Multicultural Understanding:
Leveraging the Advantages of Cultural Diversity in Scrum Adoption

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INTRODUCTION

We live in the Information Age. Our daily lives are saturated by a constant flow of data that becomes information and potentially knowledge. This evolution from analog to digital technology has created a global knowledge-economy, increasing the need for product innovation and process improvement to support the demand. U.S. Information Technology (IT) occupations experienced a 90% workforce increase between 1980 and 2014 (Otoiu & Titan, 2017). In the same period, foreign-born IT workers in the U.S. accounted for 16.6% of that increase. The increase of diversity in the U.S. IT sector is a prime illustration of the global impact on the Information Age.

Technology’s global influences require IT teams to respond to business and market demands by developing computer software that delivers business and product solutions quickly and efficiently. Over the course of 30 years, U.S. and European software engineers began experimenting with iterative development cycles (smaller time frames of design and development), and collaborative engagement of IT teams and business partners throughout the entire project. These foundational practices are components of Agile Software Development (Agile) (Agile Manifesto, 1991; Cline, 2015). Agile practices have proven an efficient means of developing working software for business, using fewer resources and delivering viable products at lower, overall costs.

The evolution of Agile has created a variety of frameworks that address various software development needs. One framework, Scrum, continues to be the most widely used practice in North America and Europe (Version One, 2005-2018). Scrum is characterized by five values centered around the importance of working together as a team, setting the course of functional operations of each Scrum team.

1. Focus on the Team
2. Courage to do the right thing
3. Openness when sharing challenges of the work
4. Commitment to the goals of the Scrum Team
5. Respect each member’s capabilities
Functionally, a Scrum team is a small, cross-functional group of IT and business members (e.g. between six and nine people), collaborating in a relatively autonomous manner, reacting to rapid change by business and continuously improving development processes. Scrum, like many Agile frameworks favors a flatter hierarchy, where command and control management has been replaced with collaborative and participative leadership. When a team’s operational “norm” involves the five Scrum values, they have reached adoption. Scrum centers on how to deliver value to the business in a fast and efficient manner. *Business value* is seen in improvements made to a corporate website that becomes an industry model, or software that increases marketing and sales analytics.

Most recently, there is evidence that countries in Asia, South America, and Africa are now working to incorporate Scrum into their IT operations (Version One, 2015-2017). Even though the practice of Scrum is growing around the world, there is still a lingering question about how its core values, with roots in western attitudes and behaviors, translate equally and effectively to non-western cultures. For example, how do IT teams from a culture where command and control style of management is the norm adapt to an approach that encourages participative leadership?

In my experience working on IT software development teams as a project manager and business analyst, I have seen multicultural teams struggle with adopting Scrum values and principles. Even though these teams have gone through proper Scrum training with the support of their leadership, the path to adoption was rocky. What might be a missing link is an authentic and empathetic understanding of how the teams’ diversity is not culturally aligned with the values and principles of Scrum. One way to be more authentic and empathetic towards diversity is to understand the cultural differences through a lens other than one’s own cultural values and behaviors. Research shows that understanding multicultural differences in the global workforce can be a positive force for team effectiveness, creativity and innovation (Feitosa, Grossman, & Salazar, 2018; Somich, A., 2006, Vendantam, S., 2018, Yuan & Zhou, 2015,). This research seeks to answer two questions: First, what are the advantages of multicultural differences in a U.S. IT software development team? Second, how can U.S. IT teams benefit from the multicultural differences as they work towards adopting the values and practices of Scrum?
I argue that informed considerations of multicultural differences in U.S. IT teams is an advantage in adopting the practice of Scrum. Breaking down ethnocentric barriers will provide multicultural Scrum teams the opportunity for authentic and empathetic perspectives into their diversity. As the teams develop a clearer cultural lens, I believe the stages of group development, as defined by educational psychologist, Bruce Tuckman (1965) and enhanced by Ilgen, Hollenbeck, Johnson, and Jundt (2005) will be strengthened by creating a space where divergent and convergent thinking are encouraged and practiced by all members of the team.

The importance of this research is its contribution to the positive yet critical discussion of cultural diversity in the U.S. Too often, cultural differences are acknowledged on the surface. Recognizing that someone is from a different country is important but does not equate to knowing and understanding the level of the differences. Consider the iceberg metaphor; what we see on the surface does not explain what lies beneath. Only until we look under the surface are we able to see the depth and opportunities.

Using Geert Hofstede’s Cross-cultural dimension theory (1980) as the theoretical background, I will compare three of five identified cultural dimensions to existing empirical research on Scrum adoption in a multicultural context. While there has been extensive research on challenges of Scrum adoption, most have focused on homogenous teams (i.e. teams with members from the same culture). Hofstede’s dimensions, Scrum values, and the characteristics of group development theories will go through a comparative analysis to the dynamics and advantages of diversity.

The empirical research comes from the disciplines of social and behavioral psychology, cultural studies, and information technology. Cross-cultural dimension theory has its foundation in social psychology as Hofstede’s work addresses values, attitudes and behaviors in the family, work, politics, and education. Cultural studies along with behavioral psychology adds greater understanding into why culture defines our reactions and behaviors. Agile practices and the Scrum framework were formed from experimentation by seasoned software engineers, which provides the information technology lens to the research. These disciplines recognize the importance of human interactions and cultural awareness, applying complementary applications using a global lens to understand the value of diversity in world views.
Culture, whether it is national or organizational, defines how we interpret most everything. As we interact with cultures different from our own, our human nature will recognize the explicit differences such as dress, skin color, or perhaps their native language. Quite honestly, the hidden biases create assumptions that are held as truths. When we step outside the boundaries of our ethnocentric interpretations, we create an opportunity to change the mental models around cultural differences. This opportunity can encourage intentional engagement with the differences, welcoming the acknowledgment that our culturally based assumptions are myopic at best. The myopic view limits opportunities for authentic learning about others as well as ourselves.

Developing an empathetic lens is the beginning of recognizing the cultural biases lying beneath the surface. I encourage the reader to enter the discussion with an open mind and a willingness to acknowledge that biases exist. The intent is to illustrate cultural differences between eastern and western world-views, the relation to Scrum values, and the opportunities to use the differences as advantages to improve productivity, creativity and innovation.

The roadmap for this paper starts with a brief history of Agile Software Development and the Scrum framework. Creating a basic understanding of the guiding values and principles is important for the multicultural analysis. An introduction of Hofstede’s cultural dimension will follow, laying the groundwork for identifying the intersections between Scrum values and cultural dimensions. The final section will focus on the evolution of group development theory, setting the course for a deeper discussion on the stages of group development and how multicultural intersections with Scrum can be used as advantages during each development stage.
CHAPTER 1: AGILE AND THE SCRUM FRAMEWORK

As the knowledge economy began demanding quality products faster and at affordable costs, IT development teams recognized the frustrations of missing project deadlines, increased costs, and products that no longer met business needs. Essentially, market forces and business responses move faster than IT development teams were able to react. Without a continuous feedback loop, where business teams were talking with IT regularly, new business requirements for software to support design, production, and analytics would go unaddressed, resulting in a product that was already obsolete in the minds of business. While business lives with an agile mind-set, IT was working with a methodology that allowed for changed requirements only after the development was ready for testing.

The various Agile frameworks evolved from software engineers’ experimentations with trying to improve traditional software development practices. Agile pioneers identified that cost reduction and improved product delivery (i.e., website, operations report, a business analytic report, etc.) would be realized within a process that embraced change. Through experimentation, these pioneers recognized the value of smaller cross-functional teams, shorter delivery cycles (weeks vs. months), and an increase in autonomy from rigid organizational hierarchies. Enter the concept of iterative development, paving the way for the evolution of Agile frameworks such as Scrum.

In 2001, following decades of experimentation with iterative development, a group of software engineers from North America, United Kingdom, and Europe established the values and principles of Agile Software Development (Agile Manifesto, 2001). The intention of the manifesto was to suggest alternatives rather than a prescription of how to deliver software faster. The result has now become a foundation for IT and business teams working together in a more efficient and value-driven way.

Table 1 is a summary of Agile values and how they align with the principles of Agile. These values and principles visualize the importance of the team members with the intention of working together towards a central goal. The values impress the need to embrace ever-changing business needs and the importance of continuous reflection and innovation throughout the development cycles, without increased complexity in the process. The principles support the
need to move away from highly detailed and rigid project plans because predicting the future has already proved a costly and nearly impossible feat. Underpinning the human element is the need for trust and respect among all team members.

Table 1

Agile Values and Principles

<table>
<thead>
<tr>
<th>Agile Values</th>
<th>Agile Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individuals and Interactions over processes and tools</strong></td>
<td>At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its environment and support they need and trust them to get the job done</td>
</tr>
<tr>
<td><strong>Working Software over comprehensive documentation</strong></td>
<td>Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale</td>
</tr>
<tr>
<td><strong>Customer Collaboration over contract negotiation</strong></td>
<td>Continuous attention to technical excellence and good design enhances agility</td>
</tr>
<tr>
<td><strong>Response to Change over following a plan</strong></td>
<td>Simplicity, the art of maximizing the amount of work not done, is essential</td>
</tr>
</tbody>
</table>


Of all the Agile frameworks in practice today, Scrum is by far the most accepted and well-known in North America, UK and Europe, with a growing awareness and acceptance around the world (Version One, 2005-2018). Ken Schwaber and Jeff Sutherland, the creators of Scrum and two of the Agile Manifesto co-authors, based their theory of Scrum on empirical process control and the pillars of “transparency, inspection, and adaptation” (2017, p. 4); (see Figure 1).
A Scrum team is made of IT and business roles, working in two- or three-week Sprints to deliver value (i.e. working software) to their business partners. The value of this iterative development approach has the business imbedded with the development team through-out the Sprint, approving the work before it is pushed to a public or production environment. Change is constant and Scrum teams adapt and learn from the constant change. The role of the Scrum Master is to facilitate this meeting, encouraging the open and transparent communication and engagement from all team members. The Scrum Master is also responsible for removing impediments keeping the team from moving forward. Scrum practices involve various ceremonies such as daily stand-ups, where all members discuss briefly what they have accomplished, what they are still working on, and what challenges they have. When a challenge is facing one member it affects the team. The team’s commitment to their goals and to each other breeds the trust of the teams’ technical abilities.

The performance of the Scrum team is strengthened when the values of focus, courage, openness, commitment, and respect become the standard way of getting work done (see Figure 2). Impressing the values of open collaboration, trusting in the technical skills of the team, and their ability to address complex challenges invite innovation through divergent and convergent
thought. As in the values and principles of Agile, the Scrum framework sees the importance of accepting changing business needs and the ability to act upon those needs without the dependency of a rigid and lengthy decision tree.

For people born and raised in countries with western values and behaviors (i.e., Australia, Great Britain, and United States), the interpretations of the pillars of Scrum and its values are probably more tacit in nature. Hofstede’s research (2001) identified these countries as having values and attitudes where change is welcomed, and individuals are encouraged to speak their mind and challenge the status quo. The research also identified cultures where youth are taught to never challenge authority, and change is a methodical endeavor (i.e., Hong Kong, India, Malaysia). Sridhar Nehur, et al., stated that “Culture exerts considerable influence on decision making processes, problem-solving strategies, innovative practices…”(2005). Although the context of their research centered on the impact of organizational culture on Agile and Scrum adoption, this statement parallels the dynamics inside a multicultural Scrum team. A national cultures’ values and attitudes towards hierarchy and authority have the potential to create a challenging dynamic that can slow the progress towards Scrum adoption.
CHAPTER 2: CROSS-CULTURAL DIMENSIONS

Social psychologist Geert Hofstede conducted cultural research on employee attitudes at IBM, a multinational company, between 1968 and 1972. The time-tested relevance of the results, now over 40 years old, is shown in the multi-disciplinary studies using all or some of Hofstede’s data. In Culture’s Consequences (2001), Hofstede discussed the importance of including cultural history to support the analysis on the similarities and differences between the nations in the IBM study. The evolution of cultural change is presented as a self-regulating system adjusting to outside forces (i.e., nature, economy, political domination, technology). Gradual adjustments are seen in the societal norms or “value systems of major groups of the population” (p. 12), where these norms rarely are dismantled completely. Additionally, the 2001 release of Culture’s Consequences includes significant correlated research from 1990 and beyond.

The IBM study sought to identify components of culture that define how humans think, feel, and behave. Attitudes towards values between countries where IBM was located as well as other “data…from populations not related to IBM” (2001, p. xix). were statistically analyzed and compared to other cultural research efforts. The survey’s results identified five cultural dimensions, exhibiting problems that are shared across cultures but handle differently; Power distance (PD), Uncertainty avoidance (UA), Individualism/Collectivism (IDV), Masculine/Feminine, Long-term/short-term orientation (p. 29).

I selected the dimensions of PD, UA, and IDV for my research because of their relevance with the Scrum values. Specific countries surveyed in Hofstede’s research will serve to illustrate the concepts of cultural dimensions and different world-views and their impact on the five stages of group development. The selections are based solely on my experience in working with software developers native to each country and will serve as good examples of western and eastern world-views. The countries are Australia, Great Britain, USA, India, Malaysia, and Hong Kong. A brief historical note on the inclusion of Hong Kong over China. IBM did not have a presence in China between 1950 and 1995. Hong Kong was a sovereign state under British rule and rejoined the People’s Republic of China in 1999, when the British Empire’s lease expired (IBM China chronology, 2018). Despite the colonial influences, Hong Kong’s inclusion in the IBM survey illustrates their ability to maintain Chinese cultural values.
The power distance dimension involves inequality with societal constructs of status, monetary wealth, and the exercise of power. In an organizational setting, PD is illustrated by hierarchies and allocation of power. Within an organization, the balance or imbalance of power can be witnessed in the relationship between boss and subordinate. In cultures where PD is high (i.e., India, Malaysia and Hong Kong), the unequal balance of power is accepted and expected. High-PD cultures accepts the inherent power given to a supervisor because of the cultural value of reverence to authority. Conversely, lower-PD cultures (i.e., Australia, Great Britain, USA) strive for equality for all regardless of status, wealth or power (Hofstede, 2001; Kassa & Vadi, 2008; MacGregor, Hsieh, & Kruchten, 2005; Yuan & Zhou, 2015). These countries recognize hierarchy as “an arrangement of convenience” (Hofstede, 2001, pg. 97) and subordinates see their superiors as equals.

Uncertainty avoidance is explained through coping mechanisms created by societies during times of uncertainty and ambiguity. Mechanisms such as technology, law or rules, and religion or rituals evolve to create a sense of control and way to manage ambiguity. Societal norms of low-UA cultures are more open to change, and innovation and acceptance of ambiguity are part of life (2001). Cultures with higher-UA require clarity and structure, and are suspicious of innovation or change (Efrat, 2014). Organizations use technology to create a means of predictability for short or long-term goals. Rules establish boundaries, creating a sense of security for employees and stakeholders. Business meetings, training programs, procedural processes supporting business operations (accounting, production) are examples of organizational rituals (Hofstede, 2001).

Individualism and collectivism, as defined by Hofstede, is “the relationship between the individual and the collectivity that prevails in society” (2001, p. 209). Societal norms and value systems define the ways of living, “mental programming and the structure and functions” (p. 210) of social institutions (i.e., education and religion). Low-IDV cultures (i.e., collectivist cultures) place high importance on community, where the family, clan, or organization protect their members, thus creating a sense of loyalty and commitment in return. Group decision-making is valued and sharing information is important for an organization’s success in collectivist cultures. India, Malaysia, and Hong Kong are collectivist cultures. Australia, Great Britain, and USA ranked high on the IDV index, where society values individual decision-
making and a self-reliant approach to family, school, and work. These countries tend to have a greater sense of control in their careers and life and a willingness to engage in point-counterpoint discussions to solve problems.

Multicultural influences have been positively linked to increased creativity and innovation, which in turn increases group effectiveness (Yuan & Zhou, 2015; Vendantan, 2018). This research will use the following definition of team effectiveness on a multicultural Scrum team:

When the team delivers working software that provides business value through collaborative efforts between the software developers and business leads. This ability requires the team to reach beyond cultural boundaries to work through technical and interpersonal dynamics, developing trust in the capabilities of each member, creating a space where sharing information is an accepted norm, and where the collective focus is on the team and their strategic goals.
Power Distance

A detailed comparison of the differences between low- and high-PD cultures and the intersection of Scrum values with the societal norms defined by Hofstede is found in Table 2. Low-PD cultures have a benefit in interpreting the values and practices of Scrum based on the similarities with societal norms rooted in western culture. As low-PD cultures adopt Scrum practices sharing similar values and norms of their own culture, high-PD cultures are faced with norms that are very different to their own.

Table 2 Comparison of power distance societal norms to Scrum values

<table>
<thead>
<tr>
<th>Scrum Value</th>
<th>Societal Norms (values and attitudes) and the differences between low and high PD cultures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus on the Team</strong></td>
<td></td>
</tr>
<tr>
<td>Smaller team (6-9 people), where decisions are made inside the team with the support of management</td>
<td>Decentralized decision-making</td>
</tr>
<tr>
<td></td>
<td>Flatter or horizontal hierarchy</td>
</tr>
<tr>
<td>High PDI (India, Malaysia, Hong Kong</td>
<td>Centralized decision-making</td>
</tr>
<tr>
<td></td>
<td>Tall or vertical hierarchy</td>
</tr>
<tr>
<td></td>
<td>Increased dependency on a few to make many decisions</td>
</tr>
<tr>
<td><strong>Openness when sharing challenges</strong></td>
<td></td>
</tr>
<tr>
<td>Daily meetings where members openly share progress and challenges of current work</td>
<td>Openness with information; Management encourages input from subordinates</td>
</tr>
<tr>
<td></td>
<td>Authoritarian leadership where telling vs. asking for input is the norm</td>
</tr>
<tr>
<td><strong>Courage to do the right thing</strong></td>
<td></td>
</tr>
<tr>
<td>Collaborative relationship with business teams</td>
<td>Participative leadership is a catalyst for personal satisfaction</td>
</tr>
<tr>
<td></td>
<td>Fear of speaking up or against authority</td>
</tr>
<tr>
<td><strong>Commitment to the goals of the team</strong></td>
<td></td>
</tr>
<tr>
<td>Scrum team is responsible for defining how to deliver the work.</td>
<td>Support from management and champion of innovation</td>
</tr>
<tr>
<td></td>
<td>Innovation is challenged because of hierarchy</td>
</tr>
<tr>
<td><strong>Respect each members’ capabilities</strong></td>
<td></td>
</tr>
<tr>
<td>Scrum ceremonies invite opportunities for problem solving</td>
<td>Empowered by the decentralized structure the team is responsible for their success</td>
</tr>
<tr>
<td></td>
<td>Challenges might be seen as a sign of failure</td>
</tr>
</tbody>
</table>


By design, the Scrum framework is a decentralized structure, where decisions on how to complete the work are primarily made by the team. Only when decisions are bigger than the team will the team consult with management. The importance of creating an environment of freely sharing progress and challenges is central to the team’s success. The Scrum Master acts as a participative leader, supporting the team by addressing the challenges and promoting the values throughout the team. In their research of multicultural factors on software development teams, MacGregor, Hsieh, and Kruchten (2005) found that management encourages input from their
teams, reducing the perceived distance between boss and subordinate, and supporting the construct of equality, regardless of status. In research on cultural diversity in software development teams compared to PD, findings suggest the value of cultural understanding for all teams (Asnawi, Gravell, and Wills, 2012, Borchers (2003), and Casey (2009)). Both Borchers and Casey recognized the value of finding the similarities between the cultures as well as understanding and respecting the differences.

Perception of status in the organizational context has been shown to negatively influence group creative efforts. Yuan and Zhou (2015) performed an extensive empirical study on how power distance affects group-level divergent and convergent processes. The findings uncovered that authoritarian leadership, associated with centralized decision making, accentuates the status divide, reducing the opportunity for inviting a free flow of ideas, opinions, and perspectives. Conversely, participative leadership, as modeled in Scrum, reduces the perception of status differentiation.

Team members from high-PD cultures are accustomed to authoritarian leadership, where it is customary to be told what to do rather than engage in collaborative dialogue to reach decisions. Openly sharing information or expressing concern about a business decision conflicts with high-PD values. Berger, Cohen, & Zelditch’s research on status and participation in small groups (1972), found perceived status in a group can prevent members from freely sharing information or expressing concern about a business decision. Asnawi et al. (2012) research on Agile adoption in Malaysia found organizational cultural boundaries limited Agile adoption. The cultural boundaries included the wanting the freedom of transparency, which alludes to an imbalance of power between boss and subordinate, a societal norm for high-PD cultures. This finding contrasts with Scrum values of openness, thus affecting the process control of transparency. Additionally, when interpersonal dynamics are impacted by cultural boundaries, creativity and innovation within the group can be negatively impacted.

While on the surface, PD has many direct conflicts inside the Scrum framework, there are ways team members from low-PD cultures can be a bridge for high-PD culture members. Anit Somech (2006) confirmed that participative leadership has a positive impact on multicultural teams. Yuan and Zhou (2015) suggested that group biases, such as perceived status, can be reduced when leaders connect directly with the high-PD members for their inputs. This effort
can increase understanding between the low- and high-PD members. In the context of Scrum, it would be the Scrum Master connecting with the high-PD member. This connection creates the potential of facilitating idea generation, thus enhancing the teams’ convergence process. Genuine collaboration and limited problem solving is at risk without openness of communication. The risk of agreeing to a request out of reverence can result in software that does not work as expected, requiring more rework to reach the expected outcome.

The decentralized design of Scrum encourages a collaborative decision-making style, thus empowering the team members to be responsible for their own success. The optimal support structure where senior leadership supports a fail fast mind-set increases the freedom to innovate. These norms are counter to high-PD cultures where centralized decision-making becomes an impediment for creativity and innovation. Creativity and innovation are enhanced when convergent and divergent thoughts are championed by leadership.

Understanding the dynamics of PD inside a multicultural team is not enough to make a Scrum team an effective working unit. Hofstede’s research (2001) confirmed that PD drives societal norms when there is a lack of clarity or a situation is not predictable. “The level of uncertainty avoidance in a country affects the way power is exercised there” (p.150). Therefore, when there is a lack of clarity, cultural norms inform the appropriate response mechanism.

Uncertainty Avoidance

The mechanisms created by humans to cope with the uncertainties of life stem from the national culture itself and are sustained through social domains of family, education, organizations, and government. What we learn from these social domains are the norms that drive our implicit and explicit behaviors. Organizations, like societies, use mechanisms of technology (i.e., data analytics identifying business trends), rules (i.e., policies and procedures), and rituals (i.e., business planning meetings and training programs) to establish comfort and a level of order and predictability.

The development of Scrum is an example of the software community responding to uncertainty and establishing a sense of control during the development, design, and implementation phases through improved collaboration with business partners. The guiding
values and rules in Scrum were established by calling upon lessons learned and on-going experimentation with both the known and the unknown of current software delivery practices. The ceremonies inside the Scrum practice (i.e., daily stand-ups, sprint and release planning, retrospectives, etc.) are the rituals intended to reduce uncertainty and create a space where open communication is the norm.

The distinguishing factors of low- and high-UA societies are the extent of their coping mechanisms derived by the societal values and norms (Hofstede, 2001). High-UA societies sway more to strategic long-term planning, calling upon the societal norm of clarity and detail. The IBM survey found high-UA societies had greater levels of stress and anxiety, were less accepting of change and required more detail and structure. The belief is that clarity comes from the details, which allows for calculated risks. Conversely, low-UA societies are more open to change even if the risks are unknown, and comfortable with ambiguity and chaos. Scrum’s iterative design acknowledges that planning for the unknown is impossible. This is supported in the 1963 book *A Behavioral Theory of the Firm*” in which the authors Richard M. Cyert and James G. March (as cited in Hofstede, 2001, p.147) stated organizations “avoid the requirement that they correctly anticipate events in the distant future by using decision rules emphasizing short-run reaction to short-run feedback rather than anticipation of long-run uncertain events” Table 3 visualizes the differences between low- and high-UA societies and Scrum practices.
Table 3 *Comparison of uncertainty avoidance societal norms to Scrum values*

<table>
<thead>
<tr>
<th>Scrum Value</th>
<th>Scrum by design</th>
<th>Low UA (US, Great Britain, Australia)</th>
<th>High UA (India, Malaysia, Hong Kong)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Need for predictability in most situation</td>
<td>Authoritative leadership and close supervision lead to satisfaction, performance, and productivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarity and detailed planning are expected</td>
<td></td>
</tr>
<tr>
<td>Openness when sharing challenges</td>
<td>Team is responsible for decisions</td>
<td>Participative or Consultative leadership breeds satisfaction, performance, and productivity</td>
<td></td>
</tr>
<tr>
<td>Courage to do the right thing</td>
<td>Curious about difference</td>
<td>Difference is dangerous</td>
<td></td>
</tr>
<tr>
<td>Commitment to the goals of the team</td>
<td>The commitment to the team goals is justification for challenging authority</td>
<td>Comfortable challenging authority when in the best interest of the project and the organization</td>
<td>Less willing to challenge authority or perceived authority</td>
</tr>
<tr>
<td>Respect each members’ capabilities</td>
<td>Multi-cultural teams exhibit greater creative thought, in the right environment</td>
<td>Innovations need good champions</td>
<td>Innovations are highly influenced by hierarchy and/or authority</td>
</tr>
</tbody>
</table>


UA index values for all the selected countries fell below the average of 65. This does not translate to all having similar tolerances for uncertainty. Hofstede’s detailed substantive research confirming a strong correlation between PD and UA for European and Western countries (p. 145). Therefore, the low-PD norms of Australia, Great Britain, and USA are the distinguishing factor from Hong Kong, India, and Malaysia and their high-PD and high-UA ranking.

When a multicultural team faces challenges in problem-solving, the societal norms related to accepting ambiguity or handling conflict might pose challenges in decision making. For example, low-UA members would be more comfortable with moving forward without a fully defined solution because they are accustomed to taking chances and reflecting on the lessons learned to improve future efforts. High-UA members might call for more clarity and detail to identify potential risks, thus mitigating uncertainty (Hofstede, 2001). McGregor et al., (2005) stated that “Developers from cultures with higher uncertainty avoidance may be frustrated when they are asked to jump-start development without a detailed, thorough plan” (p. 6). Rather than challenge a decision to move forward on a project with unknown risks, a high-UA member would resort to what is normal; gather all the information necessary to reduce potential risks.
The most beneficial characteristics of UA on Scrum teams are those that are exhibited in high-PD societies. Where participative leadership creates an environment where information sharing is encouraged. When high-UA members appear resistant to speak up and explain why clarity is needed, it is all members’ responsibility to 1) respect the members concerns, 2) encourage them to share the reasons for the need for additional detail. This enlists the Scrum values of respect, openness, and courage. Intentional listening to understand the nature of the concern is critical for the team meeting their goals and ultimately delivering a quality product. Multicultural teams with the ability to identify the nuances of UA and PD must also acknowledge that collectivist norms are by far the strength of a successful Scrum team. The constructs of group-identity, sharing of information, and collective decision-making valued in low-IDV societies. The collectivist mindset supports all the values of Scrum.

Individualism and Collectivism

The Individualism dimension is a conceptual representation of two poles. Hofstede defines the poles:

Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and her/his immediate family only.

Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people’s lifetime continue to protect them in exchange for unquestioning loyalty. (Hofstede, 2001, p. 225)

The separation between the poles is distinct as are the value systems within. A person from a collectivist culture identifies with family and organizational connections through a We lens. This lens creates an in-group identity and is demonstrated by loyalty to the group and a strong belief in collective or group decision-making. With loyalty comes an unspoken sense of duty to the organization where the individuals’ efforts are for the group and not necessarily to benefit themselves.

Countering the We consciousness is the I consciousness, where identity is based on the individual or perhaps their immediate family. Hofstede’s sharp description of the I consciousness stated that individual identity is centered around personal characteristics of the self (e.g. outgoing, shy, athletic, studious, etc.). A person from an individualist society learns early in life
that dependency on a group is perceived as impractical, and group involvement is measured by the value gained from membership (i.e., career enhancement, social acceptance, etc.).

Comparing individualist and collectivist norms to Scrum values, the *We* consciousness unfolds as the foundation of Scrum. Collective decision making, in-group identity, and information sharing for the benefit of the team must be valued and respected for the Scrum team to be effective. This is not a new construct for many western organizations, where being a “team player” means working across business domains. However, a team of many individualists are bound to find conflicts with commitment to the team goals. The imperative in this conflict is for the individuals to develop trust with the team. How trust is gained will be addressed in group development and forming discussion. Table 4 identifies some key differences between the high- and low-IDV societies.

Table 4 *Social norms for low and high IDV societies and their alignment with Scrum practices*

<table>
<thead>
<tr>
<th>Scrum Value</th>
<th>Scrum by design</th>
<th>Low IDV (India, Malaysia, Hong Kong)</th>
<th>High IDV (US, Great Britain, Australia)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on the Team</td>
<td>Collectivist; in-group identity. Loyalty to the group is based on support from the group</td>
<td>&quot;We&quot; consciousness, creating a distinction between in-group and out-group members</td>
<td>&quot;I&quot; consciousness, creating a distinction from other individuals.</td>
</tr>
<tr>
<td>Openness when sharing challenges</td>
<td>Success is linked to sharing information</td>
<td>Conformity of behavior; in-group expectation</td>
<td>Less conformity of behavior</td>
</tr>
<tr>
<td>Courage to do the right thing &amp; Commitment to the goals of the team</td>
<td>Belief in collective decisions; sharing information with the group is necessary for the success of the group / organization</td>
<td>Belief in individual decision-making; tendency to withhold information, not openly committing, and avoiding alliances</td>
<td>Individuals will respect the self, and the issue that needs to be addressed Direct appraisal improves performance</td>
</tr>
<tr>
<td>Respect each members’ capabilities</td>
<td>Loyalty to the group is based on support from the group</td>
<td>Harmony, face and shaming; Direct appraisal of performance is a threat to harmony</td>
<td>Direct appraisal improves performance</td>
</tr>
</tbody>
</table>


The IT space creates a shared identity for software developers and other team members, such as the Scrum Master, Product Owner, and Business Analyst. The domain language and
colloquialisms familiar to the industry used between the members, regardless of ethnic language strengthens the bridge towards mutual understanding. A shared identity reinforces the in-group connection, thus increasing loyalty to the group which are all values inside a collectivist society.

However, the *We* and *I* concepts can act as conflicting forces when building a multicultural team. The forces can become impediments to developing the values necessary for ensuring team effectiveness. The different world-views of *We* vs. *I* inform how multicultural team members adopt the Scrum values of respect, openness, and courage, focus on the team and commitment to the team’s goals.

Feitosa, Grossman, and Salazar (2018) performed research on how culture influences the effectiveness of multicultural teams. The work compared existing literature on research primarily done in North America and “other Western contexts” (p. 377) using a multicultural lens. Of the five key assumptions identified in the Feitosa, et al., (2018) research, three have direct relevance for multicultural teams as they work towards adopting Scrum values: trust, team orientation, and conflict. Trust and respect are concepts that are usually linked together. Therefore, as Scrum teams adopt the value of respect the capabilities of others, they in turn develop a trust in the person to perform to the expected level. Similarly, team orientation evolves through the focus on the Scrum team and the commitment to the teams’ goals. These values further confirm the in-group identity, which is directly linked to collectivist societal norms. Conflict will be addressed in more detail Chapter 3, Group Development Theories.
Dynamics of interpersonal and group development have been researched for decades. The concept of group development stages is a common discussion in Scrum trainings because of the need for teams to understand and anticipate the changes that naturally take place during Scrum adoption. The most common theory presented interpretations of group development stages (Tuckman, 1965; Tuckman & Jensen, 1977). Group Development theory has been used as a baseline for continued research on group development models. In 2005, four members of Michigan State University released an empirical review of research on organizational work groups seeking to understand group effectiveness and performance. The research enhanced Tuckman’s group development theory and consolidated the initial five stages to three (Ilgen, et al., 2005).

Educational psychologist, Bruce Tuckman, developed a group classification model while working in a U.S. Navy sanctioned think tank. A review of articles related to group development stages were classified by types of groups (i.e., therapy, training, natural, and laboratory), group activities (social or interpersonal), and activities or tasks specific to the groups. The 1965 review resulted in Tuckman proposing four stages of group development; forming, norming, storming, and performing. Within each stage are interpersonal relationship patterns and task orientations the collective group must work through as they evolve to the next stage. In 1977, Tuckman and Mary Ann C. Jensen reviewed studies that furthered Tuckman’s 1965 recommendations and amended the model to include the adjourning stage.

In the forming stage, members begin orienting themselves in terms of interpersonal behaviors and expected behaviors and boundaries. Essentially, this is the stage where the ground rules are established in how the work will get done, roles, and tasks. Norming is the stage where conflicts can arise due to boundaries being crossed, misinterpretations of the ground rules of how to proceed with information gained to accomplish the work, or interpersonal conflicts. Task progress is typically slowed until resolution is met. When the team begins accepting the nuances of the individual team members and has established healthy working patterns, it has reached the storming stage. This stage sees new boundaries and expectations based on lessons learned from the earlier stages. Information sharing increases in both the personal and task related efforts, which supports a collective need to maintain harmony even in midst of interpersonal or task
conflicts. The performing stage is reached when the team is a “problem-solving instrument” (Tuckman, 1965, p. 70). The trust and respect of the individuals and their skills are strong, and the work presents intellectual and productive rewards. The final stage supports a life-cycle concept, placing importance on the issues of interpersonal feelings that have developed during the life of the group and the group prepares to disband.

Ilgen, et al., (2005) sought to understand why some organizational groups were more effective than others by reviewing exiting research and theory on organizational work groups. Their baseline for a group’s life cycle was based on three group development stages; formation, functioning, and finishing. McGrath, Arrow, and Berdahl’s research on group development acknowledged that organizational teams are complex adaptive systems, responding to both internal team dynamics and other forces external to the team (2000). The connection between group development and complex adaptive systems challenged existing research defining team development as a linear flow requiring inputs to a defined process, resulting in an output (i.e., I-P-O).

The linearity of the I-P-O framework was interpreted by Ilgen and team as limiting and constraining. Instead, the team believe three key influencers of team development center on how individuals and teams feel about each other, how they behave as a team, and how they assign meaning to their feelings and actions. The influencers were categorized as affective, behavioral, cognitive, and labeled as mediators. The mediators essentially act as feedback mechanisms within the evolutionary process and are active in each development phase, creating dynamics that have potential to move the team forward or backward in their development cycle. The research team considers the power of variability within a team as a non-linear cause and effect to team progress and performance. Recognition of the active mediators and variability of group development contributed to the group development research domain by introducing a model that supports the adaptive nature of groups. The model is represented as IMOI (i.e., input, mediator, output, input), where hyphens were deliberately removed, indicating a non-linear flow process.

The IMOI classification model simplifies understanding of group formation stages. In this research paper, I have chosen to use this model because the non-linear perspective provides a real-world view of the ebbs and flows of new groups, regardless of purpose or domain in which they function. Furthermore, the inclusion of affective, behavioral, and cognitive conditions presents a space where human and cultural dynamics can be openly acknowledged during
forming and functioning stages. Hofstede’s dimensions (2001) and the societal norms used to describe the differences between cultures have relative connections with the mediators. My research excludes the final stage of finishing because of the iterative nature of Scrum. Scrum teams may change in personnel over time, but the focus of the practice remains. Change is constant, thus the continuous adaption to internal and external factors must be considered.

Forming: Trust (Affective)

In the meta-analysis of group development and group performance research, Ilgen, et al., (2005) determined that constructs of potency (i.e., a collective belief the team can be effective), collective and group efficacy (group conformance and the perceived performance capabilities), team confidence and team safety (i.e., individual interests will not be harmed) are rooted in the formation stage and are predictors of group performance (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Guzzo, Yost, Campbell, & Shea, 1993; Little & Madigan, 1997). When groups have Reaching a level of trust essentially means a team is willing to work together. Amy Edmonson’s 1999 work on how teams learn, team performance, and the teams’ need for psychological safety theorized the positive connection between learning behaviors and building group trust. Learning behaviors include information sharing, lessons learned discussions, and experimentation. All these behaviors are seen in fully functional Scrum teams. Where uncertainty around tasks and deliverables is high, successful teams create behaviors that allow for sharing information without the judgement from others on the team. The Scrum values of sharing challenges and having the courage to do the right thing effectively become mediators in building trust and psychological safety.

For multicultural Scrum teams, reaching a level of trust is developed differently. For western world-view countries like Australia, Great Britain, and USA, trust emerges through friendships based on shared mental models (Fagerholm, Ikonen, Kettunen, and Münch, 2014; Feitosa, et al., 2018; Ilgen, et al., 2005). Shared mental models are considered behavioral mediators and will be discussed later. The high-IDV norm of “I” consciousness creates distinctions and similarities of self and others, where those most like the self are identified as having shared characteristics. Whereas eastern world-views (i.e., Hong Kong, India, Malaysia) establish trust using mechanisms born from high-PD and low-IDV societal norms of group identity and collectivist
ideals (Gibson, 1999, Hofstede, 2001). These conflicting paradigms of group and self, as defined by Hofstede and Gibson, introduces unacknowledged boundaries of PD and IDV.

These boundaries present opportunities for the members to intentionally categorize their professional skills, personal interests, and experiences in order to create a conceptual frame. This frame contains a blend of culturally influenced experiences, where similarities and differences are identified. As suggested by Giorgi, Lockwood, & Glynn, (2015) and Feitosa et al., (2018), categorizing professional and cultural similarities and differences can be a positive mechanism in moving from an “I” mindset to a “We” collective. The categorization process creates the opportunity of adding meaning to what is similar and what is different at a micro and macro level. The similarities eventually become the value system for the in-group (Giorgi, et al., 2015). In-group identity commands a level of behavior conformance, which is linked to the collective efficacy of a group. Furthermore, Gibson’s 1999 research on group efficacy showed that team performance is positively impacted in times of low uncertainty, high collectivism, and high interdependence.

The alignment of Scrum values to eastern and western societal norms presents advantages that can be leveraged toward building group trust and psychological safety. High-PD and low-IDV cultures both share collectivist norms that value group decision making and conformity of behavior. The collective structure of group decisions and in-group identity supports the Scrum value of focus on the team. Low-PD/high-IDV members can begin to see the value in sharing information for the sake of the group and not just for performance goals (e.g. a quarterly goal set by management and agreed upon by the individual). However, high-PD cultures are careful about how challenges are shared. There is a perception that challenges in completing tasks are a sign of failure. The daily Scrum meeting is the place for sharing such information. If the high-PD member is not comfortable with this format, the option of having private meetings to resolve the issue should be encouraged until trust is established. Additionally, the technical nature of IT teams alone creates a community of shared knowledge and acceptance that the team has joined together because of their skills and abilities.
Inputs necessary to develop the trust within the team are also seen when the team defines how goals will be accomplished. The variability of planning becomes the key mediating factor that determines how effective the plans are in reaching the strategic goals. Planning involves the mediators of gathering and analyzing the information and using this information to develop the strategy for reaching the team’s goals (Ilgen, et al., 2005). The planning mediators creates an interdependency between information and strategic decision-making. Without good information, strategies for success are limited. Also, effective strategies based on solid information create a greater demand for innovative information sources.

Eliciting valuable information requires a team with diverse functional backgrounds and a willingness to openly collaborate with each other and external teams (e.g. sharing and seeking information from other corporate teams). Functional diversity within a team should offer more information sources and varying viewpoints for developing the team’s strategy. If managed well, the external information sources can evolve to openly sharing unsolicited information.

Research on interdependency of eliciting and sharing information to create effective strategic plans found that planning efforts were enhanced because of functional diversity (Bunderson & Sutcliff, 2002; Stout, Cannon-Bowers, Salas, & Milanovich, 1999). This same research set also discovered positive connections between effective strategic plans and higher team performance. Additionally, small, self-organized teams with highly educated members were found to have higher participation in sharing information and performance improved when leadership roles were emergent throughout the life-cycle of the project (Erez, LePine, & Elms, 2002; LePine & Van Dyne, 1998). The functional diversity of a Scrum team, at times, commands for members to exercise leadership capacity in times when the functional expertise is in demand.

Imagine a Scrum team that includes a user-experience designer (e.g. a person responsible for designing websites and mobile application screens), software engineers, a Product Owner, and Scrum master, tasked with developing a new mobile application for Apple or Android phones. The functional backgrounds demand the collection of specific and unique information to inform the scope of the mobile application project. This team must elicit, analyze, and organize information related to system requirements, demographics and web marketing standards, current design standards and corporate branding and compliance requirements, as well as financial
decisions related to proposed capital expenditures. The functional diversity on this team involves creatives from different realms. Creativity is necessary from all members to bring the need for a mobile application from conceptual model to a fully-functional mobile product.

This example is just as relevant in a multicultural team setting. Just as trust is developed differently based on cultural influence, planning behaviors are influenced by culture. Societal norms for high-UA/high-PD promote a need for detail and clarity, structured rules and procedures, and centralized decision-making. These norms have been linked to reduced creativity and innovation. On the other hand, low-UA/low-PD norms promote a sense of curiosity, a comfort level with ambiguity and tend to have decentralized organizations. Additionally, it has been suggested that PD has a negative influence on innovation because these cultures are associated with centralized decision-making (Hofstede, 2015; Van der Vegt, Van de Vliert, and Huang; 2005).

Perhaps the Apple developer is from a high-UA/high-PD culture and requires greater specificity of requirements and the Product Owner is from a low-UA/low-PD culture, where just enough detail should be enough to get the work moving. The Product Owner represents the vision and direction of the project and establishes the timeline for delivering the product. This role is ultimately accountable for the team’s work, therefore holds a level of authority. The developer is less inclined to challenge a deadline because of the Product Owner’s perceived authority. Furthermore, innovation opportunities are reduced because of the imbalance between the need for clarity and the expectation of meeting aggressive timelines. This scenario paints a distinct difference in cultural norms and places the team at risk for missing deadlines.

Yuan and Zhao (2015) suggested a mitigation strategy when PD is impacting group innovation called a formal work group strategy. When challenges with establishing strategic plans are faced by the Scrum team and opinions and recommendations are needed from all members, the Scrum Master or Product Owner can initiate the conversation by asking the high-PD members to provide their input first. This allows other members to hear and respond to the first comments. The intention of this strategy is to reduce the perceived bias, while impressing the Scrum values of respect, courage, and openness.

Scrum is designed to remove the barriers of rules and strict procedures and encourage a space where information and challenges are shared openly. The self-organized Scrum team operates without a centralized command and control hierarchy. The creatives in the Scrum team example
bring a variety of perspectives and interpretations that can and should be leveraged as advantages. Scrum provides the space where power is reduced and the freedom to innovate is positively influenced.

Structuring (Cognitive)

The third formation phase addresses how teams acknowledge and manage the norms, roles and interpersonal communication and interactions. (Ilgen, et al., 2005). These norms, both explicit and implicit, are a collective understanding of the skills and nuances of the team members, also referred to as shared mental models and transactive memory. The cognitive nature of these mediators adds meaning and understanding of how the team works together and who is responsible for specific tasks. Successful teams develop insight into communication needs and information demands that support the team goals and strategic plans.

Shared mental models include how the team supports each other under normal and deadline-driven times. When the software engineers are working against the clock to develop and release a new version of the app, collaborative tools, such as instant messaging can be used for communication in lieu of daily meetings. Through trial and error, the team learns that allowing engineers to be “heads-down” is acceptable and adjusting to support the team is imperative. Missing deadlines does not make for an effective team. The collectivist mindset, closely aligned to a high-PD, low-IDV, and high-UA, embraces the concept of huddling as a team, focusing on forward motion and adjustments to reach the end-goal. The individualists on the team can still be motivated through the interdependence of certain tasks, such as confirming requirements with external business partners. This example supports research findings that collaboration and communication impacts the predictive power of shared mental models, thus enhancing a teams’ effectiveness and performance (Mathieu, Heffner, Goodwin, Salas, Cannon-Bowers, (2000); Marks, Burk, Sabella, and Zacarro (2002).

As the team continues to build a sense of group trust and solid planning strategies, they should be able to anticipate the information needed for a role to complete any given task. The interdependency between the Scrum team roles contributes to an increase in coordination and collaboration within the team as well as other organizational groups (Blickensderfer, Cannon-
Bowers, & Salas, 1998; Volpe, Cannon-Bowers, Salas, and Spector (1996). The anticipation factor acts as a self-regulating mechanism for how the team gets work done. Shared mental models continue to strengthen and evolve through openly sharing and working together to resolve challenges. Mathieu, et al., (2000) confirmed that teams with similar knowledge structures is crucial for predicting team performance.

Multicultural teams experience both complimentary and opposing cultural norms which can challenge a newly forming team in the affective and behavioral stages. Scrum ceremonies support all the values and align with acknowledgement of the development of team norms. Even though collective societies tend to exhibit norms of high-PD, the participative leadership role of the Scrum Master serves to act as a bridge for those members witnessing, processing, and adopting new attitudes towards beneficial leadership styles.

The transactive memory mediator is the positive contrast to shared mental models. This mediator defines the breadth of knowledge on a team. Being able to accurately identify who knows what, how competent they are with the knowledge they possess, and whether others on the team have the same knowledge is critical for collaboration and problem solving. The functional structure of Scrum (e.g. small teams with specialized skills) creates a space where knowing who on the team has the connections to other information, or skills to solve a technical challenge is critical. This knowledge base held by members about each other has been shown to improve performance.

Returning to the mobile application Scrum team example, when a challenge occurs in developing a feature for the iOS version (i.e., iPhone Operating System), enlisting connections external to the team with knowledge of the iOS platform might serve as a resource to work through the problem. Calling upon this knowledge store keeps the team moving towards the goal of releasing the new feature, with the intention of not missing deadlines. This example shows how team members holding different knowledge sets were called upon at a critical time for the benefit of the team (Lewis, 2002).

Both shared mental models and transactional memory within a cross-functional Scrum team create opportunities for cross-training, which has been shown to improve team performance, especially in environments where a product release is time-sensitive and even the slightest
human error can negatively impact team success (Marks, et al., 2002). Goal achievement now becomes a confirming factor of the teams’ feelings about their ability to perform.

Figures 3 and 4 present visualizations of the inputs and mediators to the forming phase. The categories of trust, planning, and structuring are represented as defined by Ilgen, et al., (2003). While Figure 3 appears to be a linear process, Figure 4 depicts the true non-linearity of the formation process.

*Figure 3 – Input and Mediators for Team Formation – Linear perception*
Functioning: Bonding (affective)

As a team evolves from the forming phase into the bonding stage, the feelings of trust, planning behaviors, and cognitive structuring have created a space where the members are willing to work with each other. The inputs and mediators experienced during the forming phase establish the foundation to exam different issues as the team becomes more comfortable working together towards meeting the strategic goals. Bonding moves the team beyond the acceptance of working together, but to a space where they want the team to stay together and perhaps engage in other activities outside of the work related mission. Ilgen and team (2005) cited research that identified bonding as a blended construct that focuses on a “member’s emotional and affective attachment to the larger collective” (Bishop & Scott, 2000; Kristof-Brown, et al., 2002). Bonding is more commonly observed later in the functioning stage and is the result of two mediators; 1) how diversity is managed and 2) how to manage conflict among team members.
Research on multicultural factors during bonding is sparse if existent at all. However, there is research on functional diversity that looked at social interactions of teams by comparing surface-level and deeper-level characteristics. The research team considered surface-level characteristics as demographics such as race, age, and gender. Deeper-level characteristics were defined as attitudes and values towards overall satisfaction with the organization, work-related tasks and interactions with supervisor (Harrison, Bell, & Price, 2002). The researchers argued that over time, deep-level factors were more important in interpersonal interactions and overall groups success. Although the research was not specifically focused on interactions on multicultural teams, the lens of social interaction between peers and boss-subordinate relationships relates to dynamics seen when societal norms of power distance, uncertainty avoidance, and individualism and collectivism are considered. The implication of Harrison, et al. research for an evolving multicultural Scrum team is that the impact of societal norms can be reduced over time as framing of similarities reinforces the team’s shared mental models.

The other bonding mediator of managing conflict can be observed in both forming and functioning stages. Research recommends taking a proactive approach to addressing the conflict. Ilgen, et al., (2005) cited research findings where conflict was minimized when a peer-to-peer feedback loop is in place. Two Scrum ceremonies align to this finding; the daily stand-up and retrospective. Both meetings reinforce the Scrum values of respect, trust, and courage to do the right thing collaboration. For productive teams, the research consensus is that teams are more successful when open collaboration and freedom to speak up is part of the team norm (Druskat & Wolff, 1999; Lovelace, 2001, Montoya-Weiss, Massey, Song, 2001, Simons & Peterson, 2000).

When conflicts arise that are born from cultural differences, it is imperative to understand the nature of the conflict before responding with an individualistic or collectivist approach. Asking questions from a cultural dimension lens can help identify whether the issue is related to PD, UA, or IDV norms. For example, are the issues based on a perception of power distance? Are there misinterpretations related to the norms around uncertainty avoidance? Perhaps a situation where there is a critical need to have enough information for decision-making, but a member with high-UA norms is taking too long to elicit and analyze the data before sharing with the team. Or perhaps a low-IDV member is frustrated because a high-IDV members appears to be withholding information, which does not support the collective norm of freely sharing
information for the benefit of the group. Multicultural interventions have been recommended that include intentional conversations about the similarities and differences within the group (Feitosa, et al., 2015). These interventions support the bonding mediator, keeping the team on track to meeting their goals, enhancing team effectiveness, and further encouraging a space where divergent and convergent discussions are respected.

Adapting (Behavioral)

The ambiguous nature of business is perhaps the only constant in a mix of culturally diverse attitudes and values. Ilgen, et al (2005) found that adapting mediators can be categorized into how a team tackles routine or unpredictable work and whether the team is set up for sharing the workload during times of change due to organizational demands. Evolving Scrum teams tackle unique challenges presented by business on a regular basis. Functional diversity and a high level of education on the team have already been identified as positive connections to high functioning teams.

The foundation of Scrum allows for ambiguity and flexibility. Jeffrey LePine’s research on the impact to individual-level decision-making during times of change or uncertainty (2003) suggested that that teams in ambiguous business environments performed better if the members worked at higher levels of cognitive functioning. Cognitive function, in this case, is the ability to communicate, interact, and adapt to uncertain or unforeseen changes in the business environment, or even to the scope of a current project. When change is necessary, the team must use critical thinking for problem solving and solution implementation. LePines’ research cited Argote and McGrath 1993 book *Group Processes in Organizations: Continuity and Change*, where a positive correlation to team efficacy was found in teams that adapted to unplanned change by modifying their routine processes. Openly sharing information, collective decision-making, and the freedom to challenge the status quo are positive forces for adaptation. Problem solving is dependent on the free-flow of information between team members and the connections made with external teams to better inform recommendations and final decisions. The higher cognitive functioning teams presents other benefits to the team by allowing other members to obtain knowledge they would not have otherwise been able to gain (LePine, p. 30, 2003).
The routine Scrum ceremonies creates the feed-back loops and role confirmation in times of varying ambiguity. Daily stand-ups involve all team members, providing updates on critical issues or small wins of the day. This meeting invites open dialogue to address challenges that can potentially derail a project. The conversations also create opportunities to understand the different roles and responsibilities inside the team. No matter the nature of the change, roles in the Scrum team are well defined, but not so structured that cross-training or information sharing cannot prepare another person to step-in during times of crisis. LePine (2003) also suggested that routines provide a means for anticipating other’s actions and can be a positive force for increased efficiency and reduce uncertainty.

For the maturing team, the “We” consciousness establishes team norms that may act as a substitute for the societal norms. However, all members hold the responsibility of honoring the Scrum values during unforeseen changes. Especially during times of crisis, the heterogeneity of the team can be a source of greater innovation and creativity. For example, the Scrum Master can use a humble approach of engaging members that are less inclined to speak up during uncertain times. Yuan and Zhou (2015) proposed that a group leader, using an authentic and humble approach, can reduce the perceived power distance, creating a positive dynamic for group divergence, convergence and creativity.

Adapting to change and uncertain times also calls upon the mediator of workload sharing. This is when other team members can help another team member during critical times. The challenge with this mediator is ensuring that it remains a positive force on team performance. The small size of a typical Scrum team can, at times, require members to take on additional work for the sake of a project deadline. The functional diversity might pose a challenge when technical skills of a software developer is not easily transferable. However, the non-technical roles on a team, such as quality assurance can be spread across the entire team. Quality assurance is responsible for testing the product before it is released to the public. In the mobile application example, those members not responsible for product development will assume testing responsibilities to ensure there are no defects or major problems with the code before pushing it to production.
Mediators that were active during the forming stage continue to be present in the adaptation phase, especially during deadline-driven events. Trust is confirmed when all team members are fully engaged in testing the application. Each member trusts that a critical lens is used by all, and that all members have developed the courage to speak up when an issue with an application feature is found. Shared mental models drive the intensity of the testing effort, as these models define how the team supports each other under normal and deadline-driven times.

Learning (Cognitive)

Ilgen, et al. (2005) challenged research defined the cognitive learning process as a dependent factor for adding to a team’s knowledge base. Instead, it has been suggested that gaining new knowledge has the potential of changing behavior. The advantage of behavioral change based on team learning stems from leveraging the value of diverse opinions within a team. Cristina Gibson and Freek Vermeulen conducted research on team diversity and the positive effects in fostering learning behaviors (2003). The findings challenged earlier research on the same subject, suggesting that differences in background is a negative influence on communication and social integration. Demographic characteristics of age, gender, ethnicity, and organizational function (i.e. finance, production, sales) were central to categorizing team differences. Gibson and Vermeulen (2003) hypothesized that like-minded team members (i.e. subgroups) are positive forces toward team learning and behavioral change.

Learning is dependent on trust, attitudes about change and ambiguity, interpersonal dynamics, and how a team reaches consensus (Gibson and Vermeulen, 2003). The functioning Scrum team has developed a working trust level during the forming stages where shared mental models of how change and ambiguity are handled, and values of interdependence, equality and respect for all members continue to emerge. These team characteristics have been widely researched and shown to have a positive connection to higher team performance, creativity, and innovation (Gibson & Vermeulen, 2003; Kassa & Vadi, 2010; Shane, 1993; Yuan and Zhou, 2015; Feitosa, et al, 2018). Creative thought demands both divergent and convergent opinions in times of change. If a Scrum team faces a major change in project scope, the solutioning efforts
on how to move forward requires all members to be heard. The cultural differences along with the functional diversity of the team creates a wealth of learning opportunities for all members.

Throughout the forming stages, the building of shared mental models intersects with building the transactive memory about which team member has specific expertise for a task. For example, one member might be more skilled at leading brainstorming and problem-solving discussions, while another has more knowledge about emerging technology. At the same time, the team members that are less inclined to lead the team might have unique perspectives based on past experiences. These differences seen in individual skill-sets are cognitively categorized and called upon as needed.

It can be assumed that a functioning Scrum team continues to adapt the Scrum values into their daily routines. Because learning is ever-present, the multicultural differences on the Scrum team are still factors to consider when the status quo is challenged. Tradition and innovation are two separate paradigms that call for different coping mechanisms (Kaasa & Vadi, 2010). Innovative teams value gathering and sharing information across functional and hierarchical boundaries (Shane, 1993).

Figures 5 and 6 present visualizations of how the mediators from forming remain a constant influence for fully functioning teams. Similar to the forming phase, bonding, adapting, and learning process are continuous and interdependent processes. The mediators in the functioning phase both influence the affective, behavioral, and cognitive stages for functioning, and are influenced by the mediators of formation.
Figure 5 – Mediators and Outputs for Functioning Teams – Linear perception
Figure 6 – Mediators and Outputs for Functioning Teams – non-linear perspective
CHAPTER 4: CONCLUSION

This paper introduced a positive view of multicultural differences in a U.S. IT software development team with a discussion around the intersection of Scrum values with the cross-cultural dimensions of power distance, uncertainty avoidance, and individualism/collectivism. The comparative analysis between cultural dimensions, Scrum values, and their relation to group development theory uncovered key advantages of cultural diversity; group effectiveness and performance, and creativity and innovation. These advantages present opportunities to enhance the forming and functioning phases of group development as teams adopt Scrum values.

Group effectiveness and performance has been widely researched using various disciplinary lenses including social psychology, psychology, and organizational behavior. The empirical review for my research provided a broad view of how the different disciplines defined group effectiveness. The similarities between the different disciplinary perspectives allowed for a blended definition of group effectiveness centering on teams developing trust in a space where cultural boundaries were understood and sharing information was the norm.

The formation phase of group development identified the critical nature of developing trust within the team (Ilgen, et al., 2005). Establishing confidence in the team’s ability to reach their goals is the active mediator between the influence of cultural norms on trust development in individuals and the collective group. For a multicultural Scrum team, the “We” vs. “I” consciousness taps into possible IDV boundaries, where the sense of “self” over “group” must be resolved. It is quite possible that Scrum team members are not aware that societal norms are a key factor in developing trust with others.

Identifying the societal norms represented in the group and how they intersect with Scrum values is one recommendation for breaking down the boundaries of individualism and collectivism. Having this intentional conversation early in the forming phase is ideal. When the boundaries are understood in relation to the Scrum values, the team is more likely to develop a frame where similarities and differences become useful information to support the in-group identity which is critical in a collective group (Giorgi, et al., 2015; Feitosa et al., 2018).

Empirical evidence presented in this research show positive connections between in-group identity and information sharing as critical factors in group effectiveness and performance.
(Edmonson, 1999; Marks et al. 2002; Mathieu et al. 2000). The multicultural Scrum team, with its evolving norms of collective decision making, focusing on the team and committing to the goals of the team, and embracing the value of openly sharing information are already primed for success. The learning behaviors identified by Edmonson (1999) are exemplified when teams learn to balance the acceptance of ambiguity and the high need for clarity and detail. The multicultural team that is beginning to understand the influences of societal norms of their peers will learn to acknowledge the need to compromise. The scenario intersects with the scrum values of respecting each members’ capabilities and commitment to the goals of the team.

Edmonson’s (1999) work also theorized that a teams’ need for psychological safety positively impacts learning behaviors and building group trust. Learning behaviors include information sharing, lessons learned discussions, and experimentation. All these behaviors are seen in fully functional Scrum teams. Where uncertainty around tasks and deliverables is high, successful teams create behaviors that allow for sharing information without the judgement from others on the team. The Scrum values of sharing challenges and having the courage to do the right thing effectively become mediators in building trust and psychological safety.

Creativity and innovation unfolded as another advantage in multicultural teams. The results from Yuan and Zhou (2015) suggest mitigation efforts to reduce the perception of status differentiation, creating genuine ways of encouraging necessary input from high-PD members. The Scrum retrospective ceremony is an example of a formal work group strategy suggested by Yuan and Zhou (2015). This ceremony encourages all team members to share what went well during the Sprint that just completed, as well as what can be done better in the upcoming development cycle. The high-PD members can be the first to share their observations and recommendations. The unique perspectives beyond a tactical or technical scope should be the beginning of convergent and divergent discussions.

The creators of Scrum and co-authors of The Agile Manifesto, modeled Scrum to “optimize flexibility, creativity, and productivity” (Schwaber and Sutherland, 2013, p. 6) of The Scrum Guide. The functional diversity of the Scrum team leverages the divergent and convergent thought from different perspectives. Cultural diversity on a Scrum team expands learning opportunities beyond where a team member was born and raised. As we learn about another, we too should understand more about ourselves. Intentionally identifying the similarities and differences requires open and honest communication.
The decentralized and collective nature of Scrum encourages a collaborative decision-making style through a self-organized framework, where responsibility of planning work lies within the team and not with senior leadership. The optimal support structure where senior leadership supports a *fail fast* mind-set increases the freedom to innovate. These norms are counter to high-PD/low-UA cultures where centralized decision-making and aversion of ambiguity are impediments to creativity and innovation. When a multicultural team collectively understands the cultural norms in terms of Scrum values, the barriers become opportunities for creativity and innovation.

Acknowledging hidden biases provide multicultural Scrum teams the opportunity to see the diversity through an authentic and empathetic lens. Research supports understanding diversity at a deeper level creates empathy between individuals. Furthermore, cultural diversity has positive effects at the group and individual level, creating the possibility of increased divergent and convergent thinking. However, this possibility is impacted by layers of cultural contexts that were out of scope for this research.

While this research focused on multicultural IT teams in a Scrum environment, I believe the subject of understanding our cultural biases goes way beyond IT practices. As humans, regardless of ethnicity and cultural values, we all share basic mental models; caring for family, caring for others, and living in a peaceful and accepting world. I encourage all to acknowledge that differences are just that: differences. They only become borders if we don’t take the time to understand what lies beneath.
REFERENCES


