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MULTI-CULTURAL TEAMS AS SOURCES FOR CREATIVITY AND INNOVATION: THE ROLE OF CULTURAL DIVERSITY ON TEAM PERFORMANCE

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Multi-cultural teams are seen as a wellspring of creativity and innovativeness. Yet, we still miss an in-depth study of their potential and challenges during the innovation process in firms. This is a serious omission as many international firms are in need of improving their global innovation position by the inclusion of insights from team members of different nationalities with knowledge about markets and culture. To derive first insights, we conducted a longitudinal qualitative study in a large global company with 70 personal interviews in five innovation teams over a period of two years. These data, based on semi-structured interviews, provide us with rich information about effects of cultural diversity in teams in the innovation process. Data were analysed through a thematic network analysis and two coders inductively forming categories. Results indicate that cross-cultural teams have a high potential of creativity, but are confronted with difficulties arising from different working- and communication styles which have to be proactively managed from the beginning. While progressing, teams learn to cope with this diversity related to some more surface-level cultural dimensions and members even align. Yet, diversity of power distance induces conflicts that deeply impact the innovation process. Based on these findings, we develop a set of propositions, which lead into a conceptual model on the effects of

multi-cultural team work on creativity and innovation. Finally, we discuss further implications for research and practice.

Keywords: Multi-cultural; creativity; innovation; cultural diversity; team performance.

Introduction

For innovations, in particular in global markets, *creativity* is regarded a prime success factor (Spector *et al.*, 2004; Cummings and Oldham, 1997). As firms increasingly extend their global operations and market presence, they are facing diverse customer expectations that have to be fulfilled with creative products and services through a rich understanding of their national backgrounds and desires (Kraus *et al.*, 2014).

A strategy to cope with the challenge of delivering creative solutions to several dissimilar markets are *multi-cultural innovation teams* which can provide an in-depth knowledge of consumer habits. As the innovation process perpetually demands novel solutions of products and services, creativity plays a key role in innovation teams established to merge and utilise diverse individual knowledge. Although team-based structures in firms can contribute to the successful generation and implementation of ideas, dangers remain that are in particular crucial in cross-cultural teams (Cooper and Kleinschmidt, 1995; Gupta, 1996; Mathisen *et al.*, 2004). If the work in teams produces a climate of mistrust, threat, and anxiety, it damages the innovation process (Janssen *et al.*, 2004). This danger is more likely to occur in multi-cultural innovation teams, and in a very diverse international context such as between Europe and Asia (Brem and Wolfram, 2013). Even though diversity can contribute through different mindsets, informational benefits, and team spirit to the creativity of team, multi-cultural innovation teams face the challenge of dissimilarity of values due to different national backgrounds. Diversity in values can increase conflicts and lead to a lower team morale and efficiency (Jehn *et al.*, 1999; Brem and Wolfram, 2013), which in turn can inhibit creativity. As such, the study of creativity effects through multi-cultural innovation teams is an important research field.

Yet, little is known about multi-cultural innovation teams and their creative potential. Although there is a growing body of literature on multi-cultural teams (Kirkman and Shapiro, 2005), or ethnical/national diversity in teams respectively (Cox *et al.*, 1991; Dahlin *et al.*, 2005), innovation and creativity in multi-cultural teams have been a neglected issue. This research gap is even more vital for longitudinal aspects.

Our study therefore aims to explore effects of cultural differences in teams, on team processes, and therefore on creativity and innovation on the basis of a large scale ($n = 70$) qualitative longitudinal study within a large global enterprise being

referred to as "BLUE". In our study, we focus on cultural value differences (Hofstede, 1983, 1984) as well as on differences in communication and working styles (Hall and Hall, 1990) in the progress of the innovation process. Woodman *et al.* (1993) argue that creativity of a group is a function of individual creativity and of several group factors like its composition, characteristics, and processes. Thus, we explore first which characteristics related to national culture possibly enforce innovation. Second, we research which classes of team dynamics affect innovation. Third, our research aims on finding patterns of the influences in teams on creativity and innovation.

Theoretical Concepts

Creativity and innovation

Creativity and innovation are two largely interwoven concepts (Janssen *et al.*, 2004; Miron *et al.*, 2004). Creativity has been defined as the production of novel, appropriate ideas in any domain (Amabile *et al.*, 1996), whereas innovation is referred to as the introduction and application of processes, products, or procedures new to the relevant unit of adoption (Anderson and West, 1996; Bouncken and Kraus, 2013). Creativity is produced at the individual level and refers to new products and ideas, whereas innovation is the successful implementation of those products at an organisational level (Oldham and Cummings, 1996). This implies that creativity and innovation are two distinct concepts which follow each other sequentially. This view is supported by the organisation of companies in a front-end and a back-end of innovation, whereby the former one is usually where creativity is seen as the only success factor (Brem and Voigt, 2009). However, this conception of creativity and innovation does not consider that a new product emerges from a complex process on experimenting, deciding, and implementing solutions to new problems — which is usually needed in the back-end part as well. Therefore, creativity explicitly has to be extended by the reconfiguration of known approaches into new alternatives (Perry-Smith and Shalley, 2003).

Creativity is a cognitive process, which is important during the whole process of implementing an innovation, which in turn is the product of a creative idea that initiated the process. The term *innovativeness* includes creativity as well as the task related abilities which are important for the operationalisation of the idea (Eggers *et al.*, 2014). Ideas or components of innovations can come from many sources, often from experimentation, environmental changes, developments by other firms, and even by artificial intelligence.

In this paper, we refer to innovativeness as a combination of creativity and implementation of ideas since creativity alone is not sufficient for the success of a

company and an innovation itself is not possible without creativity. From a research perspective, the integration of the two concepts leads to a larger and richer body of literature, which includes factors that influence creativity on an individual or team-level as well as contextual factors supporting innovation.

Multi-cultural teams

The literature provides us with a huge body of empirical findings on processes within team work embedded in a national environment. Those findings point out different factors such as project commitment (Hoegl *et al.*, 2004) and team work quality (Hoegl and Gemuenden, 2001) which includes group cohesiveness (Craig and Kelly, 1999). Furthermore, the level of participation in decision-making (De Dreu and West, 2001) enhances creativity or innovation.

Researchers have been eager to explore the effects of diverse national or ethnical backgrounds (Cox *et al.*, 1991; Dahlin *et al.*, 2005; Gibson and Vermeulen, 2003; Milliken and Martins, 1996) as well as the effects of cultural dimensions on a dependent variable such as teamwork metaphors (Gibson and Zellmer-Bruhn, 2001) or team efficacy and effectiveness (Gibson, 1999; Eby and Dobbins, 1997). Those two traces of literature define different concepts. On the one hand, diversity in teams is viewed where team members have a dissimilar national or ethnic background. Therefore, the effects of easily perceived surface level variations such as ethnicity (Harrison *et al.*, 2002) across team members are explored. On the other hand, research takes cultural differences into consideration. Culture, the collective programming of mind (Hofstede, 1980b) which distinguishes the members of one human group from another, refers to differences in values (Maznevski and DiStephano, 2000) and/or communication styles (Hall and Hall, 1990). Cross-cultural literature explores differences in cultural values between homogeneous groups, e.g., which aspects are universally applicable across cultural frontiers (Brem and Wolfram, 2013).

Against the background of different cultural backgrounds, we use the term "multi-cultural team", as we consider teams having different values, styles, etc. Hence, we take into account that there might be differences in cultural values even within one country (Kirkman and Shapiro, 2005), and potential culture-related changes in personal behaviour.

Levels of diversity in multi-cultural teams

In analogy to Harrison *et al.* (2002) who arrange diversity dimensions, cultural dimensions can be structured by their level of visibility. We follow this idea and use the visibility concept to organise cultural dimensions of prominent cultural classifications — based on the works by Hall and Hall and by Hofstede.

Hall and Hall (1990) suggest three dimensions to differ between cultures: Distinctive degrees of information coding through the use of language, specific need for territorial space, as well as differences in using time and working styles (esp. monochromic versus polychromic). Hofstede (1993) instead is focusing on less visible dimensions which are power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus feminity. Finally confucian dynamism or long-term orientation of a country was added later (Hofstede and Hofstede, 2005).

Effects on creativity through cultural values

The effect of Hofstede's (1983) dimensions on innovation and R&D productivity has been investigated on national level. But also findings in the field of creativity and innovations can be linked to cultural dimensions. Shane (1992, 1993) found that high power distance inhibits innovativeness and creativity through control systems based on rules rather than trust. This is in line with Oldham and Cummings (1996) who identified a "supportive and non-controlling" leadership style which describes a low power distant leader, enhancing creativity. Individualism on the contrary facilitates innovativeness and creativity through valuing freedom that is necessary for creativity (Shane, 1992). Opposing to this finding, Morris *et al.* (1994) argue that very high as well as very low levels of individualism and collectivism harm organisational entrepreneurship. Low uncertainty avoidance fosters innovation (Shane, 1993) which is consistent with the link between individual level of risk-orientation and creativity (Amabile, 1988). Finally, Brem and Wolfram (2013) show in their comparative study on Germany, India and China that some cultural influenced dimensions show differences (e.g., the use of creativity techniques in new product development), and others do not differ as expected (e.g., management involvement). In sum, these findings support the assumption that there is a link between cultural dimensions and creativity and innovation.

Prior studies identified a negative effect in teams of diversity in nationality or national values on innovation. In this line, Watson and Kumar (1992) find that ethical diverse groups take fewer risks in decisions. As innovation is a process, which is afflicted with strong uncertainties (Ozer, 1999), diversity in cultural values can adversely affect innovativeness of a team. Later, Watson *et al.* (1993) find that ethnical diverse groups have less effective interaction processes in the beginning but that these diminish over time. Also communication was found an important success factor for innovation teams (Hoegl and Gemuenden, 2001). As context refers to the use of language, it can lead to misunderstandings and, therefore, process losses (Bouncken, 2004).

We reason that cultural diversity in groups affects team processes and dynamics and is likely to have an influence on creativity and innovativeness. Yet, prior

research has not sufficiently demonstrated possible connections in a real setting in firms. Past research has dominantly tested specific hypotheses through laboratory experiments with students as research subjects. This is problematic since multinational firms often select staff members with international experiences, which the majority of students that were selected in prior studies most likely did not have. Only Watson (1993) applied a cross-sectional design with a student sample, but does not provide any insights on the development and changes of cultural values of team members. Hence, results might be biased and lead to conclusions with limited relevance for firms.

Method and Sample

The first question of our research is about whether and how multi-culturality in teams influences creativity and innovativeness. Here our focus lies on diversity in cultural values and, therefore, team composition. Our second research question centers on what typical team dynamics emerge from diversity of cultural values and are linked to creativity and innovation. Also we aim to explore if those effects change during time.

An exploratory research design was taken, as there are no integrative frameworks which are focused on the influence of cultural diversity of teams on creativity and innovation. For exploration and generation of hypotheses, the qualitative method is regarded to an adequate mean (Lamnek, 1988; Eisenhardt and Graebener, 2007; Eisenhardt, 1989). Moreover, Kirkman *et al.* (2006) confirm that cultural values can be determined by interviews.

Our study used a semi-standardised interview method in one of the three largest consumer goods companies in the world which has global subsidiaries, production plants, and R&D locations. We selected this company because of its strong need to develop products for several nations and attracting customers with different tastes. Hence, they strongly develop new products with international and as such intercultural innovation teams (Bouncken and Winkler, 2010). For confidentiality reasons, we subsequently call this company "BLUE".[2] The open-structured interview questionnaire can be found in the appendix. Our research was only focused on radical innovation projects.

Our study consists of the analysis of five global innovation teams in the food and cosmetics area, whereby one of them has three subteams. The timeframe for observations was two years, interviewing members from core and extended teams. To ensure the inclusion of different perspectives, both the project leader and his or her

[2]This dataset was used with a different focus in earlier publications, especially in Bouncken and Winkler (2010).

supervisor were interviewed. To track team transformations, interviews took place at the beginning, as well as at the end of each innovation project. Finally, interview data were triangulated with evaluations and other information from different executives.

In total, in the five teams and at the two times, we carried out 70 interviews which goes far beyond the regularly recommended number of 20–40 interviews for qualitative studies (König and Vollmer, 1997). The interviews were conducted in English. As the company language is English and the teams were discussing in English during the meetings, no difficulty with this method was expected nor experienced. Interviews were transcribed in Excel semantically, leaving out fillers' and grammatical mistakes (Schilling, 2006) in a first step. Since our focus lays on the content of the interviews, this method of transcription can be evaluated appropriate. In a second step, the data was organised by their topics (e.g., the form of the advantages or problems mentioned in the interview). In the third step, we developed a thematic network analysis (Attride-Stirling, 2001) by two independent coders to develop a coding system. This allows ensuring the objectivity of the data analysis. In the next step, the two coders inductively formed categories (Mayring, 2003). Through this process, we achieved an in-depth knowledge of our research topic. The following presentation of results will link quotes and statements to form a model of the influence of cultural diversity in teams on teamwork, creativity and innovation. Our method of data analysis has more potential: At a later point in time, we will use the category system to quantify our findings.

Results

Description of the projects and teams

Projects at BLUE are organised in accordance with the traditional stage-gate model of Cooper (1990). Defined tasks are carried out sequentially. Each stage is followed by an evaluation gate. Gates are assessed by prior defined criteria and through members of a counsel. Team members of the respective projects are recruited from different departments. All teams have a cross-functional core team with marketing and R&D, as well as extended members. Innovation projects are usually supervised and organised by marketing or R&D, sometimes in joint lead. Also members from supply chain, finance, and packaging are integrated in the core team. In the extended subteam, locals are operating who are either regional brand managers (marketing) or regional production managers.

Only project *Salsa* is a special case. In the first stages of this project, regional marketers, R&D, and finance managers were core team members (Team A). Later, A was restructured. Then global managers took over the tasks from regional managers. In addition to the cross-functional core team, there were two other subteams working

Table 1. Overview of innovation project.

Team	Innovation target	Level of national diversity in the core team	Local closeness of team members/dependency on virtual work	Level of national diversity in the extended team	Local closeness of team members/dependency on virtual work	Effects around creativity
1. Salsa (*A*, *B*, *C*)	Complex. Highly innovative. Existing local product is modified and launched globally.	(a) High: Latin American dominated (Brazilian, Japanese, Argentinean, Mexican, German, French).	Located in different locations in Latin America, partly Europe. High Degree of virtual work. Late first face-to-face interaction.	Highly Diverse: Latin, North America, South-East Asia, Europe, Africa, Middle East.	Strong distance between team members. Strong dependency on virtual work. Virtual work started before kick-off meeting leaving team members uncertain of the identity of others.	(a) Language and virtual work as an obstacle for team building.
		(b) High: Dutch dominated, British, Indian, Pilipino, Chinese.	Located in one location. Task separated, people working individually. Team meetings unsteady. Interactions with Team C.			(b) Academic melting pot with different focus of education through different nationalities. Different functional backgrounds stimulated creativity and innovation.
		(c) High: German dominated, Dutch, French, Egyptian, Italian.	Located in one location. Frequent face-to-face interaction. Informal talks. Virtual interaction with team B, sometimes face-to-face meetings.			(c) Motivation though interesting and diverse team members that stimulated creativity and innovation.
2. La Fayette	Refinement. Development of products fitting global consumer needs.	Low: German dominated, French and Spanish.	Frequent interactions. Different locations in Europe such as France, Germany, and Switzerland. Later Germany and Switzerland.	Diverse: North-, South-, and Eastern Europe.	Distance between team members (Europe). First, large face-to-face workshops integrating all countries. Later more one on one telephone conferences of core team with locals. Few and well prepared workshops together.	High power distance of a team leader as a source of dissatisfaction and power struggle within the team. Reorganisation of the team during the innovation process with a new project lead. Demotivation and conflicts reduced team work quality and creativity.

Table 1. (*Continued*)

Team	Innovation target	Level of national diversity in the core team	Local closeness of team members/dependency on virtual work	Level of national diversity in the extended team	Local closeness of team members/dependency on virtual work	Effects around creativity
3. Rouge	Refinement. Development of products fitting global consumer needs.	Low: Dutch, German, and Swiss dominated.	Some team members located at the same locations. Frequent face-to-face meetings of all team members (monthly all two/three months).	Diverse: North, South, and Eastern Europe.	Distance between team members (Europe). Regular tasting sessions in the beginning. Later interactions not known.	Competitions of global and local goals slow down decisions. Power distance of locals as an obstacle. Innovation and creativity is strongly reduced due to the conflicts and the communication problems.
4. Splendid	Re-conception of an existing product.	Low: British dominated and Dutch.	Most team members work at the same location. One is working in another country. Strong reliance of this team member on virtual work. Frequent face-to-face interactions with the others.	Highly Diverse: Latin, North America, South-East Asia, Europe, Africa.	Large distance of team members (USA, Asia, Africa, Europe). Team is working together on other projects as well with changing leadership of each project. One new team member.	Low context is appreciated by all members. Feminism in the extended team is enhancing safe environment. The very smooth communication and very good coordinated work allowed improving creativity and innovation.
5. Viking	New Product development including a new active.	High: Argentinean, Indian, French, British.	Team members work in two locations. Frequent (monthly, bi-monthly) interactions of all team members.	Latin America, Europe.	Strong distance between team members (UK and Latin America). So far one face-to-face meeting, due to the newness of the project.	No cultural differences during team meetings of core team. Culture as a "social lubricant". The team worked well even though they faced distance. Due to lowly perceived cultural distance and conflicts, team members make use of their creativity in the subteams and bring ideas together which increased innovativeness.

on the innovation as well. Team B, was a research team, doing product related fundamental research. Team C, another subteam, worked with Team B. The latter team advised team C through offering fundamental research findings and team C applied this research and refined the formulation of the product. Table 1 gives an overview about every studied innovation project or team. All global projects that we analysed were scheduled for about two to three years of project duration until market launch. Teams were observed from the beginning until their finalisation.

Sources of creativity and innovation

Interviewees often reported an increase of the amount and level of creativity in the team through the multi-cultural teamwork. As an overall source of creativity, they named a richer and more diverse environment due to different national and cultural backgrounds. From the detailed answers, we can classify different aspects. Propositions are introduced in the following and are summarised in Fig. 1.

Control can have a positive effect on creativity as suggested by a team member: "*In some cases you want to have creativity. So if you want to have creativity, you need to control maybe a little bit these people*."

Different personal characteristics emerging out of different national backgrounds are a source of creative ideas. Interviewees stated that even if team members have the same academic background, they differ in the focus in their education. Especially team members in the R&D team benefit from the same academic foundation and similar approaches to solve problems, yet an enlargement of knowledge is possible because of different focuses of their education. Team members from cross-functional teams and extended teams benefit from diverse mind sets such as diverse perspectives, different ways to solve problems,

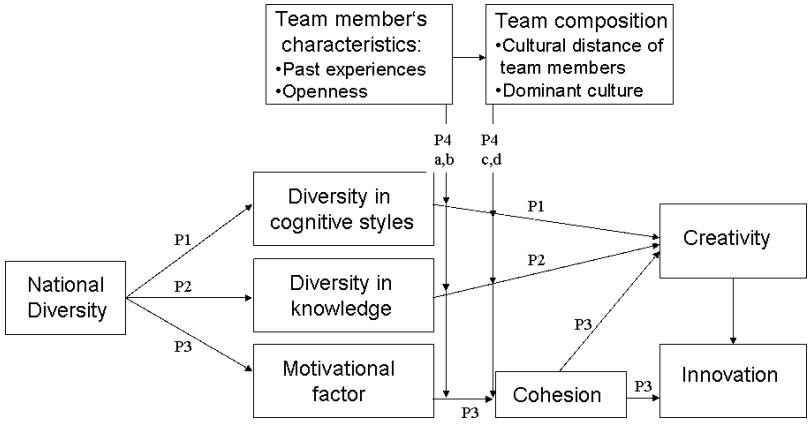

Fig. 1. Conceptual framework on effects of national diversity on creativity and innovation.

and different points of view. This becomes evident in the following statement: "*You put people together and ask to think about issues. Of course different characteristics, different behaviours, different knowledge can help engineering more brilliant ideas.*"

National diversity within a team thus seems to be a source of overall diversity influencing *cognitive styles and problem-solving styles*, academic education and, hence, knowledge. This is in line with Kurtzberg's (2005) findings that imply diversity in cognitive styles having positive effect on objectively measured creativity.

Proposition 1. *National diversity in teams enhances diversity in cognitive styles, national diverse teams will be more creative than homogeneous teams.*

Also diversity in nationality will lead to a larger *diversity in knowledge and expertise.* Woodman *et al.* (1993) argue knowledge is an important factor for creative solutions. Through the access of different knowledge backgrounds within the team, but also to different products while traveling to other countries, individual knowledge will be enlarged and, hence, creativity will be enforced.

Working in and traveling to other countries is a source of creativity. But also just working with people from different countries and using their product knowledge as background information can create new ideas: "*I go to Hungary and Russia and I work with people from these countries so they give a lot of input and also more understanding of the product. There are things that are not for sale in the Netherlands and in Germany.*"

Proposition 2. *National diversity in teams enhances knowledge diversity. Therefore, national diverse teams will be more creative than homogeneous teams.*

Working with people from different nations is also source of *motivation* and has a positive effect on the team spirit itself, as team members share their home countries' life styles, customs, policies, and history in informal conversations. Also, the image of the own country is reflected by team members who find an appreciated source of humor in confronting the others with cultural stereotypes. One of the interviewees describes culture as a "social lubricant" which leads to more fun and a more interesting work environment. The following statement indicates that cultural diversity plays an important role in team building within national diverse teams: "*I never understand Peter's jokes. So it is just about… saying 'Oh she is French, that's normal. She doesn't understand.' Then I keep asking 'No, no, no, I want to understand. I want to be part of the team.' And that is how it is… just because people explain stuff like that. A kind of creativity — a kind of feeling bonding and then he knows it is just stupid interaction but I would have it just because I am French. Stuff like — you know — "ooh la la" or that makes people laugh. That's it. So you can play on that obviously. I play that part of my personality just to create some time up — a positive mood.*"

National diversity in a team seems to play a role as a motivational factor. However, this motivational factor does not seem to play a direct and a key role in enforcing creativity or innovation. Instead, it seems to have an indirect affect. National diversity in a team effects group cohesion — a team member's motivation to maintain the team and a team spirit (Hoegl and Gemuenden, 2001). Cohesion in turn has positive effects on creativity (Craig and Kelly, 1999) and innovation (Hoegl and Gemuenden, 2001).

Proposition 3. *National diversity has a motivational effect on team members, which in turn enforces cohesion in the team. Stronger cohesion in national diverse teams will have positive effects on creativity and innovation.*

Moderating factors

Teamwork in multi-cultural teams is also influenced through moderating factors. We here focus on moderating factors that refer to certain personal traits and experiences, which facilitate teamwork. Herein experiences through living in foreign countries for a longer period of time or former experiences of working together with other cultures play an important role. Also team members have to be open-minded and not be prejudiced against other cultures.

"*If you already have those kinds of demands to work on an international team it is easy to get used to each other, get aware with each other. I had an experience when I worked in a small city; there is a small department, so they are not so prepared. They always think if you are Dutch, why care? Why should I change? I mean thinking is less open. I mean I work here and they are Dutch and here I come and then you don't work with foreigners. So I get this kind of impression. But if you are in an organisation already international, people already have this [open] kind of mindset.*"

Thus we identify two moderators of team members' characteristics which moderate the effect of national diversity in a team on its creativity:

Proposition 4a. *Past experiences with different cultures* (*in team work or achieved through living in other countries*) *will moderate positive direct and indirect effects of national diversity in teams on creativity and innovation.*

Proposition 4b. *Team members' openness to other cultures will moderate positive direct and indirect effects of national diversity in teams on creativity and innovation.*

In addition to factors that lay in the person itself, the team composition is important. Within two subteams of team *Salsa*, there were team members coming

[1]The concept of cultural distance derives from Hofstede's (1980a) work, who uses differences between country score indices as a measure for cultural distance.

from a distant culture.[1] Although the rest of the team was national diverse as well, team members from the distant culture did not integrate as easily. Cultural distant team members had less influence on decisions and their ideas were not recognised and accepted as of closer nations who dominated the team culture: "*What I've seen — if there are some strong groups in the team if most of the team members are German or most of team are Dutch they may have this kind of strong influence. Just like you have the dominant one and you have the minority one... Also if you have several people from the same background their interaction. Because of their communication, their language, but also the cultural differences you can easily promote something... Because if you have the same kind of background or culture.*"

At the same time, his Dutch colleague reported of a different presentation style and less spoken language competencies of the team member, which are leading to the assumption of a lower work quality. But when looked into his work thoroughly, the other team members found out that this was not the case.

While we did not observe any strong negative effects such as lower work morale, lower satisfaction or more absenteeism as Milliken and Martins (1996) report, one of the two team members left the team shortly after the interview leaving unclear whether the above cited situation contributed to his turn over. Although the observed effects in the team might not be as strong as described by Milliken and Martins (1996), a team composition with a minority and a dominant culture will lead to problems accepting ideas deriving from a cultural distant team member thus leaving out a source of creativity. Therefore, we consider team composition such as dominant culture and cultural distance as moderators on the effect of national diversity on creativity and innovation:

Proposition 4c. *Cultural distance of a team member will moderate positive effects of national diversity on creativity and innovation. It will decrease positive effects.*

Proposition 4d. *A dominating culture will moderate positive effects of national diversity on creativity and innovation. It will decrease positive effects.*

Sub-model on benefits

Findings presented above can be used to develop the first stage of a conceptual model. In this sub-model, we concentrate on benefits of multi-cultural innovation teams through cultural diversity. In the following, we will extend this model to barriers related to diversity and effects according to the progress of the team during the project.

Relationships developed above, inform a conceptual model developed here. The model shows that national diversity in teams is a source of creativity and innovation. As interviewees state, diversity in national background diversifies knowledge and cognitive styles of their team mates, which in turn enhances

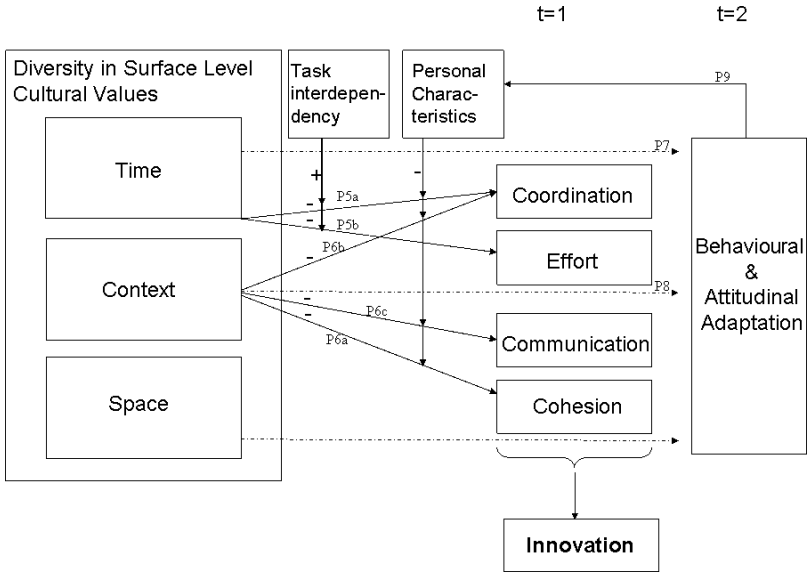

Fig. 2. Conceptual framework on effects of cultural values on team work and innovation — changes over time.

creativity and innovation. Some indirect positive effects of stronger group cohesion on creativity and innovation are possible, too.

Sources of conflicts in cross-cultural teams

Surface level conflicts in multi-cultural teams

Although cultural diversity was shown to enhance teamwork, there are also harmful processes. Especially in the beginning of projects, teams face conflicts that decelerate the innovation process and enlarge the effort that is needed for the advancement.

Effects of surface level cultural differences such as divergence in time, context and space (Hall and Hall, 1990) are eliciting certain conflicts, especially in the beginning of the innovation process. In the following, further propositions are derived. Finally, an overview of the negative effects is given in Fig. 2.

Time is the dimension that had — out of the three surface level dimensions — the largest potential to elicit conflicts, as the following quotes show: "*Sometimes people get very mad and upset about this word "enseguida".*[3] "*Please do it now,*

[3]Spanish word for "now". An Argentinean was commenting upon the use of the word by Mexican colleagues.

not 'en seguida'!" These are the ways we observe at the different cultural forms of the countries. It doesn't mean that they don't want to do something... It may just take longer."

Another interviewee felt the effect of differences in the dimension more strongly: "*Others interpret being on time or deadlines differently as it is written down on the paper. Of course it has an effect on work morale.*"

Differences related to the use of time can cause problems within the innovation process. Especially in the beginning of the project, when everybody is still used to his own definition of punctuality this difficulty was mentioned. When tasks are interdependent and one person waits for the results of somebody else differences in time lead to difficulties in coordination. Coordination, the synchronisation of efforts within the team (Hoegl and Gemuenden, 2001) is one factor which affects innovation. Therefore, we make the following proposition:

Proposition 5a. *Time will affect coordination negatively and therefore have a negative influence on the innovation process in the beginning of the project.*

Also, monochronic team members will perceive their polychronic counterparts as putting less effort into the team's tasks. Effort also affects the innovation process (Hoegl and Gemuenden, 2001).

Proposition 5b. *Differences of team members in the dimension of time will affect perceived effort negatively and therefore have a negative influence on the innovation process in the beginning of the project.*

Proposition 5c. *The influence of diversity in time will be moderated by the task interdependency of the diverse team members.*

Context can also lead to irritations. Frequently, interviewees report that high context team members are upset about the use of a direct communication style, which is often associated with impoliteness: "*I have also seen it happen that somebody from the Netherlands was so blunt that other people were quite offended by the way he did something or the way he spoke or the things he said which is possibly very difficult if you have that in your team.*"

On the other hand, differences in context are causes for misunderstandings as low context team members are looking for clear statements and decisions whereas high context members are not communicating them as directly: "*What I have seen in the past, people who were not from the UK looked at the minutes for the meetings and said: 'Let me know: Who has agreed now?' The answers were phased in such an open language: 'Potentially', 'Maybe we should...', 'We conceived to have a look at...' instead of 'yes', 'no', 'we go left', 'we go right'. That is quite difficult because you want a set of actions. So people maybe misunderstand each other.*"

Therefore we see three negative effects of differences in context. First, direct language has the potential to upset other team members. Team members whose feelings are hurt might have difficulties to feel safe and wanted in the team and might have difficulties in bringing in their knowledge. Accordingly we argue that differences in context are negative for a group's cohesion (Hoegl and Gemuenden, 2001):

Proposition 6a. *Differences in context will affect group cohesion negatively in the beginning of the innovation process.*

Second, we argue that it will be more difficult to coordinate within the team which becomes obvious in the second quote. Here low context team members do not see which steps and actions there are planned in the near future.

Proposition 6b. *Differences in context will affect coordination negatively in the beginning of the innovation process.*

Third, there is a negative effect on communication, which is related to the perceptions of language. To high context members, open communication might be defined differently than to low context team members who associate a high context language sometimes with hidden agendas. Hence, we propose:

Proposition 6c. *Differences in context will affect communication negatively in the beginning of the innovation process.*

Differences related to *space* caused relatively little conflicts. Team members became aware of cultural differences which they saw in the way people greet each other in business life. Sometimes this appears with kisses, sometimes with a handshake. Differences in the dimension of space led to confusion and some awkward situations, but they were rated as being not important for team work and the need for more space was accepted easily by low space team members.

Changes of surface level cultural-conflicts

Although the latter differences are sources of conflicts and slow down the advancement of the innovation process, team members report that they usually occur more obviously in the beginning of the process. Later, team members learn how to deal with difficulties which are related to culture. After this process of adaptation, the innovation process advances faster and more smoothly.

In this line, it was reported that the difference in use of time leads to conflicts in the beginning, but after a short period of time, there were changes recognised: Monochronic team members accepted that their polychronic counter parts were late and did not meet deadlines directly. Team members changed their attitudes towards punctuality and moreover, they did not feel offended any longer if others were not on time: "*Other cultures are much more relaxed. And then sometimes*

there is a conflict out of that. Timelines are not met... Now if someone says 'in the beginning of June I am planning a meeting', I know now, that it will take place later. Only in the beginning I interpreted it [being unpunctual] as unreliability. Now I think that's just the way it is. I think the mentality is just different... if it doesn't work out now, then he will do it some other time."

Also, diversity in time is changing during the innovation process. For once monochronic team members are including different understandings of punctuality into their plans, but polychronic team members change their behaviour, too which is expressed in the following statement: *Interviewer*: "*What is your biggest learning within the team?*" *Interviewee*: "*To be on time. That is what I learned here [in Germany].*"

Thus we conclude:

Proposition 7. *Diversity in time will lead to conflicts in time* $t = 1$ *but to behavioural and attitudinal adaptations in time* $t = 2$ *during the innovation process. Therefore the negative effect of time in* $t = 1$ *on coordination and effort diminishes in* $t = 2$.

Also, the above described conflicts which arise out of differences in communication styles were sources of behavioural and attitudinal adaptation. Interviewees stated how much they started to appreciate a direct language which becomes clear through this statement by a Chinese who is talking about his experiences in the Netherlands: "*At the beginning some people who are very straight are difficult to accept. I didn't know the reasons why he would be so rough. But afterwards you know that there are cultural differences, so you can talk in the same way.*"

"*If you know things about that [cultural differences — context was the topic before] you can use that on purpose. Then the question is what I want to achieve. If I want to achieve certain things, it can make sense to "be British", but it can also be that I need uproar or a crash. Then I have to be very German. Then I have to be very direct and everybody jerks and everybody thinks: typical German — terrible people. But you see the effect that some plans finally come into action which didn't move before because everything was so polite.*"

The last two quotes clarify several points. Similar processes appear with context as in the different use of time. Again, there are some behavioral and attitudinal changes. Attitudinal changes also relate to the attribution of a certain behavioural aspect — once the offended person understands that there was no intend to offend he can deal with the cultural difference. Therefore:

Proposition 8. *Diversity in context will lead to conflicts in time = 1 but to behavioural and attitudinal adaptations in* $t = 2$ *during the innovation process. Therefore the negative effect of time in* $t = 1$ *on coordination and effort diminishes in* $t = 2$.

But more than cultural adaptation is described in the second quote. Here a German describes an aware process where she identifies situations and uses different communication styles which she had learned in a multi-cultural team setting in order to strategically influence the advancement of the innovation process. Hence, we have indications not only for a short-term behavioral change of multi-cultural team members, but also an enlargement of their competencies. In this case, the German uses her developed communication skills to advance innovation projects. Therefore we see effects of multi-cultural team work on the innovativeness of a person which go beyond the innovation process of one project. Thus we conclude:

Proposition 9. *Experiences in multi-cultural teams in the long term have a positive effect on the innovativeness of a person.*

In addition to the overall increase of innovation competencies, our findings on handling cultural conflicts also support Proposition 4, which focused on the moderating factor of past experiences improving multi-cultural team work. As people are not offended as easily by other work or communication styles, it is logic that the negative effects on multi-cultural surface conflicts also are moderated by past experiences of team members.

Proposition 10. *Personal characteristics* (*past experiences of working in multi-cultural teams*) *moderate the effect of diversity of surface level dimension on coordination*, *effort*, *communication*, *and cohesion*.

Therefore working in a multi-cultural setting is a means to build intercultural competencies and skills that will enforce innovation as team members learn how to adjust their behaviour according to the needs of the situation. Those skills even exceed the innovation process of a product. They will facilitate future innovation processes even if those are not accomplished by multi-cultural teams.

Deep level conflicts in multi-cultural teams

Power distance. Out of the deep level cultural dimensions, power distance was perceived most often as a difference between team members. Also, it was the difference, which caused most severe problems.

We observed the negative influence of power distance in the team *La Fayette*. Supervision of the team was through a French team leader — most of the team members were Germans with one exception, a person from Spain living in France. Tasks were delegated without integrating other team members, being controlled by the team leader. Discussions left almost no room to question assumptions. The power of the team leader was supported by the high success of the product in

France whereas in Germany the product was not as successful leading to even fewer acceptances of suggestions made by Germans. Especially in marketing the French claim led to different associations, which did not fit to the product from a German perspective.

German team members' answers differed strongly, as two identified direct and open conflicts in the team, whereas two others were not having issues. One team member was unhappy that team decisions were ignored; regardless the fact that several market studies supported the decision. Another team individual reported power struggles within the team members, which became worse in the context of the restructuring of the company.

Through these observations, we identify two different cultural problems. The first problem was already mentioned in the chapter of moderating factors and regards the team composition. Certainly, the Germans were dominating the culture, which was also observed by one of the team members. The German stated: "*La Fayette to me is not a multi-cultural team. It is only a bi-national team: German and French culture. And then we have a Spanish team mate who is living in France and therefore is directed towards the French... [Bi-nationality] makes it even more difficult. If Germans are in one team they always try to be dominant... [this means] absorbing a lot of time to talk, not letting others finish their arguments, and trying to assert their own biased opinions.*"

This problem supports our Proposition 4d of harmful effects of one dominant culture. Whereas in the other teams the problem was less obvious. This clear statement contributes to our assumptions. But here, it was only one of the two identified problems, which lead to new propositions, summarised in Fig. 3. The second problem was a difference in power distance between the team leader and the team members, which caused a high level of frustration within the team and a struggle for power. Specifically, one negative effect is that team members have a lower motivation to maintain the team. Thus, two team members stated that they would not consider *La Fayette* a team at all. As group cohesion is one of the factors that influence innovation positively (Hoegl and Gemuenden, 2001) we argue:

Proposition 10a. *A high power distant team leader leading a low power distant team will cause lower levels of cohesion, which will in turn effect innovation negatively.*

Another negative effect is that team members felt cut off from information as they reported to ask frequently for more. Information was, according to one team member, not delivered equally to all team members leading to information deficits.

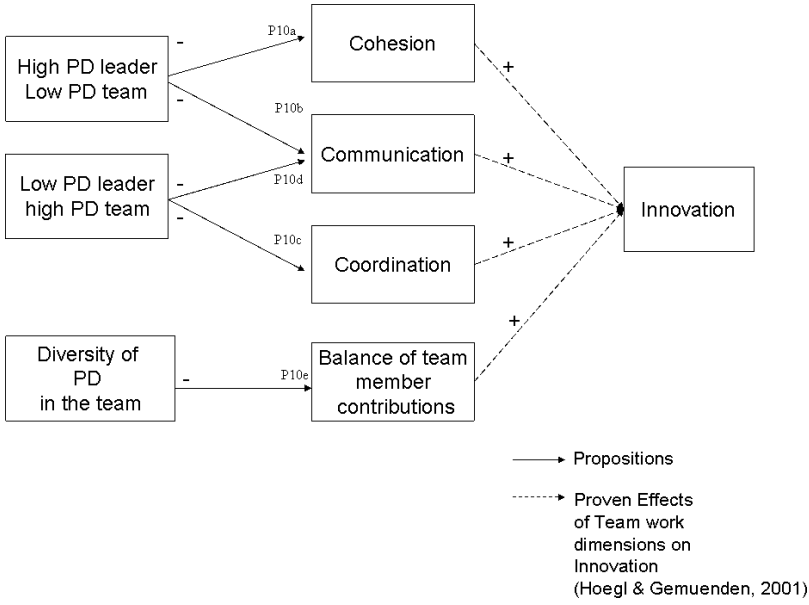

Fig. 3. Assumed and proven effects of power distance on team work quality dimensions.

Also, communication is one of the factors that is important for successful innovations (Hoegl and Gemuenden, 2001). This leads to:

Proposition 10b. *A high power distant team leader leading a low power distant team will cause lower levels of evaluations regarding communication on the team side. This will in turn effect innovation negatively.*

But not only can the combination of a high power distant leader with low power distant team members cause difficulties. Some team leaders were also reporting difficulties with high power distant team members. Their problem was that they did not know when the team was committed to a task because nobody was commenting a decision. They were missing information on their decisions. Hence, high power distant team members are a source of uncertainty for low power distant team leaders. As one team leader put it: "*People from Chile are very straight forward, authoritative, and entrepreneurial which means you don't understand when you have commitment or not. Either you enter the space of confidence or you end up doing nothing.*"

High power distance of team members can lead to less advancement of the innovation process. A Kenyan who entered a dominantly German team described process losses, which derived from a high power distance: "*Somebody, e.g., a technician wants to repair a machine. The engineer feels that things should be done in a certain way. Even though the technician knows that if we go this way, it*

does not work he does not want to contradict his boss. The end of a day it can take a very long time to get the machine to work when it could be done in the simple way. [Knowledge gets lost?] Yes then you don't give opportunity for people to develop themselves and explore."

Global innovation teams depend on sharing knowledge of team members who have access to information on local markets. But in this quote, we see that a high power distance of team members leads to a loss of knowledge, which can cause delays. The two quotes show that low power distant leaders are challenged to coordinate tasks since they do not know whether a task will work out the way they plan. Coordination in turn is a factor influencing innovation (Hoegl and Gemuenden, 2001).

Proposition 10c. *High power distance in the team with a low power distant team leader will lead to lower coordination within the team. Therefore the innovation process will be decelerated.*

Also, high power distant team members do not communicate their knowledge which leads to lower degree of openness of communication, another factor which is empirically important for innovation (Hoegl and Gemuenden, 2001).

Proposition 10d. *High power distance in the team with a low power distant team leader will lead to lower communication in the team. This will have negative effects on the innovation process.*

Another effect becomes clear regarding a highly diverse power distance team. While low power distant team members contribute and share their knowledge in front of their team leader high power distant members tend to observe at the beginning: "*At first for me, it is getting to know the new environment, getting used to everything. At first, I was just observing and learning and realising and whatever. I am not sure what the barrier is of. . . . Of course you have to get used to a certain way of working.*"

This leads to an unbalanced contribution of team members to the team's task. High power distant team members do not bring in their expertise and their full potential. As this is another factor of team work quality contributing to innovation (Hoegl and Gemuenden, 2001), we conclude:

Proposition 10e. *Diversity in power distance within the team leads to lower balance of team member contributions, which leads to lower levels of innovation in turn.*

Additionally to the leader's perspective, we found cases of differences of power distance within the team. Here some high power distant team members entered team with lower power distance and also a low power distant team leader. Team

members reported long-term changes of their behaviour and also values of the high power distant team members. For once the Kenyan reported that he learned how to speak up and give in his thoughts. But also a very young French team member stated: "*So, for instance in France, there are very high hierarchies. When you are at a lower level you execute, you don't ask. And when I joined into UK I completely understood that this was not — it was not what BLUE is asking for. We need to challenge and build which is completely different from executing which means that it is a lot more about developing your question style and by questioning how can you do best and better. . . . If you had done this interview when I first joined this was not the way I behaved in the team. It was completely different.*"

In this quotation, it becomes clear that the trait of power distance changes due to expectations, which are communicated explicitly or implicitly by the company. Therefore, an influence of the environment on the dimension of power distance is possible, yet the change in this dimension might not be as fast as in surface level dimensions. Nevertheless, the harmful effect of diversity in power distance in the team disappears over time leading to a higher degree of shared knowledge. As visualised in Fig. 4, we propose:

Proposition 10f. *Diversity in power distance will disappear over time. High power distant team members will become less power distant. This will lead to higher degrees of communication, better coordination, and more balance of team member contribution in* $t = 2$ *than in* $t = 1$.

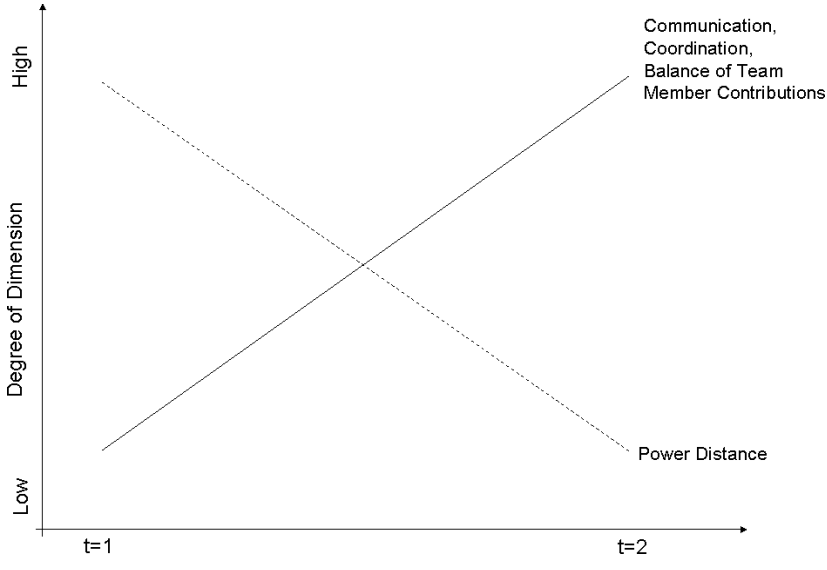

Fig. 4. Proposed development of power distance over time.

Additionally to differences in teams, we also observed concerning power distance one homogeneous team, *Rouge*. All team members appreciated the integrating and sharing leadership style of their team leader. In the interviews, we noted the strong satisfaction within the team and a strong intent to maintain the team (cohesion). Communication was mentioned as sufficient, direct, formal, as well as informal. Team members with a low level of work experience felt integrated and contributing to the task and they rated the coordination and mutual support as high. This observation supports our propositions of the harmful effects of diversity in power distance.

Individualism. Individualism and collectivism were rarely mentioned during the interviews. In two interviews, harmful elements of individualism became evident. Both interviewees described the trait of individualism, which they perceived in some people from the United States as harmful: "*I don't find the US guys particularly conducive to team working. They are very individualistic; they are very ambitious, self-centred. Now this is a generalisation but I believe the whole education system builds them to be very independent and focused individuals who recognise that hard work brings in rewards. They have a really embedded work ethic from the start, a self-centred work ethic. So if you work hard — you know — screw everybody else — you get the benefits. And I think some people there have a bit of an issue of working in another team and piling everybody's ability for the great and good.*"

The comment is in line with the finding that Anglo-Saxon teams in the US alone were less cooperative (Cox *et al.*, 1991). But a new perspective is added to the finding: It is the dimension of individualism which can lead to less trust within the team, if the rest of the team is less individualistic. Individualism therefore seems to be a factor which begins to threaten the group's safety and integration. Then, creativity and innovation will be impacted negatively (West, 2002).

Proposition 11. *Differences in individualism in a team will lead to lower levels of cohesion and thus have negative effects on the innovation.*

Uncertainty avoidance. As Hofstede and Hofstede (2005) argue, uncertainty avoidance is linked to risk-orientation which is one of the factors within an individual which is enforcing individual creativity. Within the interviews, uncertainty avoidance was not named often as a factor where there were differences perceived between team members. One of the interviewees though made the following statement: "*Another question is concerning the pricing concept which is different in all countries. Some have a very innovative price concept, which is very successful. Now we have to think about realising it in our country*

as well.... Switzerland is very conservative and France is a country, which has a high experience in changing products permanently. Therefore we have many positive examples."

According to Hofstede's (1980b), uncertainty avoidance index the interviewee came from a culture which is highly uncertainty avoiding. Hence, his statement leads to the conclusion that it is possible to change uncertainty avoiding behaviour once it becomes clear that less amount of information is sufficient at a certain point in time. Thus, uncertainty avoiding team members become — through the interactions with more risk-oriented individuals — less avoiding and more affiliated to risks. In this line we propose:

Proposition 12. *Diversity in uncertainty avoidance in a team will over time lead to a decrease of uncertainty avoidance in high uncertainty avoiding team members*.

Masculinity. Masculinity seemed to be a cultural dimension where neither differences between team members were perceived nor did problems occur out of differences. Nevertheless, in two cases, team members were described who came from a masculine cultural background. Although they did not mention any difficulties themselves a colleague stated that they learned how to work with women in a better way and that they were now less uncomfortable working with women. This leads us to the proposition:

Proposition 13. *Differences in masculinity in the team will change over time*.

Conclusions

The aim of this study was to identify culturally related factors and their interplay on creativity and innovativeness of multi-cultural teams and their progress. Results were derived from a longitudinal qualitative study within a global company. The 70 interviews in five innovation teams at two points in time provide us with rich results on different stimuli and limits of creativity and innovativeness, which form the basis for our overall model proposed in Fig. 6.

Our results indicate that cultural diversity affects the teamwork in different ways: First, multi-national teams can have informational advantages. Those teams use a broader source of information and tend to be better in organising the information. As the integration of different information is one of the key determinants of effective decision-making — especially regarding complex problems (Dahlin *et al.*, 2005) — the existence of different cultures in a team can affect the

innovation process. Second, the degree of diversity is an important influence factor: Very homogeneous or very heterogeneous teams have a higher team identity, efficacy, role expectations, and intra-team communication than moderately heterogeneous teams (Earley and Mosakowski, 2000). Team identity is connected to team cohesion which — next to communication — positively influences innovation (Hoegl and Gemuenden, 2001). Therefore, the degree of diversity in a team also influences innovation. Value diversity in teams has been found as the most important factor predicting team performance in national homogeneous teams (Kirkman and Shapiro, 2005). In this line, value diversity in determinism has a positive effect on team cooperation which again is a factor of positive influence on innovation (Hoegl and Gemuenden, 2001). Moreover, ethnic diverse teams were found more cooperative than homogeneous Anglo-American groups (Cox *et al.*, 1991). Thus, cultural diversity can increase a climate of helping and explaining. This climate will enforce the participative safety in a team (the degree to which a team is participative in its decision-making procedures and how psychologically safe team members feel) that in turn is an important factor for team innovativeness (Anderson and West, 1996; West, 2002). Cultural backgrounds or national diversity therefore have an effect on performance measures and processing of information. Yet, it has not been investigated sufficiently if cultural value diversity affects innovation and creativity.

Multi-cultural team work shows that diversity in cultural background has both — effects that enhance creativity and innovation as well as effects that are harmful for the quality of team work and thus for creativity and innovation. Figure 5 summarises propositions developed in our paper.

We found multiple effects of cultural diversity in teams that influence the process which lead to a framework that differentiates between surface level and deep level cultural differences. Nevertheless, our study implies that the innovation process can be hindered in the beginning by cultural differences within teams. Positive effects of different nationalities as a source of interesting conversations and of self-reflection therefore oppose negative effects, which have their origins in diversity of time, context, and power distance in particular.

Surface level cultural differences can be conquered relatively quickly. As team members learn how to adapt to different work and communication styles faster, they have the potential of being a source of intercultural competencies, which facilitate future innovation projects. Whereas the management of surface level diversity can reduce the harmful effects and leveraging the potential of culturally embedded personal behaviour, cognitive styles, richer information, and team motivators the deep-level diversity is a threat that largely remains and may even increases as the project progresses. In particular, power distance which had the highest potential for conflicts was found to harm team work quality and creativity.

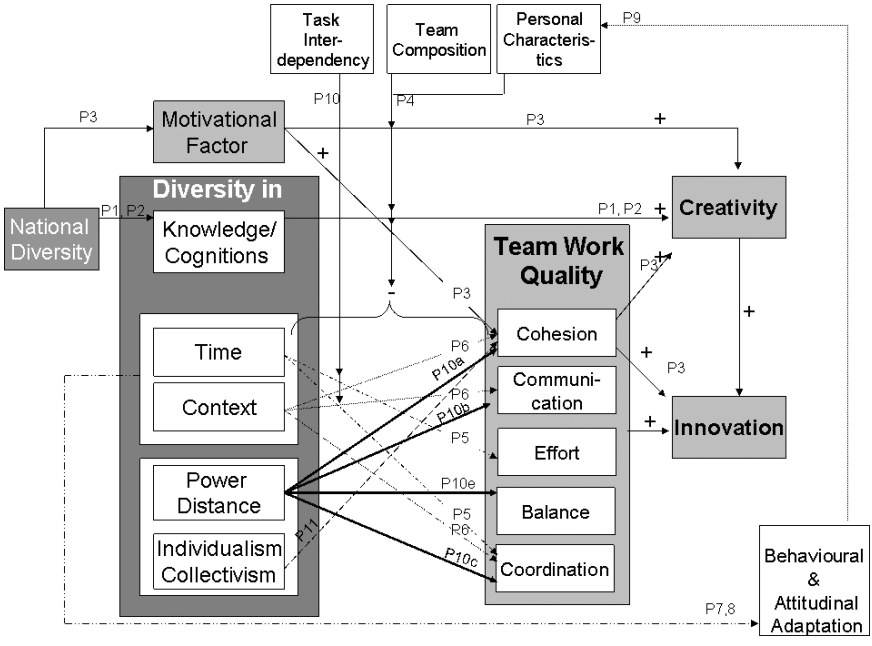

Fig. 5. Overview of propositions.

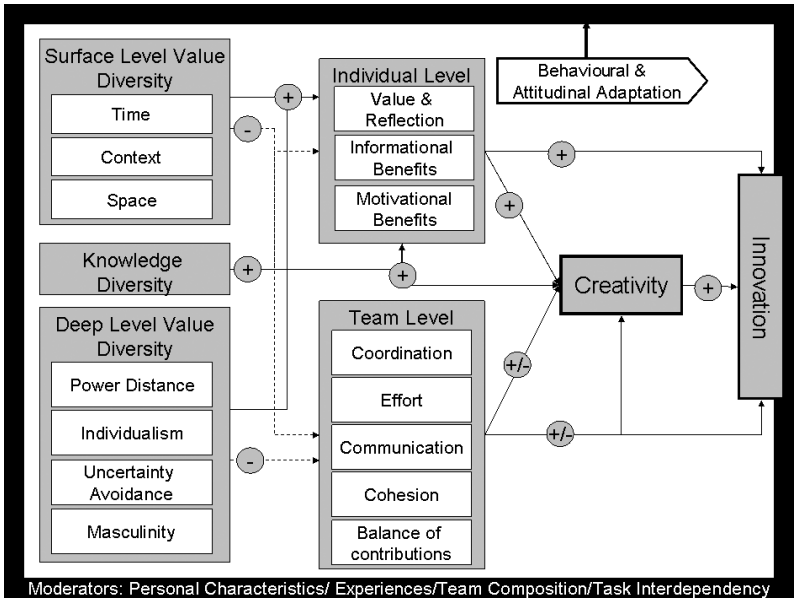

Fig. 6. Model of effects of multi-cultural team work on creativity and innovation.

Across time and by means of training, persons can change in this deep level cultural value and thus reduce the negative effects of diversity related to power distance. Other deep level cultural differences such as individualism, masculinity, and uncertainty avoidance were not mentioned frequently leaving a high degree of uncertainty respecting their effects.

Implications for theory

First of all, the finding of possible changes of cultural dimensions is striking and has some important methodological implications. Cultural values so far were considered as relatively stable over time and formed in early childhood (Adler, 2002). But here, even deep level cultural dimensions such as power distance seem to have changed during a period of less than one year. Therefore we oppose the view that culture is a static construct. Furthermore a new field of research can derive out of this finding. As culture so far was often considered as independent variable, now factors that lead to a change of cultural values can be explored leading to a more holistic view of personality of individuals.

Further methodological conclusions have to be drawn from the lack of statements concerning individualism, masculinity, and uncertainty avoidance. Although it is possible that differences in the named dimensions are not existent or important in our observed teams, a large body of research stresses the importance of the dimension of individualism for a group's preference towards goals, responsibility, training, self-management, etc. (Earley and Gibson, 1998). Even though culture has been assessed by interviews (Gibson and Zellmer-Bruhn, 2001) which was evaluated as a possible and valid method (Kirkman *et al.*, 2006), they seem to be insufficient to assess deep level cultural dimensions. It might be difficult for interviewees to perceive such differences in cultural values. For once, team members usually meet in a well-defined setting such as meetings which might influence behaviour. Next, behaviour of team members is directed towards a goal, which might be even linked to individual rewards. At last, the interview situation might bias answers. In order to explore effects of individualism, uncertainty avoidance, and masculinity, it is therefore more advantageous to use a method which identifies these dimensions in the first place: A questionnaire method.

Another methodological suggestion can be drawn out of our research. Important factors that influence the whole model as a moderator are personal characteristics. Here the former experience of working together with people from different nationalities influences the velocity of adapting to different communication, working, and therefore cultural styles. Therefore existing research on students in groups has severe limitations. We suggest adding international

experience as a control factor in future laboratory experiments, or, better, to conduct more field studies.

Implications for practitioners

As the innovation process is decelerated through conflicts that arise out of different cultural backgrounds of team members, a company should carefully plan the kick-off of the innovation project. Here enough time to get to know each other should be calculated, especially if team members are lacking of cultural experience. Also, a self-reflection on group processes and individual working styles, which picks cultural issues as a central topic, may help accelerating the process in the future. If resources are scarce, enough time in the evening for informal talks, which will affect group cohesiveness positively, should be given. To help less experienced team members, a system can be implemented that identifies "multi-cultural experts" in the company and maybe at the same location, who can function as a mentor. Moreover, psychological tests might be used to identify which team type individuals are, and to use this information to ideal teams for group cohesiveness.

Out of the surface level cultural differences, time was the one that could cause most severe problems especially if tasks are interdependent. But also organisational resources can influence whether people will finish their work on time. Here the organisation has to donate enough resources and communicate the importance of the project in relation to other work tasks. Then it becomes crucial to align country goals with global goals.

Power distance, which has been found in this study as a source of differences and conflicts, is one of the most important factors within innovation teams. A low heterogeneity in power distance is optimal, but hard for a global company to realise. Moreover, it is important not to staff a high power distant team leader with a low power distant team. As studies have shown a non-controlling leadership style as enhancing for creativity and innovation (Oldham and Cummings, 1996), we suggest low power distance as a personal selection criterion for team leaders. Furthermore, the team composition should at least mix team members with a high and a low power distant style, as high power distant members will become less power distant over time. This dimension is also the only one where we suggest a dominating tendency of team members with low power distance, as it will facilitate and accelerate a change in this dimension with the high power distant team member.

Furthermore, team leaders with teams from mixed cultures and a mixed background in power distance have to be sensitive to different needs in delegation and task explanations. They have to reinforce low power distant behaviour from high power distant team members. Likewise, conflicts can arise if

the local supervisor of the extended team member has a high power distance, because the team member is caught between different expectations. Here the team leader has to identify team members in conflicting situations and agree with the local supervisor upon decision spectrum and field of responsibilities of the team member.

For differences in individualism, our point to start from was conflicting research implying either high levels of individualism as beneficial for innovation (Shane, 1992) or neither high nor low levels of individualism or collectivism (Morris *et al.*, 1994). For multi-cultural team work, Morris *et al.*'s (1994) finding seems to be more in line with our result. In order to lower the level individualism within multi-cultural teams, a company should stress the team performance as a whole and include this factor in individual reward systems. Also including organisational citizenship behaviour (Organ and Ryan, 1995; Smith *et al.*, 1983) in the reward system could change individualism in the long term.

As cultural differences have many advantages and conflicts in teams usually lead to a greater intercultural competency which is transferred to other situations as well, we strongly recommend building multi-cultural teams to build creativity and innovation. Also expatriation programs and short-term job rotations to different countries can be a successful personnel strategy for global companies.

Limitations and further research

This paper is based on a quantitative research within a real-life context of companies. As such, it is one of the first papers of its kind not using student samples (like e.g., Watson, 1993). Hence, our results have a high relevance for firms of different categories.

So far, our study is lacking quantification and thus empirical testing, although the large amount of 70 interviews offers some possibilities that have to be taken in further steps. The developed coding system has to be deployed by two independent raters. Then inter-rater reliability has to be determined in order to account for the objectivity of our data. Also, the large amount of data has the potential for some further correlation analysis.

Company philosophy and culture might influence the results, even though team members in our analysis were from distant cultures. Furthermore, diversity in values might differ in the context of different countries. In addition, team innovation enforcing factors by West (2002) and Hoegl and Gemuenden (2001) are missing. Thus, our research could be replicated in companies who are located in non-Western countries. Further insight might be feasible through long-term studies in the timeframe of 5–10 years. Power distance, which has been found in this study

as a source of differences and conflicts, is one of the most important factors within innovation teams.

Appendix: Interview Questionnaire

General information

(1) Your functional home department:
(2) Location of your home-base in the company:
(3) Your profession:
(4) Your nationality:
(5) In which country have you spent most of your life?
(6) Your 1st language:
(7) Your 2nd language:
(8) Gender:
(9) Age:

Project data

(1) Name of the project:
(2) Project description:
(3) Project start date:
(4) Project end date:
(5) In which phase is the project right now?
(6) Your dedication to the project (% of your total work time):
(7) When did you start working on the project?
(8) When will you end in this project?
(9) What does explain the project's goals best?
    (a) Completely new development (scale 1–5).
    (b) Adaptation development (scale 1–5).
    (c) Repositioning of an existing product (scale 1–5).
    (d) Updated version of an existing product (scale 1–5).

Project team

(1) Number of team members:
(2) Number of nationalities represented:
(3) What and how many core team members are in your team?

Questions

(1) How is the team organised?
(2) How are roles defined in the team?
(3) How are decisions made within the team?
(4) Do you see cultural differences between the team members?
(5) What are benefits of cross-cultural teamwork?
(6) What are problems of cross-cultural teamwork?
(7) Suggestions for BLUE?
(8) Anything else you would like to mention, particularly with reference to creativity and innovation?

References

Adler, NJ (2002). *International Dimensions of Organizational Behaviour*. Cincinnati, South-Western College Publishing.

Amabile, TM (1988). A model of creativity an innovation in organizations. In *Research in Organizational Behavior*, BM Staw and LL Cummings (eds.). Greenwich, CT: JAI Press.

Amabile, TM, R Conti, H Coon, J Lazenby and M Herron (1996). Assessing the work environment for creativity. *Academy of Management Journal*, 39, 1154–1184.

Anderson, N and MA West (1996). The team climate inventory: Development of the TCI and its applications in teambuilding for innovativeness. *European Journal of Work and Organizational Psychology*, 5, 53–66.

Attride-Stirling, J (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, 1, 385–405.

Bouncken, RB (2004). Impact of cultural diversity on new ventures. Theoretical and empirical findings. *Journal of Creativity and Innovation Management*, 13, 240–253.

Bouncken, RB and S Kraus (2013). Innovation in knowledge-intensive industries: The double-edged sword of coopetition. *Journal of Business Research*, 66, 2060–2070.

Bouncken, RB and V Winkler (2010). National and cultural diversity in transnational innovation teams. *Technology Analysis and Strategic Management*, 22, 133–151.

Brem, A and K-I Voigt (2009). Integration of market pull and technology push in the corporate front end and innovation management — Insights from the German software industry. *Technovation*, 29(5), 351–367.

Brem, A and P Wolfram (2013). Differences in new product development in Europe and Asia. *Proceedings of the XXIV ISPIM Conference*, Helsinki.

Cooper, RG (1990). Stage-gate systems: A new tool for managing new products. *Business Horizons*, 33(3) 44–54.

Cooper, RG and EJ Kleinschmidt (1995). Benchmarking the firm's critical success factors in new product development. *Journal of Product Innovation Management*, 12, 374–391.

Cox, TH, SA Lobel and PL Mcleod (1991). Effects of ethic group cultural differences on cooperative and competitive behavior on a group task. *Academy of Management Journal*, 34, 827–847.

Craig, TY and JR Kelly (1999). Group cohesiveness and creative performance. *Group Dynamics-Theory Research and Practice*, 3, 243–256.

Cummings, A and GR Oldham (1997). Enhancing creativity: Managing work contexts for the high potential employee. *California Management Review*, 40, 22–38.

Dahlin, KB, LR Weingart and PJ Hinds (2005). Team diversity and information use. *Academy of Management Journal*, 48, 1107–1123.

De Dreu, CKW and MA West (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology*, 86, 1191–1201.

Earley, PC and CB Gibson (1998). Taking stock in our progress on individualism-collectivism: 100 years of solidarity and community. *Journal of Management*, 24, 265–304.

Earley, PC and E Mosakowski (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of Management Journal*, 43, 26–49.

Eby, LT and GH Dobbins (1997). Collectivistic orientation in teams: An individual and group-level analysis. *Journal of Organizational Behavior*, 18, 275–295.

Eggers, F, S Kraus and J Covin (2014). Traveling into unexplored territory: Pioneering innovativeness and the role of networking, customers, and turbulent environments. *Industrial Marketing Management*, 43(8), 1385–1393.

Eisenhardt, KM (1989). Building theories from case study research. *Academy of Management Review*, 14, 532–550.

Eisenhardt, KM and ME Graebener (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50, 25–32.

Gibson, CB (1999). Do they do what they believe they can? Group efficacy and group effectiveness across tasks and cultures. *Academy of Management Journal*, 42, 138–152.

Gibson, C and F Vermeulen (2003). A healthy divide: Subgroups as a stimulus for team learning behaviour. *Administrative Science Quarterly*, 48, 202–239.

Gibson, CB and ME Zellmer-Bruhn (2001). Metaphors and meaning: An intercultural analysis of the concept of teamwork. *Administrative Science Quarterly*, 46, 274–303.

Gupta, AK and D Wilemon (1996). Changing patterns in industrial R&D management. *Journal of Product Innovation Management*, 13, 497–511.

Hall, ET and RM Hall (1990). *Understanding Cultural Differences — Germans, French and Americans*. Yarmouth: Intercultural Press, Inc.

Harrison, DA, KH Price, JH Gavin and AT Florey (2002). Time, teams, and task performance: Changing effects of surface- and deep-level diversity on group functioning. *Academy of Management Journal*, 45, 1029–1045.

Hoegl, M and HG Gemuenden (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science*, 12, 435–449.

Hoegl, M, K Weinkauf and HG Gemuenden (2004). Interteam coordination, project commitment, and teamwork in multiteam R&D projects: A longitudinal study. *Organization Science*, 15, 38–55.

Hofstede, G (1980a). *Culture's Consequences: International Differences in Work-Related Values*. CA: Beverly Hills.

Hofstede, G (1980b). Motivation, leadership and organization: Do American theories apply abroad? *Organizational Dynamics*, 9(1), 42–63.

Hofstede, G (1983). National cultures in four dimensions. A research-based theory of cultural differences among nations. *International Studies of Management and Organization*, 13, 46–74.

Hofstede, G (1984). Cultural dimensions in management and planning. *Asia Pacific Journal of Management*, 1.2, 81–99.

Hofstede, G and GJ Hofstede (2005). *Cultures and Organizations: Software of the Mind*. New York: McGraw-Hill.

Janssen, O, EVD Vliert and M West (2004). The bright and dark sides of individual and group innovation: A Special Issue introduction. *Journal of Organizational Behavior*, 25, 129–145.

Jehn, KA, GB Northcraft and MA Neale (1999). Why differences make a difference. A field study of diversity, conflict and performance in workgroups. *Administrative Science Quarterly*, 44, 741–763.

Kirkman, BL, KB Lowe and CB Gibson (2006). A quarter century of culture's consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of International Business Studies*, 37, 285–320.

Kirkman, BL and DL Shapiro (2005). The impact of cultural value diversity on multicultural team performance. In *Managing Multinational Teams: Global Perspectives*, DL Shapiro, MA von Glinow and JLC Cheng (eds.)

König, E and G Vollmer (1997). *Systemische Organisationsberatung. Grundlagen und Methoden.* Deutscher Studien Verlag: Weinheim.

Kraus, S, F Meier, F Eggers, R Bouncken and F Schuessler (2014). Standardization vs. adaption: A conjoint experiment on the influence of psychic, cultural, and geographical distance on international marketing mix decisions. *European Journal of International Management* (in print).

Kurtzberg, TR (2005). Feeling creative, being creative: An empirical study of diversity and creativity in teams. *Creativity Research Journal*, 17, 51–65.

Lamnek, S (1988). *Qualitative Sozialforschung*. München, Psychologie Verlags Union.

Mathisen, GE, S Einarsen and K Jorstad (2004). Climate for work group creativity and innovation: Norwegian validation of the team climate inventory (TCI). *Scandinavian Journal of Psychology*, 45, 383–392.

Mayring, P (2003). *Qualitative Inhaltsanalyse. Grundlagen und Techniken*. Beltz: Weinheim.

Maznevski, ML and JJ Distephano (2000). Global leaders are team players: Developing global leaders through membership on global teams. *Human Resource Management*, 39, 195–208.

Milliken, FJ and LL Martins (1996). Searching for common threads: Understanding the multiple effects of diversity in organizational groups. *Academy of Management Review*, 21, 402–433.

Miron, E, M Erez and E Naveh (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? *Journal of Organizational Behavior*, 25, 175–199.

Morris, MH, DL Davis and JW Allen (1994). Fostering corporate entrepreneurship — Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 25, 65–89.

Oldham, GR and A Cummings (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39, 607–634.

Organ, DW and K Ryan (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48, 775–802.

Ozer, M (1999). A survey of new product evaluation models. *Journal of Product and Innovation Management*, 1999, 77–94.

Perry-Smith, JE and CE Shalley (2003). The social side of creativity: A static and dynamic social network perspective. *Academy of Management Review*, 28, 89–106.

Schilling, J (2006). On the pragmatics of qualitative assessment: Designing the process for content analysis. *European Journal of Psychological Assessment*, 22, 28–37.

Shane, S (1992). Why do some societies invent more than others? *Journal of Business Venturing*, 7, 29–46.

Shane, S (1993). Cultural influences on national rates of innovation. *Journal of Business Venturing*, 59–73.

Smith, CA, DW Organ and JP Near (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68.4, 653.

Spector, PE, CL Cooper, S Poelmans, TD Allen, M O'Driscoll, JI Sanchez, OL Siu, P Dewe, P Hart, L Lu, LCFVR de Moreas, GM Ostrognay, K Sparks, P Wong and S Yu (2004). A cross-national comparative study of work-family stressors, working hours, and well-being: China and Latin America versus the Anglo world. *Personnel Psychology*, 57, 119–142.

Watson and Kumar (1992). Differences in decision making regarding risk-taking: A comparison of culturally diverse and culturally homogeneous groups. *International Journal of Intercultural Relations*, 16, 53–65.

Watson, WE, K Kumar and LK Michaelson (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and divers task groups. *Academy of Management Journal*, 36, 590–602.

West, MA (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, 51, 355–424.

Woodman, RW, JE Sawyer and RW Griffin (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18, 293.