

# Culture Profiles: Facilitating Global Learning and Knowledge Sharing

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**Abstract:** The paper describes the concept of Culture Profiles to facilitate globally distributed work groups. The concept describes a representation for cultural characteristics for groups and individuals and relates this concept to existing standards. Hence, it is embedded in the landscape of learning technology standards. A sample implementation for social communities – Culture Clouds – shows the feasibility of the concept. It leads to improved cultural awareness and better mutual understanding in international groups of knowledge workers and learners.

**Keywords:** Culture Profile, learning technology standards, Learner Information, Cultural Awareness, global learning, global knowledge management, Culture Clouds

## 1. Introduction

In this paper, the approach of Culture Profiles is shown as a tool to improve cultural awareness in global knowledge sharing and learning processes. Culture Profiles describe cultural characteristics on different levels, such as national, organizational or individual characteristics. The concept is related to existing specifications and standards in order to implement an innovative concept in an interoperable way.

Global knowledge sharing is still a challenging but highly significant task. Global organizations or temporary partnerships work distributed all over the globe – more and more study programs include learners from all over the world in E-Learning study programs. This means that globally distributed teams need to be supported to work effectively and efficiently.

The main question of this article is how to facilitate global teams, in particular teams in knowledge intensive processes, such as knowledge management or learning processes. The paper describes the concept of cultural awareness and Culture Profiles to facilitate those groups with easy to use tools. However, there are already many standards to describe actor characteristics. Therefore, this paper extends standards like IMS Learner Information Package (Smyth, Tansey, & Robson, 2001) IMS E-Portfolio (Cambridge, Smythe, & McKell, 2005) and provides a conceptual embedding.

In the first section, I will describe and analyze existing models to describe and represent cultural characteristics. Based on this analysis, the need for cultural awareness and Culture Profiles is derived. This concept is embedded into a framework of existing standards and specifications. The article concludes with a sample implementation and an outlook on future activities.

## 2. Culture and Knowledge Sharing

Global work settings are changing rapidly: internationally distributed teams face an increasing emphasis on knowledge intensive work while technology enables new connections and interactions. Effective collaboration within international networks is one of the most important competencies for actors. In this chapter, I will briefly discuss two aspects: Models and representations of culture and awareness on cultural aspects as a critical success factor.

### 2.1 Culture Models and Representations

Cultural differences are currently discussed from different angles and for different scopes in order to understand their influence on working and learning processes. Generally, culture can be defined and analyzed on different levels:

- National / regional aspects define characteristics and attributes common to actors coming from or living in a certain geographic location.
- Organizational aspects define characteristics and attributes for a certain organization, such as companies or teams.
- Professional aspects define characteristics and attributes for actors in a certain profession or with a similar educational background.
- Individual aspects define characteristics and attributes for actors which describe their personality as well as individual preferences and interests.



Figure 1: Culture Levels

One approach is to identify models that represent national cultures with a controllable set of attributes (cf. Hall & Hall, 1990, Hofstede & Hofstede, 2005; Henderson, 2007; Trompenaars & Hampden-Turner, 1997). Additionally, many studies have analyzed specific aspects of cultural influences for knowledge intensive domains / professional fields, such as education (Edmundson, 2007; Henderson, 2007) or software development (Dafoulas & Macaulay, 2001; Karolak, 1998). Other studies have researched the cultural impact of certain geographical locations (e.g., Gulovsen et al. 2006; Gunawardana, 2005; Mabawonku, 2003).

Most of the studies clearly emphasize the importance of identifying and recognizing the differences and similarities when cooperating to reduce the resulting barriers. To work together successfully, it is highly necessary to reflect about ones own and the collaborators' cultural characteristics. The above mentioned cultural models can support this reflection process.

### 2.2 Culture awareness

One critical success factor of successful knowledge exchange in collaboration settings is the awareness about cultural characteristics (Byram, 1997). In the field of globally distributed learning processes, this can play a crucial role. In international scenarios, many barriers

arise such as misunderstandings and misconceptions regarding culture, communication, and cooperation (cf. Seufert, 2001, MacDermott & O'Dell, 2001).

Different solutions have been proposed for intercultural settings to address those issues. Awareness about cultural issues (Pedersen, 1988, Byram, 1997) and the teams / fellow colleagues (Redmiles et al, 2007, Sarma & van der Hoek, 2002) seems to play an important role. Therefore, an approach is necessary to cover both levels: awareness regarding culture and presence. We use the concept of culture profiling (Dafoulas & Macaulay, 2001) and support by the facilitator (cf. Michie, 2003) to achieve awareness. Culture Profiles describe cultural and individual characteristics on different levels (cf. Henderson, 2007, Dafoulas & Macaulay, 2001, Pawlowski, Richter, 2008) to increase knowledge about collaborators.

### *2.3 Standards*

For the field of learning, education and training, a variety of standards has been developed to enable and ensure interoperability, such as Learning Object Metadata (LOM: IEEE, 2002), Sharable Content Object Reference Model (SCORM: Dodds & Thropp, 2004), or IMS Learning Design (IMS LD: Koper, Olivier, & Anderson, 2002).

One group of standards deals with the description and modeling of actors / learners in learning processes (cf. Sgouropoulou, 2006). The objective of this class of standards is to provide a specification for user profiles which can be transferred across institutions and systems. An example is the specification IMS Learner Information Package (IMS LIP, Smythe, Tensey, & Robson, 2001).

Another important development to represent and exchange user information are e-portfolios. This specification describes outcomes from a learner, such as achievements, works, skills or goals.

Finally, a specification to represent competencies has been developed. The specification IMS RCDEO (Reusable Definition of Competency or Educational Objective: Cooper & Ostin, 2001) describes competencies of an individual in an interoperable way.

Those three mentioned standards can support the interoperable description of actor characteristics from different perspectives. However, none of the above discussed specifications contain information / attributes regarding cultural characteristics. Therefore, it is necessary to extend those regarding cultural issues.

## **3. Culture Profiles**

A Culture Profile can be defined as the characteristics of an entity determined by its culture. An entity, in most cases, is an individual. However, this profile can also be defined for a larger entity, such as an organization (organizational culture), group (professional culture), or even a society (national culture).

### *3.1 Concept*

A Culture Profile cannot be defined as a fixed or prescribed specification. The concept proposed is only a basic outline to cover important cultural attributes in knowledge intensive processes. The specification should be extended and dynamically improved based on the context.

The idea of a culture profile is to represent cultural characteristics from different perspectives. It is based on previous research work in which we have identified cultural

influence factors which affect learning and knowledge processes (Richter & Pawlowski, 2007, Pawlowski & Richter, 2008). Those characteristics are not intended to completely represent a cultural background of an individual but to provide a guideline for self-reflection and comparisons. The following table illustrates Culture Profiles.

**Table 1: Culture Profile**

Category	Description	Sample Attributes
General	General profile description	Name, Creator, Date of creation, Type (organizational, individual, national)
Reference	References to other profiles	Vcard reference, LIP reference, e-portfolio reference, Europass-reference, other references
Experiences	Culture related experiences	Country visit, situations, conflicts, attitudes, cases
Culture	Description of the cultural context	Society type, individualism, masculinity, power distance, rituals, language, gender differences, behavioral norms,
Educational	Description of educational preferences	Common pedagogical approaches, teaching style, relation to teachers / fellow learners, group work
Communication	Description of communication preferences	Electronic communication, face to face communication, communication in groups, feedback preferences
Technical	Description of technical infrastructure	Network speed, bandwidth, operating systems, LMS, accessibility
Legal	Description of legal background	Intellectual property rights, internet security
Historical	Historical influences	Historical milestones, symbols, heroes
Political	Political situation	Political system, parties, persons
Religion	Influence of religion	System, confession, group, religious leaders, influence on society
Development	Status of development	Infrastructure, GNP

This specification can be used as a start to represent the cultural characteristics of individuals as well as groups and organization. However, it is necessary to embed this specification with other specifications in the field.

### 3.2 Conceptual Embedding with Learning Technology Standards

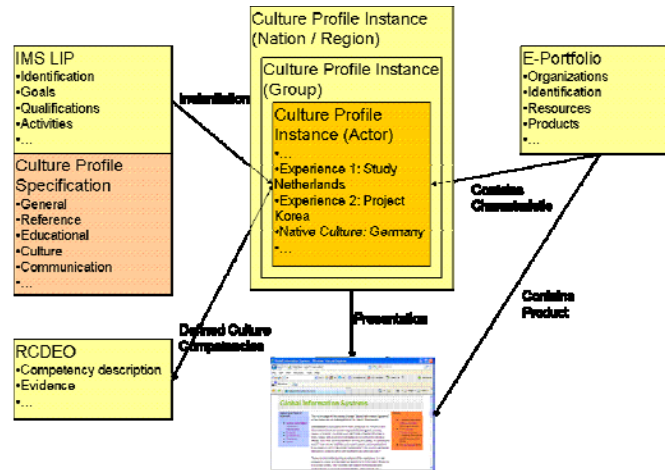
The concept of culture profiles should be embedded with other representations of user data being used. Most of the aspects in the specification are not yet covered in other specifications. However, certain relations need to be specified. From a technical point of view, the relations are specified by explicit references to other profiles (see table 1). From a conceptual level, different relations are possible.

- IMS Learner Information Package: This specification covers educational aspects, qualifications, or preferences. The above mentioned elements of Culture Profiles should be added to this specification in an application profile.
- E-Portfolio: This specification covers outcomes of a learner biography. Several relations are possible. A complete culture profile (for example specified on a web page, see chapter 4) can be added to an individual e-portfolio as an outcome.

Additionally, culture-related experiences should be added to a portfolio (e.g., visits and experiences in foreign countries or international projects).

- **IMS RCDEO:** This specification covers competencies of individuals. The main relation is that an actor should specify culture-related competencies and experiences, such as communication or management competencies in global settings.

The following figure illustrates the relations.



**Figure 2: Conceptual Embedding of Culture Profiles**

By creating those relations, the culture profile has a clear and well defined relation to other standards without conceptual overlaps.

#### 4. Implementation and Usage

The main idea of Culture Profiles is the usage in globally distributed work and learning processes. Therefore, it is necessary to define the intended usage process as well as showing potential implementations.

##### 4.1 Using Culture Profiles: Culture Awareness Processes

In global working and learning processes, problems are solved in a cooperative setting. Those working and learning processes should be combined with an awareness process integrating the use of Culture Profiles. The main aim is to facilitate cultural understanding and improving cooperation processes.

In a *collaborative work process*, problems are to be solved in a globally distributed team – this can be for example a common programming task or a common group assessment in Higher Education. A *culture awareness process* should be integrated in at least two phases: Once a project is initiated, project members should initiate a culture awareness process in order to be prepared for the common task. Additionally, the process should be initiated once problems or conflicts occur.

In the *culture profiling phase*, a group or individuals start to create and instantiate Culture Profiles. This means that also a self-reflection process is initiated. The Culture Profile is used as a guideline to reflect on cultural characteristics. This means that actors are in many cases not aware of cultural factors affecting their behavior and acting.

In parallel, actors should compare their profiles and detect similarities as well as differences. Based on this comparison, all participants should state their observations to summarize their experience. Finally, actors should develop strategies and rules how to deal with differences,

e.g., regarding communication, negotiation or learning styles leading to a better understanding and group integration.

However, conflicts and misunderstandings might still occur during a project – in this case, a facilitator should initiate the Culture Awareness process again. The processes and their relations are illustrated in the figure below.

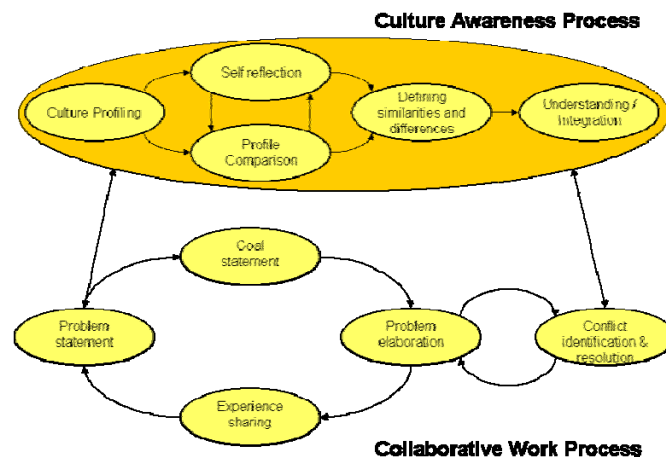


Figure 3: Culture Awareness Process

This process outlines the main steps and relations how Culture Profiles can be integrated in work and learning processes using a culture awareness process. The Culture Profiles serve as a basis for analysis as well as for discourse on culture-related characteristics.

#### 4.2 Implementation with standard tools

The main idea of Culture Profiles based on standards is to integrate cultural characteristics in learning or knowledge management systems. In this case, the specification can be easily added to user profiles (e.g., using IMS LIP).

However, Culture Profiles can also serve as a guideline for other, easy-to-use implementations. As Culture Profiles serve as a base for comparing and discussing cultural characteristics, it is not useful to solely rely on user profiles which are in most cases static. Culture Profiles should be used in a more dynamic way:

One option is the integration in communities. In this case, the attributes of a Culture Profile can serve as a base for individualized questionnaires to be integrated in user profiles. As an example, many professional as well as leisure communities provide tools for generating individual questionnaires. This option could also be used to present cultural characteristics.

A second implementation is the use of tag clouds: Culture Clouds to represent and connect cultural knowledge. In our implementation, for each category and attribute of a Culture Profile, a tag is created. This tag points to a more elaborated description of the cultural characteristic. This elaboration was either done by the users themselves or pointed to external web links (e.g., to descriptions of culture artifacts or symbols).

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

**Figure 4: Culture Clouds**

By adding further tags, users create extensions of the Culture Profile – this means that they add categories and attributes which are of importance for their context.

This usage shows the nature of Culture Profiles. It is not a static specification but a tool for dynamic self-reflection and discourse. Culture Clouds are a tool enabling users to describe themselves and to connect cultural descriptions and external resources. The resulting Culture Clouds are continuously extended, modified and prioritized. This dynamic process is embedded in knowledge processes in order to improve cultural awareness and mutual understanding.

In our first experiences, the profile helped users to describe themselves and to structure the debate on cultural differences and similarities. As a next step, we will perform an in-depth analysis how the usage of these profiles will increase cultural awareness and understanding.

## **5. Conclusion and Future Research**

The concept of Culture Profiles is a basic tool to describe cultural characteristics of actors and groups. The concept can be easily implemented: Either existing user profiles can be extended using the specification as an application profile or using standard tools such as communities or social software tools. As a next step, the usage of the profiles and the inclusion into current standards should be realized. One specific focus should be the inclusion in learner related standards, such as IMS LIP.

The next challenge is the large scale adoption in communities, such as professional and learning communities to analyze the long-term consequences of this approach. Those profiles and the inclusion into existing profiles will contribute towards better group work in globally distributed workgroups.

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## **References**

- Dodds, P., Thropp, S.E. (2004): Advanced Distributed Learning Initiative - Sharable Content Object Reference Model – 2004 Overview.
- Koper, R., Olivier, B., Anderson, T. (2002): IMS Learning Design Information Model, Version 1.0
- Cambridge, D, Smythe, C., McKell, M. (2005). IMS ePortfolio Information Model Version 1.0.
- Cooper, A., Ostyn, C. (2001). IMS Reusable Definition of Competency or Educational Objective, Version 1.0.
- Dafoulas, G., Macaulay, L. (2001). Investigating Cultural Differences in Virtual Software Teams, The Electronic Journal on Information Systems in Developing Countries EJISDC 7(4), pp. 1-14.

- Edmundson, A. (2007). The Cultural Adaptation Process (CAP) Model: Designing E-Learning for Another Culture. In: Edmundson, A. (Ed.) (2007). *Globalized E-Learning, Cultural Challenges*. Idea Group, U.S., pp. 267-290.
- Gulovsen, R. J., Bhatti, T., Hassal, P. J.; et. al. (2006). Cross cultural media usage and attitudes in the United Arab Emirates. In: Sudweeks, F., Hrachovaec, H., Ess, C. (eds.). *CATaC'06 Proceedings: Cultural Attitudes towards Technology and Communication*. 2006, pp. 142-157
- Gunawardana, K., D. (2005). An Empirical Study of potential challenges and Benefits of Implementing E-learning in Sri Lanka; In: *Proceedings of the Second International Conference on eLearning for Knowledge-Based Society*; Bangkok, Thailand; August 2005, pp. 33.1-33.8.
- Hall, E. T., Hall, M. R. (1990). *Understanding cultural differences*. Yarmouth, ME: Intercultural Press.
- Henderson, L. (2007). Theorizing a Multiple Cultures Instructional Design Model for E-Learning and E-Teaching. In: Edmundson, A. (Ed.) (2007). *Globalized E-Learning, Cultural Challenges*; Idea Group, U.S., pp. 130-154.
- Hofstede, G., Hofstede G. J. (2005). *Cultures and Organizations. Intercultural Cooperation and Its Importance for Survival*. USA, revised and expanded 2nd edition, McGraw-Hill Publishers.
- IEEE Learning Technology Standards Committee (2002). *Learning Object Metadata Standard*, IEEE 1484.12.1-2002.
- Karolak, D.W. (1998). *Global Software Development: Managing Virtual Teams and Environments*. Los Alamitos, IEEE Computer Society, USA.
- Mabawonku, A. O. (2003). Cultural framework for the development of science and technology in Africa. *Science and Public Policy*, 30(2), pp. 117-125.
- MacDermott, R., O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge, *Journal of Knowledge Management*, 5(1), pp. 76-85.
- Michie, M. (2003). The role of culture brokers in intercultural science education: A research proposal, 34th Annual Conference of the Australasian Science Education Research Association held in Melbourne, July 2003.
- Pawlowski, J.M., Richter, T. (2008). *A Methodology to Compare and Adapt E-Learning in the Global Context*, MKWI, Munich, Feb. 2008.
- Pedersen, P.B. (1988). *A Handbook for Developing Multicultural Awareness*. Alexandria, VA: American Counseling Association, 1988.
- Redmiles, D., van der Hoek, A., Al-Ani, B., Hildenbrand, T., Quirk, S., Sarma, A., Silveira Silva Filho, R., de Souza, C., Trainer, E. (2007). Continuous Coordination: A New Paradigm to Support Globally Distributed Software Development Projects, In *Wirtschaftsinformatik, Special Issue on the Industrialization of Software Development*, 49 (Special Issue), pp. 28-38.
- Richter, T., Pawlowski, J.M. (2007). The Need for Standardization of Context Metadata for e-Learning Environments, *Proc. of e-ASEM Conference*, Seoul, Korea, Oct. 2007.
- Sarma, A., van der Hoek, A. (2002). Palantir: Increasing Awareness in Distributed Software Development. *ICSE 2002, Workshop on Global Software Development*, Florida, USA, May 2002, pp. 28-32.
- Seufert, S. (2001). Cultural Perspectives, In: Adelsberger, H.H., Collis, B., Pawlowski, J.M. (Eds.): *Handbook of Information Technologies for Education and Training*, Berlin et. al.: Springer.
- Sgouropoulou, C. (2006). Developing and handling learner profiles for European learner information systems. In: Ehlers, U.D., Pawlowski, J.M. (Eds.) (2006): *Handbook on Quality and Standardisation in E-Learning*, Springer, Berlin.
- Smythe, C., Tansey, F., Robson, R. (2001). *IMS Learner Information Package, Information Model, Version 1.0*.
- Trompenaars, F., Hampden-Turner, C. (1997). *Riding the waves of culture: Understanding cultural diversity in business*. Nicholas Brealey Publishing.