Global Information Systems:

Cultural Aspects (3)

Prof. Dr. Jan M. Pawlowski
10.11.2009

Licensing: Creative Commons

- **You are free:**
  - **to Share** — to copy, distribute and transmit the work
  - **to Remix** — to adapt the work

- **Under the following conditions:**
  - **Attribution**. You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).
  - **Noncommercial**. You may not use this work for commercial purposes.
  - **Share Alike**. If you alter, transform, or build upon this work, you may distribute the resulting work only under the same or similar license to this one.

- http://creativecommons.org/licenses/by-nc-sa/3.0/

Contents

- Definitions of culture
- Culture models
  - Hofstede
  - Trompenaars & Hampden-Turner
  - Henderson
  - Pawlowski / Richter
- Requirements Analysis
- Implications for Global Information Systems

UNIVERSITY OF JYVÄSKYLÄ
1934 2009

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/]

UNIVERSITY OF JYVÄSKYLÄ
1934 – 2009

Definitions of Culture

- "Culture is the collective programming of the mind which distinguishes the members of one category of people from another." (Hofstede, 1984)

- "Most social scientists today view culture as consisting primarily of the symbolic, ideational, and intangible aspects of human societies. The essence of a culture is not its artifacts, tools, or other tangible cultural elements but how the members of the group interpret, use, and perceive them. It is the values, symbols, interpretations, and perspectives that distinguish one people from another in modernized societies; it is not material objects and other tangible aspects of human societies. People within a culture usually interpret the meaning of symbols, artifacts, and behaviors in the same or in similar ways" (Banks et al. 1989)

Definitions of Culture

- Culture is defined as the "[…] definitive, dynamic purposes and tools (values, ethics, rules, knowledge systems) that are developed to attain group goals" (Mabawonku, 2003)

- Culture includes "[..]every aspect of life: know-how, technical knowledge, customs of food and dress, religion, mentality, values, language, symbols, socio-political and economic behavior, indigenous methods of taking decisions and exercising power, methods of production and economic relations, and so on." (Verhelst, 1990)

- The system of shared beliefs, values, customs, behaviours, and artifacts that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning (Bates, Plog, 1990)

How does culture influence GSD / GLIS?

- Impact on
  - Working style
  - Group behavior
  - Communication
  - Design
  - …
- How to represent culture / which aspects should be analyzed?
- How do these aspects influence design and development processes?

More perspectives on "culture"

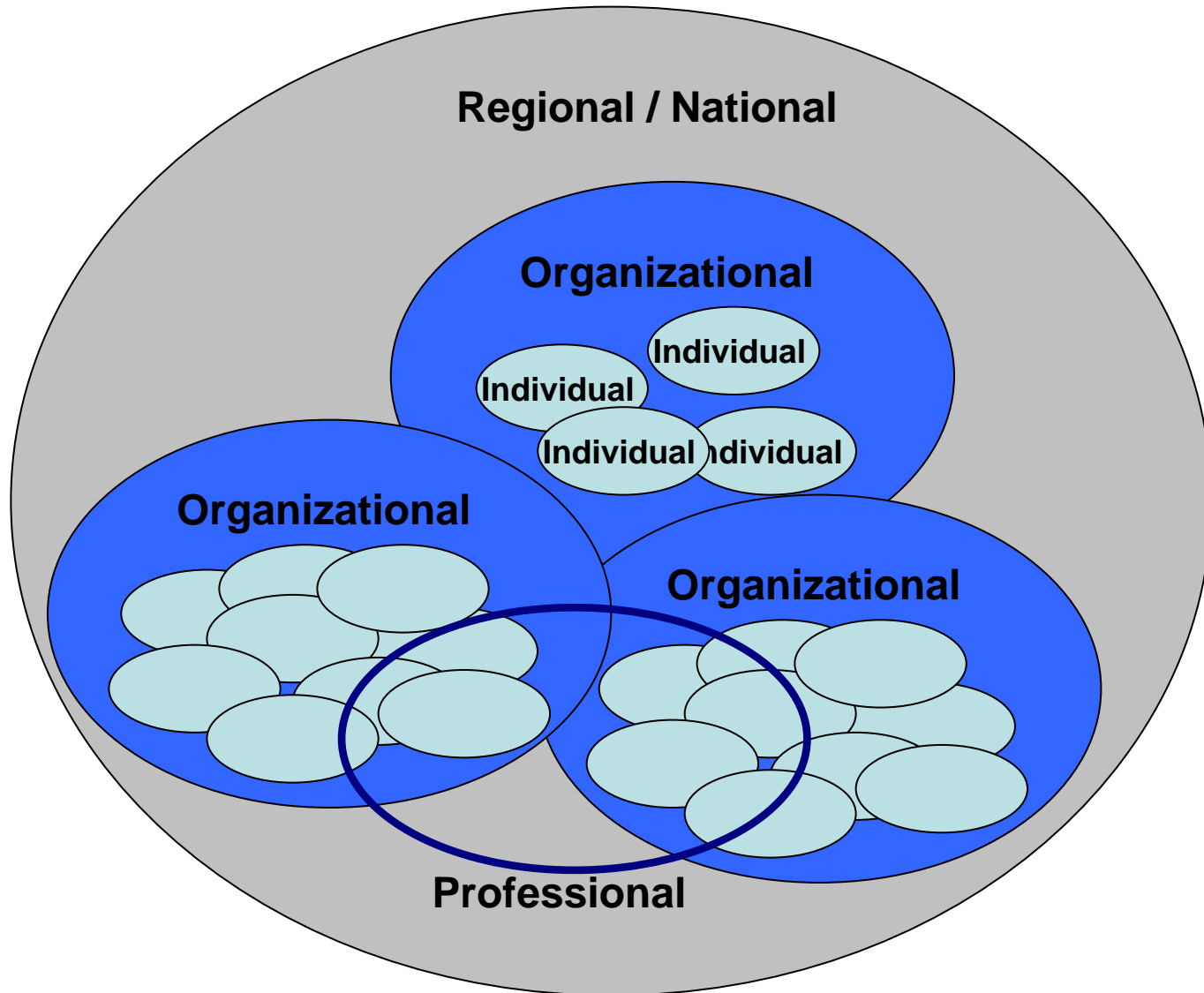- Organizational or corporate culture: Management style, rewards, working atmosphere

- Professional culture: Formal education within a group of professionals

- Functional culture: functional roles within the organization

- Team culture: common work experiences

Culture Levels

Eastern vs. Western Management (Haghirian, 2007)

Western Management	Eastern Management
Hierarchical, egalitarian command, segmented concern	Free-form command, roles loosely defined, holistic concern
Professional managers, position related to function	Social leaders often with high sounding titles for low ranking jobs
Particularism, specialized career path possibly with rapid evaluation and promotion, individually oriented	Non-specialized career paths, slow evaluation, regimented promotion, socially oriented
Decentralization of power	Centralization of power
Mobility Stability	Diversity Unity
Direct approach	Indirect approach
Systematic analysis, standardization, categorization, classification, conceptualization, precision	Ambiguity, reaction, adaptation
Long-term set planning	Often lack of formal set planning, high flexibility in adjustment
Explicit control mechanisms	Implicit control mechanisms
Organizations and systems adapt for change	Leaders/managers adapt to change
Adapted from: Haghirian, P.: Management in Japan – The kaisha in the 21st Century, Keio University, Japan, 2007	

Hofstede's "Dimensions of Culture" (1)

- Model to compare cultures
- Culture as a set of typical attributes / behaviours (manifestations of culture)
  - Values
  - Rituals
  - Heroes
  - Symbols
- Based on a study for IBM in 64 countries / follow-up studies
- http://www.geert-hofstede.com/hofstede_dimensions.php

UNIVERSITY OF JYVÄSKYLÄ
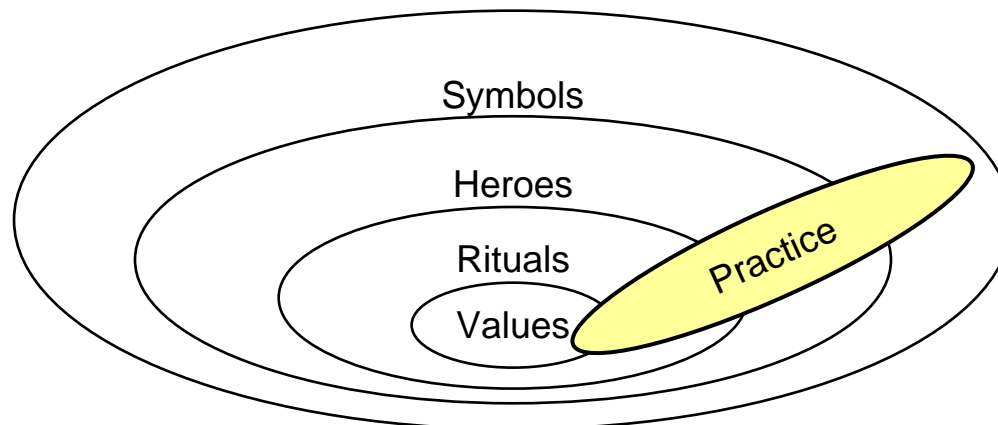
Hofstede's "Dimensions of Culture" (2)

- **Analysis dimensions**
- Power distance index (PDI): Common position to diversities within a country and the people's position towards authorities.
- individualism-index (IVD): Degree, to which individuals in a country wish to be free from dependencies to other persons and the authorities
- masculinity index (MAS): Degree to represent gender-roles as part of common norm, school, family and workplace as well as politics
- Uncertainty avoidance index (UAI): How do individuals feel threatened by uncommon or insecure situations
- Long term orientation (LTO): Time-orientation of a society (e.g., planning horizon)

Hofstede's "Dimensions of Culture"

Country/Region	Score	Rank
Germany	26	70
Austria	11	74
France	68	27-29
Spain	57	45-46
Portugal	63	37-38
South Korea	60	41-42
Brazil	69	26
Guatemala	95	3-4

Values for Power Distance Index (PDI)

Country/Region	Score	Rank
Germany	67	18
Austria	55	27
France	71	13-14
Spain	51	30
Portugal	27	49-51
South Korea	18	63
Brazil	38	39-40
Guatemala	6	74

Values for Individualism Index (IDV)

Country/Region	Score	Rank
Germany	66	11-13
Austria	79	4
France	43	47-50
Spain	42	51-53
Portugal	31	65
South Korea	39	59
Brazil	49	37
Guatemala	37	61-62

Values for Masculinity Index (MAS)

Country/Region	Score	Rank
Germany	65	43
Austria	70	35-38
France	86	17-22
Spain	86	17-22
Portugal	104	2
South Korea	85	23-25
Brazil	76	31-32
Guatemala	101	3

Values for Uncertainly Avoidance Index (UAI)

Country/Region	Score	Rank
Germany	31	25-27
Austria	31	25-27
France	39	19
Spain	19	35-36
Portugal	30	28-30
South Korea	75	6
Brazil	65	7
Guatemala	n.a.	n.a.

Values for Long-Term Orientation Index (LTO)

[Source: http://www.geert-hofstede.com/hofstede_dimensions.php]

1934   2009
UNIVERSITY OF JYVÄSKYLÄ

Critical Analysis

- Empirical study in a corporate culture
- Results were evaluated in hundreds of settings
- Relative values seem to be stabile (while absolute values are changing)
- Not applicable to all contexts
- Interpretations for GSD and specific components (e.g., communication) are questionable

7 Dimensions of Trompenaars and Hampden-Turner

- universalism versus particularism
  - Rules vs. relationships
  - Ideas can be applied anywhere – or regarding certain circumstances
- individualism versus collectivism
  - IDV
- neutral versus affective
  - Emotional involvement
- specific versus diffuse
  - proximity between people, involvement in activities
- achievement versus ascription
  - relationship to other people
  - Is reputation based on people's „objective" achievement or there position
- past, present, or future and sequential or synchronous
  - relationship to time and sequencing
- internal- or external-oriented
  - dealing with the environment

14 Dimensions of Henderson (in the field of education / learning)

- Epistemology: Objectivism – Constructivism
- Pedagogical Philosophy: Instructivist – Constructivist
- Underlying Psychology: Behavioral – Cognitive
- Goal Orientation: Sharply-focused – Unfocused
- Experiential Value: Abstract – Concrete
- Teacher Role: Didactic – Facilitative
- Program Flexibility: Teacher-Proof – Easily Modifiable
- Value of Errors: Errorless Learning – Learning
- Motivation: Extrinsic – Intrinsic
- Accommodation of Individual Differences: Non-Existent – Multi-Faceted
- Learner Control: Non-Existent – Unrestricted
- User Activity: Mathemagenic – Generative
  - Initiated by a certain instructional activity – or created by the learners
- Cooperative Learning: Unsupported – Integral
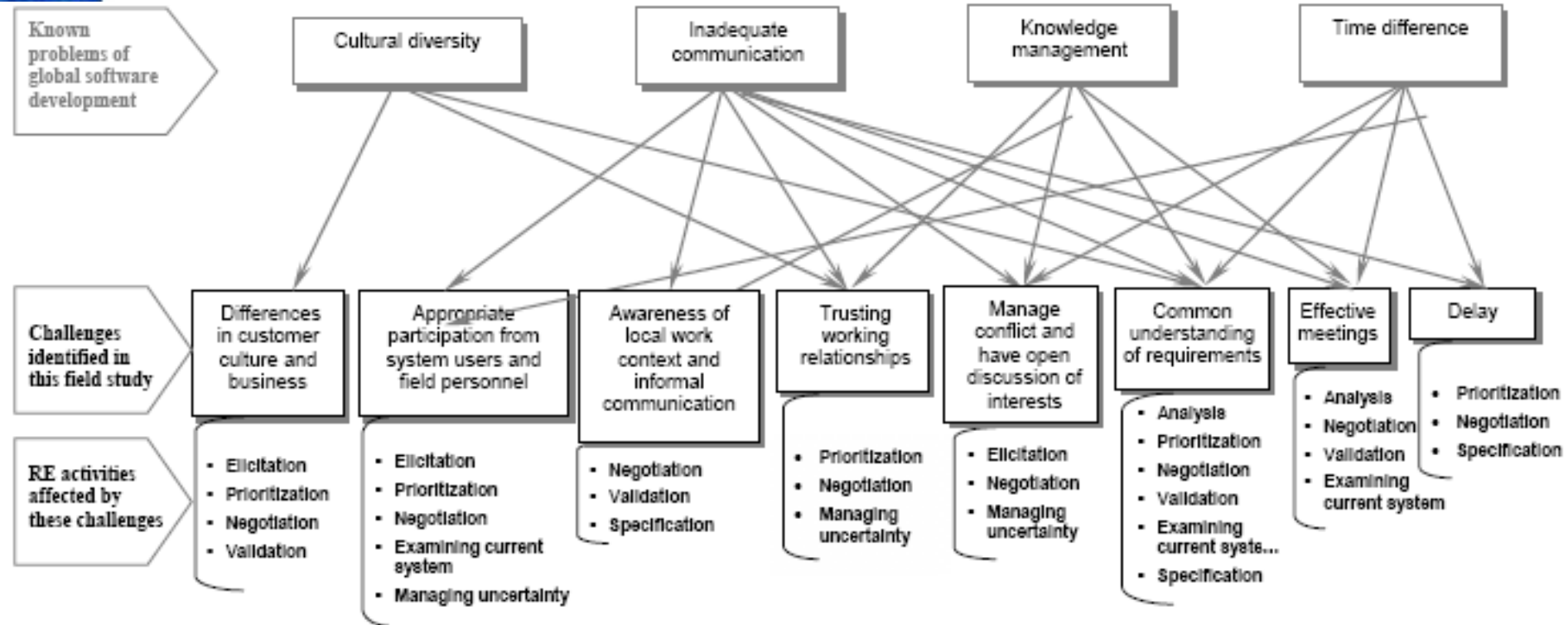- Cultural Sensitivity: Non-Existent – Integral

Context Metadata (Pawlowski, Richter, 2007)
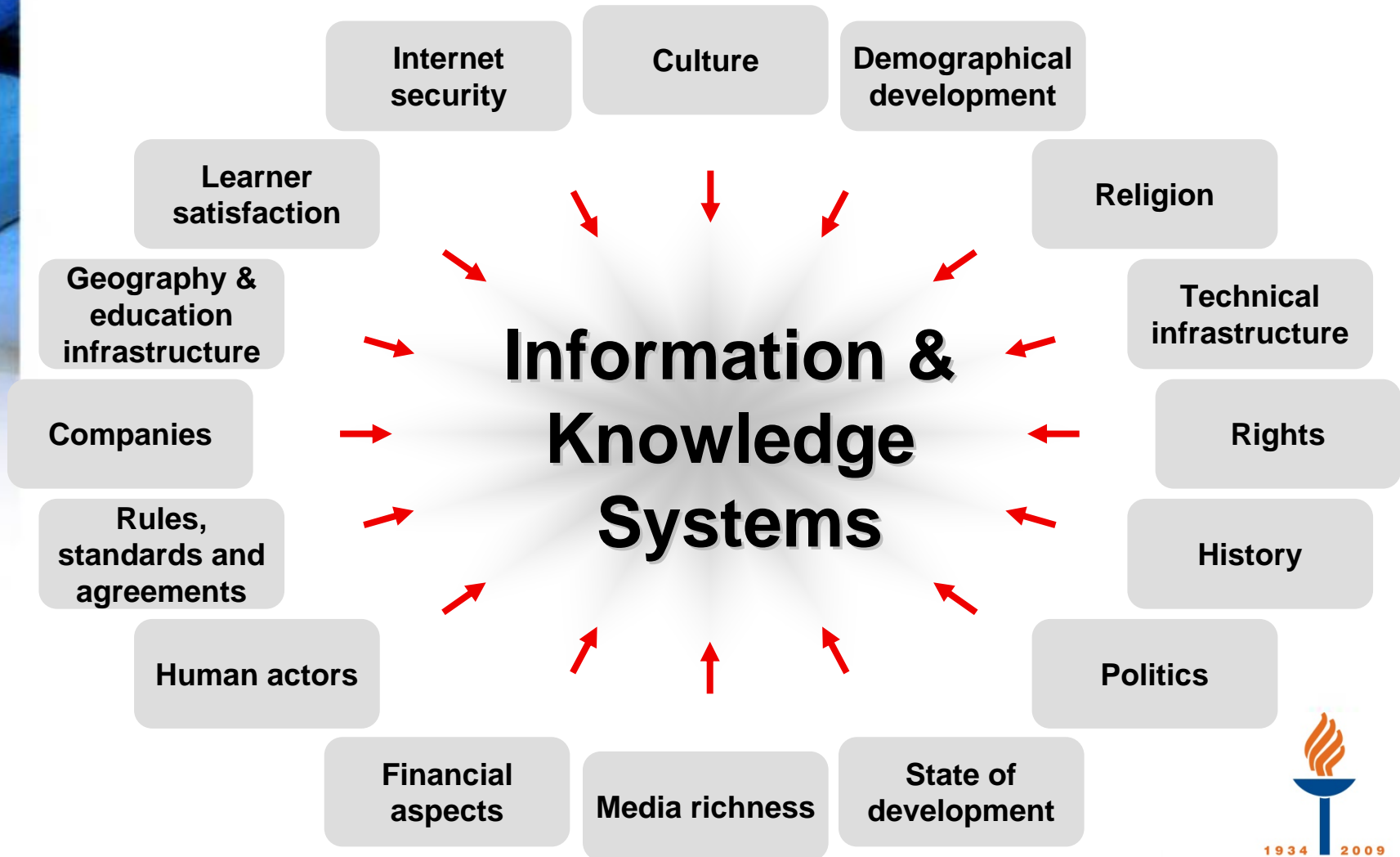
Requirements: Aspects and Relations (Damian, Zowghi, 2003)

Requirements Engineering

- Planning
  - Identifying user needs
  - Formalizing user needs
  - Development intention document (OpenUP)
- Conception: Requirement analysis
  - Refining vision and project objectives
  - Identifying functional and non-functional aspects
  - Architecture
  - Risks
  - Use cases
- Review / Negotiation

Requirements: Specifics in GLIS

- Participants: Involvement of people in remote teams
- Common modeling language / tools (e.g., UML) to avoid misunderstandings
- Separate versions in case of distributed user groups (UI requirements)
- Non-functional requirements regarding cultural aspects
- Focus on clear review process
- …

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

- Requirements planning
  - Analysis
  - Process
  - Review / negotiation
  - Requirements report
  - Architecture requirements
  - Use cases
- Cultural awareness
  - Culture profiles for countries, organizations
  - Culture specific requirements

Culture Profiles

IMS LIP
- Identification
- Goals
- Qualifications
- Activities
- …

Culture Profile Specification
- General
- Reference
- Educational
- Culture
- Communication
- …

Culture Profile Instance (Nation / Region)

Culture Profile Instance (Group)

Culture Profile Instance (Actor)
- …
- Experience 1: Study Netherlands
- Experience 2: Project Korea
- Native Culture: Germany
- …

E-Portfolio
- Organizations
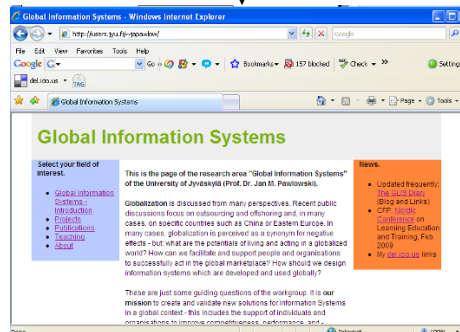- Identification
- Resources
- Products
- …

Instantiation

Contains Characteristic

Contains Product
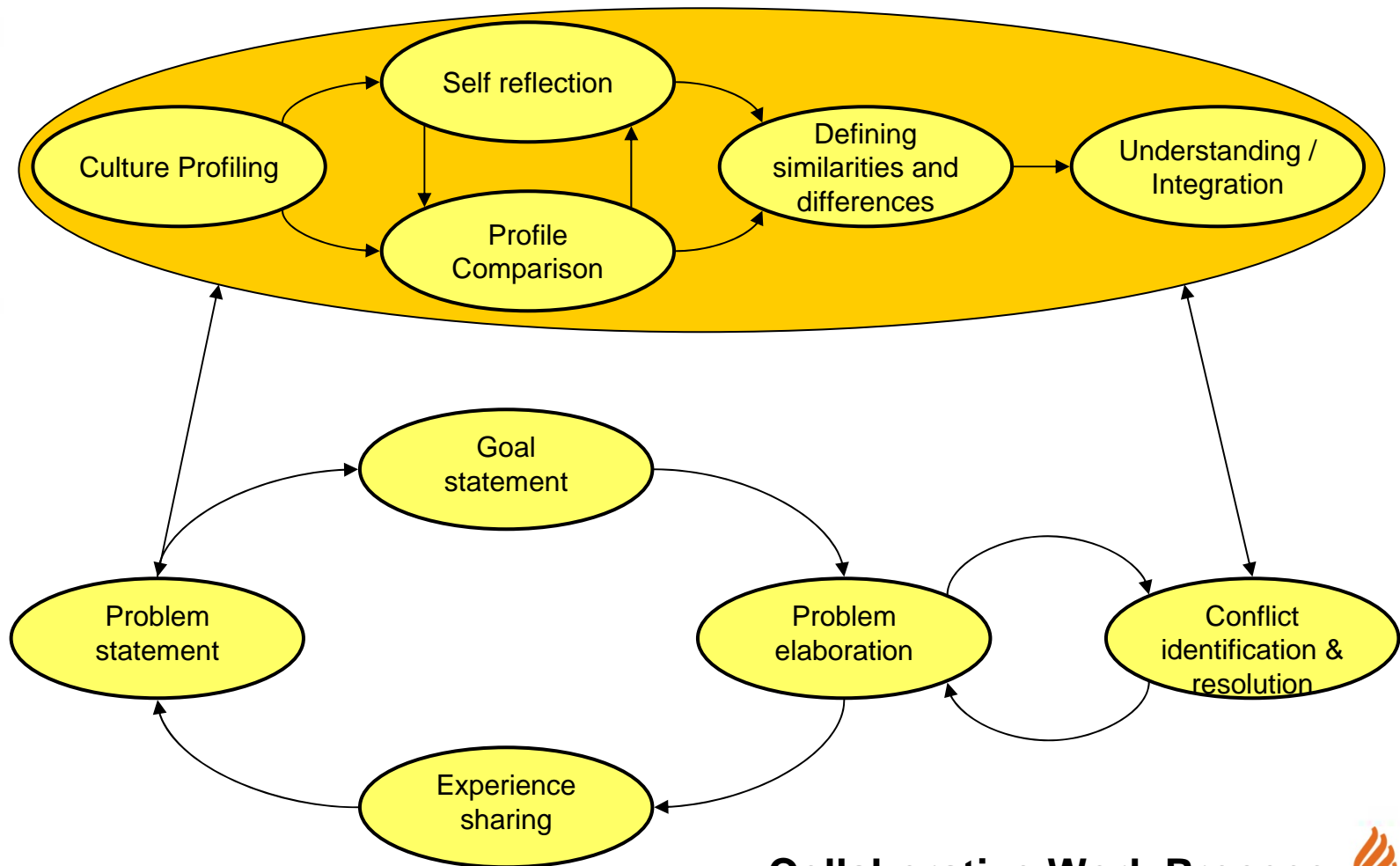
Presentation

Defined Culture Competencies

RCDEO
- Competency description
- Evidence
- …

Culture Awareness Process

Culture Awareness Process

- Self reflection
- Culture Profiling
- Profile Comparison
- Defining similarities and differences
- Understanding / Integration

- Goal statement
- Problem statement
- Problem elaboration
- Conflict identification & resolution
- Experience sharing

Collaborative Work Process

UNIVERSITY OF JYVÄSKYLÄ
1934 2009

Tools

- Process Design
- Coordination Tools
- Awareness Tools
- Specific Tools (Translation)
- Simple support mechanisms!
  - Culture Clouds

korea culture professional japan china relation to my boss teaching style germany finland giving feedback

Summary

- Models to represent culture…
  - Have been developed for different purposes and context
  - Vary in their level of abstraction
  - Can be used as a guideline to identify influence factors
- No model is validated to cover all influence factors for a design and development process
- Besides: Other requirements have to be taken into account!

1934 2009
UNIVERSITY OF JYVÄSKYLÄ

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/]

UNIVERSITY OF JYVÄSKYLÄ

1934   2009

Questions

- Define culture as a generic term including different perspectives.

- What are the differences between the model of Hofstede and Henderson?

- How would you describe your own culture?

- Which aspects should be in the focus when designing a knowledge management systems?

References

- Myers, M.D., Tan, F.B.: Beyond Models of National Culture in Information Systems Research, In: Advanced topics in global information management, IGI Publishing, Hershey, PA, USA, 2003.

- Dafoulas, G., Macaulay, L.: Investigating Cultural Differences in Virtual Software Teams, The Electronic Journal on Information Systems in Developing Countries EJISDC 7(4), 2001

- Damian, D.E., Zowghi, D.: Requirements Engineering challenges in multi-site software development organizations, Requirements Engineering Journal, 8, 2003.

UNIVERSITY OF JYVÄSKYLÄ

1934 2009

Contact Information ITRI

- **Prof. Dr. Jan M. Pawlowski**
- **jan.pawlowski@titu.jyu.fi**
- **Skype: jan_m_pawlowski**

- **Office:**
- **Telephone +358 14 260 2596**
- **Fax +358 14 260 2544**
- **http://users.jyu.fi/~japawlow**