

Skills and Learning for the Knowledge Society

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Many Interests, Many (e)Skills

- ICT vendors
 - "is there an abundant pool of competent workers?"
 - "could education and training work as a distribution and diffusion channel?"
 - "could my products gain strategic advantage through skill certification?"
- Business firms
 - "how do I create and use knowledge for strategic advantage?"
 - "how do I utilize the emerging ICTs?"
 - "how do I change my business model and processes so that the firm survives in the globally connected world?"
- Policy developers
 - "how do I create a socially, economically and environmentally sustainable world?"
 - "how do I keep voters, firms, and other stakeholders happy?"
- Educators
 - "how can I create better learning outcomes using ICTs?"
 - "how can I avoid destroying my identity and my knowledge capital?"
- Individuals
 - "how can I acquire useful capabilities?"
 - "how can I become what I want to be?"

Towards a Human-Centric View on Learning: Why Would Individuals Want eSkills?

- Access to economic opportunities
- Meaningful social interaction
- Access to individual development
- Physical, social, and economic security

The complex map of reality

"You are here"



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IN THE AREA 1 KM 3 KM 10 KM 50 KM

Map

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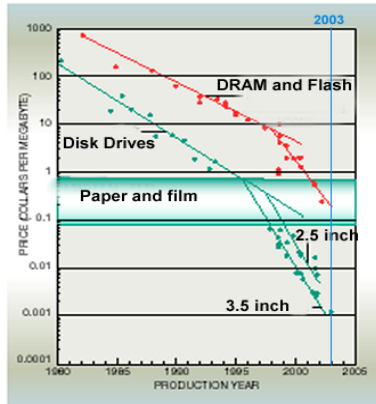
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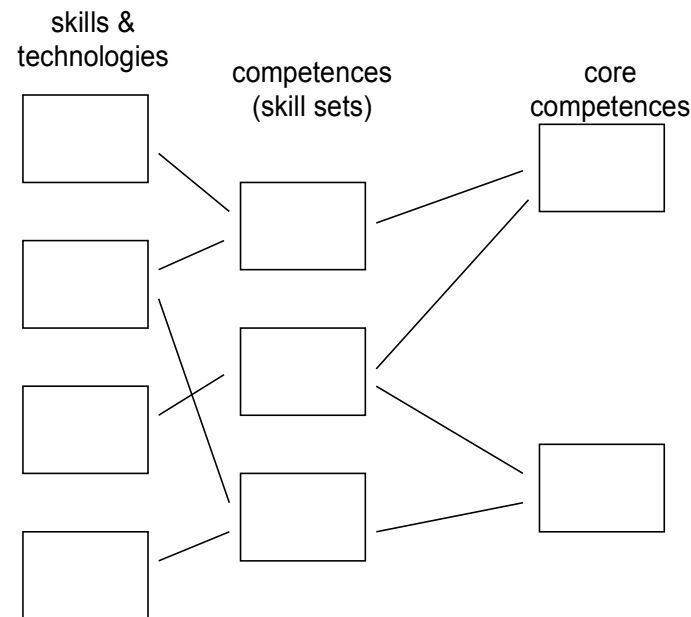
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Strategic Relevance of Skills and Competences

- From “product-market” to “resource based” view on strategic business advantage
 - Core competences = “bundles of skills and technologies” that underlie sustainable competitive advantage
 - An analytical concept: what abstract “organization level competences” can be defined and used to understand competitive advantage



The Perceived Benefits of Competence Management

- The rough procedure:
 - First create a catalogue of various skills (e.g. IST-related "e-skills")
 - Then use this catalogue to analyze
 - a) skills that workers have
 - b) skills that would be needed to run the organisation
 - Then detect skill-gaps and fill them using training
- Depending on your interests, you can do this on different levels of analysis:
 - individual
 - work teams
 - organisation
 - member state
 - EU
- This approach has been widely used in educational planning for decades

A Problem With the Conventional View?

- The question:
 - Is the conventional view on skills adequate for knowledge work
 - in the Knowledge Society,
 - or in ICT intensive environments?
- The answer:
 - No, we need to stop and think. Inaccurate concepts lead to failing policies.

Why Skills Look Important?

- Skill catalogues and positions seem natural and useful when:
 - The context of action is stable
 - Social distribution of knowledge is “realized” and “frozen”
 - Work practices and tools remain stable

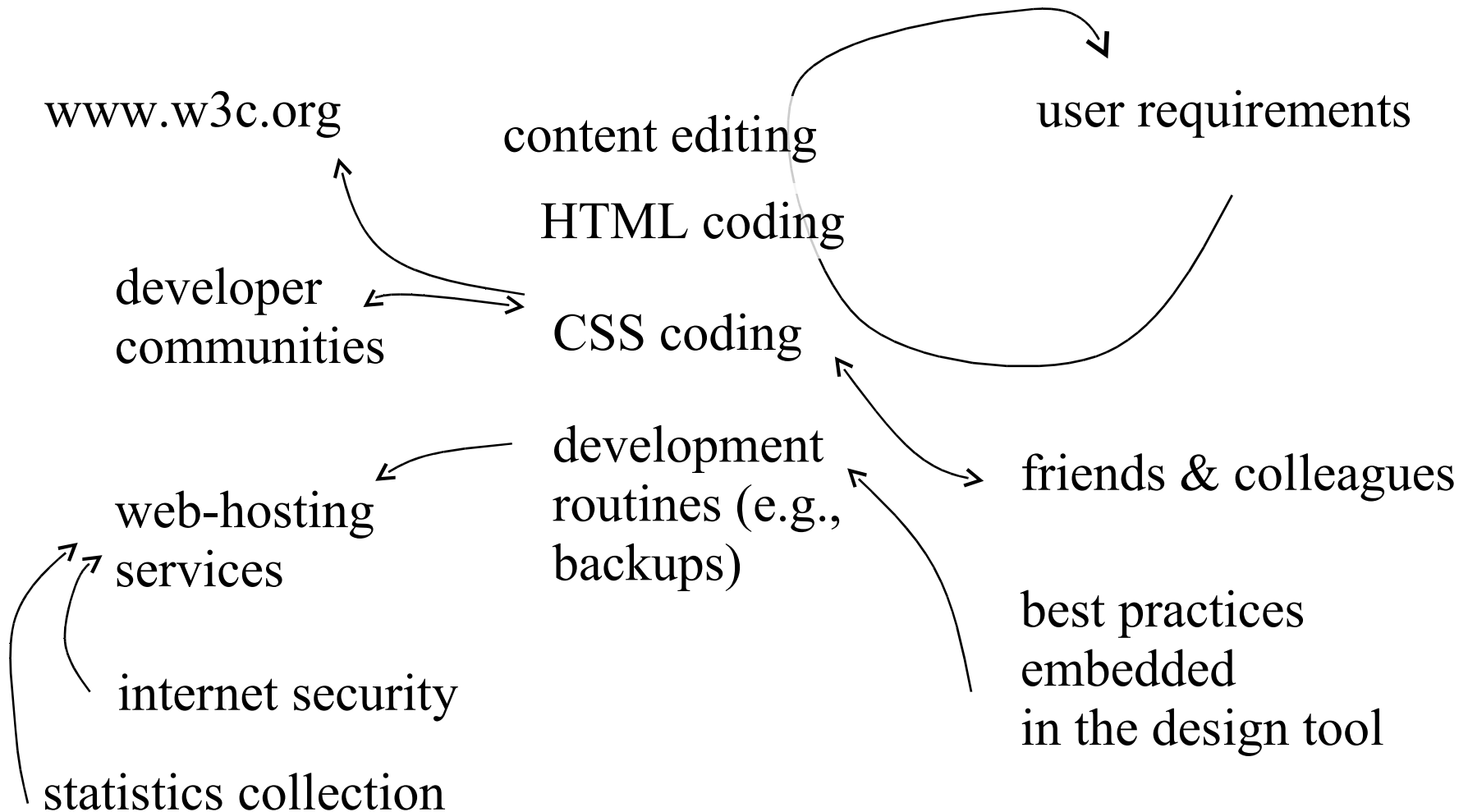
E.g.: well-defined professions in the context of stable work practices (doctor, accountant, metal worker, shop assistant, plumber)
- My argument: The conventional view works only within limits, because in real life most capabilities:
 - are socially distributed (are realized using capabilities “borrowed” from others)
 - are socio-technically distributed (supported by a network of tools and people)
 - are not a property of a person (“in” a person)

In other words, you don’t find skills by studying a person, you find them only by studying a relation between a person and a context of action

They relate “affordances” of material artifacts with systems of social motives (“context of action”)

Industrial Age mass-production

Social and Technical Distribution: an example: "web-page design 0.1"



A More Realistic Example: Linux Kernel Debugging Cycle

processing phase		information resource	tool	community resource
detect		compiled code documentation	man	LDP
debug	characterize	source code linux -kernel list FAQ JitterBug oops/tracing.txt Kernel Traffic LDP project-specific sites linux -kernel archives README files log files bug reporting form	editor gcc make gdb ksymoops IRC computer configuration	linux -kernel list JitterBug personal email IRC channels kernelnewsflash LDP project-specific lists
	remove	source code	editor gcc make	
	test	patch MAINTAINERS file	diff gcc make editor ftp	personal email linux -kernel list
distribute		patch MAINTAINERS file	gzip tar email ftp	linux -kernel list JitterBug
integrate		patch release	CVS vger package managers	MAINTAINERS vger

The Industrial Age Was Characterized By Stability and Routine

- Pragmatic definitions of “cognitive stability”:
 - “When, on average, 98 percent of the work world is today like it was yesterday.”
 - “When less than 10 percent of the work day is spent in figuring out how to do things.”
- Conventional skill-based policies, then, may become misleading when:
 - work context is not cognitively stable (e.g. non-routine research and development; new business creation & venturing).
 - distributed cognition and “cognitive division or labour” become important (e.g. when you can easily ask help from experts)
 - work content is about changing the meaning of things (e.g. when you design innovative IST applications).

The analysis of “skill-gaps” becomes then conceptually inadequate.

Managers have to ask how competences emerge in the first place, how they are used, and how their development can be supported.

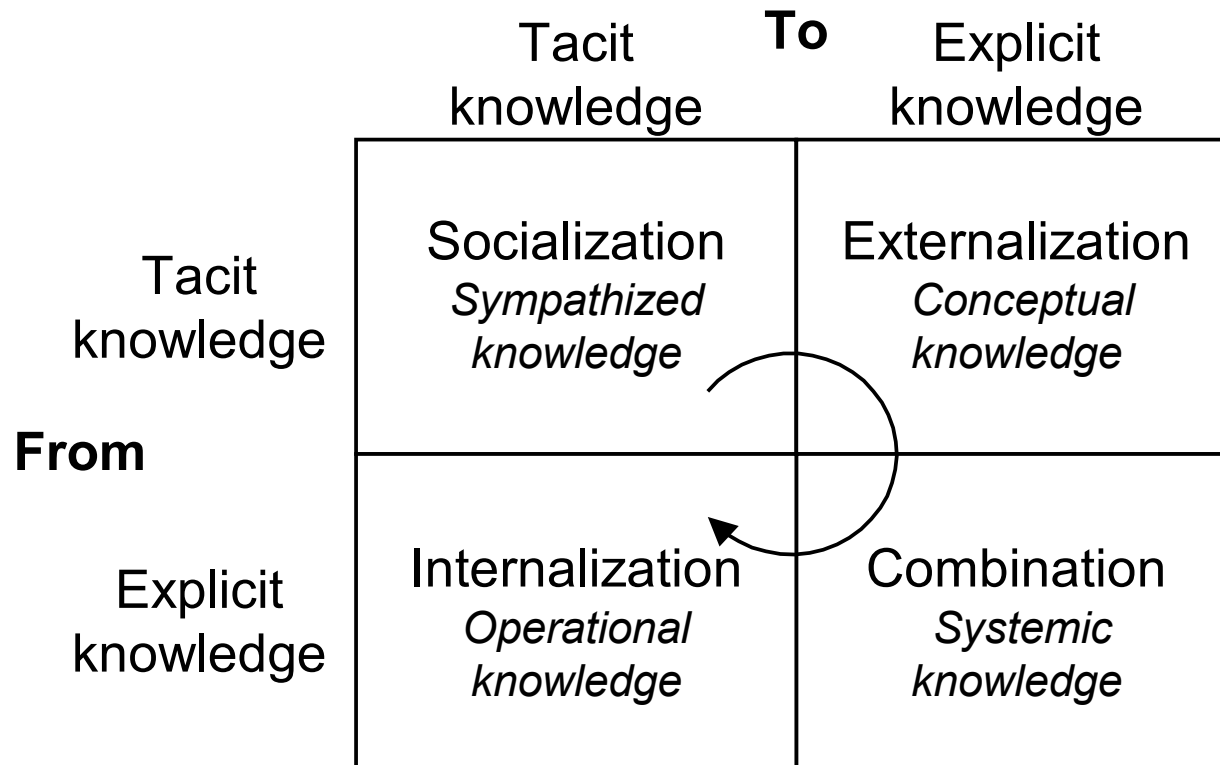
In other words, we need to have a model of learning.

How do people learn “skills” in the first place? How do they become competent actors in specific contexts of action? How are these processes changing in the Knowledge Society?

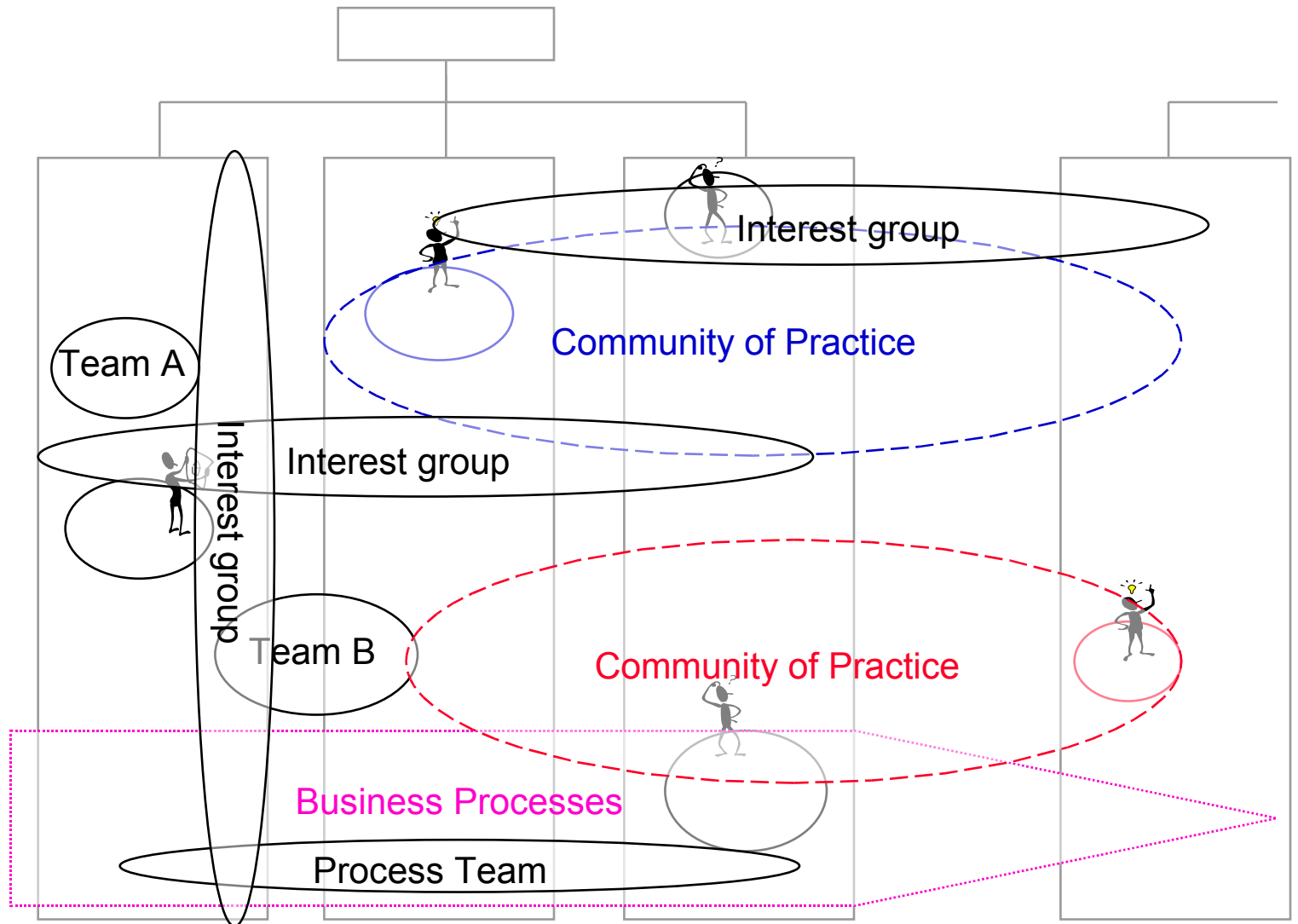
Two Forms of Learning

- Reproductive
 - Socializes people in existing norms and practices
 - Emphasized in Confucian cultures and formal European education
- Expansive / creative
 - Creates new forms of social practice, new products, new identities, and new meaning
 - Emphasized in innovation studies & organisational knowledge management

A Process View: Nonaka-Takeuchi Cycle of Reproductive + Expansive learning



A Structural View Organizational Communities of Practice



A Typology of Knowledge Communities

	homogenous	heterogenous
ephemeral	socialization "ba" thought community	externalization "ba" task force
stable	genre community of reflective practitioners competence community	change laboratory
institutionalized	community of practice thought style organizational department, "function"	activity system organizational division, "process"

↑
increasing knowledge creation

The New Profile of Competencies

- Different business logics require different approaches
 - Efficiency improvement and value extraction requires learning how not to do things (reduction of "waste" and "slack," improvement of "total quality")
 - Value creation, in turn, requires learning how to do things (new business and product concepts)
 - These different contexts lead to different modes of learning
- For example, creative learning requires
 - social capabilities (mobilisation of resources, management of risk)
 - imagination & play
 - time
 - space
 - toys
- In radical innovation, slack can be the most profitable investment

The Impact of Social Software

- knowledge resources are widely available
 - the speed of learning increases
- social distribution of knowledge becomes more efficient
 - local knowledge networks become global and dynamic
 - social networks become a critical source of value for knowledge workers
 - knowledge combination capabilities become more important
- informal learning becomes the dominant form
 - peer-to-peer, problem-based, real-world contexts
 - many specialized e-Learning technologies become niche products: generic technologies dominate (blogs, electronic publications, collaboration tools, ...)
- the speed of diffusion of innovations becomes faster
 - cognitive stability becomes rare in real work environments
 - active management of cognitive stability becomes important for learning support
 - speed of learning becomes a competitive advantage for firms

Do We Need "Re-skilling"?

"re-skilling"

"human-centric education"

- skill-gap analysis
- e-Learning courses designed to fill the gaps

- mass-produced learning content
- standardized job descriptions
- outdated competences

- learning technologies that support autonomous and collaborative knowledge creation
- new methods & policies for time/space organisation

- difficult match with educational institutions and regulations
- problems with certification
- unpredictable outcomes
- re-training of learning and general managers

Session Questions

- Who are the key players?
- What is the contribution of training and learning managers?
- What is the trainer's new role?

- We move towards learner-centric design of processes and tools
- The "learner-in-a-context-of-action" is the key player
- Teachers and trainers become facilitators in peer-to-peer and mentoring processes, and creators of low-risk playgrounds
- Teachers and trainers will also become sources of expert knowledge in pedagogic methods and learning innovation
- In knowledge organisations, all managers become learning managers
- The allocation of learning "time-spaces" will be directed by the organisation's strategy
- Learning will be measured by its impact, not by "amount of internalized content"
- Some cultures and countries have easier paths to the future than others