Global Information Systems:

Globally distributed teams (4)

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- Team issues (Garton, Wegryn, 2006)
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- Architecture aspects: environment and tools
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The Open Unified Process – Disciplines

- Architecture
  - Architecture Notebook
- Configuration and Change Management
- Development
  - Design
  - Build
  - Developer Test
  - Implementation
- Project Management
  - Iteration Plan
  - **Project Plan**
  - Work Items List
  - **Risk List**
- Requirements
  - Supporting Requirements Specification
  - Vision
  - Use Case
  - Glossary
  - Use-Case Model
- Test
  - Test Case
  - Test Log
  - Test Script
- *Roles*
- *Artefacts / Support*

[Source: http://www.epfwiki.net/wikis/openup/]

Issues

- Staffing: Finding, selecting and initiating virtual teams
- Coordination of tasks and dependent work items
- Communication between teams
- Cultural aspects, barriers, and solutions

The virtual manager

- Skills required
  - General management
  - People management
  - Communication
  - Technical knowledge
  - Decision making
  - Problem solving
  - Administration
  - Cultural knowledge and skills

Cost issues

- Management time for coordination
- Training cost for cross-cultural communication
- Cost of misunderstanding (re-work, delays, drop-out)
- Increased cost for offshore experts
- Communication, travel cost

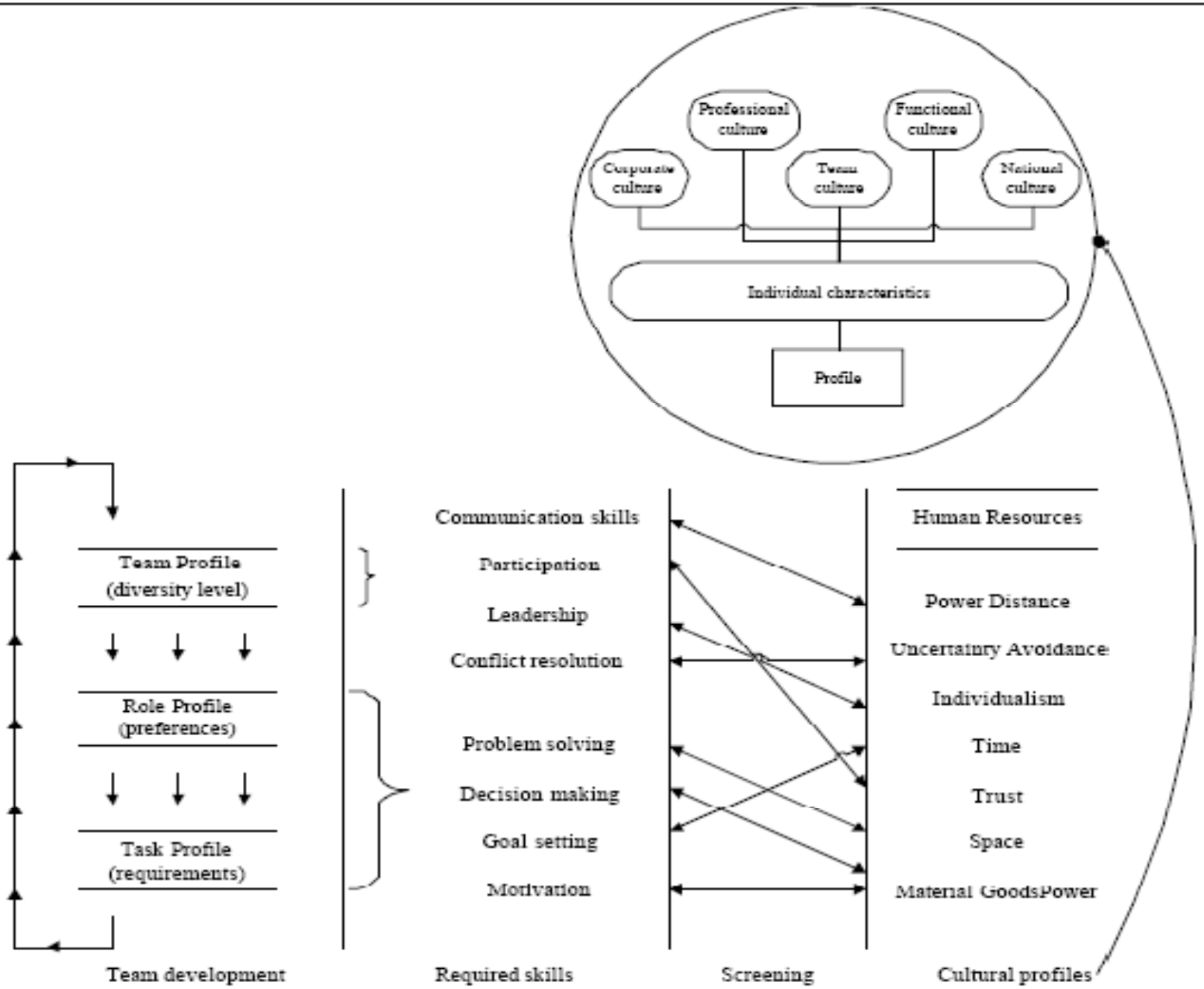
Creating teams

- Process
  - Choose team members
  - Interview team members
  - Consider team dynamics
  - Consider personalities of team members
  - Evaluate abilities, skills / competencies
- Staffing plan
  - General information
  - Staffing process
  - Goals, objectives, timelines
  - Staffing profiles
  - Skill sets and requirements
  - Organizational chart

Creating teams (2)

- Defining roles and responsibilities
  - Job description
  - Annual performance objectives
  - Growth and development plan

Cultural profiles (Dafoulas, Macaulay, 2001)



Management issues

- Team meetings across time zones
  - Split regional teams
  - Rotating conference calls
  - Management meetings
- Managing language difficulties
  - Translation
  - Communication rules (clarity of speech, rotating right to speak,…)
  - Avoiding / knowing gestures
  - Questions in different cultures

Building teams

- Managing cultural differences (see L3)
- Considering adjustment to calculate productivity and potential difficulties
- Phases of cultural adjustment
  - Enthusiasm
  - Conflict Stage
  - Integration Stage
  - Adaptation Stage

Virtual Teamwork

- Discovering commonalities
  - Workshops, informal meetings
- Creating trust
- Understanding dynamics of the team
- Creating a virtual community
- Team member interaction
  - Virtual communication
  - Virtual team days
  - Sharing best practices
  - Rewards

Virtual Teamwork Processes

- Communication process: A formal plan defines…
  - Stakeholder groups
  - Formal Communication plan
    - Meetings
    - Conference call
    - Communication tools
    - Documents
    - Website / intranet updates
  - Informal communication / escalation
  - Communication rules

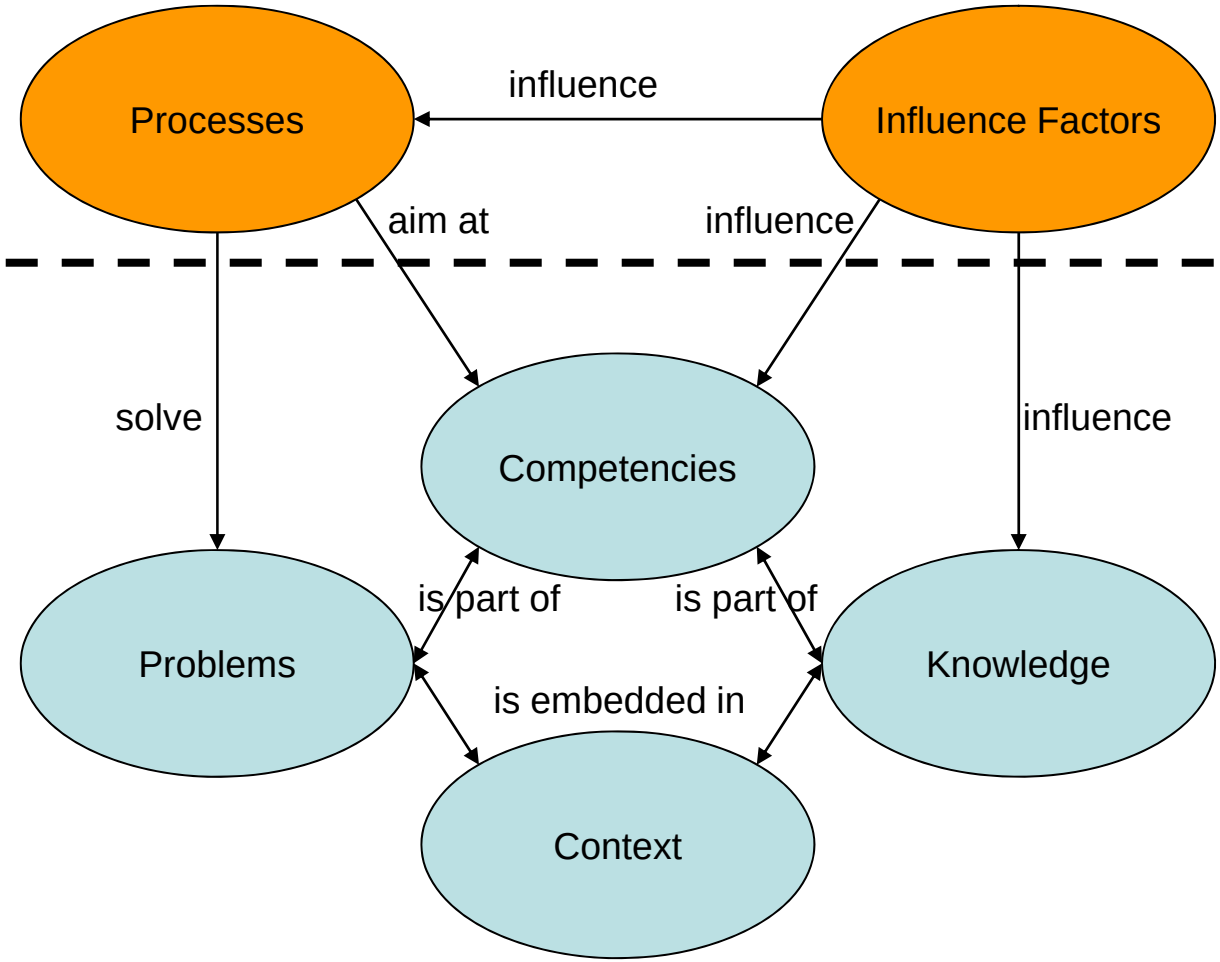
Virtual Teamwork Processes (2)

- General process management
  - Design, development, …
- Change control process
  - E.g., resources, schedule, maintenance, catastrophes, …
- Defect-tracking process (technical)
- Organizational processes
- Client and vendor processes
- Status report process
- Risk Management
- Escalation procedures

Describing team / individual profiles

- What are necessary competences?
- A competence is a set of knowledge, skills, abilities and attitudes to solve a problem in a given context
- Competences differ according to
  - Domain
  - Career path / position
  - Education
  - Context (country, project, …)

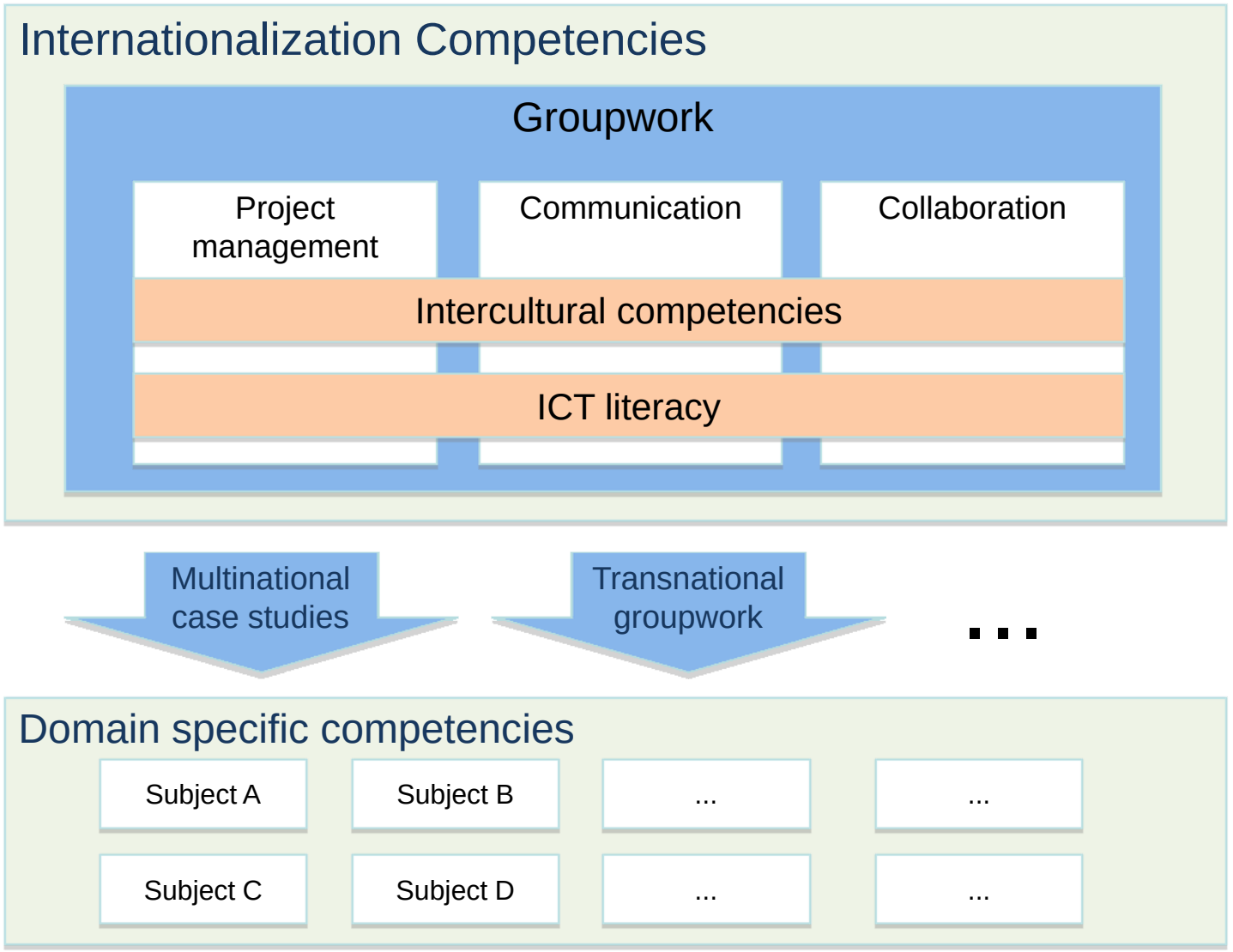
Competence scheme



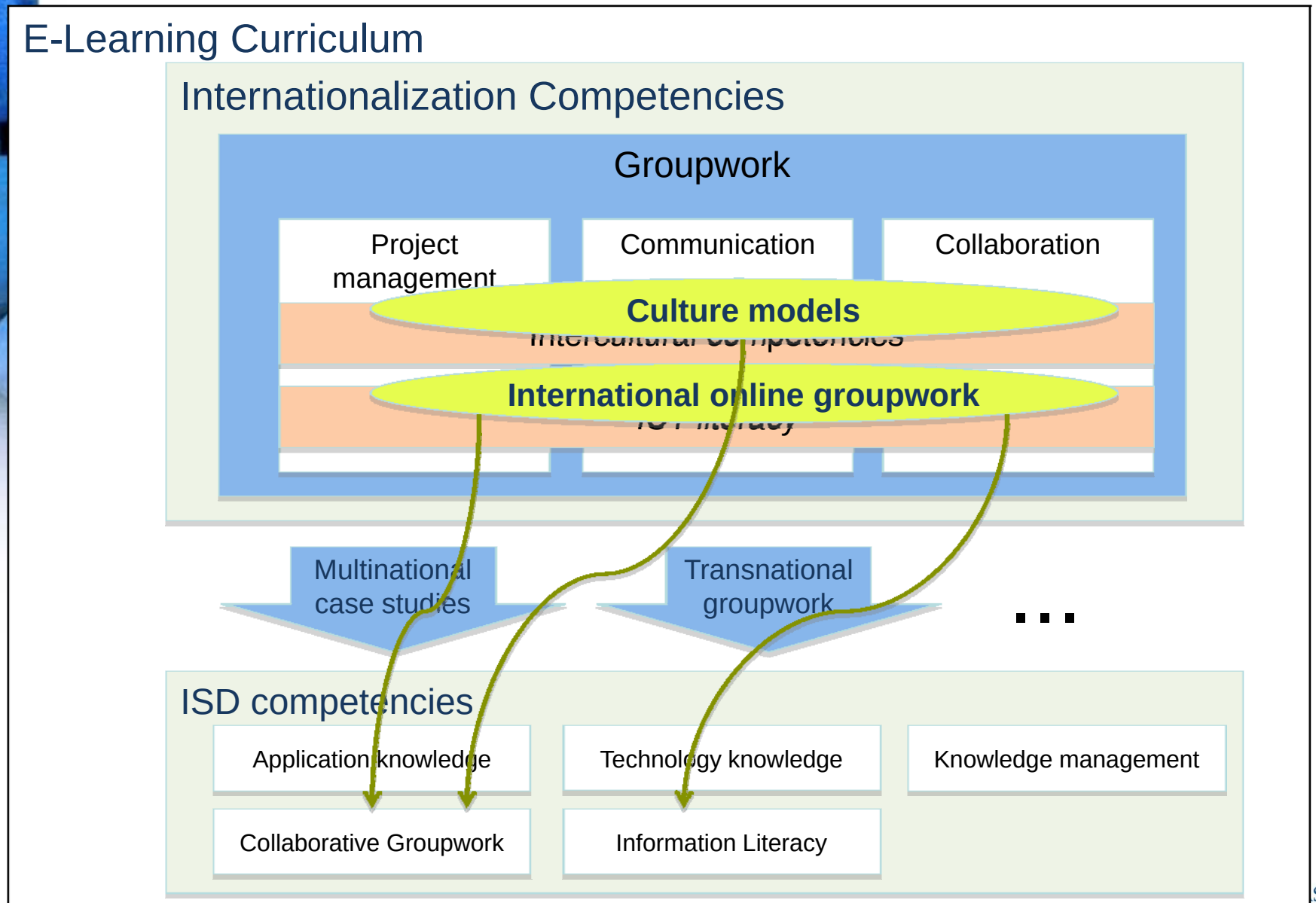
Competence descriptions

Generic Skills Classes			Active meta-knowledge (Pitrat)	Generic problems (KADS)	Cognitive objectives (Bloom)	Skills cycle (Romiszowski)
1	2	3				
Receive	**1. Acknowledge**					Attention
	2. Integrate	2.1 Identify 2.2 Memorize			Memorize	Perceptual acuteness and discrimination
Reproduce	**3. Instantiate/Specify**	3.1 Illustrate 3.2 Discriminate 3.3 Explain	Knowledge Search and Storage		Under-stand	Interpretation
	4. Transpose/ Translate					Procedure Recall Schema Recall
	5. Apply	5.1 Use 5.2 Simulate	Knowledge Use, Expression		Apply	
Produce/Create	**6. Analyze**	6.1 Deduce 6.2 Classify 6.3 Predict 6.4 Diagnose	Knowledge Discovery	Prediction, Supervision, Classification, Diagnosis	Analyze	Analysis
	7. Repair			Repair		Synthesis
	8. Synthesize	8.1 Induce 8.2 Plan 8.3 Model/Construct		Planning, Design, Modeling	Synthesize	
Self-manage	**9. Evaluate**		Knowledge Acquisition		Evaluate	Evaluation
	10. Self- control	10.1 Initiate/Influence 10.2 Adapt/Control				Initiation, Continuation, Control

Internationalization Curriculum



Competencies in ISD



Competence mapping

- Describe the problem / challenge / success factor
  - Success factors
  - Culture models
  - …
- Describe the competence using competence vocabulary and drive the complexity
- Map competence profiles to actors to be recruited

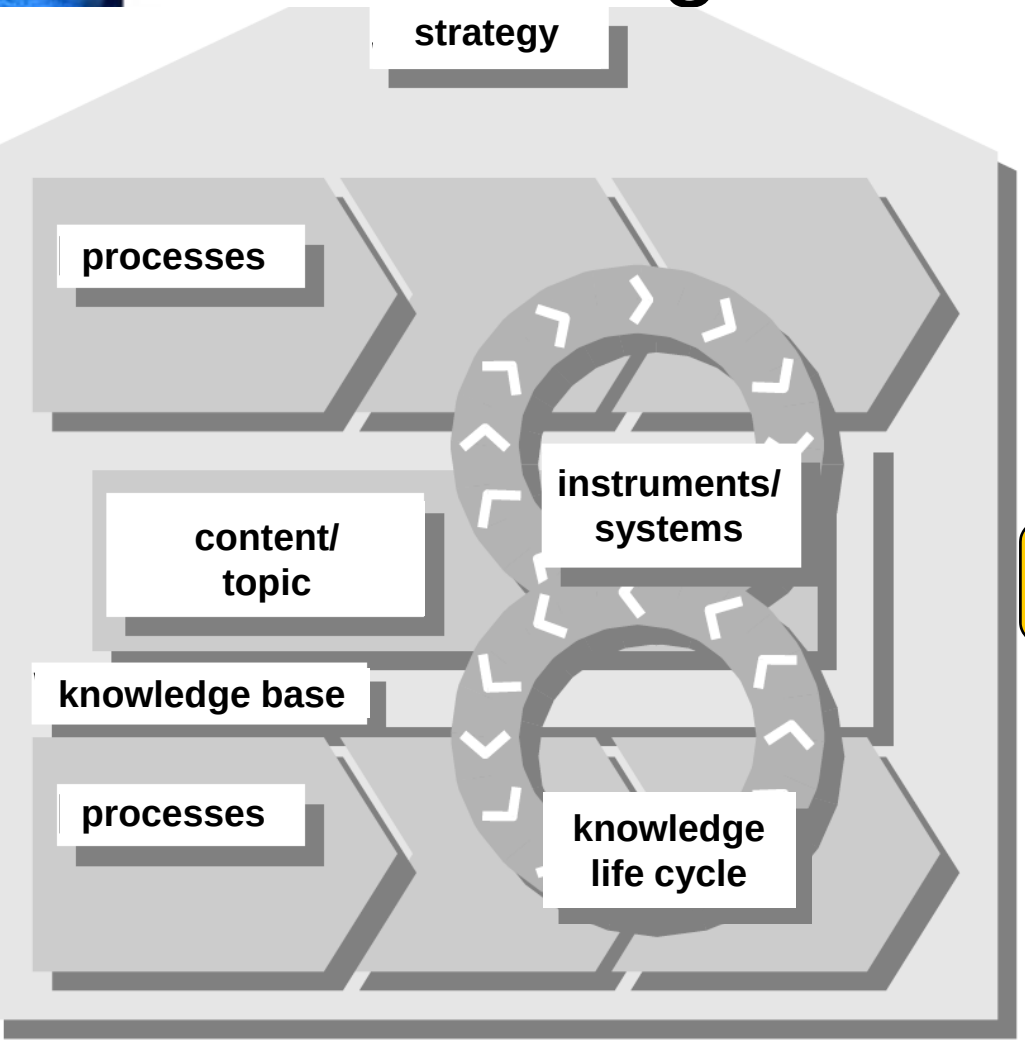
Knowledge management and learning in virtual teams

- Need to find, extract, share and re-use knowledge in development processes

Knowledge management

	human-oriented	technology-oriented
knowledge management strategy	personalization	codification
comprehension of knowledge	knowledge is contained in peoples head	documented knowledge; detached from employees
actors/roles	knowledge worker, networks, and communities of interest	authors, experts, knowledge broker
knowledge managements systems (KMS)	interactive knowledge managements systems	integrative knowledge management systems
prior knowledge management system functions	communication and cooperation, locating of experts, community-support	publication, structuring and integration, search, presentation and visualization of knowledge elements

Knowledge management process



[Remus, 2002]

- Knowledge Identification
- Knowledge Use
- Knowledge Acquisition
- Knowledge Preservation
- Knowledge Development
- Knowledge Distribution

[Probst, 1997]

Knowledge management: success factors

- Organizational culture
- Management support
- Common vision and understanding
- Holistic, integrated approach
- Continuous participation
- Multiple communication channels
- Technical and organizational infrastructure
- Motivational factors

Knowledge management in a global context: known issues

- General barriers: lack of time, lack of infrastructure, fears
- Communication
- Culture
- …

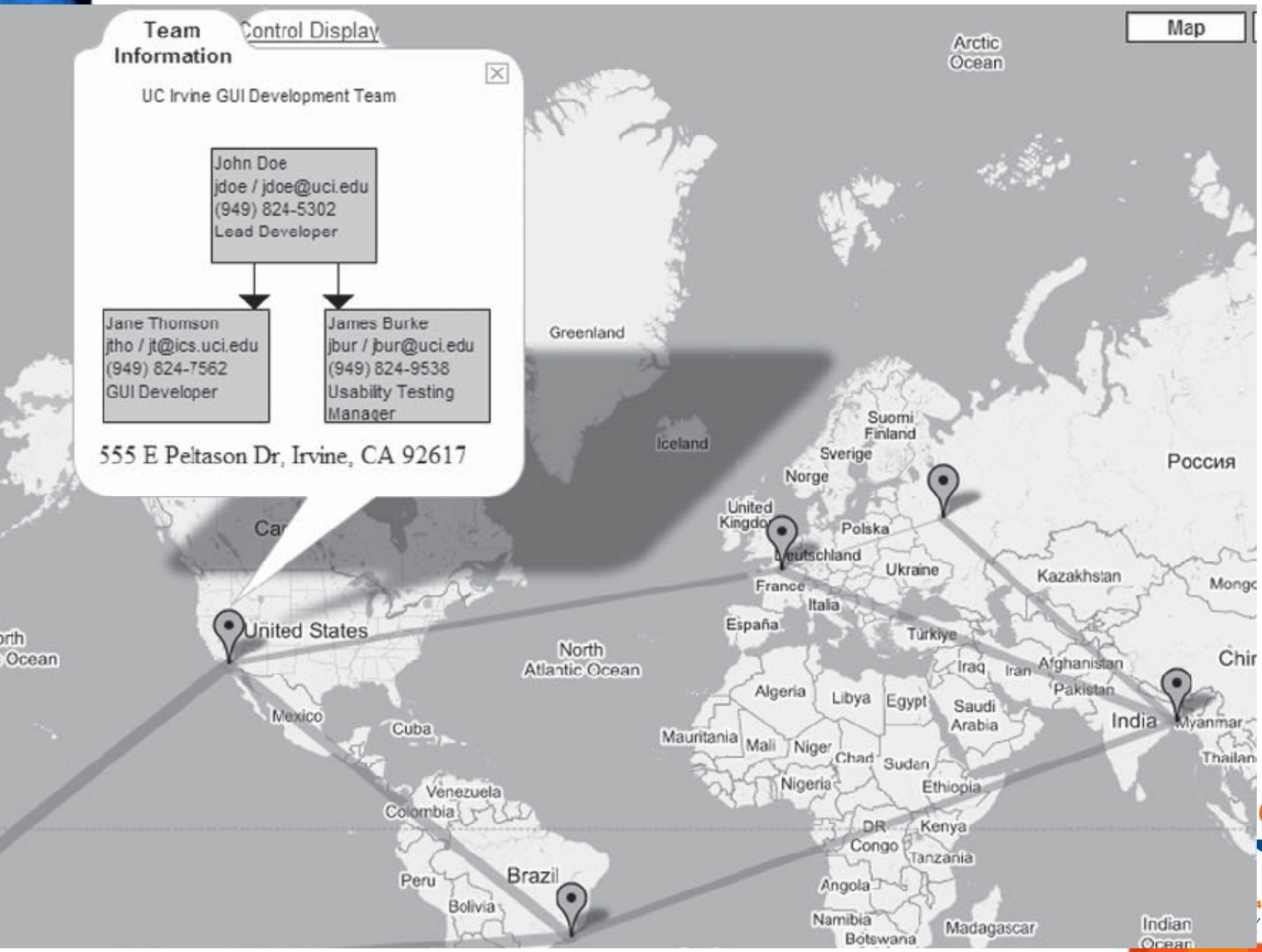
Knowledge management in a global context: ideas for solutions

- Knowledge communities
  - Based on a regional / local approach
  - Trust building in smaller groups
- Context awareness
  - Getting to know norms, values, …
  - Contextualized knowledge
- Multilingual infrastructure, communication support
- Time allocation, Rewards, reputation
- User involvement
- Knowledge facilitators
- User generated content (Web 2.0 applications)

Collaboration tools (cont.)

- Collaborative tools
  - Development environment
  - Administration tools
  - Workflow tools
  - …
- Virtual management tools
  - Document library
  - Shared calendar
  - Online meetings (video- / phone conferencing)
  - Online scheduling and planning
  - Discussion forum
  - Awareness tools (IM, location-based tools)
- Knowledge management tools

Coordination



[Source: Redmiles et al., 2007]

At the end of this phase, the following results should be ready:

- Refined project plan
- Staff plan / team building concept / training planning
- Culture profiles
- Communication plan
- Collaborative architecture

Questions

- Which competencies / skills do virtual managers and remote workers need?
- Which cultural influence factors affect communication?
- How do you assess the stage of the group process?
- Which tools should be available for virtual communication?
- Develop a communication plan including communication rules for a small virtual team in the US and Finland.
- Which main barriers of KM can be identified, propose potential solutions.

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