Letter from Industry

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Does Institutional Residence Time Impact Behaviors?

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Abstract

Innovation activities in large organizations are typically conducted by teams. Previous research noted the positive correlation between innovation performance and the cultural diversity of teams, wherein people from different backgrounds approach problems differently and have differing tolerances for risk. In a long term extension of these studies we aim to determine if these proclivities attenuate over time, as members modify & harmonize their behaviors driven by cultural norms of the organization. In an early read out from this effort, cohorts of innovation team members across several continents and representing six of the ten global cultural clusters completed a series of team analytics and questionnaires. The analytics were derived from cross-cultural communication frameworks which have been utilized to assess how culturally associated values influence behavioral traits. The respondents invited to participate were directly involved in innovation projects either as part of their main function or through membership of a specific innovation team and represented a range of experience levels. Subjects were also invited to offer written commentary on team and organizational culture as it applies to innovation. A definitive trend was uncovered wherein employee service time (in years) correlated with moves from cultural group norms towards more moderated, centrist decision making traits and lowered risk taking appetite. Further, specific indicators which correlate to disruptive ideation and innovation performance softened as a function of service time, independent of cultural origins. Together, this may signal a need for innovation teams to be mindful that balance is maintained with respect to members service time and new team entrants are supported to pursue high-risk high-reward ideas.

Keywords: Diversity; Culture; Innovation; Ideation; Disruption; Normalization.

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1 Introduction

Diverse and inclusive environments are cornerstones of the contemporary workplace. While all forms of diversity are beneficial, in the case of innovation teams it has been noted that cultural diversity of team members has a disproportionately beneficial impact on performance (Bertelsmann, 2018; Lorenzo et.al., 2018). This has been attributed to different problem solving strategies and propensities for risk taking across cultures, and the collective impact on team dynamics is often substantial (Jones et al., 2020). Metrics often used to measure impact include numbers of original new ideas generated and the degree of novelty and disruptiveness of those ideas against

existing paradigms including likelihood of patentability. In essence many innovation programs assess ideas and pipelines according to the classifiers core, adjacent, transformational and even have rubrics on healthy balance among the three categories viz. the '70-20-10' moniker (Viki et.al., 2017). In the process of ideating solutions, highly innovative teams will increase the amplitude of the so called 'fuzzy front end' of the innovation supply funnel (Figure 1), creating ideas which have the potential to truly disrupt the field of inquiry (Gassmann and Schweitzer, 2014). One of the features of our corporate innovation engine are pilot seed funding programs which allow teams to nominate ideas which challenge the status quo ante. Having observed and confirmed the positive benefit of cultural diversity on innovation team performance (Jones et al., 2021), we became interested to learn if, over time, those individuals and teams would continue to be serial disruptors or progress to suggesting safer, de-risked follow on ideas. The latter may have a higher potential for success and reflect realities encountered by team members in progressing projects within the organization. Such might also tie-in with increasing managerial experience/advancement, and associated sensitivity towards reducing and mitigating risks in projects. Given anecdotal observations that teams involved in serial innovation project cycles successfully proposed de-risked ideas (classified as adjacent versus transformational), we have begun to investigate any changes to cultural drivers and team dynamics as a function of time.

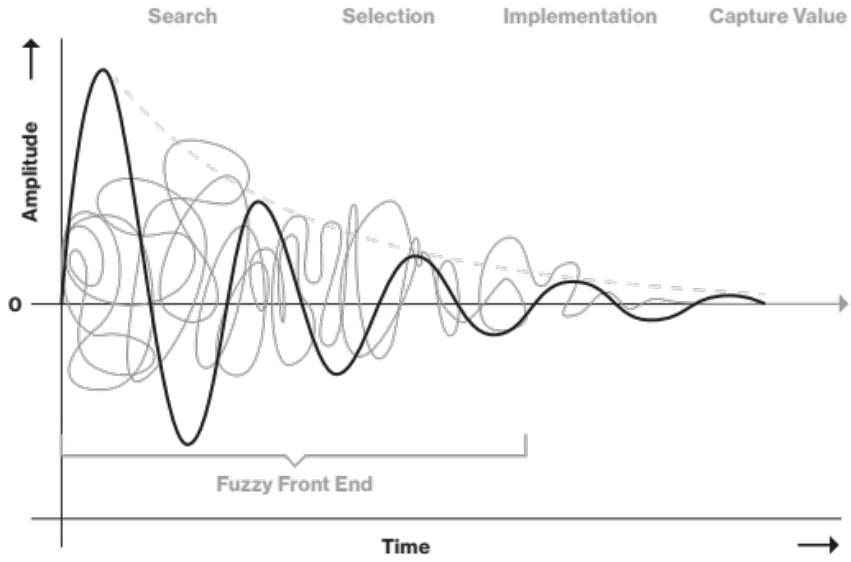


Figure 1. The innovation pipeline fuzzy front end (amplitude= novel idea volume)

2 Methodology

For the present study, members of innovation teams from Europe, Asia and the Americas were recruited and agreed to complete surveys. Participants were asked to self-identify against one of the ten global cultural groups described in Figure 2 (Jung, 1933; Pittenger, 1993). In addition to specific written questions, respondents were invited to characterize their current identity against a panel of six indicators describing tendencies and preferences reasoned to have cultural ties (Figure 3). Four of these are derived from the cultural dimensions described by Hofstede and adapted by Trompenaars (Hofstede, 2010; Hampden-Turner and Trompenaars, 2006). Correlations have been made between these indices and innovation performance and two additional indicators

CULTURAL GROUP	CODE	REPRESENTATIVE NATIONS
Anglo	AN	Australia, Canada, New Zealand, UK, USA
Arab	AR	Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Saudi Arabia, UAE
Confucian Asia	CA	China, Hong Kong. Japan, Singapore, South Korea, Taiwan
Eastern Europe	EE	Albania, Czech Republic, Greece, Hungary, Mongolia, Poland, Russia
Germanic Europe	GE	Austria, Belgium, Germany, Netherlands
Latin America	LA	Argentina, Bolivia, Brazil, Chile, Columbia, Costa Rica, Mexico
Latin Europe	LE	France, French-speaking Canada, Italy, Portugal, Spain
Nordic Europe	NE	Denmark, Finland, Iceland, Norway, Sweden
Sub-Saharan Africa	SS	Ghana, Kenya, Namibia, Nigeria, Zambia, Zimbabwe
Southern Asia	SA	India, Indonesia, Malaysia, Philippines, Thailand

Figure 2. The ten major cultural groupings globally

FACTOR	HIGH	MEDIUM	HIGH	ANTONYM
INDIVIDUALISM Emphasis on individual goals and rights	AN, GE, NE	EE, LE	AR, CA, LA SA, SS	COLLECTIVISM Emphasis on group goals, personal relationships
COMPETITIVE Competition, assertiveness, and achievement	AN, GE	AR, CA, EE LA, LE, SA	NE, SS	COOPERATIVE Collaboration, nurturing, and family
PARTICULARISM Specific, unique standards based on relationships	AR, CA, LA SA, SS	EE, LE	AN, GE, NE	UNIVERSALISM Rules, standards apply to everyone
HIGH POWER DISTANCE Differences in status; superiors make decisions	AR, LA, SA	CA, EE, LE SS	AN, GE, NE	LOW POWER DISTANCE Equality; shared decision-making
LOW UNCERTAINTY AVOIDANCE Emphasis on flexibility and adaptability	AN, EE, NE	AR, CA, GE SA, SS	LE, LA	HIGH UNCERTAINTY AVOIDANCE Emphasis on planning and predictability
SHORT TERM ORIENTATION Emphasis on immediate outcomes	AN, AR, EE NE, SS	GE, LA, LE SA	CA	LONG TERM ORIENTATION Emphasis on long term planning

Figure 3. Cultural indices and baselines used on questionnaire

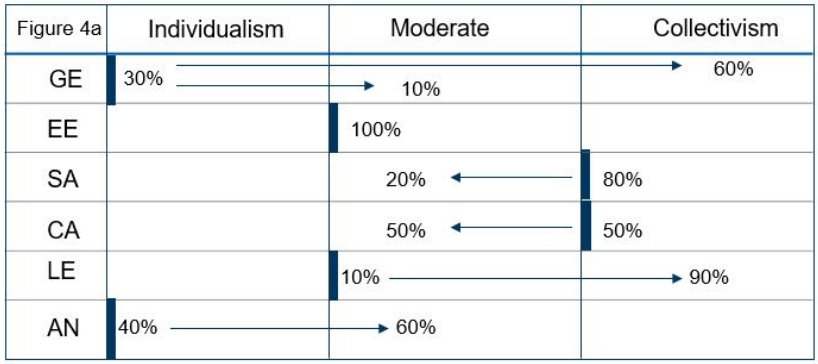
(competitive/cooperative and particularism/universalism) which have been used in the assessment of cultural quotient (CQS) and cultural affinities (Ng, et.al. 2009; SHRM, 2015) were included. Grids supplied to participants had cultural groupings omitted and respondents were asked to select high/medium category for each factor or antonym.

A total of sixty associates were recruited balanced evenly across the CA, SA, GE, LE, EE and AN groupings. In addition to completing the cultural identity panel, participants were also invited to respond to a series of general and project specific challenge questions and given the option to participate in an in-person interview with a facilitator. Aside from the information supplied, the only personal data recorded was years of service within the organization. Participants were given the option to respond via a blinded inter office mail program (fully anonymity), via email to a project coordinator on a de-identified form, or directly in person to one of the study authors. Data was then compiled and aggregated.

3 Findings

The six culturally influenced prompts selected are reasoned to have associations with innovation performance and tendencies (Kaasa and Vadi, 2010) and also show a range of baselines across the six cultural groupings represented in the study (signified by solid bar in Figures 4). Although some unexpected micro-trends were observed across the six indices, clear trends surfaced with regard to migration from cultural baselines towards more centrist, collaborative and cooperative behaviors and longer term perspectives (Figures 4 a-c). This presumably reflects behaviors being influenced and driven by corporate culture and needs as opposed to the individual. For example only 12% of those polled identified as ‘competitive’ versus 33% expected based on cultural identity and 20%

identified as 'cooperative' versus 0% expected (Figure 4b).



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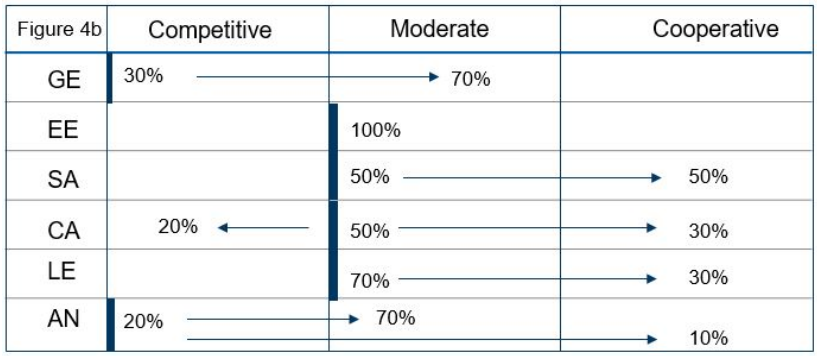

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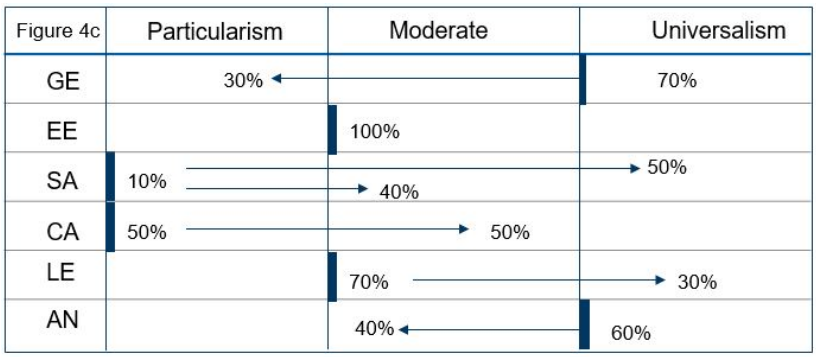

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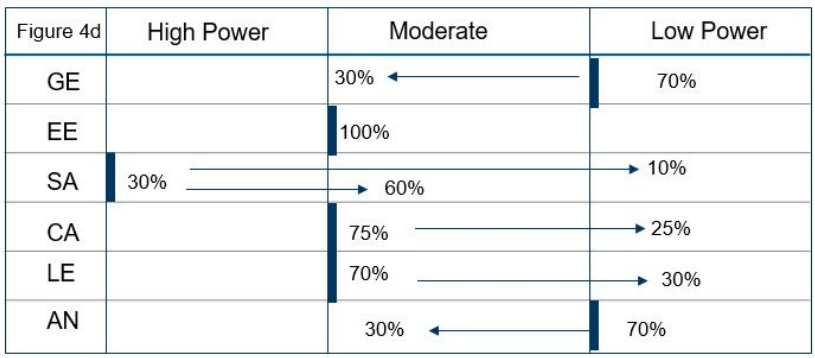

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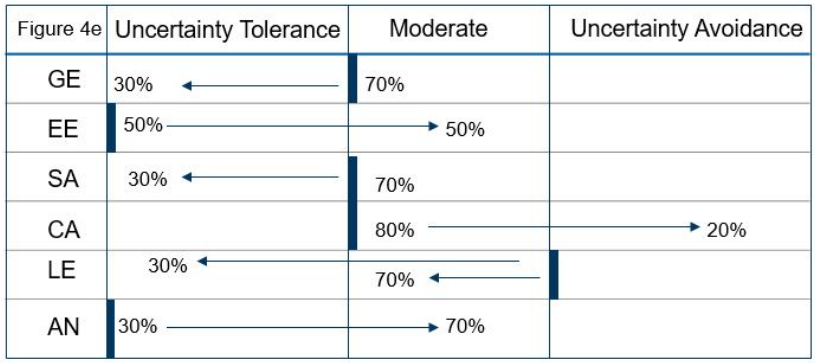

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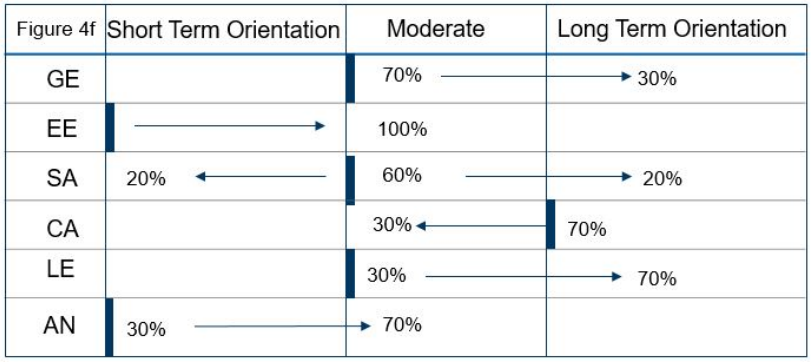

(4f)

Figure 4. Tracking movement from baseline (solid bar) in cultural questionnaires

Likewise, responses on the power indices, uncertainty avoidance and long term orientation, though less dramatic all showed trends towards moderated behaviors with more certainty and long term preference (Figures 4 d-f). Where baselines would predict 50% for moderate in each category, the results showed increases to 60+%, including an 18% gain in the case of moderation towards uncertainty (Figure 4e). While these shifts and trends presumably bode well for team and organizational harmony, there exists the potential for innovation performance, where risk taking and out of box thinking are at a premium, to be impacted.

One might posit that for the serial innovator the need to approach consensus building may come at a price in terms of disruptive potential of certain ideas. Further insight is gained when examining employment time against responses. *Significantly, all cases where substantial movement from cultural norm were evident (>50%), all of those still identifying with culture base had been at the company less than 3 years*. Since several of the indices are suggested to correlate directly with innovation performance (e.g. individualism) this has potential significance when considered over time, and at scale. At a minimum it may suggest the need to balance innovation teams with an appropriate number of newly hired (<3 year) associates, and in cases where highly disruptive innovation outputs are desired, consider adjusting balance in favor of this group.

Context is of course important here. While the pharmaceutical industry relies on innovation to develop products, the lifecycle of its main assets (prescription medications) is very long with up to 10 years development time prior to market, and 20 plus years thereafter. Compared to the high technology industries and consumer products where lifecycle management is in the order of months, and the relative timescales for disruptive innovation come into perspective. Similarly the

nature of innovations in the industry are less likely to be truly radical as companies operate in a highly regulated environment where even minor perturbations on a prescription drug requires substantial investment, oversight and dialog with the regulatory bodies in order to gain approval.

Aside from innovation performance, one of the potential implications of these early findings is that as employee residence or 'soak time' increases, so does the level of discomfort with proposing ideas outside of the norm or challenges to the status quo if viewed as disruptive and counter to corporate culture. This is a pivotally important point, as we are well aware of the concept of the 'frozen middle', where creative ideas can be inadvertently suppressed by middle management who may feel the need to underscore risk avoidance (Stubbings, et.al., 2019), and has led to the demise of many prominent brands. Such situations place additional emphasis on the need for psychological safety for teams, to enable them to propose disruptive innovation concepts without fear of reprisal (Edmonson, 1999) coupled with continual team strengthening tactics (Lau and Murnighan, 1998; Lencioni, 2002).

Respondents provided additional insights through questionnaires (data not shown). Interestingly, when queried regarding suppression of ideas and concepts by middle management even those with longer service time did not indicate this to be an issue, nor did they report experience observing in/out group derogation over time (Mor Barak et.al., 2016). However, a near uniform response was the increasing use of style-switching tactics to more effectively interact with associates from different cultural backgrounds (Tajfel and Turner, 1986). This paints a picture of effective personal and team development as maturity is gained in the organization, and may contribute to the normalization/flattening of cultural identities observed (Figure 4). Possibly relevant is that responses from associates who had worked in other pharmaceutical companies prior to joining reported similar responses to those who had not, suggesting corporatizing behaviors may be unique to each company.

4 Implications and Conclusion

Continued longitudinal research at sufficient scale is needed to correlate the observations and hypotheses herein. However, from tracking multiple cycles of innovation program funding there exists a continual need to infuse the pipeline with disruptive innovation teams. One aspect might be accomplished by adding an additional measure of diversity to each team (institutional residence time) to ensure a wide range of approaches contribute to the innovation funnel. Further, it may be instructive to give newly hired personnel opportunities for early independence to fully exploit the fresh ideologies they bring to the corporation before institutionalization attenuates their voracity for disruption. For example, several federal agencies (e.g. NIH, NSF) have dedicated funding streams for new investigators (defined in terms of years in post) to help high-risk high-reward (presumably highly innovative) proposals to be supported. Such a mechanism could be adapted for internal innovation funding programs in the industry. In the case of established innovation teams, deliberately adding junior colleagues to the team may help capture a broader set of approaches. Such scenarios could become self-sustaining if a sub-set of senior members are continually replaced with those with fresh experiences either directly from the academy or from other companies. For serial innovators, there may be merit in providing opportunity for associates to refresh/recharge with new ideas through temporary assignment in a different group or even external to the company through an academic collaboration.

Regardless of mechanism, in order to sustain innovation growth, a company needs to maximize the diversity of inputs for creativity and problem solving using all measures available. It is only in this way that the full benefits of diversity are realized and the full value of people's life experiences

are utilized and championed. A quote attributed to the late Apple CEO and innovation luminary, Steven Jobs regarding the impact of new talent seems relevant "It doesn't make sense to hire smart people and tell them what to do; we hire smart people so they can tell us what to do" (Jobs, 2011).

In summary through a study of global innovation teams with a range of experience levels we observe that:

- Serial innovators have a tendency to mitigate risk taking and adopt more moderate approaches as a function of corporate residence time
- The moderating effects observed appear to be independent of cultural bias and preferences
- Culturally diverse teams adapt over time and increase adaptive style-switching tactics to improve communication within the team

As an initial conclusion on innovation team balance it would seem that a diverse blend of cultural and institutional experience is optimal. We intend to report out with more comprehensive findings and data at an appropriate juncture, including possible recommendations regarding onboarding processes for newly hired innovators. In the interim, all teams and their members will continue to receive internal support through regular trainings, workshops and programs.

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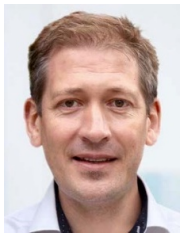
Biographies

Fabrice Gallou. Fabrice Gallou received his Ph.D. from The Ohio State University (2001) in the field of natural products total synthesis. He then joined Chemical Development at Boehringer Ingelheim, USA, working as a process chemist responsible for route scouting and supply of early phase programs. He subsequently moved in 2006 to the Chemical Development group at Novartis, Switzerland, as a process development chemist, and in 2008 became responsible for global scientific activities, overseeing development and implementation of practical and economical chemical processes for large scale production of APIs. His research interests are in the research and development of sustainable synthetic methodologies intended for large scale implementation. He has published more than 180 peer-reviewed papers, book chapters, and patents, and won multiple awards, most recently the 2019 Swiss Chemical Society Senior Industrial Award, and the 2019 Yves Chauvin Award from the French Chemical Society. At Novartis he played a key role in establishing a seed funding mechanism in the Technical Research and Development group, which allows cross functional teams to pursue innovative ideas and concepts.



Arnaud Grandeury. Arnaud Grandeury was born in Remiremont, France in 1977. He received his Ph.D from the University of Rouen, France in the fields of materials science and supramolecular chemistry then expanded his knowledge in chiral recognition mechanisms and solid-solution interfaces at the Max Planck Institute for Dynamic Complex System in Magdeburg, Germany. He then joined the technical research and development team at Cephalon near Paris where he oversaw crystallization related processes and activities before moving in 2007 to Novartis Pharma AG, in Basel Switzerland as a solid state analytical expert. He has worked with and mentored numerous associates, students and teams in European and Asia Pacific sites, and authored over forty peer reviewed papers and patents. His numerous roles at Novartis include leading innovation initiatives in the Analytical Research and Development group on the global level. He received the Novartis Leading Scientist award in 2017, and was a founding member of the Novartis Technical Research and Development Innovation Council, which won the 2020 Innovation Leader award for best new initiative in the Industry.

Graham B. Jones. Graham Jones was born in North Wales U.K. in 1965. He received a B.Sc. in chemistry in 1986 from the University of Liverpool followed by a PhD in 1989 from Imperial College, London. He was awarded a NATO Fellowship to work at Harvard University before commencing an academic career which spanned twenty five years. During this time he held tenured professorships and leadership roles at several Universities in the USA and UK most recently as Professor of Medicine and Director of Translational Research at Tufts University Medical Center in Boston, USA. In 2018 he was recruited by Novartis Pharmaceuticals as Director of Innovation and Connected Health Research. He has authored 175 publications, attracted >$100Million in research funding and mentored over 100 graduate students and research fellows. He has also served as an advisor to startups who have gone on to raise >$4Billion in capital. He was awarded the DSc in 2006 for career contributions to science and is a founding member of the International network for the science of team science (INSciTS).