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Formalization of a Framework for Cultural Translation in Global Collaboration.
The case of the Lean Organization

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Abstract

In the present world, it is not rare to see multiple cultures coexist in large global projects spanning multiple geographies. The misunderstandings arising from these cultural differences are responsible for many failures, which are then blamed by each nationality on the others, without trying to understand and address those differences first.
We propose to prepare the ground for the development of culturally aware information systems based on the application of the Hozo ontology to describe this field and the rules that can be applied to correct the understanding of behaviors in one culture by the individuals representing the other cultures, especially when more than two cultures coexist. The American author Erin Meyer has provided a reference model for this, using eight dimensions. The example of Lean will be used to illustrate the approach of creating a common culture that enables employees from all over the world to work together, using a common language, but at the same time highlighting the fundamental task of translating this common language locally in a way that can be understood by each representative of each culture.

1. Introduction

We propose to prepare the ground for the development of culturally aware information systems based on two aspects, a knowledge engineering formalization and its application to the Lean organization:

For the Knowledge Engineering formalization, we propose to use the Upper Ontology of Culture or UOC[1] as a framework, and to propose the *Culture Map* (CM) ontology to describe this field and the rules that can be applied to translate behaviors in one culture for the individuals representing the other cultures. The model we took for CM has been described by Erin Meyer in her book The Culture Map[2], using eight cultural dimensions:

- Communicating: from Low Context to High Context
- Evaluating: from Direct to Indirect Negative Feedback
- Persuading: from Principles First to Applications First
- Leading: from Egalitarian to Hierarchical
- Deciding: from Consensual to Top Down
- Trusting: from Task-Based to Relationship-Based
- Disagreeing: from Confrontational to Avoiding Confrontation
- Scheduling: from Linear Time to Flexible Time.

For example, if we take the *scheduling* dimension, an individual belonging to one cultural group may be considered as always late by an individual of another group, while this one might be considered as very punctual by a third one, belonging to a cultural group positioned further on the scale towards *flexible time* than he or she is.

The theory of complex systems[3] enables us to consider each individual working on a project as an agent, associated with properties that will vary based on his/her culture. In this context, we believe that a first alignment of the properties of the agents at the project level (creation of a common culture for the project, which can be a compromise between the represented cultures) is mandatory to achieve a good result, though in theory an on line cultural translation of the behaviors would enable to start immediately, without a need to align the cultures.

To show that the latter option will never be practical, let us imagine which mind-boggling exercise it would be to have global project teams arriving to a meeting scheduled at 9:00 am between 8:30 and 10 am and have a system adapting the agenda based on culture to fit the discussion points to the projected arrival time of each member.

Practically, each individual agent will keep their culture as an attribute, and will apply translation in the context of interaction with other members of the team if they can be taught what these differences are.

It can be argued that the global knowledge workers will have developed a global or company culture that is not their culture of origin, but this global culture is too often assumed by multinational corporations to be shared by all when they start a project with a local group that has not been exposed previously to global projects, so it remains important to consider the culture of origin, while taking into account its evolution in time for global workers.

The example of the Lean Organization will be used to illustrate the approach of creating a common culture that enables employees from all over the world to work together, using a common language, The Toyota Way 2001, first publication in English language of the Toyota Way principles and practices, requested by Mr. Fujio Cho, former president of Toyota, as described for example in Extreme Toyota[4], is a clear example of translating these principles and techniques that were first intelligible only to a Japanese population, to the English speaking workforce in North America. The Toyota Production System would never have had the planetary success it has today if the Toyota culture had not been made available to the west, even coining a different term, Lean, starting with The Machine that Changed the World[5]. Working as a vice president of Information Systems at Toyota Motor Europe, covering 53 markets with almost as many different cultures and different languages, the first author has been able to witness first hand that even literature in English language is not enough to percolate to every audience in Europe, and that further cultural translation is needed.

This article is organized as follows: section 2 presents a framework for including Culture in a Smart System for the Lean Organization. Section 3 presents a domain ontology for the strategic dimensions of Culture. Section 4 presents the influence of culture on the Lean Organization. Section 5 presents an experiment to illustrate the concepts practically and section 6 exposes our conclusions and perspectives.