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Hello Diversity! Opportunities and Challenges of Entrepreneurial Diversity in the Digital Age

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Abstract:

This report outlines the key insights gained at the “Hello Diversity! Conference” held in June 2019 at the Freie Universität Berlin (Germany). The two-day event featured 14 talks from experts in academia and practice who shared their perspectives on how entrepreneurial diversity affects the exploration and exploitation of digital innovation potentials. Their insights highlighted the lack of holistic knowledge on the topic, especially concerning the role of digital technologies in fostering entrepreneurial diversity. The shortcomings of related discourses were debated in several panel discussions with the 170 participants involved in research or in fostering entrepreneurial diversity through management practices, policies, and special interest groups. The conference culminated in a “Paperthon”, which kick-started interdisciplinary research projects aimed at increasing our understanding of entrepreneurial diversity in the digital age.

Keywords: Entrepreneurial Diversity, Digital Age, Digital Technologies, Digital Innovation

[Department statements, if appropriate, will be added by the editors. Teaching cases and panel reports will have a statement, which is also added by the editors.]

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1 Introduction

Diversity has lately become a buzzword amongst researchers and practitioners to discuss all kinds of heterogeneity within and across organizations (Harrison & Klein, 2007; Mor Barak, 2016; Roberson, Ryan, & Ragins, 2017). Especially the ongoing digitalization fuels the scientific and public discourses in this regard, as diverse mindsets, experiential backgrounds and knowledge are discussed as drivers for the exploration and exploitation of digital innovation potentials (Carlo, Lyytinen, & Rose, 2012; Kohli & Melville, 2019; Welter, Gartner, & Wright, 2016). These processes are enabled through digital technologies that decisively influence how and what type of value is created (Boudreau & Lakhani, 2013; Iansiti & Lakhani, 2014; Nambisan, Lyytinen, Majchrzak, & Song, 2017). WhatsApp, Slack, and Clue are some of many examples of digital innovation that have decisively transformed the way we communicate, collaborate, and even plan our reproduction. Given the wide-ranging implications of digital innovation for our private and professional lives, it is crucial to ensure that human diversity, including age, gender, race, socioeconomic status, values, and beliefs amongst others, is reflected in all aspects of digital value offerings, from their development to deployment, from use to management, and finally, their impact (Cushman & McLean, 2008; Trauth, 2017; Urquhart & Underhill-Sem, 2009). The predominant discourse tends to highlight the beneficial aspects of diversity, arguing that diverse workforces are better equipped to, for example, perform complex tasks (Choi, 2002; Lechler, 2001), identify digital innovation potentials (Dai, Byun, & Ding, 2019; Tzabbar & Margolis, 2017), and achieve firm growth (Eisenhardt & Schoonhoven, 1990; Hmieleski & Ensley, 2007).

The “Hello Diversity! Conference”, held at the Freie Universität Berlin in June 2019, endorsed and developed a vision that offers new directions to scholarly and practical discourses on entrepreneurial diversity in the digital age. Indeed, current discussions are often limited in scope when it comes to the conceptualization of diversity. Most importantly, the term diversity is often restricted to gender. While research on gender diversity is certainly highly relevant, given the considerable disproportion of male and female founders in leading startup ecosystems (Berger & Kuckertz, 2016), or female members on management boards (Hillman, Shropshire, & Cannella, 2007), it does not reflect the multi-faceted nature of diversity (Ettl, Brink, Tegtmeier, & Ram, 2019; Gardenswartz & Rowe, 1994). A more holistic framing of diversity can be achieved by dividing its facets into demographic, functional and deep-level dimensions (Van Knippenberg, De Dreu, & Homan, 2004). The multi-faceted nature of diversity also accounts for the fact that diversity can be a double-edged sword, with both beneficial and detrimental outcomes for (team) performance and firm growth (Harrison & Klein, 2007; Van Knippenberg, Van Ginkel, & Homan, 2013; West, 2007). Particularly practitioners often overlook these ambiguous and even contradictory implications. Consequently, the key goal of this conference was to widen the perspectives on entrepreneurial diversity and to consider its opportunities and challenges in order to create awareness for a more holistic understanding of *how different dimensions of diversity affect the exploration and exploitation of digital innovation potentials*. Theoretical knowledge in this regard allows to identify management practices that can support the beneficial outcomes - and mitigate detrimental ones - arising from heterogenous individuals jointly performing digital innovation processes.

Although diversity has been discussed as a promising facilitator of innovation in the digital age, in-depth knowledge about the interplay between entrepreneurial diversity and digital innovation is still largely missing. Most importantly, discussions were previously focused on the uni-directional impact of entrepreneurial diversity on the identification and exploitation of digital innovation potentials (Beckman & Burton, 2008; Hart, 2014; Vissa & Chacar, 2009). However, we still lack comprehensive knowledge about the impact that digital tools and infrastructures in turn have on entrepreneurial diversity and its different dimensions (Deng, Joshi, & Galliers, 2016; Dias & Doolin, 2016; Sundermeier, Wessel, & Davidson, 2018). Another key goal of this conference, therefore, was to *explore the bi-directional interplay between entrepreneurial diversity and digital innovation* and especially the question of how digital technologies affect the work of diverse groups of people who explore and exploit digital innovation potentials. We have deliberately chosen to encourage discussions on the bi-directional relationship between diversity and digital innovation, as this corresponds to the two different perspectives of social inclusion research in Information Systems literature (hereafter IS), namely information systems and technology developers, for which Trauth (2017) has identified considerable research potentials. Additional insights in this regard would allow to generate theories on how marginalized groups such as, for example, people from certain ethnic backgrounds or with visible or non-visible disabilities, can be empowered through technologies to exploit digital innovation potentials (Hüsing & Selhofer, 2002; Leahy & Broin, 2009). Their endeavors can ensure the inclusion of diverse talents in the workforce and may enable the identification of digital products and

services that are representative of society as a whole (Birkner, Sundermeier, & Tegtmeier, 2019; Trauth, 2017). Nevertheless, the conference also invited critical perspectives, with some scholars having raised doubts on whether digital technologies actually contribute to the greater engagement of diverse groups in venture creation, or only perpetuate socially constructed disadvantages (for a discussion in relation to women's entrepreneurship, see Dy et al., 2017).

Bearing in mind these considerations, the "Hello Diversity! Conference" sought to address two central questions:

- How do different dimensions of entrepreneurial diversity affect the exploration and exploitation of digital innovation potentials?
- Which digital tools and infrastructures either foster or hinder entrepreneurial diversity, and how?

Addressing these questions is of particular relevance to scholars from a range of disciplines, including information systems (IS), entrepreneurship and (innovation) management, who seek to foster ongoing societal changes. To achieve the objectives outlined above, the program committee (Janina Sundermeier, Stephanie Birkner, Kerstin Ettl, Julia Kensbock, and Silke Tegtmeier) set out to attract an interdisciplinary group of scholars from different fields, as well as practitioners involved in new venture creation processes, politics, and the management of diversity in and across ventures. In total, 14 experts shared their experiences and views throughout so-called "Diversity Talks!"¹, followed by panel discussions involving 170 conference participants. The insights and identified shortcomings that emerged from the talks in relation to the central conference questions provided a basis for the participating scholars to kick-start research projects during a "Paperthon" on day two of the conference.

The conference and this report present a selection of perspectives to showcase the variety of diversity dimensions and their implications (Gardenswartz & Rowe, 1994; Van Knippenberg et al., 2004). Although not able to cover all the dimensions, feedback from the conference indicates that even the discussion of some of the facets of diversity in relation to diversity and digitalization has provided a crucial step forward by helping researchers and practitioners to broaden their perspective on the different dimensions of entrepreneurial diversity in the digital age, and to gain insights on digital tools that support (or hinder) the promotion of diversity. These insights and discussions allowed to establish avenues for future research that inform the promotion and management of entrepreneurial diversity in the digital age and, vice versa, how digital innovation can foster such diversity.

The paper is structured as follows. In section 2, we provide more detailed descriptions of the conference including its objectives, agenda and overview of the interdisciplinary backgrounds of the participants. In section 3, we outline the framework by van Knippenberg et al. (2004) which, because it allows to systematically capture the different dimensions of entrepreneurial diversity, was used to structure the conference agenda. In section 4, we summarize the key insights from the "Diversity Talks!" that were given by 14 experts who shared their perspectives on the core questions of the conference. In section 5, we present our conclusions and discuss directions for future research.

2 The Conference

A grant from the Freie Universität Berlin provided the funds required to organize the two-day "Hello Diversity! Conference", aimed at facilitating discussions and kick-starting interdisciplinary research projects on different facets of entrepreneurial diversity in the digital age. The first day of the conference featured expert talks, called "Diversity Talks!", on the current state and discourses of entrepreneurial diversity in research and practice. The talks were subdivided into three sessions, each comprising three to four talks on the demographic, functional, and deep-level diversity dimensions. This subdivision allowed us to highlight the multi-faceted nature of entrepreneurial diversity and frame the panel discussions at the end of each session. The discussions included both experts and an interdisciplinary audience of scholars, practitioners, and students. Table 1 shows an overview of the conference participants.

Table 1. Overview of Participants.

Target Group	Field
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¹ To transfer the key insights that were provided throughout the conference to the general public, all talks were video recorded and are now available on Youtube: <https://bit.ly/38hHefY> In addition, a Hello Diversity! Podcast was launched that features ideas and opinions of scholars and practitioners on how to foster entrepreneurial diversity in the digital age: <https://spoti.fi/2qwDlqB>

Scholars (N=23)	Professors, Postdocs and PhD students from diverse disciplines (such as information systems, management, and entrepreneurship) and countries (US, Netherlands, Germany, Denmark, Switzerland, UK, and Syria)
Practitioners (N=67)	Startup founders, policymakers, diversity managers of global players, consultants with a strong focus on the startup ecosystem of Berlin
Students (N=80)	Bachelor and Master students from diverse disciplines in higher education institutions

The active participation of all target groups in the discussions of the conference enabled the inclusion of their manifold perspectives and viewpoints on how entrepreneurial diversity is currently perceived, researched, and managed. The research gaps, opportunities for, and challenges of entrepreneurial diversity in the digital age that were identified during the first day of the conference were used to kick-start interdisciplinary research projects among the scholars who joined the “Paperthon” on the second day of the conference. Inspired by similar events held at the ‘International Conference on Information Systems’ (ICIS), the aim of our Paperthon was to gather scholars from various fields to enable them to jointly generate meaningful theoretical and practical contributions. The day started with pitches during which all participants had the chance to present their research ideas, data sets, and special competences that could contribute to a better understanding of entrepreneurial diversity in a digital age. Four interdisciplinary teams with complementary skills and ideas came together and started to work on the concretization of their research questions, theoretical angles, and opportunities for data collection. Coaches supported the teams by providing expertise in the areas of information systems, digital entrepreneurship, and organizational studies. The Paperthon ended with each team presenting the progress of their project and an agreed work plan up to the end of 2019. As the research projects are still ongoing, they are not discussed in detail in this report. However, we can already conclude that the conference acted as a very fruitful arena for kickstarting the collaboration of the scientific community interested in these topics.

3 Theoretical Foundation

Diversity is a phenomenon of interdisciplinary interest as it focuses on the heterogeneity of individuals in certain units, such as founding teams and working groups, in relation to specific characteristics (Harrison, Price, & Bell, 1998). According to the framework by Van Knippenberg et al. (2004), these characteristics can be subdivided into demographic, functional, and deep-level diversity dimensions. Demographic dimensions refer to observable and mostly unchangeable characteristics of individuals, such as age, gender, sexual orientation, physical ability, ethnicity, and race (Gardenswartz & Rowe, 1994). In terms of functional backgrounds, individuals differ regarding their work experience, educational background, seniority in a startup, management status, and so on. The third dimension, deep-level diversity, covers all aspects that are not directly observable, such as personality traits, values, beliefs, attitudes, and mental health states (Harrison & Klein, 2007). This classification of diversity dimensions allows to holistically capture diversity in digital innovation processes and outcomes including, but not restricted to, a gender perspective. With the overall aim of broadening the scope of the discourse on diversity, this framework has been utilized to structure the conference’s “Diversity Talks!” and related panel discussions. The experts offered to give a talk were asked to share their insights of and experiences with distinct diversity dimensions and their implications for the exploration and exploitation of digital innovation potentials in their own field of action.

The varying effects of diversity can be explained by the categorization-elaboration model by van Knippenberg et al. (2007) that combines two theoretical logics. On the one hand, the social categorization logic refers to the inherent tendency of individuals to assess others based on perceived similarities and differences. According to the underlying similarity attraction theory (Byrne, 1971), individuals tend to favor others with similar characteristics and approaches to perform entrepreneurial activities in relation to the exploitation of digital innovation potentials. Hence, diversity in this regard is seen as detrimental because it separates in-groups and out-groups and increases conflict between individuals who perceive themselves to be dissimilar (Harrison & Klein, 2007; Kollmann, Stöckmann, & Linstaedt, 2019). On the other hand, the information/decision-making logic describes the positive implications of diversity, when it serves as an informational resource. To that end, heterogeneity in terms of perspectives, knowledge, experiences, and information is found to have positive implications for venture creation processes. Drawing on these theoretical perspectives, the aim of the conference was to encourage open discussions that address both the opportunities and challenges of entrepreneurial diversity in the digital age.

4 Insights from the “Diversity Talks!”

Following the framework introduced above by van Knippenberg et al. (2004), we divided the “Diversity Talks!” into three sessions to capture expert knowledge and experiences on, respectively, demographic (4.1), functional (4.2), and deep-level (4.3) entrepreneurial diversity in the digital age. All experts were asked to share their expertise regarding the opportunities and challenges of diversity for the pursuit and outcomes of digital innovation processes, defined as “the use of digital technology during the process of innovating. Digital innovation can also be used to describe, fully or partly, the outcome of innovation” (Nambisan, Lyytinen, & Song, 2017, p. 223). The exploration and exploitation of digital innovation potentials is an inherent part of entrepreneurial activities (Shane & Venkataraman, 2000). Nevertheless, we intentionally did not limit the insights provided in this regard to the startup contexts only, but also invited speakers who shared their experiences with digital innovation processes that are pursued in and by established organizations in order to foster mutual learning experiences. A summary of all opportunities and challenges that have been highlighted by the experts can be found in Table 2.

4.1 Demographic Entrepreneurial Diversity in the Digital Age

4.1.1 The Creative Power of Research on Women’s Entrepreneurship: Roots and Routes of a Field of Study in its Adolescence (Stephanie Birkner and Silke Tegtmeier)

In the first of the “Diversity Talks!” focused on demographic entrepreneurial diversity, Stephanie Birkner and Silke Tegtmeier highlighted the importance of women’s entrepreneurship and a gender-aware perspective in research on the opportunities and challenges of the ongoing digitalization in many industries. Existing research, particularly in the field of digital entrepreneurship, includes sex as a variable but fails to acknowledge gender differences in the way innovation potentials are explored and exploited (Birkner et al., 2019; Trauth, 2013). This blind spot implies that research on digital innovation is still lacking a holistic and gender-aware perspective that allows to explain how doing and undoing gender influences the identification of market gaps, value propositions, and innovation potentials that are worth turning into business models. Liff et al. (2008) argue that society is facing an evolving digital divide that can only be addressed through interdisciplinary efforts. Indeed, when those who innovate are less aware of the diverse needs of underrepresented groups, it limits rather than improves the outcomes for those for whom the value propositions of the innovations are intended, as it has been shown for the so-called maker culture (Maric, 2018). Stephanie and Silke argue that there are two major reasons for this shortcoming. First, both the domain of entrepreneurship and the attributes that are perceived as characteristic for an entrepreneur are still primarily seen as male, which implies that entrepreneurship by men is considered to be the norm in current discourses (Ahl, 2006; Bruni, Gherardi, & Poggio, 2004; Meyer, Tegtmeier, & Pakura, 2017). Second, the field of women’s entrepreneurship is still comparably young and only “at the brink of adolescence” (Hughes, Jennings, Brush, Carter, & Welter, 2012, p. 429) which implies that many research questions remain unexplored (Brush, de Bruin, & Welter, 2009). Table 2 summarizes how research on women’s entrepreneurship has entered the academic discourse in the last decades:

Table 2: Research on Women’s Entrepreneurship in Academic Discourse.

Year	Type of Publication	Reference
1976	First Journal Article	Schwartz (1976). Entrepreneurship: New female frontier. <i>Journal of Contemporary Business</i> , 5(1), 47–76.
1983	First Conference Presentation	Hisrich & Brush (1983). The woman entrepreneur: Implications of family, educational, and occupational experience. <i>Frontiers of Entrepreneurship Research</i> , 2, 255–270.
1985	First Academic Book	Goffee & Scase (1985). <i>Women in charge: the experiences of female entrepreneurs</i> . London: George Allen and Unwin.
1998	First Policy-Oriented Conference	Organization for Economic Cooperation and Development (OECD) Conference on Women Entrepreneurs.
2003	First Academic Conference on Women’s Entrepreneurship:	Diana International Conference on Women’s Entrepreneurship Research.
2006	First Special Issue in Premier Journal	de Bruin, Brush & Welter (2006). Introduction to the special issue: Towards building cumulative knowledge on women’s entrepreneurship. <i>Entrepreneurship Theory and Practice</i> , 30(5), 585–593.
2009	First Dedicated Journal	<i>International Journal of Gender and Entrepreneurship</i> .

Although digital technologies are considered to act as external enablers of venture creation processes (von Briel et al., 2018), women still launch fewer than 15% of all startups in Germany (Kollmann, Hensellek, Jung, & Kleine-Stegemann, 2018). Scholars, therefore, are interested in identifying challenges that prevent women from exploring and exploiting digital innovation potentials. A recent study conducted by Silke and colleagues indicates that male stereotypes of entrepreneurs continue to prevail, even among younger generations (Meyer et al., 2017). The images of men and entrepreneurs are highly congruent, mostly in those characteristics which are *un*typical for men and entrepreneurs. However, the congruence of women and entrepreneurs was low and not significant. In other words, entrepreneurs and men appear to be connected by an image of how they are not expected to be (e.g. timid or passive). This is alarming because these characteristics can be seen to act as exclusion criteria for women's entrepreneurship (Meyer et al., 2017). The prevalence of this stereotypical thinking is surprising, particularly given the findings of Silke's second study, which indicates that women entrepreneurs have, just like men, a balanced set of skills, industry experience, and self-efficacy concerning entrepreneurship-related tasks, although women entrepreneurs often report other motivations for starting businesses than men (Tegtmeier, Kurczewska, & Halberstadt, 2016). Future research is required to determine how and which digital tools and infrastructures are suitable to support women in overcoming existing obstacles (Sundermeier et al., 2018) as well as to further the impact of gender in adopting and using them (e.g. in respect of the design of ICT, see Oudshoorn et al., 2004). One example is the digital platform *elpha.com* that was launched in 2019 with the intention to create a safe space for women in tech operating in Silicon Valley. It took the founders less than a year to raise 1.3 million USD of venture capital in order to create a worldwide renowned vibrant platform that constitutes a hybrid social and professional networks for women in tech seeking expert's advice, discovering resources, and discussing digital innovation opportunities (Balasubramani, 2020).

4.1.2 Why the Socioeconomic Background Matters Most (Natalya Nepomnyashcha)

In contrast to the field of women's entrepreneurship that has experienced an upswing in the scientific and public discourse over the past decade, Natalya Nepomnyashcha, founder of "Netzwerk Chancen", criticized scholars and practitioners alike for neglecting economically disadvantaged children and young people in Germany. Her network advocates equal opportunities for these groups and raises the question of how society in general and the business world in particular could justify overlooking two million children that are raised in economically disadvantaged conditions and with very limited options to receiving an adequate education. These questions are all the more important given the comparably low number of IT professionals and startup founders who explore and exploit digital innovation potentials in Germany.

Natalya's talk started with the case study of Gerhard Schroeder, the former federal chancellor of Germany, who was raised by his mother, a cleaning lady, after his father died in the Second World War. He always aimed to climb the social ladder but was confronted with prejudices, because his family was seen as anti-social and poor (Schroeder, 2006). This case exemplifies the obstacles faced by children from parents with limited financial resources and education. According to Natalya, who herself comes from a similar background, only 15% of university graduates in Germany have parents without a secondary education qualification (A-level or equivalent) and are considerably more likely to suffer from bad health and low self-confidence. A study by Duguet et al. (2010) supports her observations with findings that indicate that young adults who grow up under economically disadvantaged circumstances are also less likely to be invited to job interviews. The scholars sent out identical CVs that differed only with regards to the address of the applicants and found that applications with ZIP codes from poorer areas of Paris received significantly fewer invitations to job interviews compared to those from more privileged areas.

Natalya emphasizes the necessity to make policy and companies aware of such biases and to enable them to establish support programs for economically disadvantaged young adults who might become future skilled employees that are needed to remain competitive during the ongoing digitalization in many industries. These support programs are also relevant to fostering digital innovation activities in Germany as it is found that only 3.4% of all founders do *not* possess a high school diploma (Kollmann et al., 2018). Hence, certain aspects of the socioeconomic background can act as challenges that hinder the exploration and exploitation of digital innovation potentials. Future research is required to specify the challenges encountered in this regard and to determine which measures could be implemented to support young adults from economically disadvantaged backgrounds (Butler, McAvoy, & Murphy, 2008). Recent discussions highlight, for instance, the role of massive-open-online courses (MOOCs) as powerful digital tools that enable particularly less privileged and disadvantaged groups to acquire education that helps them develop an entrepreneurial mindset and systematically discover untapped innovation potentials (AbuJarour et al., 2019).

4.1.3 Destabilizing Instability: Success of Fragile-Country Entrepreneurs (Lubna Rashid)

Another aspect of socioeconomic background that is relevant to the discourse on entrepreneurial diversity in particular is emphasized by Luba Rashid who conducts research on entrepreneurial activities in fragile countries that are ruled by governments that are unable or unwilling to provide civilians with basic services, such as free health and education. A recent report by the OECD (2018) indicates that 24% of the world population dwells in fragile contexts with the number expected to reach 3.3 billion by 2050. The oftentimes ongoing conflicts in these countries require innovative solutions to bridge fragmented transportation routes, provide construction sites with necessary resources, and establish solutions for different kinds of social problems, such as poverty and illnesses. These deficiencies are drivers for entrepreneurial activities that aim to overcome the previously stated issues in fragile countries. Entrepreneurial endeavors are crucial to creating employment, overcoming poverty and helping to improve overall socioeconomic life. The case of Ruanda shows that they can even support peace-building activities. In particular, the stimulation of entrepreneurship in the coffee industry after the genocide against the Tutsis enabled collaborations among the once broken communities in Ruanda.

Encouraging entrepreneurship in these contexts is therefore of considerable importance but Lubna highlights that existing initiatives have neglected involving entrepreneurs already operating in disadvantaged areas in the world in the process of building such support programs. Especially the external business conditions that are most crucial to fostering entrepreneurial activities in fragile countries are often neglected. To prove her argument, she presented three studies that she had recently conducted in Syria, in Sub-Saharan Africa, and Pakistan (currently under review). All three studies indicate that entrepreneurs operating in these fragile contexts were not held back by missing ambitions but driven by intrinsic motivations. A comparison between German and Pakistani entrepreneurs even showed that there were no significant differences in the entrepreneurs' innovativeness, proactivity, and internationalization behaviors. Interestingly, the internationalization activities of Pakistani entrepreneurs were even comparably higher than those of their German counterparts, even though they possess less knowledge and skills relevant to the pursuit of internationalization activities.

These studies show that entrepreneurs in fragile contexts already possess the personality traits, motivations, orientations, and mindsets that are positively related to entrepreneurial success, but nevertheless fail more often to explore and exploit digital innovation potentials because the economic systems they are operating in do not allow them to thrive. Policy and science still lack answers to questions on how to establish startup ecosystems that sustainably improve extrinsic conditions to support intrinsic entrepreneurial tendencies of founders in fragile contexts.

4.2 Functional Entrepreneurial Diversity in the Digital Age

4.2.1 Diversity in the Context of New Work (Lea Böhm)

The first talk on functional entrepreneurial diversity by Lea Böhm, founder of "AllesRoger", focused on the concept of new work and its implications for diversity in the digital age. The idea of new work was coined by the philosopher Frithjof Bergmann (1977) who discussed new approaches to flexible and self-determined working. In particular, the ongoing globalization and digitalization allow and require work to become more flexible in terms of time, place and its overall organization.

Lea states that such flexible working environments require entrepreneurial leaders to possess a balanced set of hard and soft skills in order to successfully guide their teams through the exploration and exploitation of digital innovation opportunities. Her experience shows that the value of soft skills has long been perceived as low, but the importance of diverse skill sets is constantly growing, especially given the increasing autonomy and required self-organization within work teams. Nevertheless, IT environments still tend to separate hard and soft skills among their leaders. Lea's observations indicate that teams exploiting digital innovation potentials are often divided into hard-skilled developers, responsible for software engineering, and agile coaches who manage self-organized teamwork and resolve conflict among team members. This separation of skills could be explained by agile development methods being described as "examples of apparently major success stories that seem to have run counter to the prevailing wisdom in information systems (IS) and software engineering" (Ågerfalk, Fitzgerald, & Slaughter, 2009, p. 317). Research still lacks insights on whether and to what extent the separation of hard and soft skills has implications for the exploration and exploitation of digital innovation potentials. To foster diversity of skills in these environments, it would be interesting to find out which measures allow to address existing

prejudices against certain skill sets that might hamper team performance. Reducing such prejudices is also important given the responsibility of companies to develop inclusive products and services where unintentional prejudices and ethical pitfalls can be avoided by a functioning team whose members have and embrace different skills, backgrounds and perspectives (Trauth, 2017).

4.2.2 Want to Foster Gender Equality at Your Company? Allow Remote Working! (Silja Conradi)

The flexibility of new work approaches also facilitates remote working and remote collaboration among team members who work from geographically distant locations. Silja Conradi, the second speaker on functional entrepreneurial diversity, argued that remote working, supported by digital technologies, can significantly facilitate gender equality in the workplace. She illustrated her argument through her own life-story. After becoming responsible for raising three children on her own during half of the week, while working 200km from home, she had to make crucial sacrifices due to her struggle to balance work and family life. She did not want to quit her job but the founders of the startup she was working for were initially doubtful whether she would be able to fulfill her leadership role while working from home. The founders eventually decided to give it a try, which turned out to be a great success. Silja's story is not unique in light of the fact that 88% of all single parents with under-aged children are women (Statista, 2018) who carry a considerably larger share of caring responsibilities and hence, the burden of having to balance family and work.

Silja shared her experiences of working remotely as a leader and emphasized the importance of digital technologies in this regard. The key for efficient collaboration among team members is to create a common team spirit through fixed meeting structures and daily communication through Skype, Slack, and other instant-messaging providers. Silja has found video communication for meetings to be especially valuable because seeing each other fosters a sense of belonging. Video communication channels are also used for daily meetings in the morning during which every member shares his or her tasks for the day. Despite the advantages of digital technologies to efficiently communicate, Silja recommends establishing regular off-site meetings during which the whole team works and spends leisure time together. Indeed, she thinks that digital technologies should not only be perceived as relevant for essential work-related communication but also for small talk amongst colleagues that would normally happen at the coffee machine or other places in the office.

In sum, her talk highlights the contributions that digital communication technologies, such as Skype, Slack, and other video-call and messaging providers, can make to fostering gender equality in work settings. At the end of her talk, she asked the audience and especially the researchers to explore how other diversity aspects could benefit from remote working in order to make it more popular among decision-makers in startups and other work environments.

4.2.3 The Five Elements of Success to #harmonAIze Humans and Machines (Nancy Nemes)

Achieving gender equality is also one of the goals of Nancy Nemes who launched the network "Ms.AI" in order to empower more women to understand and exploit innovation potentials enabled by artificial intelligence (AI). Beyond her ambition to promote gender equality in AI-fostered innovation opportunities, she also emphasized the need to include individuals from diverse backgrounds and with diverse mindsets, value, social statuses, amongst others, into these processes. Only such inclusivity can ensure that AI is used to create digital products that are reflective of society as a whole and not only minor parts of it. Similar questions in relation to how AI-fostered innovation impacts on value creation processes are also addressed in a call for an upcoming special issue of the journal "Management Information Systems Quarterly" (Berente, Gu, Recker, & Santhanam, 2019).

4.2.4 Employee Lifecycle – How to Attract, Retain and Develop Diverse Talents (Uta Menges)

Fostering diversity in workforces can only be achieved through talent acquisition processes that involve educated human resource managers who are aware of the opportunities and challenges to attract, retain, and develop diversity within ventures. Uta Menges, diversity and inclusion manager at IBM, exemplified these processes with the case of IBM and links her insights to new venture creation processes. Key to attracting diverse talents is a company's external communication which should make explicit their commitment to diversity, for example by targeting women for leading positions and through inclusion strategies. A firm's core diversity values need to be transparent and companies that care for establishing a diverse workforce should be present at career fairs that address certain target groups, such as for instance

the LGBTQ (Lesbian, Gay, Bisexual, Transgender, and Queer) community. Digital communication channels, social media platforms, and websites presenting the diversity and inclusion strategy are crucial technologies that support companies in this regard (Jayne & Dipboye, 2004; Rosenzweig, 1998).

Once a company has attracted diverse talents, it is required to pursue an equal opportunity hiring process in which unconscious biases, such as prejudices and stereotypical thinking, should be avoided. Avoiding such biases is a considerable challenge since unconscious biases are persistent and mostly expressed through the preferences of individuals towards people similar to themselves (Byrne, 1971). The selection process of talents should hence include a variety of people that are capable to objectively assess the skills and experiences of the candidate. Previous research shows that these measures are only efficient when the members of the hiring committee perceive diversity not just as an option but as a responsibility for the company (Kalev, Dobbin, & Kelly, 2006).

A company's attitude towards diversity should remain visible throughout the onboarding and retaining processes. Nevertheless, diversity training and evaluations have been found to be inefficient if leaders in the company do not perceive diversity as their responsibility (Kalev et al., 2006). Uta Menges has found that digital platforms, such as enterprise social networks or comparable Web 2.0 applications, that enable employees to raise their voices are very efficient tools. In particular, she observed that after introducing such a platform, employees felt encouraged to highlight and discuss diversity issues and contribute with their own ideas to overcoming these issues. Scholars have started to examine the role of enterprise social networks as an inclusive communication tool (Riemer, Stieglitz, & Meske, 2015), but literature is still missing comprehensive insights on the opportunities and challenges of such digital platforms in these regards. Relevant research questions could include the examination of configurations that such platforms require in order to encourage exchange and allow to implement suggestions raised in relation to certain concerns. Findings in this regard are also of particular importance for remote working teams that have only limited options to discuss diversity issues on a face-to-face basis. Which kinds of communication platforms are perceived as trustworthy for raising diversity concerns and discussing potential solutions? Further research on such questions could contribute to theory development regarding the suitability of different digital tools, infrastructures, and platforms to foster diversity in remote working teams (cf. 4.2.2).

4.3 Deep-Level Entrepreneurial Diversity in the Digital Age

4.3.1 Underneath the Surface: When Members of Entrepreneurial Teams Differ in Personality, Values, and Attitudes (Julia Kensbock)

The first talk in the deep-level diversity session was held by Julia Kensbock, who emphasized the importance of considering diversity in entrepreneurial teams. In contrast to the popular image of the entrepreneur as a "lone wolf", 85% of all ventures are started by at least two individuals who jointly pursue venture creation activities (Lazar et al., 2019; Wassermann, 2012). Generally, starting a new business in a team (instead of alone) can have great advantages. Among others, teams benefit from a broader range of qualifications, mutual support in difficult situations, and higher efficiency due to simultaneous task processing (Choi, 2002; Lechler, 2001; Roure & Maidique, 1986).

In her talk, Julia summarized the recent state of the art in research on the effects of team diversity for team performance. Adding to this research, a recent study conducted by Julia and her colleagues examined the performance of entrepreneurial teams whose members differed with regard to deep-level diversity dimensions (Kollmann, Stöckmann, Meves, & Kensbock, 2017). In particular, the scholars focused on differences in team members' individual-level entrepreneurial orientation, defined as "a tendency to respond to situations, or classes of situations in an entrepreneurial manner" (p. 845). Their study shows that understanding the performance effects of team diversity requires a close look at different diversity dimensions. The findings indicate that team diversity can have both positive and negative effects on team performance, depending on the sub-dimensions of individual-level entrepreneurial orientation diversity (i.e., proactiveness, innovativeness, or risk-taking diversity) under consideration. Specifically, different levels of *proactiveness* within teams can have negative implications for team performance, whereas diversity in terms of *innovativeness* fosters the performance among team members. *Risk-taking* diversity increases opportunities for conflict among founding team members, which again negatively impacts team performance.

Julia's talk underlined the importance of considering "diversity within diversity". Notwithstanding the importance of observable ("surface-level") diversity characteristics such as gender or age, scholars and

practitioners should also pay attention to deep-level diversity in teams, for example, the extent to which team members have diverse ideas about the new venture's goals and the strategies by which these can be achieved. Considering deep-level diversity in the digital age also implies new challenges and research gaps in the future. In particular, individuals (including entrepreneurs) might not only differ in their digital skills or literacy (OECD, 2016), but also in their attitudes and beliefs about digital technologies and innovations (e.g., being open versus anxious about digitalization).

4.3.2 Neurodiversity - A New Hope (Timo Lorenz)

Another perspective on diversity that is often neglected and misunderstood is neurodiversity, which is a rather novel approach that adopts a social model of impairment involving conditions like autism, ADHD, and dyslexia. Timo Lorenz emphasized that people on the spectrum are not pathologically disabled but *get* disabled by society that sets standards regarding expected behaviors and particularly workplace environments created for neurotypical persons. Individuals on the spectrum have, however, a different perspective on the world and tend to communicate in an atypical manner. A neuro-diverse standpoint criticizes the labelling of people on the spectrum as 'atypical' and instead attempts to understand their standpoint through listening to their needs and wants.

A study by Timo and his colleagues shows that people on the spectrum, particularly those on the autistic spectrum, have great strengths, such as attention to detail, auditory skills, focus, logical reasoning, repetitive tasks, and systemizing (Lorenz, Frischling, Cuadros, & Heinitz, 2016). These capabilities are especially useful for coding software and other digital artifacts. Timo, however, warns against generalizing all people on the spectrum, such as assuming they are automatically computer experts, because, as he argued in his talk, "if you know one autistic person, you know one autistic person. They are as heterogenous as any other group". The main source of such misperceptions is that people gain their knowledge about cognitive conditions from pop culture, such as "The Big Bang Theory" series. The image of autism in pop culture is not representative but raises awareness of the fact that people on the spectrum do have special requirements in relation to their working environment. For instance, many struggle with their environment due to a heightened sensitivity to, and getting easily distracted by, noise and light. Regarding communication, people on the spectrum often face difficulties in understanding non-verbal communication. These circumstances are generally not difficult to address but many still face discrimination and bullying at workplaces that are not prepared to meet their specific requirements.

Addressing these shortcomings is necessary in order to integrate people on the spectrum into the workforce and benefit from their skills in exploiting digital innovation potentials. Timo argues that it is necessary to create awareness and especially a realistic view on the condition through listening to individuals without prejudice and generalization. Only such an approach can help to shift the discourse from diagnosing people on the spectrum as disabled towards talking about their strengths and interests. Especially founders need to reflect on how they can create a working environment that offers a win-win situation for both parties.

4.3.3 Building a Career with and Despite Non-Visible Disabilities (Hannah Dahl)

Hannah Dahl, co-founder of "CoWomen", corroborated the previously presented outcomes of Timo's research projects with her own experiences, because she has to deal with a non-visible disability that affects her digestion and requires her to visit doctors on a regular basis. During her time at the university and in her first jobs, she realized that the organizational structures were not prepared to address her needs, especially since her disability is non-visible. For instance, the time available for a written examination was often insufficient, because multiple visits to the bathroom and regular eating were not taken into consideration. In her job as a software consultant, she faced difficulties when she asked for a day off on a regular basis in order to visit her doctors.

Hannah decided not to remain silent but to raise her voice instead, on her own behalf. It appeared that many of her fellow students and co-workers faced similar problems but were too shy to communicate their needs. These insights prompted her to set up different initiatives that raise awareness. Awareness-raising is much easier nowadays as information can easily be spread via digital communication channels, especially social media. Fostering a diverse workforce requires enabling people to speak up for their needs and wants. Digital technologies facilitate the creation of platforms on which people with visible and non-visible disabilities can exchange information and experiences on how to raise their voices, regardless of their location. One obvious research opportunity in this regard could involve examining the potential role played by digital communication platforms and social media networks to empower and encourage

individuals with specific needs to make their voices heard and to allow them to formulate guidelines for inclusive workspaces (see also 4.2.4).

4.3.4 Networks in the Backstage of Businesses: The Case of Migrant Entrepreneurs in Amsterdam (JuanFra Alvarado Valenzuela)

The final talk on deep-level entrepreneurial diversity in the digital age was held by JuanFra Alvarado Valenzuela who conducts research into migrants' entrepreneurship in Amsterdam. He focuses on individuals who have left their home countries to exploit digital innovation potentials in industries such as communication, education, and mental health. Having left their home countries implies that migrants also left their established business networks behind and are confronted with the challenge of how to build a reliable network that supports them to create thriving ventures (Alvarado, 2018).

The migrants JuanFra interviewed had on average 10 strong business supporters in their network that grew through diverse circumstances. The majority of contacts in these networks were former co-workers from previous employments in the region of Amsterdam. In addition, the communities formed in offline locations, such as co-working spaces for startup founders which have proven to be crucial facilitators for expanding migrants' business networks in a foreign county. These results indicate that remote working might be a facilitator of diverse and inclusive workforces (cf. 4.2.2) but that founders from foreign backgrounds also benefit from contact persons in geographic proximity to themselves. Finding these contacts is facilitated through digital platforms, such as Meetup.com.

Table 2. Summary of Viewpoints.

Summary	<ul style="list-style-type: none"> ▪ A holistic conceptualization of diversity covering all its demographic, functional, and deep-level dimensions is required to comprehensively assess the relationship between diversity and digital innovation ▪ The relationship between diversity and digital innovation is bi-directional and ambivalent ▪ A disregard of diversity in all its dimensions limits the inclusiveness of digital value offerings and fosters the digital divide 	
Demographic Diversity and Digital Innovation	Opportunities*	Challenges*
	<p>Digital technologies allow to adapt the design and usability of digital value offerings to tailor products and services for distinct demographic target groups.</p>	<p>Digital innovation processes are biased and inconclusive, especially with regard to gender and socio-economic diversity.</p> <p>Gender is considered as the main diversity focus in digital innovation processes, with limited awareness that doing and undoing gender has a decisive influence on the identification of digital innovation potentials and the results of the respective processes.</p>
	<p>Digital technologies lower innovation barriers to some extent and enable more demographic groups to participate in the exploration and exploitation of digital innovation potentials.</p>	<p>Gender stereotypes continue to be reproduced in digital environments.</p>
		<p>People from economically disadvantaged backgrounds still face discrimination and are left behind instead of using their potential to fill the shortage of IT-professionals.</p> <p>Support programs designed to enable entrepreneurs from fragile countries to pursue digital innovation processes often do not reflect the conditions of these contexts.</p>
Functional Diversity and Digital Innovation	<p>The exploitation of digital innovation potentials requires a diversity of soft and hard skills.</p>	<p>Prejudices and unconscious biases against certain skillset hamper IT-team performance.</p>
	<p>Digital communication platforms support employees who are committed to and speak up about diversity issues, and propose solutions.</p>	<p>Unconscious biases and a lack of perspectives from people with diverse backgrounds within workforces limit the representativeness of digital value offerings.</p>
	<p>Digital communication technologies facilitate remote working, making it easier to reconcile parenthood and work and to acquire talent with complementary skills across national and international borders.</p>	<p>IT-enabled remote working is not yet broadly accepted.</p>
	<p>Digital platforms allow companies to promote their diversity and integration strategies, which are becoming a decisive asset in their fight over attracting talent.</p>	
Deep-Level Diversity and Digital Innovation	<p>Diverse levels of innovativeness among team members have favorable effects on team performance during the exploitation of digital innovation potentials.</p>	<p>The exploitation of digital innovation potentials is decisively influenced through the rather invisible but presumably diverse attitudes and beliefs about digital technologies and innovations held by team members.</p>
	<p>The creation of an inclusive workforce, which includes people with different cognitive conditions, is likely to have a positive impact on digital innovation processes and outcomes.</p>	<p>Organizations are often not well prepared to create a working environment for their technical teams that reflects the needs of people with different cognitive conditions.</p>
	<p>Digital communication channels can create safe spaces for employees with visible and invisible disabilities, where they can (collectively) speak up to highlight shortcomings in their integration.</p>	
	<p>Professional online networks enable migrants to establish a professional network of relevant contacts that are suitable to supporting their entrepreneurial activities.</p>	
<p>* The opportunities and challenges presented in this table are limited to the aspects discussed throughout the conference.</p>		

5 Conclusions and Call for Future Research

Digital innovation processes and their outcomes have wide-ranging implications for our private and professional lives as they decisively influence how and what type of value offerings are created (Boudreau & Lakhani, 2013; Iansiti & Lakhani, 2014; Nambisan, Lyytinen, Majchrzak, et al., 2017). Nevertheless, numerous case studies indicate that digital value offerings, and the processes of their creation, are still often biased and inconclusive (Cain & Trauth, 2013; Trauth, 2017; Urquhart & Underhill-Sem, 2009). For example, the AI-enabled recruitment algorithm used by a leading e-commerce platform to automate the pre-processing of candidate profiles for software development jobs has proven to discriminate against women, as the algorithm was trained with biased data reflecting male dominance in technology-related professions. Similarly, facial recognition, which is widely used in cell phone applications, is still struggling to identify people of color, which excludes them from using certain services. These are just two of all too many examples which highlight the importance of addressing the manifold facets of human diversity in digital innovation, encompassing both processes and outcomes, in order to ensure that digital products and services are truly representative of the needs and wants of all sections of society rather than only a few exclusive groups (Trauth, 2017).

This conference report presents the insights and experiences of fostering and managing entrepreneurial diversity to explore and exploit digital innovation potentials, and opens up manifold avenues for meaningful research projects. To that end, it seems necessary to broaden existing discourses in order to cover the different and distinct dimensions of diversity including, but not limited to, the gender perspective, and to facilitate the discussion of the opportunities and challenges in the bi-directional relationship between entrepreneurial diversity and digital innovation. To achieve these objectives, the “Hello Diversity! Conference” highlighted the importance of bringing together scholars and practitioners from various disciplines and enable them to holistically examine the implications of diversity for digital innovation processes and outcomes. In addition particular, the “Diversity Talks!” highlighted the crucial role played by technologies in empowering diverse groups to engage in digital innovation, but research has only recently started to examine the extent to which these opportunities are being realized, and the challenges brought by diversity (Majchrzak, Lynne Markus, & Wareham, 2016; Sundermeier et al., 2018; Welter, Baker, Audretsch, & Gartner, 2017). Questions for future research projects that have been raised during the conference include, but are not limited to, the following (grouped into the different diversity dimensions):

5.1 Demographic entrepreneurial diversity

- Do digital technologies perpetuate or challenge stereotypes, especially with regard to the capabilities of women pursuing digital innovation processes?
- Which digital tools and infrastructures are suitable to support women in overcoming existing challenges related to exploring and exploiting digital innovation potentials?
- How does the socioeconomic background affect the entrepreneurial orientation of young adults? What measures are effective in supporting young adults from economically disadvantaged backgrounds to engage in digital innovation
- How do innovation ecosystems need to be designed in order to support entrepreneurs in tackling external conditions in fragile country contexts and exploring and exploiting digital innovation potentials?

5.2 Functional entrepreneurial diversity

- What are the implications of separating hard and soft skills within IT-teams for the exploration and exploitation of digital innovation potentials?
- Which diversity dimensions can particularly benefit from IT-enabled remote working?
- What do the design processes for AI-enabled products and services have to look ensure the creation of inclusive products and services?
- Which digital communication platforms are perceived as trustworthy for raising diversity concerns and discussing possible solutions in professional work environments?

5.3 Deep-level entrepreneurial diversity

- How does diversity in entrepreneurs' attitudes and beliefs toward digital technologies affect team outcomes in the digital age?
- How can entrepreneurs and managers efficiently collaborate with neurodiverse people for the exploitation of digital innovation potentials?
- How and which digital communication platforms can empower and encourage employees with support needs, to meet their specific requirements in the workplace?

In the conference report, we show how different approaches have been found to foster and encourage entrepreneurial diversity in the digital age, and how digital innovation processes and outcomes are still far from being inclusive (AbuJarour et al., 2019; Berger & Kuckertz, 2016; Kollmann et al., 2018; Olbrich, Trauth, Niederman, & Gregor, 2015). Existing shortcomings in these regards need to be recognized and addressed in order to ensure the inclusiveness of digital innovation (Trauth, 2017). IS literature has started to look into the requirements of inclusive design processes for digital value offerings (Olbrich et al., 2015), including, amongst others, ICT-enabled refugee integration (AbuJarour et al., 2019), and accessible social networking websites (Leahy & Broin, 2009; Riemer et al., 2015), but the conference discussions indicate that we have only just started to generate comprehensive knowledge and awareness on the bi-directional relationship between diversity and digital innovation. While we are aware that the conference insights presented in this report cover only some diversity dimensions, we hope that these insights encourage researchers to conduct their own projects on entrepreneurial diversity in digital innovation. Indeed, research has a vital contribution to make to foster diversity in the digital age, especially at a time when old threats are rearing their heads again and new ones are emerging.

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