?
- Please discuss 10 minutes in small groups (2-4 students).

Blackler (1995) vs. Mäki (2008)

- Why did not Mäki find Communication-Intensive Organizations?
 - **Rapid development of ICT tools?** (helps at utilizing encoded knowledge)
 - **Constant changes in organizational forms and operational activities?** (impairs development of embedded and encultured knowledge)
 - **Focus on core know-how > utilization of offshoring, outsourcing, sub-contractors?** (impairs development of embedded and encultured knowledge)
 - **Employee turnover increase?** (impairs development of embedded and encultured knowledge)
 - **Demands of efficiency?** (favoring encoded instead of other forms of knowledge)
 - **Difficulty to operationalize / separate** different types of knowledge- intensive organizations (this is related to research methodology)

Summarizing frameworks of knowledge work / knowledge organizations

- There are differences between organizations and their (knowledge related) operational preferences and practices
- If you are capable to **analyze** and **understand** knowledge work and knowledge organizations, you are also more capable to **work** in different kinds of knowledge organizations, or **develop** them

1st and 2nd waves of knowledge management

Table 5 Six research questions and their dominant biases and related traps

Research question	Knowledge-sharing bias	Knowledge-sharing traps
<i>Why is knowledge sharing managed?</i>	Control bias	MANAGEMENT TRAP
<i>When is knowledge sharing managed?</i>	Opportunity-driven bias	
<i>Whose knowledge sharing is managed?</i>	Individual knowledge bias	LOCAL LEARNING TRAP
<i>Where is knowledge sharing managed?</i>	Operational level bias	
<i>What knowledge sharing is managed?</i>	Codified knowledge bias	ICT-TRAP
<i>How is knowledge sharing managed?</i>	Technology driven bias	

1st and 2nd waves of knowledge management

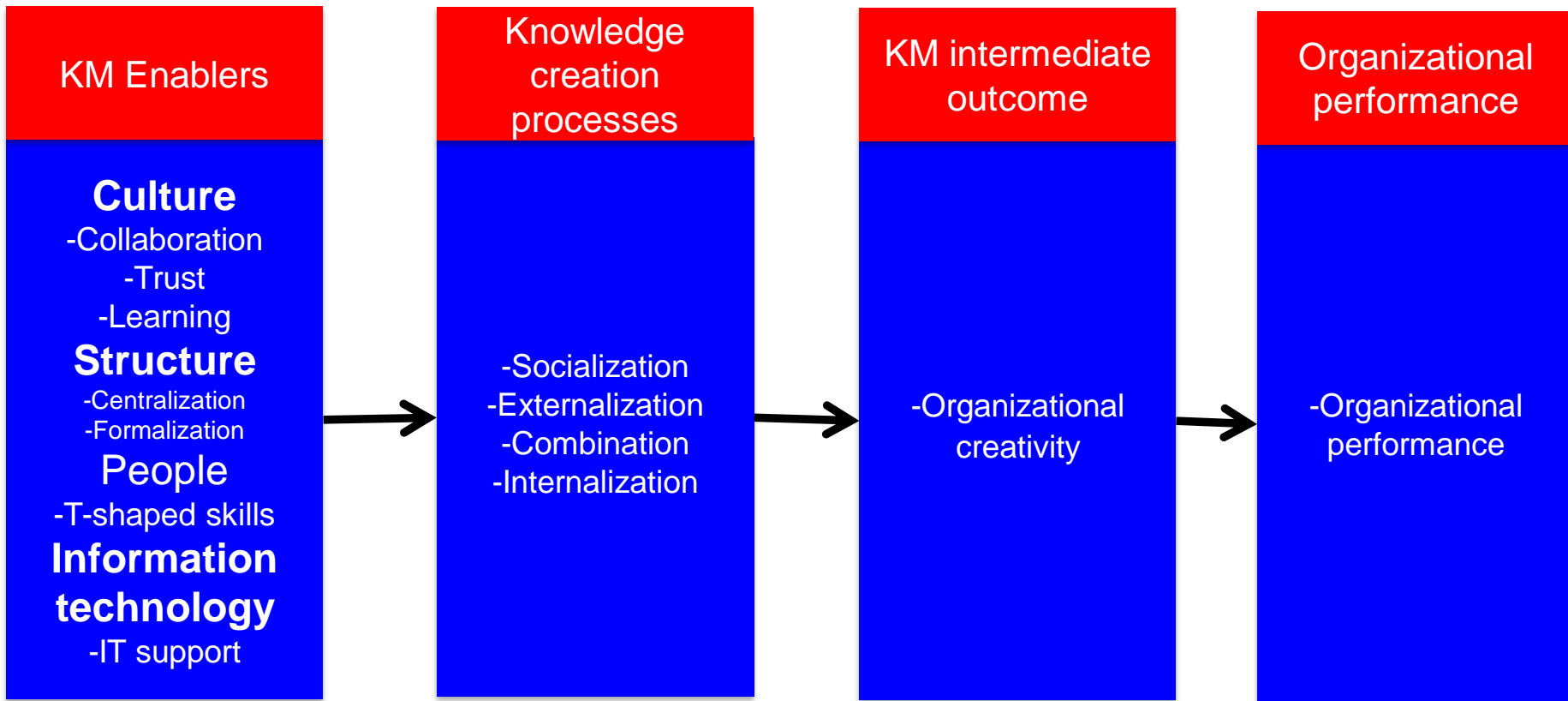
Table 6 Differences between the first and second generation of knowledge management

Research question	First wave	Second wave
Why is knowledge shared?	Managerial needs	Part of daily work: as a routine
When is knowledge shared?	When there is an opportunity to do so	When there is a need to do so
Where is knowledge shared?	Operational level	Organization-wide
Whose knowledge is managed?	Individual: human capital	Collective: social capital
What knowledge is shared?	Codified	Tacit and codified
How is knowledge shared?	Repository systems and electronic networks	Via personal and electronic networks

What kinds of problems KCM projects aim to solve?

- Problems are often *ill-defined*
 - Intended objectives are hard to define (=> how to measure or evaluate what have been achieved?)
 - Path to solution is not clear (=> how to find it?)
 - Outcomes are hard to foresee or predict (=> how to convince the decision maker?)
- These are all typical features of many OD (organizational development) efforts
- Scientist/practitioner working with these kinds of problems must be skilled and knowledgeable about the subject/phenomenon

So, where to focus?



Source: Heeseok Lee & Byounggu Choi (2003) Knowledge Management Enablers, Processes, and Organizational Performance: An Integrative View and Empirical Examination, *Journal of Management Information Systems*, 20:1, 179-228

See also: Rubenstein-Montanoa, B., Liebowitza J., Buchwaltera J., McCawa D., Newmanb B. & Rebeckb K. (2001). A systems thinking framework for knowledge management. *Decision Support Systems*, Vol. 31 (1), 5-16.

Typical KM challenges

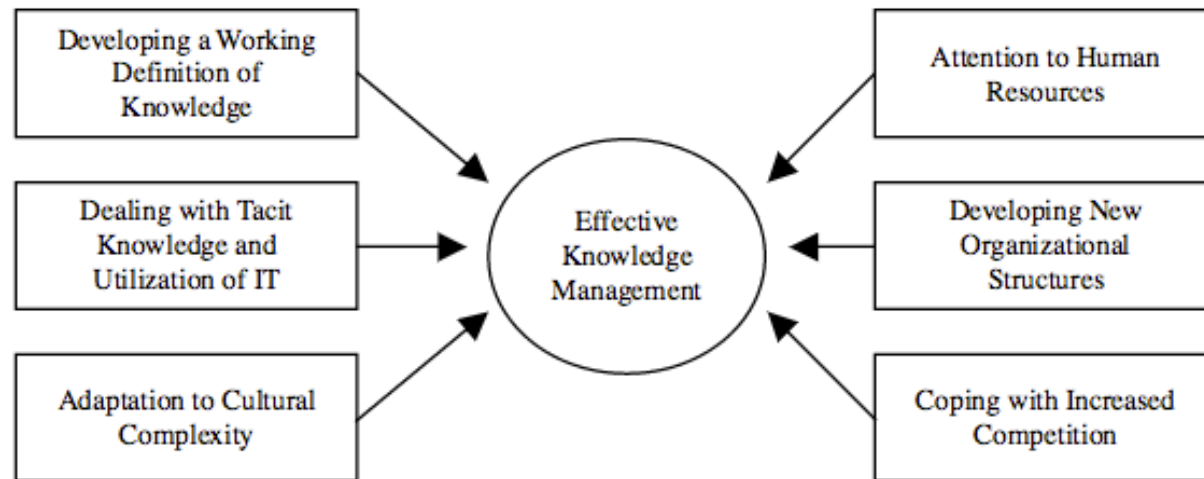


Figure 1.
Overview of knowledge management challenges for global business

Critical success factors for SMEs developing KM

In order of importance:

1. Management & leadership and support
2. Culture
3. Strategy and purpose
4. Resources
5. Processes and activities
6. Training and education
7. Human resource management
8. Information technology
9. Motivational aids
10. Organizational infrastructure
11. Measurement

Can anything go wrong?

- Error 1: Not Developing a Working Definition of Knowledge
- Error 2: Emphasizing Knowledge Stock to the Detriment of Knowledge Flow
- Error 3: Viewing Knowledge as Existing Predominantly Outside the Heads of Individuals
- Error 4: Not Understanding that a Fundamental Intermediate Purpose of Managing Knowledge Is to Create Shared Context
- Error 5: Paying Little Heed to the Role and Importance of Tacit Knowledge
- Error 6: Disentangling Knowledge from Its Uses
- Error 7: Downplaying Thinking and Reasoning
- Error 8: Focusing on the Past and the Present and Not the Future
- Error 9: Failing to Recognize the Importance of Experimentation
- Error 10: Substituting Technological Contact for Human Interface
- Error 11: Seeking to Develop Direct Measures of Knowledge

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Työskentely ryhmässä tehtävän harjoituksen parissa