

MASTER'S THESIS

The Climate towards Creativity in China

A Preliminary Assessment

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Written by: Lizanna Engel

Master of Science in Economics and Business Administration (cand.merc)
International Marketing and Management

Supervisor: Xin Li
Department of International Economics and Management

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Abstract

The purpose of this study is to assess the prevailing conditions that enable creative thought in the People's Republic of China. Creativity as a precondition for the innovation of products, services and processes is of vast importance for the Chinese economy today. This is because a transition from manufacturing to a more services and knowledge-dependent economy is underway in the pursuit to find new drivers of growth. This is illustrated by the fact that in 2015, the GDP growth of the country subsided to just above 6% after a 30 year long period of an average growth rate of 9%.

The literature on creativity is presented in order to express the importance of the phenomenon and guarantee an understanding of the current debate regarding the differences across country borders. An exploratory approach is taken by means of a qualitative investigation of a carefully selected group of interviewees from different backgrounds united by their interest in the development of the Chinese economy.

The KEYS framework is a theoretically grounded tool used to assess the climate for creativity within an organization. It scrutinizes the following dimensions: Organizational Encouragement, Organizational Impediments, Freedom/Autonomy, Sufficient Resources, Workgroup Support, Supervisory Encouragement, Challenging Work, Workload Pressure, Personal Creativity and Forthcoming Productivity. For the aim of this study an adaptation to the country level was undertaken.

The analysis uncovers various supporting and inhibiting factors characterizing the climate towards creativity in China. The Pressure and the Supervisory Encouragement were found to be most inhibitive, while Freedom/Autonomy, Sufficient Resources, Workgroup Support, Supervisory Encouragement and Challenging Work were found to be ambiguous and could result in a more positive evaluation in the future. The analysis gives reason to conclude that the climate towards creativity today is in a constant state of change yet supportive with room for improvement.

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1.0 Introduction

Today, there are many macro-economic trends shaping the world and the environment any business is embedded in. The increase in worldwide population and economic growth originates a rapidly expanding consuming class; the increasing integration of global labor markets make it imperative to manage talent and knowledge acquisition; a growing demand for natural resources and a diminishing supply influences economies, people and the environment. It is fair to say that dramatic shifts in human behavior and the use of resources are necessary. If a business wants to be sustainable in the long-run in this unpredictable environment, it should be ready to search for new or improved processes, products or services, perceived as valuable by its customers. Creativity, in this regard is beneficial but at the same time it can incur costs, as pointed out by De Dreu in 2010. It is costly because a creative person stands out of the crowd and renders him/herself vulnerable to outside threats. Sticking to the status-quo, engaging to habituated action, following the well-trodden path, and conforming to the views and perspectives of the majority is easier and requires no justification (De Dreu, 2010). Nevertheless, creativity is beneficial since a creative person may find new ways to solve problems and materialize opportunities, win disputes and reach agreements (ibid). According to Teresa M. Amabile (1998) three main components in an individual permit creativity in any given field. These components are: expertise, creative-thinking skills, and intrinsic task motivation. While the discussion in the literature continues, these characteristics seem to be universally accepted. It is the contextual environment surrounding an individual that influences the factors needed for creativity in the first place. To keep up Gross Domestic Products (GDP) growth China requires new drivers of growth and turns to creativity and innovation in that quest. It is thus worthwhile to assess these factors or in other words the climate towards creativity in China by the means of an empirical investigation, which is the aim of this study.

1.1 Contextualization

It is the goal of social research and of this study to help priority setting and guide the use of resources, to increase the understanding of the wider environment (i.e., beliefs, values and attitudes of stakeholders) and to identify and monitor changes and trends (McGivern, 2006). Creativity and innovation are complex, multilevel, and emergent phenomena that require skillful leadership in

order to maximize the benefits (Anderson, Potočník, & Zhou, 2014). For this reason, considerable research has built up over the last 30 to 40 years across several disciplines within the management sciences (ibid). Recently, the trend towards more integration across cultures especially in the business domain has spurred research efforts in this direction. It seems that particularly the comparison between East (especially China) and West (especially Europe and the United States) has triggered enormous interest but does not remain without challenges. Researchers as well as practitioners are confronted with the question whether some cultures enable creativity more, while others might in fact hamper the evolvement of creativity. This study is directed at both of these groups, but also at laypeople having an interest in the topic. It firstly aims at increasing the understanding of the reader based on an exploratory empirical analysis in investigating the current literature, reports and prevailing perceptions. Furthermore, it contributes to management behavior and refutes persistent prejudices. Lastly, the findings gathered open up the discussion on how to evaluate and value creativity in the future. The expected outcome is not a recommendation since it is a field in progress and the subject of analysis (The People's Republic of China (PRC)) is too large to assess reliably. Generalizing about the evolvement of creativity or future success of the Chinese economic model will thus not be possible. Nevertheless, an increased understanding and recognition of the importance of creativity has major social significance in that people may like to change their behavior or conception of creativity based on the findings. Moreover, the reader can gain an impression about whether the movement from a manufacturing to a knowledge-based economy will be successful and whether China is likely to increase its global influence in entering market segments where major Western countries dominate now. The topic of this study thus relates to a highly relevant and up-to-date field of research and it is expected to uncover to this point unexplored yet important questions regarding the present and future evolution of creativity in China.

1.2 Problem Statement

Since its economic reform began in 1978, China has gone from a poor developing country to the second largest economy in the world. For 30 years, from 1985 to 2015, China's GDP rose by 9.4 percent per year on average (Woetzel, Chen, Manyika, Roth, Seong, & Lee, 2015). Nevertheless, the impression prevails that this growth is based on manufacturing activities and factories. According to a 2015 report by McKinsey two forces helped to drive this growth – a constant flow

of new workers into the labor force and massive investments in housing, infrastructure, and industrial capacity (Woetzel et al., 2015). As these are receding now, China's growth is slowing down, and the country finds itself in the midst of a very challenging transition to a slower-growing, more consumption-driven economy. Because of the overall trend of an aging population and because the returns on fixed asset investments are declining, other sources of growth are needed in the future. Exacerbating factors are a weak demand in main export markets, growing local government and corporate debt and overcapacity in many sectors (Woo & Wong, 2016). The productivity and attractiveness of products must be ensured to make up for the loss of momentum. An investigation in how China plans to raise the productivity level has implications for domestic, but likewise internationally operating firms. This study was inspired by the current debate on a global level concerning how creativity can lead to increased productivity in China, and how the reaction at a governmental, societal, institutional and organizational level can be evaluated.

Research Question

In line with the above reasoning the climate towards creativity in China will be investigated.

Thus, the proposed research question is as follows:

Given the diverse opinions and predispositions on creativity in China in the academic and non-academic literature, I will investigate the current climate towards creativity based on the conception of various parties having an interest in the evolvement of the PRC.

Sub-question:

Do the different parties interrogated in this study perceive the current climate as supportive or inhibitive of creativity?

1.3 Thesis Structure

The concepts inherent in the research question are entailed in the distinct parts of this study, which is composed of six chapters. The introduction puts the topic into context explaining the relevance of the problem and the resulting research question. The literature review and framework presents the current debate among researchers in other words the diverse opinions and predispositions and derives the framework guiding the empirical enquiry. As the outcome of creative thinking can incur positive but also negative consequences for the planet and its citizens, the ethical aspects of creativity are examined briefly. The state of cross-cultural research and the specific case of East (Asia) versus West is explored followed by the antecedents leading to creativity in China in particular. The measurement of creativity is examined and the framework in its original form is presented. The methodology verifies the coherence of the approach used. It explains in detail how the triangulation technique was applied to assemble a representative group of individuals appropriate for the aim of this study. The analysis firstly summarizes the relevant key findings of the secondary data in other words the non-academic opinions and presents the findings of the empirical inquiry. Three reports concerning the current state and the future development of the PRC are examined, predominantly focusing on how to keep up the productivity level by means of innovation. The discussion puts the secondary and the primary data into perspective utilizing the key standpoints from the current academic debate. Besides, valuable future research paths are suggested and the research question is answered. Lastly, the conclusion summarizes the key findings and draws up some practical implications for the present and the future.

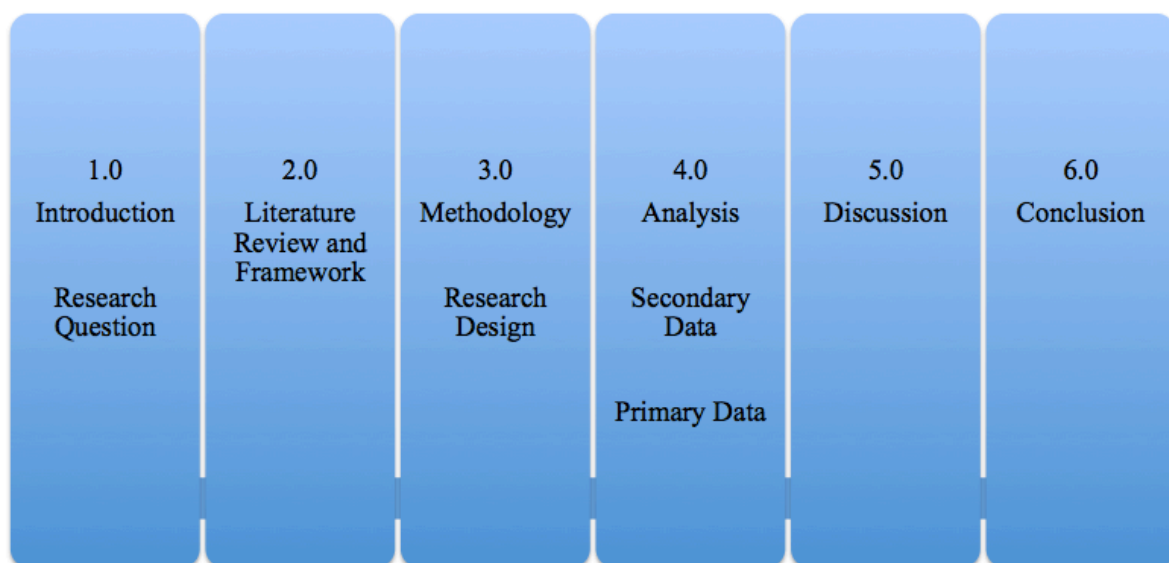


Figure 1: Thesis Structure

2.0 Literature Review and Framework

The following chapter provides an overview of the current discussion on creativity in the literature. First of all, it is discussed why creativity is important today not only in a societal but also in an economic sense. Subsequently, the most important differences between creativity in East and West are presented in terms of the historical formation, the definition and the impacting factors. Lastly, it is analyzed how creativity is measured and the framework for generating data in this thesis is deduced. A general understanding about the diverse predispositions on creativity in the academic literature of the East and West thus builds the basis for the analysis of the current climate towards creativity in China.

2.1 The importance of creativity

2.1.1 Generic benefits of creativity

Creativity leads to the generation of intangible ideas or the fabrication of tangible objects, which can possibly help conquer the most important challenges of our time. Amabile (1996) scrutinizes the organizational environment and defines creativity as potentially involving products, services, organizational processes, and work methods – in any functional area, at any organizational level. Creativity is often an essential ingredient to employee success and consequently company survival in a competitive economic landscape. In organizations work becomes increasingly dynamic, uncertain and knowledge-based, which points to the need of the development of creative solutions by the workforce (Grant & Berry, 2011). When employees exhibit creativity at work, they produce novel, potentially useful ideas about organizational products, practices, services or procedures (Shalley & Gilson, 2004). Kampylis and Valtanen (2010) describe the challenges that creative ideas face from the very beginning: Gaining acceptance and making the potential value of ideas visible is key to recognizing the importance of creativity. Yet, making that judgment is reliant on a subjective assessment and it is not always clear whether a process or product is novel and useful and for whom (ibid). Moreover, it can be asserted that there is a spectrum of what can be considered a creative outcome, ranging from minor improvements of workflow or products to major breakthroughs and the development of new products or processes, and at times it is unclear which occupations they should originate from (Shalley & Gilson, 2004). It may be that in some circumstances management

might consider incremental ideas desirable, whereas in other circumstances more radical ideas might be valued (Shalley, Zhou, & Oldham, 2004).

Diverse managing goals, changing environmental conditions, conflicting interests, and lack of predictability are some of the characteristics that decision makers have to face today as part of overall prevailing uncertainties (Brugnach, Dewulf, Pahl-Wostl, & Taillieu, 2008). Instead of considering this as “something to get rid off” or to minimize, uncertainty has become accepted as an unavoidable fact of life (ibid). The incommensurable benefit of creativity lies in the fact that it can help reframe problems so that a different meaning of the original problem is conveyed and ultimately in finding a solution to the problem as such. Responding flexibly and effectively to changing and unknown conditions, in other words dealing with ambiguity, makes creativity a crucial quality in this globalized world.

2.1.2 Ethical considerations

The generic benefits of creativity on a micro and macro economic level become clearer and more pronounced nowadays. Nevertheless, in order to ensure that the world is moving in the “right direction”, the ethical component should not be forgotten but is becoming more urgent as well (Kampylis & Valtanen, 2010). Moral creativity should come from more than only the organizational context. Martin (2006) analyzes moral creativity contextually referring to role responsibilities, exercising leadership, developing social policies and generally living authentically in light of moral ideals. This is essential, since the consequences of creativity are not positive in any situation. Some previous studies have focused on deviance, mental illness and drug use in relation to personal creativity (Kampylis & Valtanen, 2010). Moreover, the invention of war weapons or the expression “creative accounting” exemplify the negative potential (ibid). Published in 1999, Feist states that creative people “*tend to be open to new experiences, less conventional and less conscientious, more self-confident, self-accepting, driven, ambitious, dominant, hostile, and impulsive*” (p.290). These characteristics considered from any cultural context are not entirely positive. Human creativity is thus a complex phenomenon with possibly positive but also negative implications. In their 2010 study Kampylis and Valtanen herald the era of conscientious creativity, in which knowledgeable humans are considered able and wise enough to create something ethical and constructive for all. In this era the challenge is to gradually, if not radically, increase the focus on political as well as socio-economic factors and educational as well as organizational settings that

promote benevolent and constructive creativity and, in parallel, to decrease the factors that promote malevolent and destructive creative activities (Kampylis & Valtanen, 2010).

2.1.3 Cross-cultural reflections

Even though the question whether there are differences in creativity in distinctive cultures has significant implications for management practice, international business and economic development, theorizing and research have lagged behind in this regard (Anderson, Potočnik, & Zhou, 2014). Hempel & Sue-Chan (2010) conclude from prior research that conceptualizations of creativity are broadly similar across cultures, but with distinct differences in the details. They acknowledge that at present there is relatively little research on culture and creativity in organizational settings, and much remains to be understood about how cultural factors influence creativity in actual organizations (Hempel & Sue-Chan, 2010). Zhou & Su (2010) review the cross-cultural creativity literature and conclude that the theorizing and research is vastly unsatisfactory. Leung and Morris provide an assessment of creativity and innovativeness contrasting East Asia and the West in an attempt to foster a more nuanced popular understanding of cultural influences on creativity (Leung & Morris, 2010). In a world controlled by increasingly global dynamics and interdependence it is however imperative to scrutinize the differences in cultural perspectives on the matter, to study different approaches and states of development. This is because such cultural research on creativity has both intellectual and practical significance (Zhou & Su, 2010).

2.2 Creativity in the East and West

2.2.1 Historical development

Creativity became firstly recognized as a research area in 1950 after Joy Paul Guilford's presidential address to the American Psychological Association. Nonetheless, it remained a subset of psychology studies until the end of the twentieth century (Sternberg & Lubart, 1999). Up until the Enlightenment movement (1620-1780) "*a tolerance of institutional permission and divine guidelines of intervention prevented the actual discussion about creativity*" (ibid, p.19). Following this conception, Kampylis & Valtanen (2010) entitle it the metaphysical era, from Antiquity to the

Renaissance in the fifteenth century, in which a few geniuses are considered able to create from nothing (“ex nihilo”) through divine (or other) inspiration. Subsequent follows the aristocratic era, from the Renaissance to the middle of the 20th century, in which a few charismatic geniuses are considered able to create from something (ibid). Today, creativity is acknowledged in the individual and societal domain. The individual domain meaning the ability to solve problems of everyday life on the job or after work hours; the societal domain refers to new scientific findings, movements in art, inventions or new social programs (Sternberg & Lubart, 1999). Kampylis & Valtanen (2010) call this the democratic era, from the middle of the 20th century until today, in which anyone is considered able to create from anything.

According to Lubart (1999) the environment was often ignored when examining creativity, however this is misleading, as the environment plays an important role in stimulating and supporting as well as defining and evaluating creativity. Lubart (1999) identifies the interrelated context influencing creativity as the physical setting, the family, the school or workplace, the field of endeavor and the culture. In a well recognized and much cited study Csikszentmihalyi (1997) proposed that three main factors underlie creative production and the judgment of it: (1) a stable cultural domain; (2) a social institution, or field, deciding which works will be selected from among the many works created; and (3) the individual, the one who brings the idea or product into a given field in a given setting or culture.

The Eastern conception of creativity is less focused on products but more on processes; it involves the reinterpretation of traditional ideas and finding a new point of view, which often starts with a form of meditation (Lubart, 1999). This is confirmed by Niu and Sternberg (2003), who state that creativity can be nurtured, either through meditation (Taoism) or through self-cultivation (Confucianism); this is still being adopted by modern Chinese, especially in the traditional Chinese arts and literature (ibid). Niu (2006) shows that the Eastern definition has developed however as she concentrates on product-oriented forms of creativity in modern China. The modern conception of creativity advanced by Niu and Sternberg (2003) encompasses moral goodness, in terms of furthering the society as a whole, and novelty, as opposed to past perceptions when usefulness was more significant.

In China, creativity research started in the late 1970s as a byproduct of the research on intelligence and giftedness (Niu, 2006). By the late 1990s researchers started to investigate a definition of creativity from a Chinese perspective (ibid). According to Niu (2006) the research on

creativity in China has only recently come to its mature stage, since it was promoted to the citizens by the early twenty-first century in Mainland China. Meanwhile, China has become a “*manufacturing colossus – a thousand-pound gorilla dominating global production of textiles, footwear and toys – and more recently electronics and white goods*” (Keane, 2006, p.291). In 2004 China held its first forum on creative industries heralding the beginning of a time of enthusiastic appreciation of the creativity concept (Greenspan, 2014), which was followed by the first international creative industries forum in Beijing in 2005 (Keane, 2006). According to Keane (2006) the level of media and governmental recognition of the Beijing Forum indicate that arguments about the economic value of culture are winning support. The interest however does not only include the creative industries, such as media, advertisement and film but creativity on an overall level.

Xu & Rickards (2007) plead that the perception of Asian economies being successful using copy-cat strategies and the simple importation of ideas is an over-simplistic concept. On the contrary, starting from a low base, China is moving rapidly to develop its creative industries and to implement policies to generate value and investment (Keane, 2006). For instance, according to Phan, Zhou & Abrahamson (2010) the amount of literature scrutinizing entrepreneurship in China is growing quickly. Likewise, research on creativity is acknowledged as creativity “*is the engine that drives entrepreneurial discovery*” (ibid, p.181). Nevertheless, the authors assert that the research body on entrepreneurship in China is still at an infancy stage (Phan, Zhou, & Abrahamson, 2010).

In both, the Eastern and the Western perspective, creativity is today predominantly viewed positively. It becomes visible in the West as creativity is promoted in schools and in the popular press and in the East as gods of originality are worshiped and creative individuals are praised (Lubart, 1999). This view can be affirmed for China as still today, the inventors of gunpowder, papermaking, printing and the compass are known and celebrated (Morris & Leung, 2010). Lubart (1999) argues that historically in every culture specific areas exist in which creativity is accepted and promoted and others where it is not. These are for example religious, economic or social organizational settings (ibid). Moreover, creativity development can be dependent on the evolvement of certain structural conditions, for example in a situation where only men receive education, as a consequence women tend to be less creative (ibid). According to Triandis et al. (1993) individualist cultures traditionally value independence, self-reliance, and creativity, whereas collectivist cultures emphasize obedience, cooperation, duty, and acceptance of an in-group authority. This is illustrated by the fact that standing out of the crowd generally is not highly

appreciated in collectivistic Chinese societies and educators in China tend to overlook the practice of teaching creativity, placing more emphasis on teaching basic knowledge and basic analytical skills (Niu & Sternberg, 2003). However, Sundararajan & Raina (2015) assert that collectivism does not categorically stand against the development of creativity, but on the contrary creativity is often related to unconformity with and critical appraisal of the overall surrounding context. The historical development and the culture specific aspects in the East and the West such as areas in which creativity is promoted, structural conditions, which facilitate creativity development and cultural dimensions play an important role in understanding the current conception of creativity.

2.2.2 Definition in the Western perspective and in China

The most often used Western definition of creativity is the ability to produce work that is both novel (i.e. original, unexpected) and appropriate (i.e. useful, adaptive concerning task constraints) (e.g. Sternberg & Lubart, 1991; Woodman, Sawyer, & Griffin, 1993; Kamylyis & Valtanen, 2010). This definition was agreed upon at the end of the twentieth century by the most important scholars in the sphere of creativity research. Ideas are considered novel if they are unique relative to other ideas currently available; they are considered useful if they have the potential for direct or indirect value in the short- or long-term (Shalley, Zhou, & Oldham, 2004). Simonton and Ting (2010) summarize this by proposing the equation $C(reativity) = N(ovelty) \times U(sefulness)$. In general, creativity can occur in virtually any domain, including the visual arts, literature, music, business, science, education, and everyday life (Lubart, 1999). Amabile, Conti, Coon, Lazenby & Herron (1996) define innovation in contrast as the successful implementation of creative ideas within an organization. Thus, creativity can be asserted a precondition for innovation (ibid). Besides, it has been argued that creativity primarily involves intra-individual cognitive processes, whereas innovation mainly represents inter-individual social processes (Zhou & Shalley, 2003; Anderson, Potočnik, & Zhou, 2014). Nevertheless, some of the literature claims that the two concepts depart more in emphasis than in substance (Mathisen & Einarsen, 2004).

Kamylyis & Valtanen (2010) find 42 explicit definitions and 120 collocations of creativity, pointing to a low consensus in the field. This is confirmed in a more recent study in which Anderson et al. (2014) propose an integrative definition of creativity and innovation at once aiming to subsume the diverse perspectives. Kamylyis and Valtanen (2010) criticized that the definitions

used are often too broad or too narrow or use stereotypes without going into detail. They propose a summarizing definition of creativity based on their commonalities in that it is “*a key ability of individuals, it presumes an intentional activity, it occurs in a specific context and it entails the generation of tangible or intangible products, which must be novel and useful*” (ibid, p.198). This definition has been partly advanced above and constitutes the backbone of this theoretical and empirical investigation.

Kampylis and Valtanen (2010) conclude that creativity has a vast amount of facets, which reside in all human beings and should be used and exploited in every nation as “*all humans are considered able and wise enough to create something ethical and constructive for everyone in society*” (Kampylis, Valtanen, 2010, p.209). According to T.M. Amabile (1998) three main components of individual creativity exist, which together form the requirement for exercising creativity in any given field: expertise, creative-thinking skills, and intrinsic task motivation. Although all three components seem to be individual factors, and the environment is not listed as a component, results from Amabile and her colleagues’ research suggest the important role of the environment (Niu, 2007). For instance, Amabile (1998) posits that employers can use several levers in order to increase the level of creativity within their firms. These are the amount of challenge they give employees, the degree of freedom they grant around processes, the way they design work groups, the level of encouragement they give, and the nature of organizational support (Amabile, 1998). Klijn and Tomic (2010) confine that the field of creativity needs more in-depth research in order to effectively develop, promote and predict creativity within organizations. They state that on top of psychological aspects an analysis of sociological, cultural, economic and biological aspects should be scrutinized in more detail (ibid).

According to Keane (2006), the word for creativity in Chinese (创意 — chuàngyì) brings together the notions of ‘creating’ (chuàng) and ‘ideas’ (yì), but with a more overt emphasis on art and imagination. In contrast to the Western perception, the Chinese view of creativity not only comprises innovative ideas, imagination and independence but moreover a contribution to the progress of the society and an execution of influence (Hempel & Sue-Chan, 2010; Rudowicz & Hui, 1997). Moreover, the view of characteristics required for creative capabilities differs from China to the West. Similar characteristics are motivational qualities, cognitive traits, and personality characteristics; differences lie in the Westerner’s appreciation of humor and aesthetic sensitivity, while Chinese consider opinionated, arrogant and rebellious as characteristics of creative

individuals (Hempel & Sue-Chan, 2010). The differences in the conception of creativity between Western and Chinese cultures are most striking when the attractiveness of creativity is considered (ibid). In the West, many of the qualities associated with creativity, such as independence or assertiveness, are valued as desirable while characteristics, which Chinese associate with creativity, carry a far more negative connotation (Chan & Chan, 1999; Hempel & Sue-Chan, 2010). This could stem from the fact that in China the desire for harmony and thus acceptance of the status quo is deeply embedded in cultural values and in addition Keane (2006) reasons that “*the capacity to imagine alternatives to the socialist plan is often constrained by political correctness and a fear of stepping over the line*” (p.286). Nisbett (2003) confines that creativity and the invention of such products as the compass and paper were produced by the desire to make life easier for the community and thus were in accordance with the principle of harmony and an emphasis on usefulness. They were thus not affected by the negative connotation of creativity. In the past decades this has changed with the environmental influences; Chinese seem to value novelty much higher than usefulness now, while in the West novelty is traditionally more appreciated (Erez & Nouri, 2010). Erez and Nouri (2010) attribute this to the fast growing economy in China reinforcing the acceptance of change in general.

Niu (2012) finds that Confucian ideology has shaped how Chinese have viewed creativity in the past and asserts that it will probably continue to do so in the near future. According to her, the Confucian notion of creativity bears the following implications. First, human beings have the potential to create and play an important role in the creation of the world and human civilization. Second, human beings are not the sole creator of the world; they have to work collaboratively with the context to achieve creativity. Third, novelty is a defining feature for creativity, but it is seen as a continuation from the past, present, and future – not necessarily a breakthrough. Fourth, appropriateness describes how human and context fit together in a changing environment during the creative process. And lastly, human creativity is a purposeful activity, and to achieve creativity, a person has to continue to learn from others, control his own emotions and behaviors to build up a character that is suitable to the environment (self-cultivation). Thus, the individual has to be open-minded, actively engaged in investigating the environment, and allow the environment to change himself or herself, and eventually to reach a comprehensive understanding of things and full awareness of the world (ibid). Consequently, it can be said that the context is more important than the individual in the Chinese notion of creativity, however it is not true that the Confucian ideology runs counter to creativity in itself (Niu, 2012). In line with this (Sundararajan, 2015) asserts that

Chinese privilege art, whereas the West emphasize science, as the primary venue for creativity. Moreover, in China creativity doesn't entail confrontation, but thrives in harmony. Lastly, it is not necessarily directed at products but at the self and an ideal mental world (ibid). The review shows that while there is a broad agreement between Western and Chinese cultures about the concept of creativity, there are also significant differences in the details.

2.2.3 External and internal impacting factors on creativity

After having looked at the historical development and the differences in defining creativity in China and the Western world, it is valuable to look at the factors impacting creativity. These are often categorized as internal/intrinsic/individual factors, residing in the individual and external/extrinsic/contextual/environmental factors, acting from the outside and impacting the individual's inclination towards creativity. Both sides will be presented in more detail, even if Anderson et al. (2014) confine that future research is still needed to identify the full range of individual differences and contextual factors for both creativity and innovation. Clearly, this is an even more delicate issue on a cross-cultural level. In the following the extrinsic and intrinsic factors impacting creativity will be recapitulated on a general level. Thereafter the case of China will be illuminated collecting important research findings.

Anderson et al. (2014) summarize that individual factors are traits, values, thinking styles, self-concepts and identity, knowledge and abilities, and psychological states on creativity. Shalley and Gilson (2004) put together a list of essential influencers of creative capability. These are *personality factors*, a certain set of *skills* and *domain-specific knowledge*.

The core *personality traits* include broad interests, independence of judgment, autonomy, and a firm sense of self as creative (Shalley & Gilson, 2004). This is confirmed by Leung et al. (2008), who state that personality studies have demonstrated that creative people tend to be nonconforming, independent, intrinsically motivated, open to new experiences, and risk seeking.

Relevant *skills* comprise the ability to think creatively, generate alternatives, engage in divergent thinking, or suspend judgment (Shalley & Gilson, 2004). Moreover, problem finding, problem construction, combination, and idea evaluation are mentioned (ibid). Leung et al. (2008) summarize intelligence, tolerance of ambiguity, self-confidence, and cognitive flexibility to be found in creative people. These skills are necessary because “*creativity requires a cognitive-*

perceptual style that involves the collection and application of diverse information, an accurate memory, use of effective heuristics, and the ability and inclination to engage in deep concentration for long periods of time” (Amabile, 1988, p.146).

Domain-specific knowledge reflects an individual’s level of education, training, experience, and knowledge within a particular context (Gardner, 1993 in Shalley & Gilson, 2004). „*Education provides exposure to a variety of experiences, viewpoints, and knowledge bases, reinforces the use of experimentation and divergent problem solving skills, and develops individuals cognitively so that they are more likely to use multiple and diverse perspectives and more complicated schemas*“ (Perkins, 1986 in Shalley & Gilson, 2004). Training can provide employees with guidance on how to generate novel ideas as a part of what they do (Shalley & Gilson, 2004). Experience in a field can also be a necessary component for creative success because according to Weisberg (1999) an individual needs some level of familiarity to perform creative work. It would be difficult to be creative in an area without having some experience and knowledge about what has historically been constituted as routine or developed as the status quo (Shalley & Gilson, 2004).

Additionally, Shalley and Gilson (2004) put forward that creativity requires some level of internal, enduring force that pushes individuals to persevere in the face of challenges. Thus, much of the research on individual creativity has focused on the importance of intrinsic motivation (i.e., the feeling of competence and self-determination on a given task) for creativity (Amabile, 1988). Intrinsic motivation increases the tendency to be curious, cognitively flexible, risk taking, and persistent in the face of barriers (Shalley, Zhou, & Oldham, 2004; Zhou & Shalley, 2003). Risk taking is contained in the notion that in order to develop new and useful products or processes, individuals need to hold the will to try and to accept possible failure. For many, this is not an easy thing to do and can depend on the individual’s predisposition toward risk as well as the organizations’ culture (Shalley & Gilson, 2004). If employees are risk averse, they are likely to continue performing in more routine ways rather than take a chance with a new, and potentially better, approach.

According to Anderson et al. (2014) contextual factors influencing the individual are task context (e.g.; job complexity; goals and job requirements) and social context (e.g., leadership and supervision; customer influence; other social influences: Feedback, evaluation, justice; and social networks). On a team level contextual factors are team structure and composition, team climate and processes and team leadership. And the factors existent on an organizational level are management

related factors (e.g. human resource practices), knowledge utilization and networks, structure and strategy, size, resources, culture and climate (including company culture and national culture), the external environment (e.g. population growth or industry related attributes), innovative diffusion and corporate entrepreneurship as organizational innovation (ibid).

If the level of creativity is to be changed, leaders need to focus on affecting the social and contextual influences in the environment that would be more likely to lead to creativity. They need to ensure that the training received provides the skills necessary to perform not only their work but also a depth and breadth of knowledge that should encourage them to be curious about other solutions, options, or ways of doing their work (Shalley & Gilson, 2004). It is assumed that this finding can be transferred to the societal environment, meaning that individuals living in a certain country and cultural community should be provided with the knowledge-base and ability to engage in discovering new possibilities and ways of thought. If the context punishes certain creative ideas, engaging in creative thought might be perceived as very risky and therefore discouraged. Thus, a key in the motivation of individuals toward creativity is to ensure that they feel able to take risks and break out of routine, safe ways of doing things (Shalley & Gilson, 2004). Concerning the society, this should be established at least in the intended areas and domains (Lubart, 1999).

The research by Leung, Maddux, Galinsky, & Chiu (2008) empirically demonstrated that multicultural experience is positively related to creative performance and creativity-supporting cognitive processes, such as the tendency to access unconventional knowledge from memory and to recruit ideas from foreign cultures for creative idea expansion (Leung et al. 2008). “*The relationship between multicultural experience and creativity is particularly strong when people adapt and are open to these new experiences and when the creative context deemphasizes the need for firm answers or mortality concerns*” (Leung et al. 2008). The authors acknowledge the critique that they have focused their study on *little c* creativity and *Big M* multicultural experience. *Little c* refers to smaller forms of creativity such as paper- and-pencil measures of creativity whereas *Big M* refers to larger forms of multicultural experience such as living in a foreign country. As a consequence, the interest in multicultural experience is far from exhausted and the relationship between *Big C*, referring to major artistic achievements or scientific breakthroughs, and *little m*, referring to exposure to cross-cultural information at home, can supplement the findings with noteworthy insights (Maddux, Leung, Chiu, & Galinsky, 2009).

Leung et al. (2008) name contextual factors related to cognition (distant future and potential gains anchored in the minds of individuals rather than near future circumstances and potential losses) and affect or emotions (positive or neutral), as having been shown to facilitate creativity. A great deal of research has demonstrated that emotions influence creative performance, however there is debate about the influencing effect of positive, negative and mixed emotions as well as moderating factors (Fong, 2006). For instance Bledow, Rosing & Frese (2013) argue that creativity results from a phase of positive affect following a phase of negative affect.

A more recent approach to creativity, especially in the workplace, encompassed a movement from actor-centered over a context-centered to an interactionist perspective (Zhou & Hoever, 2014). They unfold that companies hiring employees who seem inclined to creativity with an organizational context unsupportive of creativity will not realize their creative potential but establishing an organizational context supportive of creativity may increase employees' creativity even if they lack the natural inclination to be creative (Zhou & Hoever, 2014). This puts emphasis on the relation between intrinsic and extrinsic factors and thus stresses the value of understanding the inherent conception of creativity and the cross-cultural debate. Subsuming, one can say that, while there are individual differences with regards to creativity, contextual factors in terms of the task, the team, the organization, the social environment and influencers on the emotional state can enable the expression of creative activity and motivate its application.

2.2.4 Antecedents of creativity in China

Both individual and environmental factors play critical roles in Chinese student creativity according to Niu (2007). Chen, Leung, Li & Ou (2015) criticize that most cross-cultural research on creativity is conducted with students, while the relationship between Chinese culture and creativity in organizational settings should be further scrutinized. Nevertheless, Niu (2007) finds important implications for environmental factors in that societies in general, and families, schools, and workplaces in particular, should work actively to create an environment that protects and nurtures the individuals' sense of autonomy, on the one hand, and discourages blanket conformity, on the other, in order to enhance creativity. Any direct or indirect attempt to restrict freedom or induce uncritical obedience from the individual could stifle creativity (ibid). Niu & Sternberg (2003) attest that especially societies and schools can have a significant impact on creativity; however, this impact has not been sufficiently recognized in the first three decades of psychology study of

creativity. The authors investigate the relationship between education and creativity and posit there are three different factors responsible for the discrepancy in rated creativity between Chinese and American students namely, social values, school pedagogic practices, and educational testing systems (ibid). Firstly, the American society tends to foster more freedom and expression of individuality, whereas Chinese culture tends to encourage more conformity at the expense of [outward] creative expression. Secondly, those children who are schooled in a system that values or rewards analytical abilities over self-exploration may become less creative. Lastly, students in China are typically concerned predominantly about doing well on standardized analytical tests, and there is conspicuously less incentive for cultivating creativity (ibid).

Other studies found that graphical characters in the Chinese language help to enhance figural-spatial creativity and mathematical education at least enhances the performance in mathematical creativity tests (Rudowicz, Lok & Kitto, 1995 and Zha, 1998 in Hempel & Sue-Chan, 2010). Niu & Sternberg (2003) achieved a substantial increase in the students' creative performance by simply telling them to be creative. Thus they suggest that actively guiding individuals on how to be creative would already make a difference. Moreover the authors give concrete advice on a broader level: providing channels of self-expression and creating an environment in which the individual's sense of autonomy is nurtured and protected and lastly, relieving students of unnecessary burdens of an excessive academic workload and assessments.

According to Chen, Leung, Li, & Ou (2015), organizations should adopt effective human resource management practices in areas such as compensation, promotion, job design, career development, and training to encourage openness to different views and disagreements. The prompt that a climate promoting the development of genuinely harmonious and mutually beneficial interpersonal relationships can mitigate the worry about the interpersonal risk associated with creativity (ibid).

Zhang, Tsui, & Wang (2011) found that transformational leadership is meaningful at the group level in the Chinese context and can stimulate creativity in groups. Meanwhile authoritarian leadership was found to relate negatively to group creativity. Teams led by authoritarian leaders have low collective efficacy and engage in less knowledge sharing (ibid). In such groups, creativity is unlikely to be high and innovations are unlikely to flourish. Transformational leaders however raise followers' consciousness about the importance and value of designated outcomes, they encourage followers to transcend their self-interests for the good of the group, organization or society; and they expand followers' portfolios of needs to improve themselves and what they are

attempting to accomplish (Bass, 1985 in Zhang et al., 2011). In the 1990s it was proposed that many Chinese leaders tend to adopt an authoritarian pattern of leadership, making all the important decisions and assigning tasks to subordinates (ibid). According to Farh and Cheng (2000) the Chinese style of authoritarian leadership reflects the cultural characteristics of familial ties, paternalistic control, and submission to authority (ibid).

Kaasa and Vadi (2008) demonstrate the relationship between culture and creativity and propose a set of Hofstede's dimensions, which will most certainly lead to a higher patenting intensity, however basing their judgment on a European sample. They conclude that a region should have power distance, uncertainty avoidance, family-related collectivism (as opposed to friend-related and organization-related collectivism) and lower than average masculinity (Kaasa & Vadi, 2008). The evaluation of these factors results in relatively high power distance, low uncertainty avoidance, and high family-related collectivism in China (Hofstede, 2015), shading a positive light on the development of creativity in China.

Finally, It is often assumed that dialectical thinking as a cognitive style leads to increased creativity. The Asian epistemology in contrast to the Western perception comprises dialectical thinking being less troubled by contradiction and accepts the coexistence of opposites and even the unity of the thesis and antithesis (Paletz & Peng, 2009), which can be related to the principle of Yin and Yang. Paletz, Bogue, Miron-Spektor & Spencer-Rodgers (2015) propose that this could result in a lower degree of motivation for creative solutions. The authors acknowledge a contradiction in their study in asserting that the increased interest in novelty on the other hand, which could result from the economic boom experienced in recent years and the teaching of formal logic/linear thinking in schools could increase the motivation for creative solution finding (Paletz et al, 2015).

A number of antecedents of creativity were found in China such as the educational system, management practices and traditional principles embedded in the culture.

2.3 The measurement of creativity

Most studies have measured creativity using ratings by individuals who are believed as having advanced knowledge within the domain of interest (Shalley, Zhou, & Oldham, 2004). Thus, laboratory studies as well as field studies (e.g. in educational or organizational settings) have relied upon judges and supervisors. Anderson et al. (2014) confirm this mentioning an increase in the use of independent or observer ratings by peers, supervisors or experts. Others have relied upon

objective measures that may reflect creativity, such as patent disclosures, technical reports, and ideas submitted to suggestion programs (Shalley, Zhou, & Oldham, 2004). On the individual and team level, creativity and innovation is most often analyzed by means of survey-based questionnaires (Anderson et al., 2014). Moreover, Anderson et al. (2014) critique that a proportion of studies still rely upon self-ratings of dependent and/or independent variables, which have proven short-comings, but they acknowledge that this is declining and the methodological sophistication of study design characteristics is advancing.

Hempel and Sue-Chan (2010) confirm that studies of creativity in organizational settings usually explicitly define creativity and use subject matter experts as assessors to account for the influence of culture on the assessment of creativity. They posit that studies of culture and creativity often rely upon measures of divergent thinking (ibid). However, divergent thinking has been criticized to be weakly related to real-world creative performance, in that it measures only a superficial level of creativity (Amabile, 1996, Niu & Sternberg, 2002, Hempel & Sue-Chan, 2010). The alternative of using lay people's conceptualization of culture-specific views of creativity remains rare (Hempel & Sue-Chan, 2010). Another method to assess creativity is the consensual approach put forward by Amabile (1996), where multiple raters are used to achieve reliable creativity assessments, but this one also does not remain without criticism (Hempel & Sue-Chan, 2010).

Hempel & Sue-Chan (2010) question the impartiality of so called "objective measures", as they are subject to reinterpretation by examiners. Failure to consider rater (i.e. the field) effects in creativity assessment can result in bias, because judgment of novelty and usefulness are important in promoting acceptance and adoption of new ideas (Csikszentmihalyi, 1997). Hempel & Sue-Chan (2010) likewise criticize that often a distinction between novelty and usefulness is not made when assessing creativity, which is necessary when applying the corresponding definition since the importance of each could vary depending on the field of interest, across domains and cultures.

Sundararajan & Raina (2015) criticize that non-Western phenomena of creativity are in the current research often overlooked because of a bias residing in the evaluation of collectivist and individualist cultures (i.e., the social norm account of Asian creativity). The collectivist and especially Chinese culture is often associated with "*conservative, follows tradition, submissive, concerned with Face, conforming, and so on*" (ibid, p.5). The authors point to the fact that creativity however often resides in critical appraisal and transformation instead of unquestioned conformity, that it is often intrinsically motivated and not extrinsically initiated and lastly it is a desired choice

by the individual (ibid). Similarly, the Chinese principle of metaphysics yin and yang resembles the coexistence of antagonistic and reinforcing forces and thrives in their preservation, rather than their dissolution (ibid). According to the authors, this makes it possible for individuals to conform to conventions in one's outer, public reality, while remaining a nonconformist in one's inner reality, which is guiding the individual to engage in creative thought. In essence, the stereotypical acceptance of collectivism as running counter to creativity is to be neglected (ibid). Livingstone, Palich & Carini (2002) support this notion when stating that the contextual factors provide the conditions for creativity, but it is actually forces within the individual (i.e. creative abilities, intrinsic motivation, etc.) that drive creativity. According to the logic of contradiction, tension and contradiction are the drivers of developmental change, suggesting that creativity occurs when there is a misfit between individual and contextual factors or between the organization and its environment (Livingstone, Palich, & Carini, 2002).

According to De Dreu (2010) the multiplicative equation by Simonton and Ting allows for an analysis whether culture influences usefulness, novelty or both parameters and thus creativity in a certain field. Moreover, the weight of the criteria and the kind depends on the cultural influences (ibid). Creative outputs can be termed a function of cognitive flexibility of considering many possibilities. They can also be a function of cognitive persistence involving a structured exploration of few, distinct areas (ibid). According to the author, culture may influence the likelihood with which a one or the other course of processing is taken. Moreover, he mentions the influence of task type and time pressure (ibid). Cultural background shapes what is important to the individual, what should be considered relevant issues and problems, what constitutes threats and opportunities – it may explain why certain cultures, at certain times, are so creative in some domains and others not. He concludes that people may be highly creative in domains that 'fit' their cultural values, for example while preserving smooth interpersonal relations among individuals from cultures valuing harmony and group cohesion; and more creative in acquiring and maintaining independence and individual freedom among individuals from Western cultures (De Dreu, 2010).

Subsuming one can say that various scales exist when studying creativity in the organizational environment, however it seems unclear whether one offers significant advantage over the others.

2.4 KEYS: Assessing the Climate for Creativity

By now it is clear that innovation and creativity are highly relevant in an organizational context, comprising the individual, group, and organizational levels. Several instruments for measuring work environments, which foster creativity and innovation based on a combination of both personal qualities and (work) environment factors exist (Mathisen & Einarsen, 2004). The KEYS framework is one of the few instruments which meets the following criteria: its aim is to assess the quality of the social environment of organizations in relation to innovation and creativity, there is information on psychometric characteristics available (the original sample consisted of 3,708 subjects from 26 companies), the instrument is deployable for research as well as commercial use and it has been described in an international journal (Mathisen & Einarsen, 2004). The name derives from the ambition to provide a collection of the key characteristics underlying the climate for creativity.

“KEYS was designed to assess perceptions of all of the work environment dimensions that have been suggested as important in empirical research and theory on creativity in organizations” (Amabile, Conti, Coon, Lazenby, & Herron, 1996, p.1155).

The model focuses on the individuals' perceptions and the influence of those perceptions on the creativity of their work rather than on inherent personality characteristics or organizational structures (Amabile et al., 1996). For that reason it usually uses a self-reporting questionnaire. It is deployed to measure individuals' work environment (climate) perceptions focusing on the organizational level, individual level, group level and supervisory level support/inhibition (Amabile, 2010). It is theoretically grounded in five contextual components, namely *the Encouragement of Creativity, the Autonomy of Freedom, the Resources, the Pressures and the Organizational Impediments to Creativity*, which were derived from reviewing previous research (Mathisen & Einarsen, 2004). These affect the three individual components necessary for an individual to produce an innovative idea, namely the expertise, the creative skill and the task motivation (Amabile, 2010).

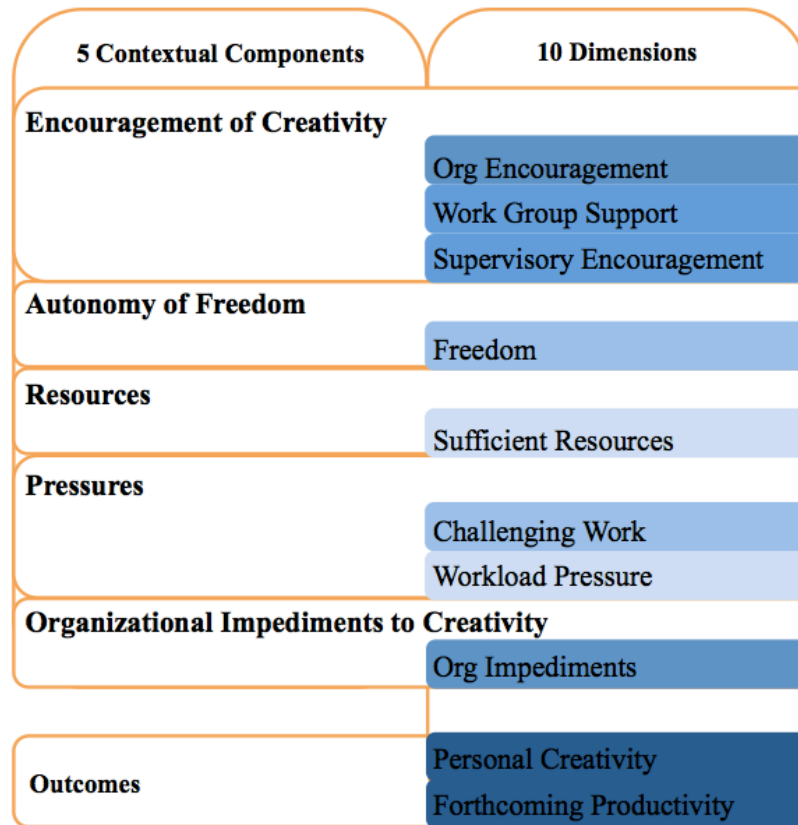


Figure 2: KEYS Contextual Components and Dimensions

According to the KEYS users guide, its value lies in its capacity to accurately identify the conditions necessary for creativity and innovation to occur (Amabile, 2010). It provides a quantitative picture, which can be easily compared to other groups and organizations. The 78 numerical items on KEYS form 10 *Work Environment Dimensions*. Four dimensions describe *management practices* (Freedom, Challenging Work, Managerial Encouragement, Work Group Support), which are defined as “*allowing freedom and autonomy in the practice of work; providing challenge; specifying clear strategic goals and forming work teams comprised of individuals with diverse skills and perspectives*”. Two describe *organizational motivation to creativity* (Organizational Encouragement, Organizational Impediments), which is defined as “*the basic orientation of the organization toward innovation; shared vision; providing rewards and recognition; lack of internal politics, and lack of overemphasis on the status quo*”. And two describe *resources* (Sufficient Resources, Workload Pressure), which comprises “*everything the organization has available to aid in the area targeted for innovation, including time, funding, information and materials*”. The remaining two dimensions do not describe the work environment but the perceptions of *outcomes* – the creativity and productivity of the work actually being done in

the organization (Amabile, 2010). Two dimensions, namely “organizational impediments” and “workload pressure” are hypothesized to relate negatively to creativity and are evaluated as “lack of organizational impediments” and “realistic workload pressure” to make the results comparable in absolute numbers. The final KEYS report includes graphical and verbal presentations of the results. As a part of its diagnostic function it can specify particular areas of a work environment that are relatively strong or weak at a given point in time, helping managers and organizational leaders to identify directions for action (Amabile et al., 1996). In order to gain a general understanding, it is valuable to take a closer look at each of the 10 dimensions belonging to the five contextual components presented in Appendix B.

Mathisen and Einharsen (2004) consider the KEYS framework a promising tool for the analysis of the work environment for creativity. They argue that it includes impeding factors, which many other instruments fail to take into account, and it assesses climate based on the cognitive schema approach measuring individual perceptions of environmental factors on different levels (ibid). Moreover, factor analysis shows that the several dimensions are not largely redundant (Amabile, 2010).

Amabile et al. (1996) assert as a necessary condition for the evaluation of climate that the respondent actually has experience and knowledge of that climate and that therefore it might be more appropriate to measure it at department or group level instead of aiming for a holistic organizational view. Finally, they warn that the interaction of all factors influencing creativity and innovation is not finalized and future research should deepen this understanding (Amabile, 2010).

3.0 Methodology

In order for the reader to better understand the execution of the research, this section explains the methodological approach taken and the overall research design that is pursued. At this stage the problem to be researched is clear and the sort of research enquiry will be identified in accordance with a suitable philosophy of science. This will serve as the foundation for a decision upon the structure of the research, the type of data, the units of analysis, the method of data collection and the sampling strategy. In sum, it justifies why this study contributes to the understanding of the current climate towards creativity in China.

3.1 Research Design and Sample

It is widely acknowledged that the purpose of social research is to scrutinize the wider environment to understand people's attitudes, opinions and behavior for instance in a certain cultural setting (McGivern, 2006). The investigation is used for effective planning and decision making for example in policy and strategy development and implementation (ibid). Following the research question, an exploratory research design is used. According to McGivern (2006), exploratory research is aimed at achieving a greater understanding of a certain issue, it is *"useful in helping to identify a problem, clarify the nature of a problem or define the issues involved"* (p.53). Its nature or purpose is not to deliver a definitive or conclusive answer to the research question. Nonetheless, increasing the understanding about the current climate towards creativity is a worthy endeavor. For this aim, a cross-sectional design was used, involving one round of data collection providing a snapshot of the situation in one point in time (McGivern, 2006, p.100). This is inferred in the research question as the "current climate" is to be explored. The data collection is executed through in-depth interviews.

Concerning the sampling strategy in exploratory research the sample size is often relatively small (McGivern, 2006, p.283). In order to justify the source of data, it is crucial to define the relevance of the chosen sample units to the research problem. In this case the research subjects are defined in terms of their experience and background. The applicable term is classified as network sampling or snowball sampling. All participants were volunteers, recruited to the study through personal contacts. The demographic profile, the geographic place of residence and the nature of past

experience were not predefined in detail, except for the fact that they should vary to a considerable degree in the absolute sample (a mix of young and mid-aged, Chinese and non-Chinese, highly educated). All participants live in an urban environment, in China, in Germany or in Denmark. As common in social research, the population of interest is very large but it was ensured that a satisfactory amount of elements regarding the population are represented. The final sample consists of 9 interviewees. Both former expats have lived in China for more than 3,5 years.

The population was predefined in five categories:

- Chinese international management students with some working experience in China
- Chinese employees working in China
- Expatriates having lived in China and maintaining a deep connection with the country
- University representatives having experience with China-related topics
- A person interested in the topic holding extensive knowledge (the expert)

| Type | Contact | Age group | Gender | Nationality | Place of Residence |
|---|--------------|-----------|--------|-------------|--------------------|
| Former Expat I | Face to face | Mid-aged | Male | German | Germany |
| (Investment Partner at a Venture Capital Firm focusing on the Asia Pacific region) | | | | | |
| Former Expat I | Face to face | Mid-aged | Male | German | Germany |
| (Vice President for Asia/Pacific & India of a business line, he built up production, application technology (7 labs) and R&D (2 centers) departments) | | | | | |
| Local Employee I | Voice call | Young | Female | Chinese | China |
| (Started working at a MNC in summer 2015 in Guangzhou) | | | | | |
| Local Employee II | Voice call | Mid-aged | Female | Chinese | China |
| (Works at a MNC in Product Development in Shanghai) | | | | | |
| University Representative I | Voice call | Mid-aged | Male | Danish | Denmark |
| (Professor at Copenhagen Business School who's primary research areas are China and cross-cultural cooperation) | | | | | |
| University Representative II | Face to face | Young | Female | Chinese | France |
| (Coordinator of the International Students' Program, Office of International Affairs at Sun Yat-Sen University, Guangzhou) | | | | | |
| Chinese Student I | Voice call | Young | Female | Chinese | Germany |

| | | | | | |
|---|--------------|----------|--------|---------|---------|
| (Experience from living in China and Germany) | | | | | |
| Chinese Student II | Face to face | Young | Female | Chinese | Denmark |
| (Experience from living in China, France and Denmark) | | | | | |
| Expert | Voice call | Mid-aged | Male | German | China |
| (Currently building up an R&D department for a chemical company in China) | | | | | |

Figure 3 – Interview Participants

As Patton (1999) pointed out, issues of quality and credibility can intersect with audience and intended research purpose. One technique for enhancing the quality of analysis is coined triangulation suggesting that multiple methods of data collection and analysis “*provide more grist for the research mill*” (Patton, 1999, p.1192) in facilitating cross-data validity checks. This study deploys triangulation of methods, in qualitative primary and secondary research, as well as triangulation of sources, examining the consistency of different data sources within the same method (ibid). The latter can be found in the collection of perspectives of people from different backgrounds and opinions such as employees, students and professors. The researcher should capture arising differences and commonalities leading to a realistic representation of the explored phenomenon (ibid).

The study follows neither a purely deductive nor purely inductive approach. It is an iterative progress involving both inductive and deductive reasoning. This is because an operational framework grounded in theory is used but the theory is not directly tested. Moreover, this study is not specifically aiming at but possibly contributing with new findings, which could be part of theory building. It should be pointed out that a social constructionist view was adopted. This paradigm, or belief system, assumes that “*all social reality is constructed, or created, by social actors*” (Pole & Lampard, 2002). Bryman and Bell (2011) point out that social phenomena are thus not only produced through social interaction but are in a constant state of revision, and the researcher himself presents a specific version of social reality, which cannot be regarded as definitive. Since it is aimed to deliver a picture of the current conception of creativity and since human behavior changes according to the situational context this paradigm applies in this thesis.

3.2 Data Collection

Qualitative research is concerned with insight and understanding complex issues – particularly social issues – rather than measurement (McGivern, 2006). It aims at deeper and more emotional responses. It is intended to extract a comprehensive depiction of creativity based on what people think and feel about different elements involved in evaluating this phenomenon (Amabile et al., 1996). *“The findings from a qualitative research study cannot said to be representative in the statistical sense, [...] but it is possible nevertheless to generalize the findings from the sample to the wider population”* (McGivern, 2006, p.59).

This study uses qualitative data in its primary research approach. Collecting data through in-depth interviews allows a flexible style of questioning and is particularly appropriate for more sensitive topics (ibid). The chosen area of focus is sensitive in that it is not discussed on a regular basis, for example with colleagues, friends or family and may depend on cultural background (De Dreu, 2010). The interviews were non-structured according to McGivern (2006), as they simply included topics to be discussed and no list of explicit sub-questions, which corresponds with the exploratory nature of the study. Open-ended and non-directive questions in most cases accompanied by probing to encourage more elaborate responses were deployed. Each interview was initiated through e-mail correspondence, in which the researcher stated briefly why the individual was chosen, the topic of the study, the length of the interview, the number of questions and the interviewers name and background. After the first interviewee indicated that his answers could have been more elaborate when being presented with the questionnaire beforehand, the subsequent participants were provided with the interview outline earlier. This was worthwhile since there was no unfolding technique used, but instead reflecting about each topic prior to the interview benefited data generation. There was a clear introduction and warm-up phase (i.e. funneling), and a wind down signaling the end of each interview. In the beginning, confidentiality was assured, the possibility to demand the interview transcript was communicated and the purpose of the research and the underlying reasoning was explained in more detail. Moreover, the main ideas were clarified such as the aim for “a general view compared to an industry or job specific view on creativity” and “the meaning of creativity in an economic sense” in accordance with the definition by Amabile (1996) being a precondition for innovative product and service development. By means of actively listening, observing the tone of voice and showing interest in the interviewees’ perspective, rapport between both parties was created.

Quantitative data is mainly acquired from secondary sources, which serve as a reference base to justify the validity and appropriateness of the primary data (Pole & Lampard, 2002). Moreover, “*secondary data provide a very useful context for the interpretation of primary data, and will increase the richness and depth of interpretation and reporting*” (McGivern, 2006, p.149). Since the data was originally gathered for a different purpose, they need to be evaluated on timeliness, quality and objective. All reports used were published in 2015, they are official documents by well-known agencies and their objective is mainly to inform the players of the global marketplace. Thus, the philosophy of science or main paradigm guiding the research was a hermeneutical approach. It emphasizes the circle of interpretation in the search of meaning among the data collected. The gained knowledge follows a cycle of exposure to data, interpretation and re-exposure to data (Kuckartz, 2014). This creates a knowledge-building experience resulting in reflection, reinterpretation and a greater understanding of the data collected. Based on this knowledge, theory is applied on the micro and macro level environment.

The interview outline comprised 11 topics based on the KEYS framework (Appendix E + F). Thus all of them were relevant and necessary and succeeded in keeping all interviewees’ attention throughout the interview. All interviews were audiotaped and transcribed and lasted 25:45 – 47:28 minutes. After a short introduction, respondents were first asked about their relation to China. This was followed by questions about their perception of several environmental dimensions impacting the inclination to engage in creative thought in China.

The expert interview followed a slightly different approach. It lasted 69:34 minutes. There was no introduction needed from the researchers’ side, since the interviewee was meant to express his conception of creativity in China without any prior frame of reference possibly inhibiting his account. He was asked about his relation to China, his conception of creativity in China in every day life, in general and compared to the Western view. The phase out was accomplished by a summary provided by the researcher, which was confirmed and rounded off by the expert. The interviewee was provided with the interview outline before the actual interview taking place.

3.3 Data Analysis

The KEYS framework fits especially well in the context of this study, because it takes into account the psychological context of innovation, in other words rather than assessing the personal or organizational characteristics, it focuses on the environment perceptions that can influence the level

of creative behavior (Amabile et al., 1996). For this reason, the KEYS framework was chosen and adapted in order to allow for a country-level analysis.

For the data analysis the procedure was closely related to the grounded theory approach, which belongs to the inductive reasoning method. Strauss and Corbin (1999) developed this approach drawing on one of the most widely cited books in social sciences by Glaser and Strauss ('The discovery of Grounded Theory: Strategies for Qualitative Research' published in 1967). Two types of coding are deployed in this study: open coding and axial coding. The first phase of analysis consists of open coding defining codes, which were often touched upon while answering various questions. The second phase was axial coding, grouping conceptually similar codes and relating them to higher-order themes in accordance with the predefined KEYS framework. The final analysis presents the derived outcome in line with the ten dimensions. There was a constant movement back and forth taking place between participants' raw data, and the KEYS framework and the creativity literature reviewed. This helped in finding higher levels of conceptualizations connecting the themes that emerged, which are presented in the discussion section. Moreover, the researcher translated the data in a numerical representation following the original quantitative picture developed for commercial use of the framework.

Adaptation of the KEYS framework to a country level and method of interpretation

Creativity in the economic sense was defined in the beginning of each interview as a precondition for innovative products, processes or services. How the climate towards creativity is measured using an adaption of the KEYS framework is visualized in Figure 2.

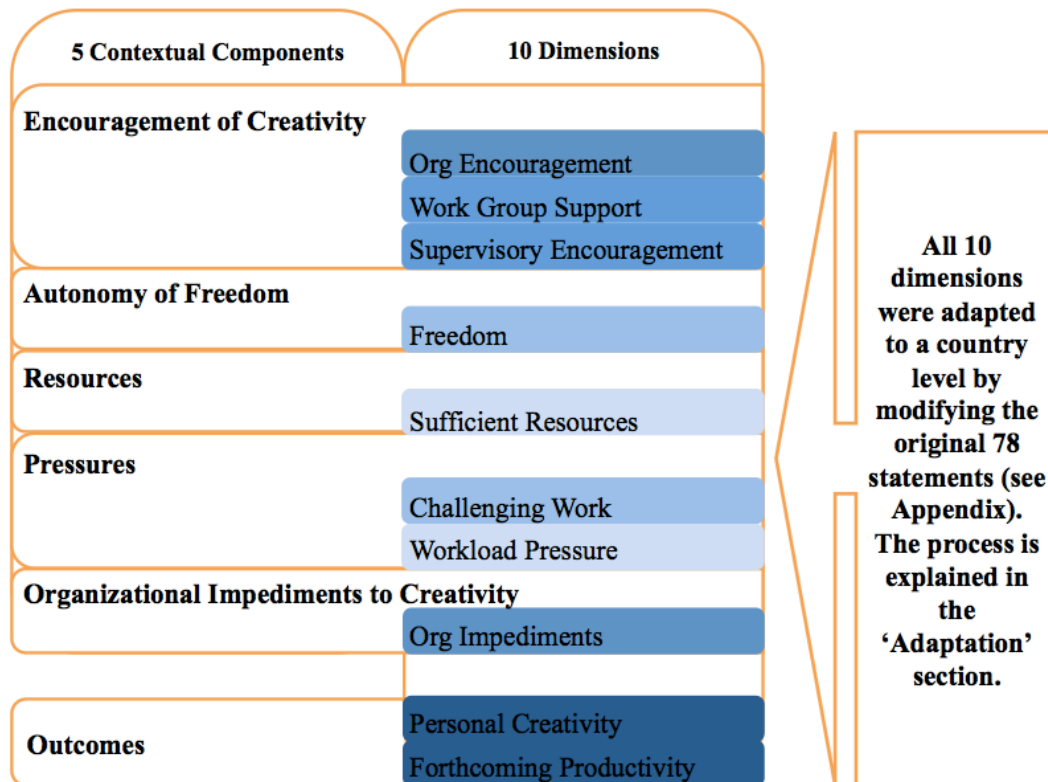


Figure 2: Adaptation Process

In order to transfer the KEYS framework from an organizational level to a country level, the dimensions were modified. Hence, the label “Organizational Encouragement” can be described as a country level encouragement of creativity. Participants were asked if they perceive organizations and institutions as being held to encourage creativity in China. This dimension is aimed at making the interviewee reflect his/her general impression of support in thinking creatively in China. The dimension “Supervisory Encouragement” is aimed at the perception of the relationship between the superior and the subordinate as being conducive to creativity. During the interview, the question did not specifically contrast distinctive types of companies or institutions or hence supervisors. The dimension “Workgroup Support” is intended to derive an elaboration upon the perception of the ways in which working in groups was seen as encouraging creativity in China. In this question also no difference was made between groups of young people or mixed or any other structure. The label “Freedom/Autonomy” aimed at the day-to-day experience of people having control over their decisions in terms of work and after-work time at any stage in life. The label “Resources” asked for the interviewee’s impression of resources available to people living in China, that are perceived as necessary to make creativity possible. In all interviews, data, material, budget, information and education were named when asking for more details about the interviewee’s account of this

question, however as will be seen in the analysis, more dimensions came up during the conversations. The label “Pressures” aimed firstly at positive pressures, which were named “Challenging Work” by Amabile et al. (1996). In the country-level context this can be related to people seeing their role in the society as contributing to the overall development, accepting challenge and thinking creatively in order to fulfill their role actively or passively in line with their desires. This dimension was changed the most during the evaluation, because eventually it led to a general consideration of people being interested in engaging in creative thought. It was thus named “Challenging Work/Interest” by the researcher. The negative pressure was originally named “Workload Pressure” but can in this context also be referred to as Societal Pressure in asking for aspects that make people feel unable or unwilling to engage in creative thought, which derived various factors exerting pressure on individuals in context of their economic situation. The label “Organizational Impediments to Creativity” was translated to a country level, in not only asking for organizations in China but also aspects existent in the society and culture that can hamper creativity. The Outcome variables were part of the cooling down phase, in which participants were encouraged to reflect about their own experience and personality. Interviewees were asked if they felt like they could more effectively engage in creative thought in China than abroad. Lastly, they were asked to give an opinion on the current state of China’s economy and if they thought that China was keeping up successfully the economic growth of the country in the global competition.

In the analysis a mix of a “bottom up”/data driven approach and a “top down”/framework driven approach was used. A code frame was deducted from the 78 KEYS questions that are originally answered by the participants giving a clear outline of what was specifically looked for in the data (Appendix C). Moreover, some statements were added to the existing list. As a consequence it became possible to identify issues, solely belonging to one dimension deriving a clear picture. A descriptive level of analysis is presented in the Primary Data section by unfolding the interviewees aggregated perspectives. It was refrained from discussing the viewpoints of the different groups of participants in depth as this would not have added value to the general understanding. The researchers’ interpretation of the current climate towards creativity derived from the primary data is illustrated in a graph in the Discussion section, in which a high number indicates a positively perceived influence on creativity. It becomes apparent that some categories are evaluated as being more conducive to creativity in China than others. The true interpretive work of merging the

different stages of analyses into one comprehensive representation is thus accomplished in the Discussion section.

3.4 Delimitation and Critique

According to McGivern (2006) a sample should in the best case be representative of the whole population, meaning “*the results provided by the sample are similar to those that would have been obtained had we conducted a census* [a collection of data from every element in a population]” (p.276). However, it is immeasurable if the sample provided delivers results that on average would have been achieved with a population census. Using the means of triangulation, it is alleged that the data gathered is representative. Other groups’ perceptions that might have been useful to weigh in are Chinese government representatives, employees of SOEs, MNCs and Chinese private companies, representatives of different industries such as the creative industries, Chinese citizens from rural parts of the country and so on. While these might have given relevant clues about the current climate towards creativity in China, it is believed that the most important categories, especially aiming at relevant information for internationally active parties, were included and a comprehensive illumination of the phenomenon was achieved. However, a limitation could be that the young participants were mostly female and the older ones were male, potentially leading to a biased outcome.

Usually the interviewer has made assumptions about the topic investigated. It is crucial to be self-aware and not leading the interviewee in any direction or appearing to be judgmental (McGivern, 2006). Enough rapport was established and the interviewees recognized that the interviewer asked for individual opinions and was not interested in confirming prejudices or Western stereotypes. Since the attributes underlie a subjective connotation they have been interpreted in different ways according to the specific experiences of each interviewee. Thus, the meaning of the response could also be unclear and ambiguous for the researcher to interpret (McGivern, 2006). It is possible that because of social desirability concerns, some participants felt like they had to answer in a certain way, that is conforming with the Eastern societal view or the Western view. This was avoided by choosing participants who were judged to express their own opinion. Under-reporting was thereby circumvented. All interviewees were moreover given the possibility to add what they regarded as important and not covered during the conversation at the final stage of the interview. Concerning the expert interview, even if the questionnaire used differed

from the rest, the analysis solely scrutinized the factors included in the KEYS dimensions in order to make it comparable. Thus in accordance with the requirements by McGivern (2006), all questions were relevant for the research and their purpose was clear.

Modifying a framework from an organizational level to a country level bears the risk of not being understood by the participants and not attaining the kind of information aimed for. Two interviewees, a former expat and the expert, compared the prevailing structures in China to an organization and none of the interviewees had difficulties in considering the country on such a level of abstraction. Thus, even if the original KEYS framework is relatively old and today not used for a similar evaluation, the undertaking was fruitful. The question concerning negative pressures should have not only focused on workload pressure, as predefined by the KEYS framework, but inhibitive pressures in general. This should have been anticipated by the researcher while adapting the framework to a country level. Nevertheless, the findings were not diluted, since negative pressures were extensively discussed in the question concerning organizational impediments. All in all, a rich catalogue of outcomes was derived giving valid reason for the present analysis.

Concerning the secondary data, it remains, that the innovation input factors of human capital in the GII bring fewer immediate benefits compared to other input factors, meaning that the good performance of China in the index cannot necessarily be traced to its development of human capital alone. More impactful factors are PISA scales, university rankings, cluster development and the domestic credit to private sector for example. Indeed, the indicator of knowledge-intensive employment is very low.

It should be mentioned, that neither moderating factors nor intrinsic factors, such as tolerance of ambiguity, were explicitly derived from the primary data, as the perception of the environmental conditions being conducive to creativity is at the heart of the analysis. Thus intrinsic factors were not intensively discussed and the author of this study is not in the position to make a judgment on the intrinsic inclination towards creativity in Chinese people per se. Neither is it possible to evaluate the current conception of creativity, which is vastly impacted by cultural dimensions (Sundararajan & Raina, 2015). It is nevertheless valuable to assess these factors in the literature reviewed, since it is valuable for the reader's understanding of the conception of creativity and the complicity related to the topic and the current academic debate. Besides, those factors were touched upon while analyzing the Challenging Work/Interest dimension.

4.0 Analysis

4.1 Secondary Data

Three secondary sources are presented in order to illuminate the discussion on the climate towards creativity in China. It is a purely descriptive account summarizing the content of the reports without any interpretation or valuation provided by the researcher, this is instead located in the Discussion section.

The Global Innovation Index (GII) ranks the innovation performance of 141 countries and economies around the world based on 79 indicators. The GII has established itself as the premier reference among innovation indices and has evolved into a valuable benchmarking tool to facilitate public-private dialogue (Dutta, Lanvin, & Wunsch-Vincent, 2015). The outcome for China will be summarized.

The report ‘The China Effect on Global Innovation’ by McKinsey Global Institute, the think-tank of McKinsey & Company, finds that in several sectors China is taking the global lead in two areas of innovation: firstly in improving consumer products and the business models used to sell them, secondly in making manufacturing processes cheaper, quicker and better. The outcomes of the report will be summarized in more detail.

Lastly, some insights on the 13th 5 Year Plan (FYP) for the years 2016-2020 will be presented, based on a PwC review of the Fifth Plenary Session of the 18th Communist Party of China (CPC) Central Committee ending in Beijing on 29 October 2015. All three sources clarify the aspects inherent to the discussion contained in this study and serve with valuable information.

4.1.1 Global Innovation Index 2015

According to the Global Innovation Index 2015 (GII), innovation-driven growth is no longer the prerogative of high-income countries alone. China is designated a (upper-)middle-income country and takes in rank 29 out of 141 economies. Seven innovation pillars are evaluated of which the first five define aspects of the environment conducive to innovation within an economy (inputs) and the last two outline the results of innovative activities within the economy (outputs).

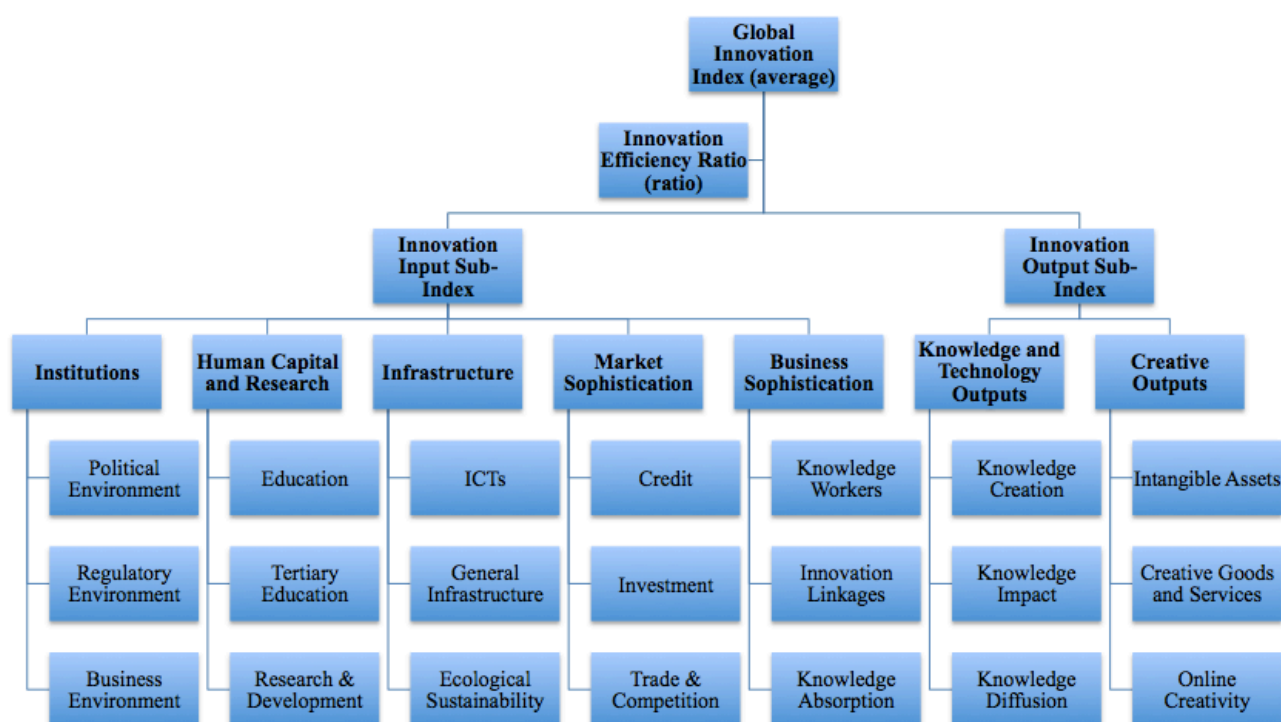


Figure 5: GII Setup

A more detailed description of all indices and a detailed assessment of China can be found in Appendix D and in the original report.

“The GII leaders have created well-linked innovation ecosystems where investments in human capital combined with strong innovation infrastructures, contribute to high levels of creativity.”

The leaders are the 25 top ranking economies, which consistently score well in most indicators and have strengths in areas such as Information and Communication Technologies (ICT) and Business Sophistication; they also create high levels of measurable outputs including Creative Goods and Services. China achieves scores closer to those of high-income countries in four of the GII pillars (Market Sophistication, Business Sophistication, Human Capital and Research, and Knowledge and Technology Outputs). Outperformers, a category China belongs to, possess strengths in Creative Outputs (intangible assets, especially ICT) and Business Sophistication (knowledge workers, innovation linkages, and knowledge absorption) while also creating high levels of creative goods and services (for example national feature films or advertising).

Not only quantity is considered, but also innovation quality, which is measured by university performance, the reach of scholarly articles, and the international dimension of patent applications,

where middle-income economies are seen as narrowing the gap to high-income economies. In the group of middle-income economies China is the leader fuelled by an improvement in the quality of higher-education institutions and increasing number of patent applications. In general the innovation quality score has improved in China more rapidly than both those of its BRICS neighbors and the rest of the top 10 ranked in the composite.

China is labeled an ‘innovation achiever’ by the report because its economy performs at least 10 percent better than its peers (compared to 38 upper-middle-income countries such as Thailand, Turkey and South Africa) for the respective level of GDP. Innovation achievers demonstrate rising levels of innovation input and output results because of improvements made to institutional frameworks, a skilled labor force with expanded tertiary education, better innovation infrastructures, a deeper integration with global credit investment and trade markets, and a sophisticated business community. It is conveyed that on average, the technology gap between developing and developed countries is narrowing as well.

Although the innovation system literature puts great emphasis on the role of human capital and institutions for innovation and development, according to the report these innovation input factors seem to be the most difficult of all inputs in which to achieve good scores, both in general and for low-income countries in particular. These results do not necessarily imply a lack of policy interest in these areas, but they might suggest that it is easier to outperform peers in other inputs.

There is a wide heterogeneity among enterprises in emerging economies. Besides top-performing companies, emerging economies also host large groups of micro and small businesses operating far below the frontier of innovation with basic technologies and low levels of human capital. This suggests that raising the productivity of these smaller producers through innovation and the adoption of better technologies will have a substantial aggregate impact on a country’s economic growth, employment, poverty alleviation, and sustainable development. At the aggregate level and in comparison with data from developed economies, innovation in developing countries is more incremental than radical and takes place in an informal setting more often than it does in formal Research & Development (R&D) laboratories. For emerging countries that are catching up (e.g., China), experience shows that technology adoption alone is no longer sufficient to maintain a high-growth scenario. These countries must invest in innovation, and governmental support is crucial for promoting it. Innovation is seen as key to addressing pressing societal problems such as pollution, health issues, poverty, and unemployment. The role and significance of innovation goes

beyond the objective of economic success. Since innovation processes are also more oriented towards knowledge diffusion and absorption, instead of investing in R&D, to a large extent firms in emerging economies try to reap the benefits of catching up through adoption and international technology transfer, and favor tax incentives over direct R&D support grants. According to the authors, emphasis in emerging countries should be placed on gaining knowledge as much as on providing the right framework conditions that stimulate a process of innovation and knowledge diffusion: political stability and supportive institutions; good and widespread technical and tertiary education to enhance absorptive capacity; reliable and widespread basic infrastructure; excellent provision of ICT property rights; and stronger links and interaction between publicly funded research institutes and private companies. Nevertheless, the ultimate policy mix will depend on a country's broader development objectives, and will have to be made in collaboration with all the stakeholders to maximize the chances of success. Good coordination between ministries and between the private and the government sectors is therefore essential.

ICTs represent a general-purpose technology that are a foundational driver of modern economic growth, accounting themselves for as much as one-quarter of economic growth in many developing nations today. China is assessed to do a reasonably good job of limiting government-imposed costs on ICT products that could boost government revenue or increase the competitiveness of the domestic ICT industry. The report presents a whole chapter on how science and technology (S&T) policy reform and innovation have been the important drivers for China's remarkable GDP achievement and have accelerated progress in higher education and R&D. Accordingly, the wide range of S&T policies implemented and adjusted over the past three decades has effectively advanced the development of an innovation ecosystem, as well as significantly increasing the size of the educated workforce, laying out a solid foundation for China's future development. For more information, the reader is advised to review the according chapter in the official report.

The report states that the Thousand Talents Recruitment Program launched by the central government was very effective. It has so far drawn more than 2,000 overseas Chinese scholars and leading industrial innovators back to China, pushing talent mobility. The strategy of rejuvenating the nation's economy with science and education has accelerated the development of China's top education system, increased the quantity of undergraduates and Master's graduates, and increased investment in talented researchers, leading to an increase of both the quality and quantity of researchers.

Over the last two years, the Chinese government issued the 2014–2020 ‘Action Plan on the Implementation of National Intellectual Property Strategy’ to ease the market processes for transactions pertaining to intellectual properties. China has set a national target of becoming a leading innovative country by 2020. Reaching this target, according to the authors, depends on continuing policy reform to further improve a balanced relationship between the government and market forces; to establish a more comprehensive innovation eco-system; to nurture a legal and regulatory system that encourages investment in innovation and entrepreneurship by all sectors; and to foster open and fair competition among private, state-owned, and foreign enterprises.

4.1.2 McKinsey&Company: The China Effect on Global Innovation¹

‘The China Effect on Global Innovation’ by McKinsey Global Institute from October 2015 finds that in many ways, Chinese industry is more innovative than generally acknowledged. According to the authors China needs to evolve from an innovation “sponge” (i.e., from absorbing and adapting global technologies and knowledge) to an innovation leader to sustain GDP growth in the coming decade. The main reason is that other drivers of growth, such as an expanding labor force and heavy capital investment (specifically the return on fixed asset investment), decline. The authors determine that China has the potential to meet its so called ‘innovation imperative’ in sustaining economic growth and could emerge as a driving force in innovation globally. Based on its size in terms of population and economy featuring an enormous and increasingly demanding consumer market, the country can serve as a growing source of innovation for many. Moreover, the authors see it as a logical location for R&D and rapid commercialization of new ideas, also for globally operating companies. The Chinese model of rapid, low-cost innovation is revealed and its potential in being applied around the world and possibly disrupting a range of industries is stressed.

Each year China spends more than \$200 billion on research (second only to the United States) and turns out close to 30,000 PhDs in science and engineering. Moreover, it leads the world in patent applications. The country has become a strong innovator in some industries, largely by serving domestic demand. However, when it comes to the actual impact of innovation – as measured by the success of companies in commercializing new ideas and competing in global

¹ The report defines innovation broadly as encompassing both “frontier” and “incremental” innovation evaluating both national and firm-level data (Woetzel et al., 2015, p.16)

markets – the picture is mixed. In the more challenging types of innovation, such as creating new drugs and designing new commercial airliners, China is still not globally competitive. The report identifies expanding and raising the productivity of the service sector and further improving manufacturing efficiency through digitization as the two main goals to keep up GDP growth. China is at an early stage of the shift from manufacturing to a more service-based economy: in 2015, services accounted for just 49 percent of GDP and 40 percent of employment. The Chinese government's goal is to raise service-sector output to 55 percent of GDP by 2020. The analysis finds that China performs well in customer-focused and efficiency-driven innovation archetypes, but is catching up in engineering- and science-based archetypes, where it now still lags behind. This is illustrated by the fact that China outperforms Germany by far in absolute R&D spending, the number of PhD degree holders and the number of universities, nevertheless the amount of patents issues was smaller as well as the total citations of papers and the number of coauthored articles. Taking into account that China is a country of 1.3bn inhabitants and Germany of 80mn, this reflects how much catching up China still has to do. According to the authors, the Chinese government has long recognized the need to expand the economy's innovative capabilities leading to more output from higher value-added products and services and more workers in high-paying, high value-added employment. Government programs have focused on raising R&D spending, training scientists and engineers, and building research institutions. However, these investments have not yet translated into the successfully commercialized innovations that can substantially raise productivity in the economy. The above-mentioned four types of innovation, namely customer-focused and efficiency-driven, engineering- and science-based archetypes, will be scrutinized more closely.

Customer-focused innovations are derived based on the advantageous characteristics of the Chinese economy. These offer the possibility to commercialize new ideas quickly, as consumers' acceptance of early iterations of products and services as well as the willingness to give feedback is high enabling rapid refinements. Internet services make it possible to scale up quickly which is the reason why in China, a niche market such as online gaming is bigger than a major industry such as autos in other countries. A new wave of entrepreneurs is emerging and starting to drive customer-focused innovation. Increasingly Chinese youth aspire to launch businesses: in a 2015 survey of college students on Renren, a social networking service, 56 percent said they would be willing to become entrepreneurs while in college. Another source of entrepreneurial talent is returning students who have studied overseas. In the Zhongguancun technology hub near Beijing, an

estimated 3,400 startups have been founded by some 8,000 returnees. More and more Chinese citizens seem to be interested in building companies and innovating. For example, top Internet companies such as Alibaba, Tencent, and Baidu are a major source of entrepreneurs launching their own businesses. Finally, access to early-round funding has improved dramatically. Funding by angel investors and early-stage venture funds grew by a factor of 14 between 2009 and 2014. Almost 70 percent of early-stage investment was in Internet-and IT-related businesses. However, the slow development of some service industries in China is caused by uneven distribution of resources across the country, limiting access for poorer consumers and residents in rural areas. While more Chinese students are completing college, access to higher education is more difficult for poor and rural students. Aggravating this is the fact that there are stark disparities in access to health care across China with large differences in rural and urban areas. Besides, Chinese families are very eager for their children to succeed in school, and new services are cropping up to meet these various needs. Thus, even if China is, according to the report, already a leader in customer-focused innovation, there is still vast potential for new ideas. China has three major innovation cluster cities – Beijing, Shanghai, and Shenzhen – and a group of smaller but rapidly growing innovation clusters in other cities. Under the ‘mass innovation and entrepreneurship’ policy initiative, public incubator spaces – places where entrepreneurs can gather and work on their ideas—are spreading across China. Nevertheless, many small and medium-sized enterprises struggle to innovate because they lack the knowledge and skills to commercialize innovative products and services. Even if China is today a world leader in customer-focused innovation, many State Owned Enterprises (SOEs) do not have enough incentive to innovate. Often, they have guaranteed sales to public-sector buyers and in many SOEs, there is a lack of commitment to long-range strategy because of the short tenure of rotating leadership.

In China’s rise to become the premier global manufacturing location, it has become a world leader in *efficiency-driven innovation*, in large part because of the world’s biggest ecosystem of suppliers, workers, service companies, and logistics providers that has arisen around China’s manufacturing industry. While Chinese labor costs have increased, in comparison with costs in developing economies the cost of manufacturing in China remains far below levels of advanced economies. Wages have reached a point where some highly labor-intensive production might migrate from China to Vietnam, Cambodia, or other low-cost countries such as for example the textile or toy industry. Still, China’s labor costs remain attractive for most types of manufacturing. The large size

of the Chinese market, which forces manufacturers to scale up manufacturing quickly, also helps companies move on the learning curve at an accelerated rate. The report mentions the solar panel industry as a noteworthy example. Although open manufacturing is taking hold globally, this revolution in manufacturing can happen on a much larger scale in China, thanks to the massive manufacturing base and the Shanzhai (copycat) tradition. Indeed, open manufacturing is very similar to how things work under the Shanzhai system, which has existed for decades in China and is still thriving. In this system, small enterprises tap into a network of manufacturers, component suppliers, designers, and logistics players to get their product designs onto the market quickly. There is also a worldwide shift in the manufacturing sector to the 'Industry 4.0' model in which major processes of manufacturing and logistics are digitally linked. In this regard, next-generation manufacturing promises significant gains in asset utilization, supply/demand matching, and quality control. The authors assess that China is well positioned to take advantage of a digitally linked manufacturing ecosystem to enable cost-effective mass customization.

Engineering-based growth is derived from an accelerated learning pace. According to the report, this is fueled by government-owned enterprise purchases, facilitation of technology transfers, and introduction of market discipline in such industries as communications equipment, wind power, and high-speed rail. With strong local demand and technology transfers, Chinese companies in certain industries accumulated knowledge rapidly through learning by doing and went from acquiring and assimilating overseas technology to incremental innovation and, in some cases, frontier innovation. This is a common progression in industries such as autos and communications equipment where innovations are part science and part problem solving, based on know-how that can take years to acquire. Moreover, engineering-based innovation involves integrating technologies from multiple sources to form a single product. Companies that are farthest along have successfully acquired the necessary knowledge through various means, whether through trial and error, using technology partnerships to leapfrog to more advanced knowledge, or gaining know-how from supply-chain partners. In China, government policy plays a prominent role in the accumulation of knowledge in industries requiring engineering-based innovation. Policies that encourage technology transfer and competition within industry sectors can accelerate learning, as can government purchasing activities and government facilitation of foreign partnerships and joint ventures. On the flip side, government subsidies and policies can also slow the progress of an industry if they protect uncompetitive

players. In March 2015, policy makers announced “Made in China 2025”, which identifies ten priority manufacturing industries for improvement.

China has placed *science-based innovation* has invested substantially in building the institutions and capabilities needed for discovery and invention. Science-based innovation not only has the potential to lead to high levels of economic value but also to profound social impact (for example through lifesaving drugs). Chinese companies in science-based industries are seen to develop their own approaches taking advantage of China’s lower cost and large pool of researchers to industrialize and accelerate experimentation and discovery. These companies are using scale advantages, such as hiring thousands of PhDs, to speed up discovery as Chinese researchers are typically paid 20 to 40 percent of what researchers in advanced economies earn. Globally operating companies have started making a larger commitment to innovation in China. This could mean locating more R&D activity in China, as Microsoft has done conducting global research and taking advantage of low-cost R&D talent while getting closer to Chinese customers. Nevertheless, in the three industries that were analyzed in the report that depend on science-based innovation (branded pharmaceuticals, biotech, semiconductor design), China is not a top global competitor yet. The government’s push to raise R&D spending, train scientists, and file for patents has yet to give China a lead in science-based innovation.

Among the issues that are seen to inhibit science-based innovation in China are slow regulatory processes (it can take two years longer to get a drug approved in China than in other countries, and it can take three to seven more years for a drug to reach patients). Moreover, questions prevail concerning intellectual property protection chiefly by foreign companies and Chinese innovators. Inefficient allocation of government research funding is another issue. The ways in which China awards and supervises government research funds has left opportunities for fraud and abuse in some cases, affecting quality negatively. Another concern is underinvestment by private-sector players as Chinese companies still spend far less on R&D, as a percentage of sales, than their larger global competitors. And lastly, despite the large numbers of Chinese students being trained in scientific and technical fields, companies still struggle to find capable talent. Top scientific talents have many choices of where to work, and these men and women are in a position to turn down jobs in places that do not meet their lifestyle requirements – affordable housing, good schools, recreation choices, clean air. Chinese cities are currently at a disadvantage on these “soft” metrics (housing costs, traffic, and pollution).

The government is addressing some of these obstacles. In recent years, China has made substantial investments in science capabilities, such as education to raise the number and quality of scientists and researchers. It has also attracted Chinese scientists from overseas who have made significant contributions to research in industries such as biotechnology. Incentives such as guaranteed professorships and relocation allowances under the Thousand Talents program were used to encourage senior Chinese-born scientists affiliated with top overseas institutions to return. China's investments in science have led to publication of more scientific papers, more patent filings, and a growing science workforce, but have not yet translated into breakthrough innovations and commercial successes. Still, according to the report, the China effect could lead to large-scale yet nimble innovations serving unmet needs in emerging markets and producing new varieties of goods and services for advanced economies, benefiting consumers around the world in the future.

In summary, the “China effect” on global innovation can be boiled down to three ideas: cheaper, faster, and more globally connected. Chinese innovators are showing that innovation can be done inexpensively and on a large scale; they are vastly accelerating the speed of innovation; and they are demonstrating how China can be a platform for global innovation.

4.1.3 PwC: Prosperity for the masses by 2020 – A review of China's 13th 5 Year Plan

China's five-year plans set the goals for the country's social, economic, and political activity. They signal the Chinese government's vision for future reforms and communicate this to other parts of the bureaucracy, industry players and Chinese citizens.

According to the PwC report China aims to double its 2010 GDP and per capita income of both urban and rural residents by 2020. One of the five guiding principles to achieve this goal is innovation next to coordination, green development, opening up and sharing. To achieve the goal China would need to maintain an average annual GDP growth rate of 6.5% until 2020 (compared to 7% advanced in the prior FYP). This growth rate, coupled with a smooth transition to a growth model primarily driven by consumption and services, is supposed to guide the economy into its ‘new normal’ period and help China avoid the ‘middle-income trap’. The following points were advanced as most important:



Figure 6: FYP Objectives

The CPC has clarified the strategic importance of innovation in the 13th FYP in declaring that China's future development must rest on the basis of innovation. The focus herein lies on technological advancement, basic research as well as breakthroughs (for example in next-generation communications, new energy, new material, aerospace, biological medicine and smart manufacturing), the Internet (of Things) and better protection of IP rights. It is the plan to set up leading innovation enterprises, create innovation cities and regional innovation centers, promote cross-sectorial and cross-territorial innovation, give universities and research institutes more freedom making decisions on research and funding in order to support innovativeness, set up national-level laboratories, organize international scientific programs and projects, carry out the national big data strategy and promote open sharing of data resources, encourage the integration of the Internet with traditional sectors of the economy pushing Internet-based innovations through the "Internet Plus" initiative (targeted at industrial organizations, business models, supply chain and logistics), promote start-up incubators and crowd-funding, encourage angel and venture capital investment and lastly build a ubiquitous and fast mobile information network to balance improvements to the transportation and mail delivery networks.

According to the report, manufacturing remains the keystone of China’s economic growth and the basis for building an innovation-driven nation as well as for overseas expansion (for example through the “Made in China 2025” initiative). Enhancing environmental protection and green growth, and in that line advancing the energy revolution using clean, safe resources is a designated goal. Moreover reforming SOEs in reducing government intervention in the operation of enterprises, reduce administrative approvals, break regional market segmentation and sectorial monopolies and creating a fair competitive environment for all enterprises. Coordinating regional development, urbanization and infrastructure investment is mainly envisioned through the three grand regional integration initiatives – the “Belt and Road” initiative, the Beijing-Tianjin-Hebei integration plans and the Yangtze River Economic Belt as well as reforming the household registration system (hukou system, which determines whether a person may enjoy subsidized public services in urban areas). Furthermore, promoting the development of culture in for example fostering leading enterprises of culture and the creative culture industry and pushing for a harmonized growth of traditional and new media industries.

According to the report, the government wishes to make consumption a key pillar of growth for China in the next five years. To make it happen, it wants to address the following issues:



Figure 7: FYP Objectives to Increase Consumption

According to the authors, a distinctive feature of the 13th FYP is that it’s the first shifting from the traditionally domestic focus to a much wider international perspective by including more

cross-border issues (Belt and Road initiative, Free trade zones and playing an active part in the Sustainable Development debate). Another point of focus is the foreign trade and investment concerning inbound and outbound investment as well as international trade. Focus also lies on financial reform considering banking, financial innovation, financing for local governments and Renminbi internationalization. Lastly, the government has vowed to promote the administration of rule of law, innovate its ways of macroeconomic control and social governance, and continue to fight corruption.

In summary, all three sources point to a clear direction. The GII affirms that it is the government's obligation to support innovation and create an innovation eco-system. The McKinsey report sees development in many areas in China at a national as well as at a company level. And lastly, the PwC report affirms that innovation is high on the agenda of decision makers in China.

4.2 Primary Data

The primary data analysis clarifies each KEYS dimension solely reflecting the data collected. Thus each sentence can be documented by interview outcomes and all of the following arguments reflect the perception of the environmental facilitators and barriers to creative thought. Therefore, only few quotations can be found in the actual body text. The median of all evaluations is derived from the researcher's assessment, which is illustrated and detailed in the discussion section. Below is an indicative table representing the findings.

| Dimension | Quote |
|-------------------------------------|---|
| Organizational Encouragement | <p>University Representative I (13:10) <i>"If you read Chinese newspapers, almost daily there is something about innovation and creativity"</i></p> <p>Chinese Student II (3:00) <i>"The encouragement is increasing, at least the government and many companies are communicating it more, but I'm not sure if that's really true"</i></p> <p>Local Employee II (4:00) <i>"So actually I would say the complete environment of China encourages creativity, [...] the atmosphere is everywhere around us"</i></p> |
| Supervisory Encouragement | <p>(Chinese) University Representative II (7:15) <i>"But like the people who were born before who are now maybe in their 40s, normally they are really traditional, they don't like risk."</i></p> |

| | |
|---|---|
| | <p>Local Employee II (24:00)</p> <p><i>"If the manager does not encourage open discussion then there's no discussion at all, even if there is different contradicting arguments, it will not be spoken out"</i></p> |
| Workgroup Support | <p>Expert (29:25)</p> <p><i>"So I would say the biggest hurdle still is more the working style and the soft skills and the personality development of the people, you could also call it their team orientation and their communicational pattern, than the necessary lack of creativity because I personally think if people would understand better what other people coming from other directions are heading for they would be automatically more creative because they would widen their horizon, but people are very often still, especially those with a higher educational background, still too narrow in their expertise."</i></p> <p>Local Employee II (18:45)</p> <p><i>"Chinese people are very good team players but not leaders"</i></p> |
| Autonomy/Freedom | <p>Chinese Student I (19:35)</p> <p><i>"I think one third of my former classmates didn't really get the job that they wanted to and they had to pick up a job that they don't want to because they need to get a job and get some money."</i></p> <p>Chinese Student II (6:00)</p> <p><i>"I think one of the biggest problems about creativity is that the law is not very perfect for intellectual property."</i></p> |
| Sufficient Resources | <p>Local Employee II (7:00)</p> <p><i>"It can be difficult for people who have ideas to verify them based on hard facts and data to get an idea how to implement them in real life"</i></p> <p>Former Expat II (24:35)</p> <p><i>"I think, resources, if they have something, then it is resources. They have manpower, in people, they have the most advanced equipment in China. They have the strongest computers"</i></p> |
| Challenging Work/Interest | <p>Local Employee II (25:10)</p> <p><i>"Personally I feel China is more or less top, lets say very creative country compared with, in the world. I won't say number one but definitely in the top three or top five. The reason is, of course, it's driven by the economy because it's a fast changing world. It makes everyone catch the speed of the world and once you are not in the pace... well everyone's ready for change."</i></p> <p>Chinese Student I (8:00)</p> <p><i>"There is a lot of creativity in every day life leisure time for example when you think about jokes, about taking photos in a creative way, about student activities and how to entertain people, about using social media or the internet, there is a lot of creativity"</i></p> <p>University Representative I (17:30)</p> <p><i>"People go to work in order to be promoted. That's what they build up competencies So if more creative results are a condition for being promoted they will try to be"</i></p> |
| Workload/ Socio-Economic Pressures | <p>Local Employee I (24:10)</p> <p><i>"Its still very hard for people just working in a normal company to buy a house in Beijing, Shanghai or Guangzhou, so people have to work really hard to maybe buy a car or a house and in the Chinese concept its all about a house, so if they want</i></p> |

| | |
|-----------------------------------|--|
| | <p><i>to build a family they have to work really hard to get the money”</i></p> <p>(Chinese) University Representative II (20:10) <i>“There are a lot of news saying that a lot of people would like to become an officer in the government or maybe to the national owned company. I think it’s all because of culture. We like to have a stable job and to be safe and have a really stable salary. So for the new ideas it’s really risky because you cannot say if I can get the money back in five years or maybe ten years. So I think the reasons behind is about the welfare system is not very well in China. Like if my parents have an illness or something, I have to pay for them because they cannot get a lot of support from the government.”</i></p> |
| Organizational Impediments | <p>Local Employee I (31:45) <i>“For the education or for business or for other aspects I don’t think China really does a good job to encourage creativity”</i></p> <p>University Representative I (5:00) <i>“The process from realization to change has started now but it will take a while because the educational tradition, and the importance of the hierarchy still work against that process”</i></p> |
| Personal Creativity | <p>(Chinese) University Representative II (26:25) <i>“Compared to Chinese students I am creative, compared to Western students I am more traditionally Chinese”</i></p> <p>University Representative I (28:35) <i>“I learned a lot from Chinese and from China and so forth. Whether this made me more, it made me more international in a sense that I see things from two sides. But whether this is creativity, I don't know.”</i></p> |
| Forthcoming Productivity | <p>Expert (16:20) <i>“The time that companies came to China because of cheap labor are definitely over”</i></p> <p>Former Expat I (8:22) <i>“and suddenly out of a copycat you do have a new product. That is quite an interesting development. That is a resource we don't really have anymore because we don't produce in Europe and the US in many cases anymore. [...] big universities like Tsinghua for example they are starting to play the US game of spinning out technology and companies right out of the university this is something we usually don't do in Europe and this is interesting to watch if its going to work”</i></p> |

Figure 8 – Indicative Table of Primary Data

4.2.1 Organizational Encouragement

The Organizational Encouragement dimension on a country level describes how people living in China feel encouraged to engage in creative thought. Participants described government incentives in many areas. Mentioned were for example the encouragement of Joint Ventures, Foreign Direct Investment, the high tech status for Multinational Companies (MNCs) and local companies being directly linked to tax incentives, initiatives such as ‘one belt one road’ and incentives for high-

profile returnees especially professors and post doctors. SOEs are said to implement new R&D departments, and it is seen that what was incremental innovation before is slowly moving towards more radical innovation (*“China has become very, very efficient in these incremental innovations and already more than incremental in some areas”* – expert interview, 29:25). IP rights in China are gradually becoming more helpful and trusted. Many MNCs start to train and develop local employees’ soft skills with an emphasis on career development and long-term commitment. They also start to establish R&D facilities in China and not merely production sites. Universities receive academic research support and strive for international accreditation, which poses universal requirements on them. Moreover, there are regions in China, which are known to support creativity in particular, for example near Beijing. In the media, positive examples of creativity and entrepreneurship are showcased, the one mentioned most was Baidu (百度), but also Xiaomi (小米科技) and XinDongFang (新东方). Creativity directed at producing innovations is a much-discussed topic not only in the media but also in social networks and between different generations, since people feel a movement taking place from copying over raising quality towards tailoring products to consumer needs and interests. Especially among highly educated, young to mid-aged people (20-40 years) the dialogue about entrepreneurship is widespread since there is a lot of money flowing in the start-up scene, which comes from the government but also from banks and corporations. The abundance of creativity in newer economies such as the Internet and social media was mentioned several times, comprising the use of programs and exploiting possibilities. The awareness that creativity starts in the early years is perceived to be growing, as for example Lego brick toys were mentioned as being promoted. Starting from the South of China, young people seem to be more and more recognized as driving growth and being creatively vigorous. Lastly, it was stated that the market in China in itself offers huge potential but is highly competitive and therefore creativity is needed to survive in this environment. The fast growth of the economy over several decades has resulted in people getting used to their living environment changing all the time and thus made them receptive to new ideas. The evaluation by the interviewees results in a median of 6.3 meaning that the general encouragement of creativity in China is evaluated as positive. In the words of the KEYS dimension (Appendix C) it can be declared that people feel somewhat incentivized and enthusiastic about developing new ideas in China today.

4.2.2 Supervisory Encouragement

Supervisors in China are expected to make good decisions that lead to achieving targets. Teams are often composed with the aim of executing and fulfilling tasks in coherence with their qualification and competences. Therefore the management is not perceived as strongly looking at the diversity (gender, age, social and geographical background) of a group. Nevertheless in terms of gender the diversity is observed as higher compared to Western countries. The supervisor has the power to stop discussions and interactions and thus the generation of ideas. Especially in more traditional companies (such as SOEs) superiors often stick to traditional methods and are perceived as very risk averse in not being open to new requirements. In settings where steep hierarchies prevail the immediate goals are often more important than the overall goals of the company and there is often no systematic way to measure or reward creative input. Employees are free to propose ideas whilst the harmony between individuals is preserved and sometimes very close relations between supervisors and subordinates occur. Yet the overall objective is most of the time tied to directly increasing profitability instead of trying out ideas. It was mentioned that even if an idea leads to direct cost- and time-savings the chances might be higher but it is not guaranteed to become reality. The age is perceived as an important influence on the openness of a supervisor where an older person is often associated with being traditional, relying on his/her experience and reluctant to new ideas or new regulations. Feedback, especially criticism, is often given in private and not openly discussed in form of consultation from the higher hierarchy level to the lower level. Nevertheless, leaders usually have clear expectations and give clear directions and especially in the cities the expected labor time is becoming longer. When the supervisor and subordinate are of different nationalities it can impede the formation of trust necessitating interaction over long time periods until a level of trust is reached in which individual errors are tolerated or even cultivated in order to enable learning. Once a trustful relationship is established this can even exceed formal work relationship responsibilities in involving the supervisor to care for the subordinates' socio-economic well-being and continuing over time even after the formal tie has been cut. Monetary rewards are often more important than intangible rewards such as increased responsibility, which is why the supervisors' main objective is to ensure task execution and achievement of objectives. The evaluation by the interviewees results in a median of 2.3 meaning that the encouragement of creativity by supervisors in China is evaluated as deficient. In the words of the KEYS dimension it

can be stated that people don't see the supervisor as strongly supporting creative idea development in China today.

4.2.3 Workgroup Support

The analysis shows that a difference needs to be made between the focal workgroup or team, which a person feels part of, and a bigger scope such as the department, the division or the entire corporation. Usually team members reporting to one supervisor establish a strong connection among each other, even if they mainly stick to what is required from them without considering why or how it could be done in a better or different way. It was mentioned several times that 'standing out of the crowd' is not desired and a team can have the benefit of transmitting an individual error into a collective failure. There is a low level of discussion since the complete team follows and relies on the supervisor's instructions. Even in departments that are prone to creative thinking, such as marketing, sales and distribution, teams are often not very diverse in terms of geographic background since the need to understand local market structures and peculiarities (e.g., concerning the terminology) outweighs inspiration among team members. Nevertheless, these functional areas were mentioned as supporting creativity the most. Moreover, workgroups with younger and better-educated people are seen as functioning well in working together, discussing and supporting each other, especially in a focal team which thus tends the most to transparency, trust and open discussion (*"Chinese are quite direct and open [in the right environment]"* – Local Employee II, 24:00). Ultimately, workgroups among Chinese members can work very well and establish trust faster than a group of mixed cultures, even if only the supervisor is of a different nationality. The intimacy among group members in a permanent team can far exceed other countries' standards in that interactions are continued after work and team members become close-to family members (*"I think a good team is not completely in the inner circle because there are only members of one family, but you get very close to this circle, and then you are protected"* – Former Expat II, 25:25). The evaluation by the interviewees results in a median of 4.1 meaning that the support of creativity among workgroups in China is evaluated as existent with room for improvement. In the words of the KEYS dimension it can be held that the interaction and communication among members of a workgroup in China today is not primarily directed at encouraging creative idea development.

4.2.4 Freedom/Autonomy

People perceive positive and negative aspects concerning freedom and autonomy when living and working in China. The living standard improvement is identified as a main driver in promoting a feeling of freedom. This is mainly related to more financial resources available. An overall higher level of education, low censorship in some industries and promotion opportunities especially in Chinese companies add to a positive perception. A former expat noted that the willingness to make compromises on quality in domestic firms gives freedom, especially in thinking about product development. Moreover, the general acceptance of trial and error when bringing products to the market and testing the consumer's approval gives a certain freedom that is not abundant in other markets. A short-term solution is often regarded as good enough whereas in other cultures or countries the need to find a sustainable long-term solution might inhibit the process of testing and retesting. It was noted that ideas, which are not political can be pursued freely. Nevertheless, there was quite a number of aspects mentioned which inhibit the perceived freedom. The deficient security system, which makes money a precondition of well-being and safety in providing assurance for the future of the individual's parents, the self and the children. Moreover the concept of hierarchy where people in more senior positions have the decision power and the ability to stop any form of idea realization. It was mentioned that the most creative people are often the ones who perceive rules as limitations to their creativity and don't abide to them. This is however often not possible in China where sticking to the rules means fitting into society and breaking them leads to severe consequences and prosecution. The lack of some types of information and the censorship specifically affecting creative industries is perceived as inhibiting freedom. Particularly in the big cities, changing the job and attempting to realize an idea is seen as big risk, which can lead to a long-term cessation of income streams and thus denotes a high cost of failure. The speed of governmental decision execution can be a threat to some. Likewise the need to have powerful relations in order to influence some decisions especially in rural areas and the difficulty of realizing an idea without these connections to influential people was mentioned repeatedly. In that regard, the lack of IP rights and the challenge to protect a potential idea was demurred as impeding autonomous action. Lastly, the socio-economic pressures discussed in a later section constrain the feeling of control over work and ideas. The evaluation by the interviewees results in a median of 3.3 meaning that freedom and autonomy is evaluated as fairly deficient in China. In the words of the

KEYS dimension it can be said that people don't feel like they're able to autonomously control and realize all their ideas.

4.2.5 Sufficient Resources

Positive and negative aspects came up during the consideration of resources available in China to foster creativity. Especially the Chinese students and employees criticized the restriction of websites such as Wikipedia and Google in terms of (political) information but also the accessibility of sources such as books by famous experts in public libraries. Social networks were mentioned as facilitator of communication and knowledge sharing among various age groups and geographic regions. The education quality was assessed to be better in the big cities. The focus on individual tasks was however evaluated as not benefitting a mindset favoring creative idea development. It seems like there are few people who are not only well educated and proficient in a certain area, but who possess other skills as well, which were termed soft skills by several interviewees. Such aspects include structured thinking, structured reporting and presentation, visualization of information, proactive thinking, teamwork skills in terms of collaboration across the border of the focal team, cross-functional communication skills, disregard of the other parties' knowledge, patience, diligence in listening, thinking of the whole organization as a team working towards a common goal and representation eligibility. Especially people with a high education, who have gained expertise in their field appear to lack these soft skills and solely rely on their experience and expertise while losing openness to new ideas. It was asserted that the most advanced equipment is available in China and that there is not a lot of censorship concerning new idea or product development in some areas, for example technology. On the contrary, many governmental incentives are directed at advancements in this field. The funding and the money is available for the development of feasible ideas provided by banks, the state and corporations. Moreover manpower was mentioned as resource that is vastly available. The possibility to develop professionally for local citizens was perceived as better in Chinese companies, since MNCs still occupy mainly home country residents in the highest positions. The fact that MNCs produce products or upstream parts in China is seen as providing knowledge about production processes of goods. In that regard, it occurred that patents were creatively circumvented and new products based on that expertise were derived. Other resources that were mentioned as precondition are a proper salary that gives people the freedom and the security to explore their interests. Past work experience and teamwork

experience were both seen as originators of an entrepreneurial drive. International experience was mentioned as being desired by many. Lastly, the trend towards company transparency was evaluated positively. The structural setup in terms of public libraries and exhibitions were seen as lacking especially in second and third tier cities. Moreover in these regional areas it might be more difficult to realize ideas because of network importance and socio-economic pressures. It was identified that cheap labor is a diminishing resource in China. The evaluation by the interviewees results in a median of 4.5 meaning that the various resources required for idea development and realization in China are evaluated as existent with room for improvement. In the words of the KEYS dimension it can be held that people do not find it easy to get hold of all resources required for idea development and realization.

4.2.6 Challenging Work/ Interest

The dimension of challenging work advanced into a broader consideration in people not only seeing the relevance in being creative when accomplishing work related tasks but being creative in every day life as well. It became clear that creativity is used with a stronger goal orientation and pragmatism in situations where a real problem gives a frame for a solution to be uncovered. Creating “something out of nothing” is observed to be rarely existent, at least in the work sphere. However an indigenous tendency to play and channelizing creativity in order to solve a task is inherent (“*but sometimes you just have the feeling that people forgot about it when they grew up*” – Expert Interview, 66:20). Besides, there is an interest to try new things, as for example new products, which was ascribed to the fast economic growth and arising opportunities. Moreover, it is not only about using a certain toolbox derived from studies and prior experience but one interviewee mentioned explicitly the unusual information sources that are employed to solve problems (“*The Chinese are the most innovative team members in respect of solving things in my actual organization they are doing things which Europeans/Americans would never do*” – Former Expat II, 29:40). Nevertheless, the short-term focus of such ‘solutions’ was detected as well, which were called ‘unsustainable’ in not aiming for long-term profitability. Until recently innovation was understood as copying and slightly modifying but not as creating a differentiation to competitor’s products. Brainstorming and workshops as a means to push creative outcomes were judged to be ineffective, as they not only require extracting something out of nothing without revealing the final goal to be attained, but they also neglect the existence of hierarchy, face and potentially harmony.

Creative output when not being defined as visionary and radical but incremental and lying in the details was seen as clearly visible in China. Especially when it comes to after-work life or projects unrelated to their performance evaluation for example the use of social media or in organizing activities such as the end-of-the-year corporate event. Another factor mentioned was people's drive to adapt flexibly to whatever is required when pursuing a certain goal, which can however take some time to originate real value depending on the cultural and academic predisposition (*"It took me literally years to convey this message of innovation"* – Former Expat II, 20:30). Thinking creatively in order to derive a solution is often interrelated with feeling responsible for deriving that solution, which should be linked to a compensation that reflects this responsibility (*"People tend to think that they are paid to do a job"* – University Representative I, 2:20). If there is a huge discrepancy between the supervisors' and the subordinates' remuneration the employee might not feel in charge of finding a solution, whether creatively or not. This is particularly the case at lower levels in operations and processes, where people only work for the money. People with higher education want to be promoted, this is the reason why they build up competencies (*"They are short-term focused and cash oriented"* – Former Expat II, 4:20). It appears to be easy to find well-educated people in certain fields of specialization, however other aspects – such as soft skills or combining the knowledge of different arenas and thinking in abstract terms – are missed. If thinking creatively becomes a precondition for being promoted, people will try to think more creatively and see the relevance in it. However, for now 'creativity' and 'innovation' are not perceived as being high on the agenda of many firms yet. Leaving the predefined and secure surrounding conditions, in other words leaving your comfort zone and challenging the status quo as well as combining information from extremely distant spaces is not widespread yet and in some areas even endangering future approval. This is only imaginable when errors are not punished through lower monetary rewards or loss of face and recognition. Moreover, thinking creatively requires resources, determination and endurance, which should be sparked by appreciating the challenge and significance. A hindering factor is the culturally anchored conception of being part of a bigger 'movement', which promotes passiveness and collectivism contrary to a desire to individual impact and activism. The fact that the thinking style is also not linear in being certain that A is the cause of B was mentioned as a source of a different kind of creativity not fitting with the Western concept of creativity. Triggered through multicultural exposure and a changing environment, many individuals seem to realize that a passive role doesn't necessarily lead to self-fulfillment, especially when aspiring an international career. According to a university representative, the quotas for students

going abroad not only augment each year but are usually completely exhausted, especially when they are subsidized. The reason that was assumed is that people already see the benefit concerning the increased creative capabilities – or other deficiencies of the Chinese education system. It seems that the circumstances are changing and especially young people who are able to speak English well wish to realize their ideas or at least find a job that fulfills them personally and lets them use their language skills and not only satisfies them in being a well functioning part of a particular group. Concerning entrepreneurship, it was noted that many people perceive themselves as not being able to communicate and market their idea sufficiently and indeed many ideas are perceived to fail because the owner misses to sell its value at one point of the process. People are observed to support other people's ideas but also change their preferences quickly. It was ascertained repeatedly that creativity is not perceived negatively in China in general. If people think that they have a good idea and if they think that the supervisor/decision-maker would be interested in that idea, they would see the relevance and talk about it. The evaluation by the interviewees results in a median of 4.3 implying that people see the purpose and the challenge in tasks leading to creativity to a considerable extent in China. In the words of the KEYS dimension it can be said that the work content is encouraging people to engage in creative thought with room for development.

4.2.7 Workload/Socio-Economic Pressures

The original KEYS dimension concerns workload pressure. However transferred to a country level it became clear that 'socio-economic pressures' constitutes a better label for this dimension. Participants reported on the need to buy an apartment in order to get married, the importance of owning a car, the responsibility to permit good education to the child(ren), especially when the one child policy was in place, and the responsibility to care for the parents. The success at the work place was denoted mostly in association with not catching someone's eye in a negative way instead of attracting attention through achieving remarkable results. The emerging expectation of long work hours especially in the cities was perceived as high pressure resulting in less time to reflect upon better ways and new ideas. The pressure from parents and relatives who compare the performance of individuals and insofar the respect towards the older, more experienced people was brought up. There is a high level of competition already in the early stages when applying for universities and jobs. The inflexibility of loans that need to be repaid after a certain period puts a high cost of failure on the borrower. Finally, the pressure was evaluated as higher in the big cities because the expenses

for a comfortable living standard are much higher. The evaluation by the interviewees results in a median of 2.5 meaning that there is a fairly high degree of socio-economic pressures that impede the development of ideas in China. In the words of the KEYS dimension it can be held that there are several constraints apart from organizational impediments that discourage creativity.

4.2.8 Organizational Impediments

Interviewees saw a number of organizational impediments in other words constraints to creativity present in the environment in China. On a political level, these are a decreased interest in reacting to governmental incentives by individuals who don't see their network to be powerful enough or their rights to be protected enough when exposing ideas to the market. Former students also expressed the feeling of powerlessness when dealing with institutions, for instance with the university administration. Especially the young interviewees expressed a fairly strong doubt that the governmental incentives they knew about were actually meant to support change or merely hollow words. Even if creativity is a much discussed topic, at some universities the courses related to it usually don't count towards a degree and students are not taught how to make use of new resources provided or get involved in this process. Many students still opt for the protected life working for a SOE, which is the reason why often the best talent is absorbed by these organizations. Nevertheless, SOEs are still perceived as being slow and bureaucratic with rigid internal structures and steep hierarchies, even when encouraged to change. Decision makers in these organizations were seen as reluctant to embrace new methods or procedures. Moreover, there are many rules and regulations preventing the dynamic atmosphere needed for creativity development. Often there is a tradition of 'cascade-like' communication of one expert to the other or one level of hierarchy to the other where much information is lost on the way and the awareness of the higher goal or purpose is destroyed. Associated with the anti-corruption campaign is a rising inflexibility in the society in the last couple of years and an increased political control. For administrative undertakings often long and complicated procedures dominate and generally qualification and capability to execute a task is reinforced. The practice to discuss problems is rather unusual, which however doesn't mean that other ways to voice ideas don't exist. This was ascribed to the clear directives people receive from a very early age in order to be capable of performing in a harshly competitive environment developing largely instruction-dependent characters. The language was mentioned as something that is learned by heart at a very early age, which doesn't allow for abstraction. Moreover the

tradition to learn from the past rather than focusing on future possibilities was noted. Individual work is mostly relevant in terms of the teaching and learning style, homework and exams where cross-fertilization for example through case discussion, group work, presentation and interaction is not prioritized. Similarly professors are evaluated upon the number of publications they issue and not based on the potential for realization or applicability of theories. The level of education in China was criticized as still being low in many areas, which has impeding effects for example when it comes to the command of the English language in the global competition. Language skills are seen as a prerequisite to stay informed about recent developments in various areas and industries. Moreover, the internal diversity in the country itself produces challenges for collaboration and sharing knowledge, which is the reason why people tend to stay in their postulated regions and areas (*"My team for example is purely Mainland Chinese, but nevertheless the people are all over different, they are more different then if you would mix up one out of each European nation and call it a team"* – Expert, 35:20). This is also causes varying levels of creativity across the country. Rising labor costs in general and the unilateral support of certain industries can be seen as an impediment. Even small companies are said to fight for survival in the harsh competition of the Chinese market and encouraging creativity requires resources that otherwise could be used elsewhere. Thus, the pressing need to be financially secure is often restricting the perceived room for experimenting or even taking the risk of engaging in entrepreneurship. The focus until now has been on incremental innovation at most and largely on increasing the production output and adapting the required quality to ensure demand on the market. Also MNCs have centered on incrementally optimizing, improving products and tailoring them to the Chinese requirements as well as improving cost positions in order to ensure a reasonable average selling price in China. Lastly, the overall importance of harmony and the concept of 'face' in a public surrounding as well as the success with copying and low quality products so far were viewed as obstacles to creativity. The evaluation by the interviewees results in a median of 2.2 meaning that there is a considerable amount of organizational impediments that inhibit the development of ideas in China. In the words of the KEYS dimension it can be alleged that there are formal structures and rigidities, which more discourage than encourage creativity.

4.2.9 Personal Creativity

Participants were asked to evaluate their own engagement in creative thought and relating their experience to China. For most of them the international exposure resulted in a perceived increase of creativity, considering Chinese natives moving abroad as well as Westerners moving to China. Nevertheless, the younger participants didn't feel the effect on their own creativity as pronounced. The evaluation by the interviewees results in a median of 4.7 meaning that people perceive their own creativity as being in a reasonable state. In the words of the KEYS dimension it can be said that people are engaging in creative thought to a certain extent when living in China.

4.2.10 Forthcoming Productivity

The development of creativity is fueled by the need for innovation, in which respect one interviewee mentioned 'Made in China 2025' pointing to a greener and more innovative future. Another participant stated that China is trying to move up the value chain and another recognized the long-term strategy that is being pursued. Chinese people are increasingly connected and information sharing will be facilitated in the future even more. The government is perceived to be in the process of issuing additional policies to incentivize creativity and innovation and it was stated that most people are confident with the current Chinese leadership generation while other interviewees agreed that the leaders and the people are aware of the problems. *In this respect, competitions and awards are initialized to fertilize creativity and idea development.* Generally, career development is becoming more important and the trend of job-hopping is receding. The effect on entrepreneurship is positive even if it could be decreasing in the future as a result of the slowing economic growth. The quality of the education at universities is rising and the US model of spinning out technology and companies right out of academia is a trend that can be of advantage. Consumers are increasingly interested in products that promote creative handling and provide creative features. The level of English is rising and the fact that China has no legacy of traditionally established industries was seen as positive as it could fuel leapfrog innovation meaning that the currently existing business models will not even be established but more innovative ways of serving the consumer needs are directly introduced. Moreover, new product development based on modifications of products that are produced in China is assumed to bring benefits. The change of life and the environment is perceived as visible in many places in China, which creates a positive

atmosphere for continued change. Besides, it was mentioned that the acceptance of creativity as a major contributor to future economic development is growing as the conception is becoming known to more and more people. This was judged necessary since the per capita GDP is still fairly low. For instance industries, which were stimulating growth in the past, such as infrastructure are observed to mature now. At the same time the middle income trap is dawning. Nevertheless, the consumption is not anticipated to increase soon because of the insecurity associated with health care, pension and schooling. Moreover, people are worried about the growing gap between rich and poor and the pollution levels. Meanwhile, the amount of patents registered in China was observed as being low on a per capita basis in a worldwide comparison, but the pace at which the number has been growing is unrivaled. MNCs see examples of very creative and structured managers and start transferring global tasks to China while employing more returnees, who have a more profound cultural understanding. The family orientation and strong family bonds were mentioned as reasons for people to come back, however people with the financial means wishing to have several children or escaping from other socio-economic pressures potentially evading the harsh competition and strict requirements in the education system might emigrate for good. Moreover, the first generation entrepreneurs who are wealthy today are seen as leaving the country, which reportedly causes a 'drain of elite' in China. SOEs are losing market share to private companies and industries demanding very low labor costs such as textile or firecrackers are moving their production facilities out of the country. The manpower is for now seen as a bigger growth driver than creativity and innovative products. Likewise, it was mentioned several times that it will take a long time to establish the 'right mindset' and it was questioned whether the support of innovation and creativity will have an effect on the education system. It seems that the focus is on business and science, but not on education. For example it was criticized that detailed measures on how the education system will be changed are not available. Participants emphasized the long-term focus, some see the effects of creativity now already, while some expect two or three generations until it becomes visible. The evaluation by the interviewees results in a median of 6.1 meaning that the future growth of the economy of China is seen rather positively. In the words of the KEYS dimension it can be said that China is perceived as holding up the economic growth effectively.

5.0 Discussion

In the following the findings of the primary data and the secondary data are discussed and related to the academic literature on the topic in order to build an answer to the research and sub-question. In other words, a clear picture resulting from the prior investigation is drawn up. From the analysis, it can be seen that the interviewees perceive Organizational Encouragement as well as Organizational Impediments to creativity and innovation on a country level in China. In number, the themes found for Organizational Encouragement are fewer than for Organizational Impediments, however a weighing of the several themes is complex and a premature interpretation should be prevented. This is also the reason why the scale in Figure 9 is balanced and doesn't lean to one direction. In the following, all factors are evaluated in order to assess whether the climate is supportive or inhibitive of the economic development based on an empirical and theoretical foundation. Figure 9 gives a quick overview of the following discussion.

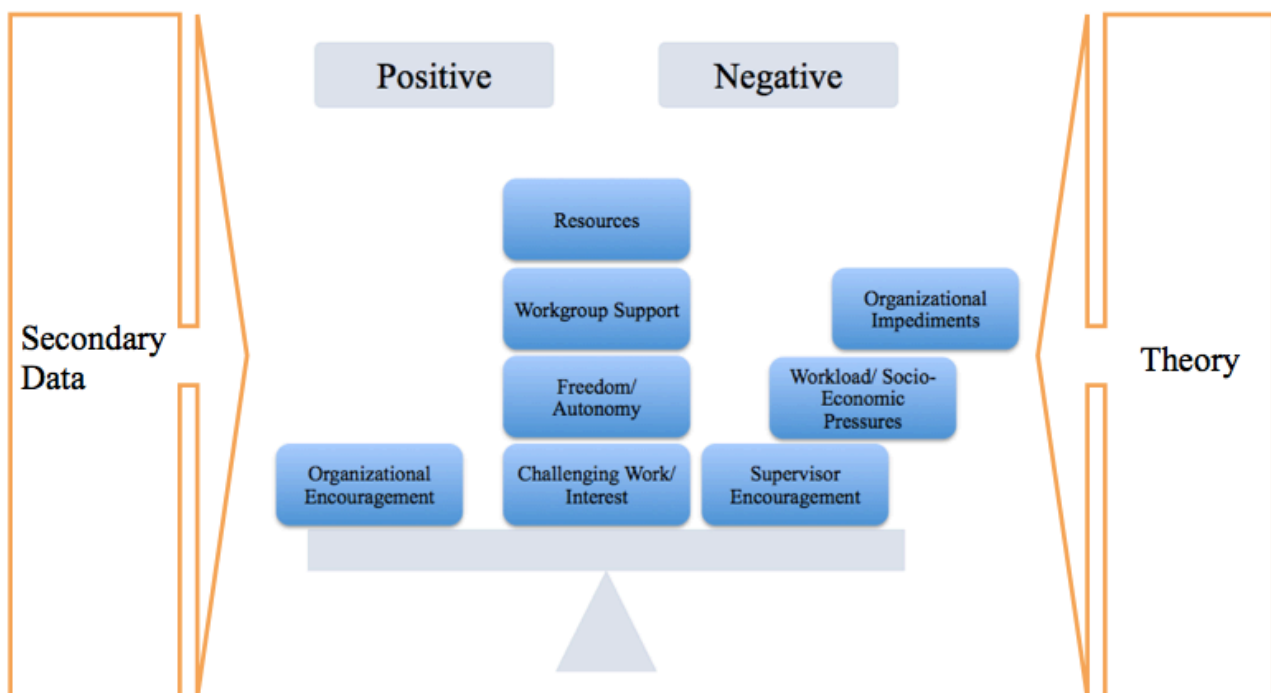


Figure 9: Discussion Overview

When looking at the different groups of participants and the graphical interpretation of the perceived climate towards creativity on a country level in China below, it becomes apparent that Supervisory Encouragement and Workload/Socio-Economic Pressures are perceived as having a mainly negative impact on creative thought development.

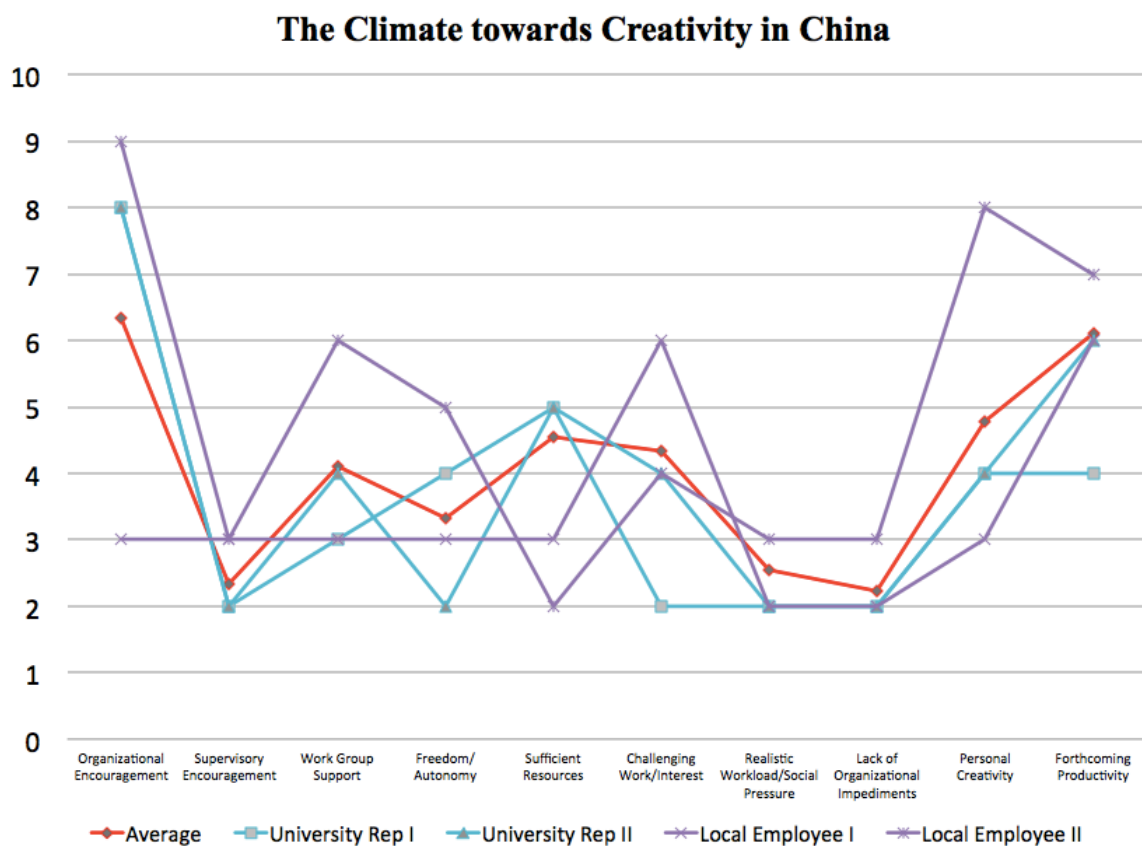
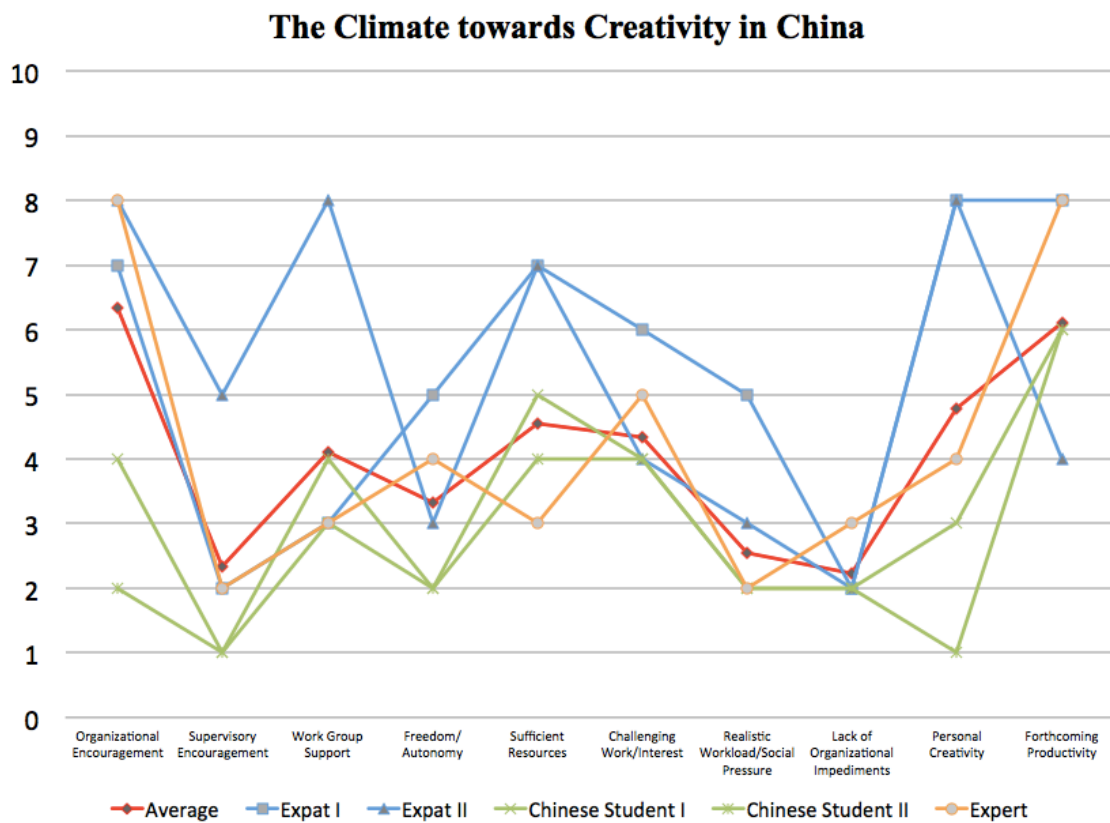


Figure 10 and 11 – The Climate towards Creativity

Chinese students evaluate Supervisory Encouragement as the most negative. This is perhaps due to the fact that even though they have worked in China before, during internships students are mainly expected to execute. Nevertheless, they gained an impression from their colleagues as well and they were speaking about their impression of China in general.

Most participants except for former expats evaluated realistic Workload/Socio-Economic Pressures negatively. The reason might be that former expats have the least knowledge about socio-economic pressures weighing on people in China at large, but were mostly referring to their experience with people working for a MNC in China.

Proceeding with the inhibiting dimensions, Organizational Impediments follow. This dimension received a less negative valuation from local employee II and the expert. The same interviewees also had the most positive impression of China's future development (Forthcoming Productivity), which might be an explanation.

Organizational Encouragement received the least positive evaluation from Chinese students and local employee I. A reason could be that all three participants are in the beginning of their twenties and hold vivid examples of the lacking educational system and more importantly, feel the socio-economic pressures the most, as they are just starting to earn the money that will enable them to keep or improve their living standard.

The dimensions of Freedom/Autonomy, Resources, Workgroup Support and Challenging Work/Interest are all perceived as ambiguous with the potential to shift the weight in one or the other direction. Freedom/Autonomy again received the least positive evaluation from the younger participants. Local employee II who's in her late thirties and former expat I, who are both concerned with the entrepreneurial development in China gave the most positive assessment.

The Resources available in supporting creativity were assessed most positively by the former expats and least positively by the local employees. This is because the former expats were considering resources needed in higher positions for higher aims of a MNC whereas the local employees were concerned with finding inspiration and launching a business.

The Workgroup Support was evaluated as most positive by former expat II who lived many years in China and worked with groups that were "close to the inner circle", which impacted his account. Also local employee II, who already worked on levels of high responsibility, evaluated the Workgroup Support more positively.

Challenging Work/Interest was evaluated as least positive by university representative I. In his view money and promotion or in other words the social-economic pressures often outweigh any other factor inflicting interest in challenging work.

Finally personal creativity was evaluated as least pronounced in the view of the Chinese students, while the mid-aged local employee and both former expats felt personally creative in the Chinese environment.

The Forthcoming Productivity dimension was evaluated positively even by the Chinese students, however former expat II and university representative I were more cautious about judging the future optimistically.

Looking at the climate towards creativity in China, it seems that the highly educated and young citizens are in a very advantageous position. Not only do they benefit from a better education in terms of content and quality, but also from the changes in the education system happening for a few years now. The McKinsey report (MKR) validates this by stating that especially top scientific talents are in the position to turn down jobs. The primary data suggests that the governmental policies are effective. The GII and the MKR confirmed that the development of China's top education system has increased the quality and quantity of researchers. Even so, the MKR confirms the gap in the education quality, stating that access to higher education is more difficult for poor and rural students and thus confirms the uneven distribution of resources across the country. The FYP conveys the intention to provide universities with more freedom. The implications of structural conditions for creativity mentioned by Lubart (1999) can be seen in the big difference between rural and urban areas in China. Niu & Sternberg (2003) confirm that policies in education are especially valuable as the methods used in schools can have a big impact on creativity in a society.

According to the primary data, young people, especially those growing up in cities got used to a quickly changing environment and are therefore keen and curious to try new things. This validates the point by Erez and Nouri (2010) that Chinese seem to value novelty much higher than usefulness nowadays. In comparison, older generations were exposed to teaching styles focused on the individual student even more. The analysis found that this is subject to change as teamwork, group presentations and collaborative work come to the center of attention in universities and organizations. Besides, international exposure and exchange are getting more support. This is in line with Leung et al. (2008) who evaluated the relationship between multicultural experience and creativity as potentially strong.

Creativity seems to have a positive connotation in China across generations, and particularly in the major cities. The finding of Hempel & Sue-Chan (2010), who state that Chinese people associate characteristics carrying a negative connotation such as rebelliousness, self-centeredness or arrogance with creativity, was not confirmed by the data. A reason could be the governmental and institutional effort to promote creativity, which has a major impact on the urban population solely represented in this study. It is a term that was familiar to all interviewees, and that is reportedly discussed in the public media and online forums in China. Important topics are the increasing popularity of a position as R&D employee and even more the occurrence of entrepreneurship and moving away from the 'workbench approach'. The MKR emphasizes the rising interest in entrepreneurship with a focus on Internet and IT-related services. The interviewees in their thirties and late twenties felt that financial aid was generally available, not only from governmental sources, but also from companies and financial institutions. This goes in line with the GII finding that in order to climb the value chain first a focus on removing structural obstacles to innovation is needed. Nevertheless, the risk of leaving one's job, especially when living in a big city, is associated with high costs of failure. The most prominent reason is the achieved living standard and the high living expenditures required in big Chinese cities. An aggravating factor is the general socio-economic pressure weighing heavy on people. These are mainly the need to care for parents and children, but also having the means to buy an apartment and a car, which often are considered a precondition to marriage. Even if the living standard has improved in general in China, maintaining a certain standard seems to be fought hard for and is not taken for granted. This is also shown by rising workhours especially in the cities. A reason could be the deficient social security system. This was touched upon by the MKR stating that there are stark disparities in access to health care across China. Working in R&D might gain popularity when it comes to working for MNCs, however in general the MKR suggests that researchers in Chinese companies receive a much lower salary. This validates the point that the security gain associated with a high salary and stability might be higher valued than self-actualization interest. Stemming from this concern is the desire to be promoted and the fear of punishment in terms of lower monetary rewards. The primary data suggested that for this reason rewarding creativity could have a big impact. This goes in line with the suggestion by Niu & Sternberg (2003) that actively guiding individuals on how to be creative can make a difference. The analysis has also shown that people associate a certain degree of responsibility with a certain amount of pay. If the pay is high enough, especially in comparison to peers (colleagues, people working in similar positions or the supervisor), people feel obligated to

perform in accordance with the associated expectations and are more inclined to look across the borders of their assigned tasks and understand the overall goal of a department, work unit or company strategy and align their activities. Future research could investigate the implications for the hierarchy of needs (Maslow, 1943) or the motivation-hygiene theory (Herzberg, 1966).

As soon as people have reached a certain value on the job market they strive for better career perspectives, which has caused a wave of job-hopping between MNCs in the past and often led to the final destination of a Chinese company, where career perspectives are superior. This was confirmed by the MKR for top scientific talent. Nevertheless, the GII points out that large groups of micro and small businesses still operate with low levels of human capital and basic technologies.

Groups of younger employees, are seen as performing better. Likewise, the appreciation of a supervisor for a creative idea is largely associated with age, in other words the younger the supervisor the higher the probability that a creative idea will be heard and realized. A certain work experience is seen as prerequisite in order to develop an entrepreneurial idea. This is a contradiction in the system where people, once they are part of the workforce, see a high risk in starting over new and launching a business. This inherent risk averseness is rooted in the socio-economic pressures, but also in many aspects of (work)life. Supervisors were described as risk averse in terms of pursuing narrow goals, giving clear directions and expecting strict obedience. They are seen as having the decision power and ability to fuel fruitful discussion but also as being responsible for taking the right decision. For many people fulfilling their ad-hoc tasks in line with expectations and not catching someone's eye in a negative way equals being successful at work. The MKR validates that there is a lack of commitment to long-range strategy especially in SOEs caused by short tenure of rotating leadership and thus responsibility. This can lead to a perception of monotonous everyday work life, having an adverse effect on creativity opposing transformational leadership promoted by Zhang, Tsui & Wang (2011). It must be stated that risk averseness is not usually associated with the Chinese culture. According to Hofstede (2015) Chinese are comfortable with ambiguity, and rules and laws are often flexible to suit the specific situation. In line with Shalley & Gilson (2004) it is thus not only the individual's predisposition towards risk, but the organizational culture playing an important role as well. The notion that the acceptance of ambiguity leads to a decrease of motivation for creative solutions isn't confirmed by the respondent's account in this study. However, as the discussion of intrinsic factors was not the main purpose of this study, more research is needed to assess the suggestion by Paletz et al. (2015). The results of this study point to

the fact that the economic boom strengthens the interest in novelty and the motivation for creative solution finding.

The workgroup behavior was discussed ambiguously. There can be severe issues, such as a low discussion culture, because people know exactly what they are supposed to deliver and most of the conversation happens in one-on-one meetings. On the other hand, there can be situations where close bonds between people working in a team are established. It is assumed that this mostly occurs on a higher level of responsibility and expertise where it is more difficult to give clear directions to be executed. When a work team has reached this state of being 'close to the inner circle' of the members, people reportedly become very direct, open and also willing to criticize each other. However, the formation of trust can take a very long time, especially between people from different cultural backgrounds, meaning different nationalities but also inner-China diversity. This goes in line with Shalley & Gilson (2004) emphasizing that it is difficult to be creative in an area without having some experience and knowledge about what has historically been constituted as routine or status quo. Even at this level however, difficulties can emerge in relation to creativity. Brainstorming for example, in other words thinking creatively without defining the need for it or outlining issues broadly with the task to structure a problem and come up with an approach to solve it, seems to be badly taken in China. Also combining knowledge from different areas in new ways seems to be alien to many. The MKR states that especially engineering-based innovation involves integrating technologies from multiple sources, the promising success of learning by doing and the potential to leapfrog to more advanced knowledge. Related to that is the nuisance of first of all being confident in personal communication skills but as a consequence the ability to represent, present, market and communicate ideas in a way that is adapted to the audiences understanding. This issue was addressed by the MKR stating that in China many small and medium-sized enterprises struggle to innovate because they lack the knowledge and skills to commercialize innovative products and services. Shalley & Gilson (2004) pointed to the importance of a firm sense of self as creative, which seems to be lacking. Lastly, collaborative work outside of the focal team, for instance across areas of expertise or formal structures, can be challenging. In general, people seem to prefer working in teams, because standing out as an individual can be avoided, preferred is a collective responsibility and thus collective success and failure. A fear of failure or losing face seems to be less associated with not fulfilling a task but with standing out in any respect. Because people are chosen for a certain position according to capabilities regardless of sex, gender diversity seems to be high already, however many other dimensions such as diversity in social or

geographical background seem to be lacking. A reason mentioned was that understanding local customs and terminology is important in order to keep up a business successfully and that the value of diversity is not recognized yet. Thus, many Chinese companies seem to recruit mainly locally. In that line, the FYP envisions breaking market segmentation.

The recognition of expertise translates into trust for the older in many situations. This is also accompanied by feeling as being part of a bigger movement, triggering a passiveness and a tradition to focus more on the past than on the future, since the future is perceived as not alterable by an individual but liable to chance. However, especially the younger generation (now in their twenties) seems to lose this inherent trust. It appears that starting in the more developed South of China the young are seen as important resource for the future and their ideas and new approaches gain recognition. This is also validated by the importance placed on returnees confirmed by the GII referring to the Thousand Talents Recruitment Program. The MKR verified this as well stating that from its inception in 2009 to May 2014, the program attracted more than 4,000 returnees. Younger, educated people seem to lose trust in official statements and aptitude; they criticize the lack of online resources caused by censorship but also other physical resources, and the powerlessness of the individual confronting large, traditional institutions. The younger participants emphasized how creativity is mainly existent in leisure times, which was confirmed by the MKR which stated that an entire body of innovation in China's consumer-facing industries has involved the creation of uniquely Chinese business models, including ways to monetize online businesses such as social media and games. Nevertheless, due to censorship, the GII ranked China very low in its category online creativity, based on edits in Wikipedia and blockage of YouTube.

The poor state of IP rights, as well as other rights in the legal system are subject to the power of knowing the right people (guanxi) and an arbitrariness of rule prosecution, which is identified and disapproved. Nevertheless, many recognize the improvement of the IP rights as well. The development was confirmed by the GII referring to the 2014–2020 Action Plan on the Implementation of National Intellectual Property Strategy to ease the market processes for transactions pertaining to intellectual properties. The MKR states that there have been improvements, but more progress is needed in order to ease the concern of foreign companies and Chinese innovators. Lastly, the 13th FYP advanced that better protection of IP rights stands in line with the goal to improve basic but also breakthrough research. Other impediments seem to be the high amount of rules existent in companies but also the bureaucratic structures that slow down the administration. For example, according to the MKR it can take two years longer to get a drug

approved in China than in other countries. Plambeck & Weber (2009) confirm this by hinting that rigid, all-encompassing framings may restrict free considerations and actions. Meanwhile, the FYP asserts the reduction of administrative approvals.

Impediments to idea realization are steep hierarchies, as well as rigid structures and deadlocked communication patterns, lack of political transparency, governmental control over ideas and realization, rising inflexibility in state structures associated with the current leadership practices and lastly censorship in creative industries. Nevertheless, the Chinese participants in their late twenties and thirties confirmed that they generally trust the current leadership of China and the FYP alleges to create a fairer competitive environment for all enterprises and the promotion of the creative culture industry. The younger value the rising academic research support, the low censorship in some industries, in which economic growth is stressed and lastly the development of designated areas, where innovation is promoted. The last point is validated by the MKR, which mentions Beijing, Shanghai, and Shenzhen being three major innovation cluster cities. The incentives by the government are perceived as effective in that more R&D departments are established by all kinds of companies in China. It was confirmed by the MKR that MNCs start to locate more R&D activity in China directed at exerting a global influence. Chinas efforts are according to the MKR directed at moving up the value-curve in increasing the amount of higher value-added products and services but also an increased number of high-paying jobs and high value-added work. The availability of advanced equipment was also praised in the primary data. Other encouraging factors include the rising availability of company information, disclosures and thus transparency, the positive effect of market competition and speed of changes and the available manpower. According to the MKR the cost of manufacturing in China still remains far below levels of advanced economies and thus attractive to many industries. Nevertheless, it is also confirmed that the rising wages make it a less attractive site for labor-intensive work. The analysis revealed that MNCs establishing production sites in China seem to be a resource for product development of a similar kind by working around existing patents. Future research in this direction could uncover new findings in terms of innovation. This is to some degree validated by the GII stating that local companies generally favor tax incentives over direct R&D support grants because of the increased opportunity to adoption and technology transfer. This also explains the success of the high tech status incentive, mentioned in the primary data. The MKR however emphasizes that while the Shanzhai (copycat) system has huge potential benefitting a faster revolution in manufacturing in being similar to open manufacturing, China needs to move away from absorbing and adapting

knowledge to being an innovation leader in order to sustain GDP growth in the future, which is confirmed by the GII. Still, at the moment the fact that Chinese producers compromise on quality striving for ‘good enough’ to satisfy consumer demands can be evaluated as adding freedom and encouraging idea development. The focus on short-term profitability is a positively impacting factor to this, while the goal of long-term profitability can be perceived as decreased autonomy and freedom. The fact that product testing is done directly on the market and several versions are launched rapidly can also be seen as an acceptance of trial and error that adds to the freedom of producers. The MKR approves that consumers’ acceptance of early iterations of products and services as well as the willingness to give feedback is enabling rapid refinements. In general, people seem to make up their minds quickly, changing opinions and attitudes concerning their preferences. For an entrepreneur, this can have huge implications. Nevertheless, people also see negative features, for example the general lack of reward systems for creative input and a harsh competition leaving not much resources for endeavors not directly leading to increased profitability. People see the challenge in real problems to be solved, which is when creativity is spurred immensely. It was thus described as a more pragmatic and goal oriented way of being creative, but not seeing a huge variety of possibilities while trying to improve a situation that is perceived as ordinary. Nevertheless, when confronted with a problem or a goal to be achieved, people enjoy searching for alternatives and become extremely flexible and adaptable in aiming for their achievement. Incremental changes are thus more prevalent than radical innovations since the latter usually results from combining knowledge from very different spheres. The fact that innovation is more incremental than radical was confirmed by findings of the GII report while the MKR declares that the Chinese model of rapid, low-cost innovation even has disruptive potential in some industries.

Some more socio-economic factors seem to impede creativity. These are the harsh competition with peers starting at a very early age, the high expectations of parents and relatives, the structure of the education system and Chinese language that is focused on learning by heart and the missing importance of ‘soft skills’, the slow rural development and availability to resources, the general level of education especially of the English language, repayment regulations for loans from financial institutes exerting pressure on the debtor and lastly the still continued success of merely copying and selling moderate quality products. The FYP foresees a better allocation of resources and thus rising levels of cross-sectorial and cross-territorial innovation. It has to be mentioned that concerning the language Hempel & Sue-Chan (2010) in contrast to the above perception declare that graphical characters in the Chinese language help to enhance figural-spatial creativity among

Chinese people. Finally, the cultural dimensions of sustaining harmony, face in public and respect for the older were determined as potentially imperative to creativity and exerting pressure.

Lubart (1999) argues that in every culture there are specific areas in which creativity is accepted or promoted and areas in which it is not. This is clearly a result of both, primary and secondary data as for example creative industries are more controlled than supported and other areas receive vast support such as engineering and science. The GII states that the role and significance of innovation goes beyond the objective of economic success in potentially addressing pressing societal problems such as pollution, health issues, poverty, and unemployment. This was confirmed by the assessment of the FYP, which seems to focus on innovation for those reasons. Moreover the framework conditions for innovation provided by the GII report largely conform with the FYP vision. However, the premise of good coordination between ministries and private and governmental sectors is an issue in a country of China's size.

When comparing the KEYS dimensions with the factors existent on an organizational level put forward by Anderson et al. (2014) it becomes apparent that labeling the preceding analysis as holistic would be wrong. The dimension of knowledge utilization and networks was touched upon, but asking the participants explicitly about their opinion, apart from supervisor and workgroup relation, could have revealed more valuable information. It could have produced a picture of how network dynamics play a role in influencing the climate towards creativity in China. Innovative diffusion and entrepreneurship could have been discussed in more detail in that respect, since there was no question aiming at the climate for start-up ventures in China. A dimension that could thus be valuable in an updated version of the KEYS framework is "Network and Corporate Entrepreneurship Encouragement". The fact that it showed up in the data however points to the value of the framework in pursuing the purpose of this study. Besides, the external environment could have been an interesting factor in considering which countries, external markets and industries impact the evolvement of creativity in China.

The analysis did not answer the question whether the interest in bringing the country's overall economy forward, as mentioned by Niu & Sternberg (2003) and Hempel & Sue-Chan (2010), has an impact on the individual motivation to think creatively in order to add to the overall economic growth. It can be deduced that general trends may develop, influencing individual desires. But it seems that these stem from societal value evolutions and not from the general pride

in developing the nation's prosperity. It seems that the importance of the community does not extend to the national level, however a more in depth research is needed to answer this question.

The research by Zhou & Hoever (2014) suggests that the organizational context is impreative in increasing the inclination to engage in creative thought in employees and generally a country's citizens, suggesting that even if people lack the natural inclination to be creative, the environment can make a positive change. Thus the efforts directed at creativity in China seem to be valuable and likewise the aim of this study.

The analysis didn't contradict the literature reviewed overall. However, since the research, especially concerning the (cross-)cultural and China-specific implications are still vastly in a state of development, this is sensible. Nevertheless some general observations were made which support the discussion in the current literature. It was affirmed that creativity is often related to unconformity with and critical appraisal of the overall surrounding context, which was proposed by Sundararajan & Raina (2015). Her assessment, that this does not necessarily entail confrontation, but that creativity can thrive in harmony in being inevitably personal, and deeply cultural is extremely meaningful and seems to be forgotten by many researchers of creativity, especially in the comparative studies of East (Asia) and the West. The historical development and the culture specific aspects such as domains in which creativity is promoted, structural conditions facilitating creativity development and traditional values play an important role in understanding the current conception of creativity.

Based on the above discussion and taking into account the reasonably positive evaluation of the outcome dimensions Forthcoming Productivity and Personal Creativity and the fact that four dimensions (Freedom, Resources, Workgroup Support and Challenging Work) were assessed as being ambiguous justifies labeling the climate towards creativity supportive. Plenty of factors were provided, both Organizational Encouragement and Organizational Impediments, which leads to the conclusion that the climate towards creativity is developing and might be more evidently positive in the future. This is in line with the MKR suggesting that China has the potential to become an innovation leader.

6.0 Conclusion

A clear picture of the climate towards creativity in China was presented in discussing the analytical and empirical results. Despite the fact that the limitations only allow for a preliminary assessment, the findings of this research contain substantial implications for business practice. It is demonstrated that China is not only going through the transition from a manufacturing-based to a knowledge-based economy, but this is accompanied by a fundamental change of the cultural values. Since the environment in China is constantly shifting, it is valid to say that the conception of creativity is evolving, too. The discussion in the literature regarding different conceptions of creativity is going to continue and the methodological sophistication will reach higher levels in the future. Nevertheless, it became clear that creativity lies in every aspect of society. The adaptation of the organizational framework to a country level succeeded and the interviewees were able to reflect upon all dimensions. This has produced a first understanding of the context impacting the new conceptualization of creativity. Especially among the younger generations, this could lead to more fruitful outcomes. Presently, creativity may foremost lead to incremental improvements of products, processes and services, which already have huge potential to unlock large returns in value, as the consumer base is expanding. Nevertheless, the fact that China is lacking the legacy of established and powerful industries could imply the opportunity to leapfrog these knowledge requirements and radically disrupt the Western heritage. The pragmatic and solution-focused thinking style may lead to unknown value creation possibilities as well. It is certain however that it will thrive most in the areas in which creativity is supported by the environmental conditions. This puts emphasis on the importance of the decision makers within companies, governmental bodies and institutions leading the country in the right direction and involving more and more people in the decision making processes in order to push autonomy and provide the necessary resources. Supporting the education system to further incentivize creative thinking, and likewise stimulating communication and collaboration skills will thus be of major importance lifting all examined dimensions to a more supportive level. It was shown that creativity is rooted in the cultural environment and values in China, yet reportedly more focused on the self than on product creation. In the future this potential must be transferred and unlocked by providing the right context from an early age in order to ignite and exploit creativity and innovation.

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KEYS Dimension Descriptions

Encouragement of Creativity:

Encouragement is described as “*An organizational culture that encourages creativity through the fair, constructive judgment of ideas; reward and recognition for creative work; mechanisms for developing new ideas; an active flow of ideas; and a shared vision*”. Work Group Support is described as “*A diversely skilled work group in which people communicate well, are open to new ideas, constructively challenge each other's work, trust and help each other, and feel committed to the work they are doing*”. Supervisory Encouragement is described as “*A boss who serves as a good work model, sets goals appropriately, supports the work group, values individual contributions, and shows confidence in the work group*”.

Autonomy of Freedom:

Freedom is described as “*Deciding what work to do or how to do it; a sense of control over one's work*”.

Resources:

The Resources category is described as “*Access to appropriate resources, including funds, materials, facilities, and information*”.

Pressures:

Challenging Work is described as “*A sense of having to work hard on challenging tasks and important projects*”. Realistic Workload Pressure is described as “*Absence of extreme time pressures, unrealistic expectations for productivity, and distractions from creative work*”.

Organizational Impediments to Creativity:

Lack of Organizational Impediments to Creativity are described as “*an organizational culture that does not impede creativity through internal political problems, harsh criticism of new ideas, destructive internal competition, an avoidance of risk, and an overemphasis on the status quo*”.

Outcomes:

The outcome creativity is described as “*A creative organization or unit, where a great deal of creativity is called for and where people believe they actually produce creative work*” and productivity is described as “*An efficient, effective, and productive organization or unit*”.

Adapted and detailed KEYS dimensions

Each of the 10 dimensions is represented by an adapted list of the original 78 statements composing the KEYS framework. Fields with a dark grey background were added to the list during the adaptation process.

| |
|--|
| Organizational Encouragement → Encouragement of Creativity in China |
| People solve problems creatively |
| New ideas are encouraged |
| There are good mechanisms for encouraging and developing creative ideas |
| People feel encouraged to take risks |
| Top management/the government supports creative work |
| People feel incentivized and enthusiastic about developing new ideas |
| Ideas are judged fairly by the people capable of bringing them to life/supporting their realization |
| People feel free to express unusual ideas without the fear of being called stupid/feeling "suppressed" |
| Failure is acceptable/ there is no fear of failure |
| Performance/Idea evaluation is fair |
| People are recognized for creative idea development and realization |
| People are rewarded for creative idea development and realization |
| There is a lively and active flow of ideas |
| There is a shared vision where people are going/what the goal is |
| Constructive competition exists |
| People feel like taking part in the decision making process |
| Supervisory Encouragement |
| In general, bosses are known to have clear expectations |
| They communicate well with the group |
| They have good interpersonal skills |
| They value individual contributions |
| They are open to new ideas |
| The feedback is constructive |
| Supervisors and subordinates engage in open interactions |
| They are supportive of creative solutions |
| Work Group Support |
| In groups there is a feeling of mutual trust |
| People challenge each others' ideas explicitly or implicitly but constructively |
| People are curious and open to hear new ideas |
| People are willing to help each other |
| There is a good blend of skills in work groups usually |
| People working in groups are committed to their work |
| There is open communication within work groups |
| People in work groups come from diverse backgrounds and as a result inspire each other |
| Freedom |
| People feel freedom to decide what job to take on |
| In every day life people feel a sense of control over the work and ideas |

| |
|--|
| People feel freedom to decide what project in the job to take on |
| People feel freedom to change their job |
| People feel like they are in control of their own life and free to follow their own inspirations |
| Sufficient Resources |
| People have no difficulties getting financial backing |
| People have no difficulties getting data and information |
| The resources available allow for creative idea generation |
| People can get hold of resources they require for idea realization |
| The educational background in general supports creativity |
| Challenging work |
| People often feel challenged in the tasks they do |
| They feel like contributing to the overall development |
| People see the relevance in the tasks they work on |
| In general, the expectations on what a person should achieve stimulate self-fulfillment |
| People like to explore alternative solutions and possibilities |
| Workload Pressure → Overall, societal aspects |
| People feel pressured by time constraints |
| People feel the need to accomplish tasks following the prescribed way |
| People feel pressured by the expectations of their bosses |
| People feel pressured by the expectations of their relatives |
| People feel pressured by the expectations of their social peers |
| People feel pressured by the societal expectations |
| Organizational Impediments |
| Political problems inhibit creativity |
| Destructive competition often prohibits creativity |
| People have to fight to keep their jobs |
| Openly discussing ideas is hindered often |
| Destructive criticism is articulated often |
| People are very concerned about negative criticism |
| People feel pressured to produce results of good quality |
| There are formal structures existent in many parts of everyday life |
| There are formal structures existent in organizations |
| Procedures are often very formal |
| People feel like the upper management/the government enforces strict control |
| People argue a lot with each other |
| People are conservative in their approaches/behavior |
| Personal Creativity |
| The person feels like working creatively in China |
| The person feels personally inspired in China |
| Forthcoming Productivity |
| China is effectively holding up (economic) growth |
| My own industry/company is effective in this environment |
| China can be described as being efficient in its operations |
| Reactions to economic changes are undertaken quickly |
| New regulations are enforced effectively and perceived as effective |

GII Detailed Profile of China

Assessment Summary for China:

Strengths for China that were identified include the following: Innovation Efficiency (the ratio of the outputs over the inputs, showing how much innovation output a given country is getting for its inputs). Education (especially PISA scales in reading, math and science), belonging to the **Human Capital & Research pillar**; General infrastructure (especially Gross capital formation) belonging to the **Infrastructure pillar**; Firms offering formal training and Gross domestic expenditure on R&D (GERD) financed by business belonging to knowledge workers and High-tech imports less re-imports belonging to knowledge absorption in the **Business Sophistication pillar**; the pillar **Knowledge & Technology Outputs** (especially Knowledge creation in terms of Domestic resident patent applications, Domestic resident utility model application, Knowledge impact in terms of Growth rate of Price Power Parity GDP per worker and lastly High-tech exports less re-exports belonging to Knowledge diffusion); and finally Creative goods exports belonging to the **Creative Outputs pillar**.

Weaknesses include: The cost of redundancy dismissal (belonging to the Regulatory environment in the **Institutional pillar**); Tertiary education and Tertiary inbound mobility (belonging to the **Human capital & research pillar**); GDP per unit of energy use (belonging to Ecological sustainability in the **Infrastructure pillar**); Microfinance gross loans (belonging to Credit in the **Market Sophistication pillar**); the Ease of protecting investors (belonging to Investment in the **Market Sophistication pillar**); Knowledge intensive employment belonging to Knowledge workers and GERD financed by abroad belonging to Innovation linkages in the **Business sophistication pillar**, and Communication, computers & information services imports (belonging to Knowledge absorption in the **Business sophistication pillar**), and finally National feature films per million population and Printing and publishing output manufactures (belonging to Creative goods & services in the **Creative Outputs pillar**).

Explanation of terms

Pillar 1: Institutions

Nurturing an institutional framework that attracts business and fosters growth by providing good governance and the correct levels of protection and incentives is essential to innovation. The Institutions pillar captures the institutional framework of a country.

The **Political environment** sub-pillar includes three indices that reflect perceptions of the likelihood that a government might be destabilized; the quality of public and civil services, policy formulation, and implementation.

The **Regulatory environment** sub-pillar draws on two indices aimed at capturing perceptions on the ability of the government to formulate and implement cohesive policies that promote the development of the private sector and at evaluating the extent to which the rule of law prevails (in aspects such as contract enforcement, property rights, the police, and the courts). The third indicator evaluates the cost of redundancy dismissal as the sum, in salary weeks, of the cost of advance notice requirements added to severance payments due when terminating a redundant worker.

The **Business environment** sub-pillar expands on three aspects that directly affect private entrepreneurial endeavors by using the World Bank indices on the ease of starting a business; the ease of resolving insolvency (based on the recovery rate recorded as the cents on the dollar recouped by creditors through reorganization, liquidation, or debt enforcement/foreclosure proceedings); and the ease of paying taxes.

Pillar 2: Human capital and research

The level and standard of education and research activity in a country are prime determinants of the innovation capacity of a nation. This pillar tries to gauge the human capital of countries.

The first sub-pillar includes a mix of indicators aimed at capturing achievements at the elementary and secondary **education** levels. Education expenditure and school life expectancy are good proxies for coverage. Government expenditure per pupil, secondary gives a sense of the level of priority given to secondary education by the state. The quality of education is measured through the results to the OECD Programme for International Student Assessment (PISA), which examines 15-year-old students' performances in reading, mathematics, and science, as well as the pupil-teacher ratio.

Higher education is crucial for economies to move up the value chain beyond simple production processes and products. The sub-pillar on **tertiary education** aims at capturing coverage (tertiary enrolment); priority is given to the sectors traditionally associated with innovation (with a series on the percentage of tertiary graduates in science and engineering, manufacturing, and construction); and the inbound and mobility of tertiary students, which plays a crucial role in the exchange of ideas and skills necessary for innovation.

The last sub-pillar, on **R&D**, measures the level and quality of R&D activities, with indicators on researchers (full-time equivalence), gross expenditure, and the quality of scientific and research institutions as measured by the average score of the top three universities in the QS World University Ranking of 2014. By design, this indicator aims at capturing the availability of at least three higher education institutions of quality within each economy (i.e., included in the global top 700), and is not aimed at assessing the average level of all institutions within a particular economy.

Pillar 3: Infrastructure

The third pillar includes three sub-pillars: Information and communication technologies (ICTs), General infrastructure, and Ecological sustainability. Good and ecologically friendly communication, transport, and energy infrastructures facilitate the production and exchange of ideas, services, and goods and feed into the innovation system through increased productivity and efficiency, lower transaction costs, better access to markets, and sustainable growth.

The **ICTs** sub-pillar includes four indices developed by international organizations on ICT access, ICT use, online service by governments, and online participation of citizens.

The sub-pillar on **general infrastructure** includes the average of electricity output in kWh per capita; a composite indicator on logistics performance; and gross capital formation, which consists of outlays on additions to the fixed assets and net inventories of the economy, including land improvements (fences, ditches, drains); plant, machinery, and equipment

purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.

The sub-pillar on **ecological sustainability** includes three indicators: GDP per unit of energy use (a measure of efficiency in the use of energy), the Environmental Performance Index of Yale and Columbia Universities, and the number of certificates of conformity with standard ISO 14001 on environmental management systems issued.

Pillar 4: Market sophistication

The ongoing global financial crisis has underscored how crucial the availability of credit, investment funds, and access to international markets is for businesses to prosper. The Market sophistication pillar has three sub-pillars structured around market conditions and the total level of transactions.

The **Credit** sub-pillar includes a measure on the ease of getting credit aimed at measuring the degree to which collateral and bankruptcy laws facilitate lending by protecting the rights of borrowers and lenders, as well as the rules and practices affecting the coverage, scope, and accessibility of credit information. Transactions are given by the total value of domestic credit and, in an attempt to make the model more applicable to emerging markets, by the gross loan portfolio of microfinance institutions.

The **Investment** sub-pillar includes the ease of protecting investors index as well as three indicators on the level of transactions. To show whether market size is matched by market dynamism, stock market capitalization is complemented by the total value of shares traded. The last metric is a hard data metric on venture capital deals, taking into account a total of 19,462 deals in 73 countries in 2014.

The last sub-pillar tackles **trade and competition**. The market conditions for trade are given in the first indicator measuring the average tariff rate weighted by import shares. The second indicator is a survey question that reflects on the intensity of competition in local markets. Efforts made at finding hard data on competition have so far proved unsuccessful.

Pillar 5: Business sophistication

The last enabler pillar tries to capture the level of business sophistication to assess how conducive firms are to innovation activity. The Human capital and research pillar (pillar 2) made the case that the accumulation of human capital through education, and particularly higher education and the prioritization of R&D activities, is an indispensable condition for innovation to take place. That logic is taken one step further here with the assertion that businesses foster their productivity, competitiveness, and innovation potential with the employment of highly qualified professionals and technicians.

The first sub-pillar includes four quantitative indicators on **knowledge workers**: employment in knowledge-intensive services; the availability of formal training at the firm level; R&D performed by business enterprise (GERD) as a percentage of GDP (i.e., GERD over GDP); and the percentage of total gross expenditure of R&D that is financed by business enterprise. In addition, the sub-pillar includes an indicator related to the percentage of females employed with advanced degrees. This indicator, in addition to providing a glimpse into the gender labour distributions of nations, offers more information about the degree of sophistication of the local human capital currently employed.

Innovation linkages and public/ private/academic partnerships are essential to innovation. In emerging markets, pockets of wealth have developed around industrial or technological clusters and networks, in sharp contrast to the poverty that may prevail in the rest of the territory. The Innovation linkages sub-pillar draws on both qualitative and quantitative data regarding business/university collaboration on R&D, the prevalence of well- developed and deep clusters, the level of gross R&D expenditure financed by abroad, and the number of deals on joint ventures and strategic alliances. The latter covers a total of 1,623 deals announced in 2014, with firms headquartered in 104 participating economies.⁷ In addition, the total number of Patent Cooperation Treaty (PCT) and national office published patent family applications filed by residents in at least three offices proxies for international linkages.

In broad terms, pillar 4 on market sophistication makes the case that well-functioning markets contribute to the innovation environment through competitive pressure, efficiency gains, and economies of transaction and by allowing supply to meet demand. Markets that are open to foreign trade and investment have the additional effect of exposing domestic firms to best practices around the globe, which is critical to innovation through knowledge absorption and diffusion, which are considered in pillars 5 and 6. The rationale behind sub-pillars 5.3 on **knowledge absorption** (an enabler) and 6.3 on knowledge diffusion (a result)—two sub-pillars designed to be mirror images of each other—is precisely that together they will reveal how good countries are at absorbing and diffusing knowledge.

Sub-pillar 5.3 includes four statistics that are linked to sectors with high-tech content or are key to innovation: royalty and license fees payments as a percentage of total trade; high-tech imports (net of re-imports) as a percentage of total imports; imports of communication, computer and information services as a percentage of total trade; and net inflows of foreign direct investment (FDI) as a percentage of GDP.

The Innovation Output Sub-Index Innovation outputs are the results of innovative activities within the economy. Although the Output Sub-Index includes only two pillars, it has the same weight in calculating the overall GII scores as the Input Sub-Index. There are two output pillars: Knowledge and technology outputs and Creative outputs.

Pillar 6: Knowledge and technology outputs

This pillar covers all those variables that are traditionally thought to be the fruits of inventions and/ or innovations. The first sub-pillar refers to the **creation of knowledge**. It includes five indicators that are the result of inventive and innovative activities: patent applications filed by residents both at the national patent office and at the international level through the PCT; utility model applications filed by residents at the national office; scientific and technical published articles in peer-reviewed journals; and an economy's number of articles (H) that have received at least H citations.

The second sub-pillar, on **knowledge impact**, includes statistics representing the impact of innovation activities at the micro- and macro- economic level or related proxies: increases in labour productivity, the entry density of new firms, spending on computer software, and the number of certificates of conformity with standard ISO 9001 on quality management systems issued. To strengthen the sub-pillar, the measure of high- and medium-high-tech industrial output over total manufactures output is also included.

The third sub-pillar, on **knowledge diffusion**, is the mirror image of the knowledge absorption sub- pillar of pillar 5. It includes four statistics all linked to sectors with high-tech

content or that are key to innovation: royalty and license fees receipts as a percentage of total trade; high-tech exports (net of re-exports) as a percentage of total exports (net of re-exports); exports of communication, computer and information services as a percentage of total trade; and net outflows of FDI as a percentage of GDP.

Pillar 7: Creative outputs

The role of creativity for innovation is still largely underappreciated in innovation measurement and policy debates. Since its inception, the GII has always emphasized measuring creativity as part of its Innovation Output Sub-Index. The last pillar, on creative outputs, has three sub-pillars.

The first sub-pillar on **intangible assets** includes statistics on trademark applications by residents at the national office; trademark applications under the Madrid System by country of origin, and two survey questions regarding the use of ICTs in business and organizational models, new areas that are increasingly linked to process innovations in the literature.

The second sub-pillar on **creative goods and services** includes proxies to get at creativity and the creative outputs of an economy. Last year, in an attempt to include broader sectoral coverage, a global entertainment and media output composite was added. In addition, the indicator on audio-visual and related services exports was renamed ‘Cultural and creative services exports’ and expanded to include *information services, advertising, market research and public opinion polling, and other, personal, cultural and recreational services* (as a percentage of total trade). These two indicators complement the remainder of the sub-pillar, which measures *national feature films* produced in a given country (per capita count); *printing and publishing output* (as a percentage of total manufactures output); and *creative goods exports* (as a percentage of total trade), all which are aimed at providing an overall sense of the international reach of creative activities in the country.

The third sub-pillar on **online creativity** includes four indicators, all scaled by population aged 15 through 69 years old: *generic* (biz, info, org, net, and com) and *country-code top level domains*, *average monthly edits to Wikipedia*; and *video uploads on YouTube* (There is no data available for this measure for China as YouTube was blocked for 2,711 days). Attempts made to strengthen this sub-pillar with indicators in areas such as blog posting, online gaming, the development of applications, and have so far proved unsuccessful.

The reader is advised to refer to Appendix III of the GII report, where all elements are described in more detail including its title, its description, its definition, and its source.

Interview Outline

- Interviewer reads out confidentiality statement & gives introduction to the topic
"This interview will be transcribed and I can send it to you for your consent if you wish. The data will only be used for this thesis' purposes and not handed to others. The thesis will be published in the university internal database, which can only be accessed by the student and teaching body of Copenhagen Business School. In case of questions you can always contact me, my e-mail address was already provided."

China is

- the nation with the largest population
- the nation with the second largest economy in GDP-terms

Creativity is necessary to guarantee economic growth in the global competition.

When answering these questions, the interviewee should focus on his/her general conception of creativity in China. This assessment is intended to provide a picture of the current climate influencing the extent to which people engage in creative thought in China.

1. Please describe your connection to China. How long did you live there for? How often do you work there? Are most of your projects related to China?/What company do you currently work for?

Encouragement of Creativity

2. Organizational Encouragement

... are organizations and institutions held to encourage creativity? Please elaborate. (risk taking; idea generation; explicitly or implicitly assisting; fair/supportive/unfair/threatening evaluation of new ideas; fear of failure; reward and recognition; collaborative idea flow and participative management and decision making; lively and active flow of ideas; constructive competition)

3. Supervisory Encouragement

...do supervisors encourage creativity? Please elaborate. (In setting clear goals; open interactions between supervisors and subordinates e.g culture of constructive feedback; being supportive)

4. Work Group Supports

... is the work group supportiveness encouraged? Please elaborate. (diversity in team members' backgrounds, mutual openness to idea, constructive challenging of ideas, shared commitment to the project, trust)

Autonomy/Freedom

5. Freedom

... do people feel like they have high autonomy in their day-to-day conduct? Please elaborate. (ownership and control over work and ideas, freedom of choice e.g. which project to work on/which job to choose)

Resources

6. Sufficient Resources

... is the general perception that enough resources are available in order to make creativity possible? Please elaborate. (data, material, budget, information, education)

Pressures

7. Challenging Work

... do people see the urgency and relevance of problems and value intellectually challenging tasks? Please elaborate. (joy in exploring alternative possibilities, going to work in order to solve relevant problems)

8. Workload Pressure

... does extensive workload pressure exists undermining creativity? Please elaborate. (time pressure; unrealistic expectations)

Organizational Impediments to Creativity

9. Organizational Impediments

... are Chinese organizations(/is the society) generally characterized by internal controversy, conservatism, rigid and formal management structures? Please elaborate. (political problems; sticking to traditional approaches; strict control of upper management; very formal structures)

Personal Creativity

10. ... do you and your colleagues work as creatively in China as in other countries? Please elaborate. (Do you perceive working in China as conducive to your creativity? Do you experience moments of inspiration in general/more in China?)

Forthcoming Productivity

11. ... do you feel that China is effectively holding up (economic) growth? Please elaborate.

We talked about the development of creative thought in China from your perspective. Is there something that you would like to add to our conversation?

Expert Interview – conceptualization of the development of creativity in China

| | |
|--------|-------------------|
| Date: | Interviewee Name: |
| Start: | Sex: |
| End: | Age: |

- Interviewer reads out confidentiality statement

On the Person

What is your personal background? And how did your interest in creativity in China evolve?

Conception

Do you think that the concept/understanding of creativity is the same/similar in the Western and the Chinese perspective?

In what way is creativity valuable in your point of view?

Situation in China – every day life

Is it desirable today to be “creative” in China, in your opinion? Has that changed over time?

Has the focus on creativity in China changed in recent years? (Is it an “every day life topic”? Do people discuss new innovations or inventions? Is it discussed by the media?)

Do you think that the perception of creativity among Chinese citizens needs to be more positive than it is today in order to have a bigger impact on the society and (economic) development?

Situation in China – overall evaluation

In which domain do you see the biggest development of creativity in China (*visual art, literature, music, business, science, education, everyday life*)?

What factors are impeding the development of creativity in China in your opinion?

Conclusion

To sum it up, what are the most important factors influencing the development of creativity in China today?

Interview Transcripts¹

Former Expat Interview I

(Investment Partner at a Venture Capital Firm)

Introduction

Question from interviewee: Creativity not only in a technical sense but also in a creative, art, music etc. sense?

Creativity as the basis for innovation, so it is business related and not only the technical sense.

Personal Connection 1:44

I lived in Shanghai from 2005 until 2008, for 3 and a half years, I was responsible for strategy Asia Pacific in China. Since 2008 I'm back in Germany but I have constant business relations in China, with Chinese companies and Investment funds. I travel to China in the moment about 3, 4 times a year depending on immediate projects or whatever comes away.

1. Organizational Encouragement 2:38

So the first question on China in general

They are absolutely held to create creativity since about 2010. In the meantime I do have the impression that everybody is singing along. So creativity is very much on the agenda of almost everyone I talk to and we have seen a lot of money going in this area especially the startup area where I come from where within the last three years from scratch big incubators, company accelerators have been created in typical Chinese style, so not a 3 story building with 10 offices but more the type of 15 story building with space for 3000 people so very, very strong encouragement from the government.

2. Supervisory Encouragement 3:50

Its hard to say in general, in the area where I work it exists most definitely but it's a very creative area of technology styles. In big companies I guess it depends as usual. If you look at companies for example at Baidu, they're extremely creative. They have very creative people working there, they're at the forefront of technology, not only as a search engine or whatever but they go into neuronets, into deep learning and they put a lot of money behind it and they build up entire organizations which have creativity at their core. So definitely. I personally would doubt that there is a lot of creativity in a brick and mortar steel mill in China but then again I wouldn't know that. However, that's the typical thing we see all over the world so also in the US you have very creative industries and less creative industries. On a general scale my gut feeling is that generally

¹ (bold writing = interviewer)

speaking China is not as creative yet as western societies with exceptions in internet, in social media that type of lets say newer economies.

If you think about the atmosphere that you experienced when you were working in China or with Chinese companies, is it a supportive atmosphere in terms of creativity? 5:55

Up to 2008 it was not, absolutely not. Creativity was still copy, copy, copy and try to get the quality up. This is partly the case today too but it changed a lot, so it got more creative.

3. Work Group Supports 6:25

I can't really say that. For the groups that we directly deal with absolutely. But again it's their core to be creative, for big companies in the moment I can't say.

For example you need to trust your coworkers in order to be a group which can work creatively, so do you feel that in China they trust each other in groups when they work together or that there is diversity in the groups? 7:25

Diversity? No there is usually very little diversity in the groups. It depends on how you define diversity. So if you look at it from a US concept of diversity that you have a Chinese, working next to an Indian, next to a Caucasian, next to a Mexican – definitely not. In the companies at least that we deal with unless they're a WOFE (<https://www.linkedin.com/pulse/business-forms-foreign-investors-china-wholly-owned-enterprise-linge>) or something like this, its predominantly Chinese working with Chinese now China itself is of course a very heterogeneous thing, so if you look at social backgrounds, men and women and so on there is some diversity but generally I don't have the feeling that diversity is on top of their list.

4. Sufficient Resources 8:22

Resources in terms of money, yes. Resources in terms of people, no. I have the feeling its harder in China to get good creative but structured people uhm which can lets say work on an international level of knowledge, of creativity, etc. Uhm that's the typical management problem that we do have in China so in terms of people, the resources is a little difficult. Uhm what else?

Education or information?

Education kind of comes into this play. Its gonna be interesting how this develops, as far as I understand the Chinese education system is not totally geared towards creativity and more towards learning, sucking in and passing tests and doing stuff, which lets say biases the people leaving university and coming into companies to a certain direction which is not healthy for creativity. But on the other hand if you look at the big universities like Tsinghua for example they are starting to play the US game of spinning out technology and companies right out of the university this is something we usually don't do in Europe and this is interesting to watch if its going to work. If the general drive towards creativity has an impact on the education system, which I cannot really see at the moment but then again I'm not really in the education system so.

What about information as a resource?

I think the main problem China has is English. Today the leading language is English in the leading edge of technology and business models and so on and the English

proficiency in China is still very low. So even a very creative person in China, a very creative engineer for example, if he can't read the patents, that his colleagues in the US wrote, that's a barrier. That's what I feel. So access to information is difficult. In this area I don't know if any censorship is going on, I don't think so, on the contrary, so it's not a physical or political barrier to access through the internet. You could get anything if you wanted to. And then again, I think they do have a great access through all the companies producing in China. So what we usually see is, you know the Apple iPhones are produced in China or the iRobot Robots are produced in China and usually it's those companies, that are producing today that get creative in copying because they produce it anyway, so all they need is a little software around where they can get their hands on because it's encrypted, and work around patents etc., and this is where they start to be creative to work around patent and then they come up with own developments and suddenly out of a copycat you do have a new product. We've seen that. That is quite an interesting development. That is a resource we don't really have anymore because we don't produce in Europe and the US in many cases anymore.

5. Challenging Work 13:05

Do you feel that people see the urgency and relevance in problems and that they value intellectually challenging tasks so that they are joyful when they go to work?

I don't know if they are different than we...

If it's triggering creativity, that they go to work and search for alternatives, like you just described in working around a certain patent.

I think they can be very creative or let's say flexible when it comes to searching for alternatives maybe even more eager to do so than the Western guys because they do compromise on quality so they are more creative in this way. Generally speaking I never had the feeling that there is any difference in having joy about creativity, or anything, I never met any Chinese going to work "Oh I have to be creative today, what a shame".

6. Freedom/Autonomy 14:30

What about in everyday life, do you feel that people have high autonomy in their day to day conduct?

No, generally speaking not. I don't have this feeling. On the contrary, I'm speaking from an expat perspective, in our standards we generally speaking would like the people to start thinking more by themselves. They're still looking a lot for very clear directions, very well defined targets but generally speaking this typical problem of an ill defined issue that you need to solve by structuring through, by working yourself through and coming back with a proposal for a solution is not the typical way Chinese people do that. Uhm if you speak about those inherently creative jobs it's probably a little different because I wouldn't know how you can break down creative tasks into tiny little pieces like you would do with a relatively boring, repetitive job but that's a little *tedious* (?)

16:15 What about in general if people are free to choose their jobs, do you feel that they are self-confident in their freedom of choice, choosing a job, or choosing a project or building their preferences?

On the level of people that are working in international companies yes. To a degree... I think this got better in the last couple of years but for some time they did a lot of job hopping because it was just a response to the high demand of people who are proficient in English and have a academic education and stuff like that, so those guys have much more freedom than we do. On the general population level including rural areas etc. I doubt this very much. I think they are pretty much stuck to whatever they have been pushed into doing by their parents or if they're "good" judged by the party or whatever.

7. Workload Pressure 17:40

Do you feel that there is a lot of workload pressure and that this is undermining creativity.

No, I don't. I think the workload pressure is pretty much similar to Germany, not a big difference.

8. Organizational Impediments

The organizational impediments, do you think that the organizations or the society in general is characterized by internal controversy, conservatism, rigid and formal management structures, which are impeding creativity.

That was a couple of things. Informal management structures, in a regular run organization, I did not have much feeling of that - but maybe again I am lacking a little bit of language proficiency to really get into this. In bad functioning organizations I have a feeling that this could be to an extent of a problem. For example, in our world there is much loyalty towards a certain person, be it the boss or whatever, more than to the company itself. And in our job sometimes we need to exchange top management because of different reasons and in a US company usually this works, it's always painful, but the people remaining accept the new guys, but in China that's a different issue. So then you could end up with a non-functioning organization where you have something on paper but in reality they kind of report to guy outside of the company. Uhm the other points were what?

Internal controversy, conservatism. 19:55

Yes, conservatism there is. And a reflex, which is bigger than in the western world to please your boss. And sometimes the most creative heads, no usually the most creative employees are not the easiest employees. And if everyone just wants to please the boss and tell the boss how great his idea is then this might be an impediment to creativity. It might be a generational thing. The second thing was what?

Internal controversy. 21:00

Yes internal controversy is also a good point. I have the impression that the Chinese don't value a healthy debate as Germans would. Even the US guys are less controversial than in Germany for a large extent because they want to be happy with everybody and in China even more so. So a direct confrontation maybe in front of everyone about a technical matter, not a personal matter is not as common as here. But then again I think that people do have other ways to still get their ideas voiced maybe not in such a confrontational way, the question is which one is more efficient.

Political problems impacting creativity, censorship? 22:10

In business, I would rephrase that. Definitely you have that in fine arts and all those things, but that's not what we are talking about. I think a little bit of problem in China is, you can have a great idea, a great business idea, if you don't have the right backing in government, if you don't have the right network and the right sons of the right people

working with you, you will not be the one succeeding with this idea but its gonna be the guy who maybe comes later and copies you but does have those connections. We have seen that, that's difficult for us to judge because you cannot, like in the Western world you would look at an idea and then you need to factor in "Okay do they have patents that are protected, can we give them enough money", and then they have a shot to make it big. You do have this political factor that you need to have somebody in here who has the right connections.

Personal creativity 23:55

Yes absolutely.

Why?

Because there was nothing, when I came to China in my area there was nothing. So I started from scratch, how much more creative can it be.

Forthcoming Productivity 24:25

Well, they're problem is declining growth right now. I know all the economic guys that China needs to have something like 5-6% GDP just to cope with their still rising population. So as a matter of fact 5-6% growth is no growth. I don't know how much truth is to that. In general I do believe, unless you know black swan events, suddenly you have riots in China coming up, China is on a very, very good path to keep up the growth. They have understood that just producing and copying is not enough. They are gearing the country towards creativity and at least in my area what we always see is this leapfrog type of innovation that they are striving for so they already understood it is not enough to be as good as western companies to be globally competitive, they know they have to go towards the next step. This could be an advantage. Just as an example, I don't know if this is true or not but electric vehicles, where we still have the big legacy of combustion engines, with big companies doing combustion engines, this is certainly the reason why electric vehicles is not going as fast as it could, the Chinese don't really have this legacy, of course they have combustion engines, but worldwide they are not really a big player, but they could be a big player in this next thing. And this is just an example, it's the same thing for many other areas.

Add to conversation? 26:35

Returnees. Big source that's maybe coming back to the resource question. A big source of innovation is a typical returnee, so you have this Chinese guy who is Stanford educated, worked in the US for 15 years, is 45, did invent something, started his startup, maybe even in the US, then suddenly discovered, hey I need to produce in China, my first customer is Chinese, the guys doing the coding are much cheaper in China, let's go back to China and do the startup there. And that's a very, very interesting development you can see for 2-3 years now.

Was is pushed by the government? 27:40

No. Usually the guys even have a US passport. So its even harder for them to establish the startup in China than in the US but they do it anyway because it makes sense.

Okay great, thank you!

Former Expat Interview II

(Vice President for Asia/Pacific & India of a business line for a chemical company, he built up production, application technology (7 labs) and R&D (2 centers) departments)

Personal Connection 1:30

I have been working in China for more than seven years starting from 2006 to 2013. I was responsible for Asia Pacific but of course China is the major economy or giant in the region, so the major focus was on China. I have been living there with my family, my wife and three children, and my connection today is of course, I have from the business perspective, I'm responsible globally for the business. Consequently I am responsible as well for Asia and for Greater China and I'm there 4-5 times per year, still, always one week. This is one aspects, and another aspect, I think and I'm very proud I still have a lot of Chinese friends, really friends, which I can rely on and I have also a personal relationship, still strong personal relationship to China. This is the connection, which I have to China.

1. Organizational Encouragement 2:55

Question by the interviewee: Before I answer this question, do you have a certain definition for creativity, for you as you define creativity, because its very broad. Only that we have the same understanding, can you describe it a little bit with your words what you mean with creativity?

Yes creativity builds the basis for innovation. In my definition. Of course I'm looking at it from a business perspective and for the growth of the economy. I define creativity as the basis for innovation for fostering economic growth. But of course in different industries similarly.

Understood. So the question is if the organization, companies or institutes, government foster creativity in China, is this the question?

Yes 4:20

Based on my experience the Chinese government would like to strengthen innovation and they're trying it in a lot of aspects that means they are investing a lot in R&D for example. They try to motivate foreign companies to cooperate with local companies in form of joint ventures or with attractive term sheets I would say. I believe that China would like to strengthen this aspect of innovation. On the other side what I see is that they have a lot of limitations. One limitation is from my point of view in the culture. It is related to the language, which I personally see as a big obstacle. Even though I don't personally speak Chinese but everything in China is related to memorize things and not to learn things. And this means that the whole society today is forced and educated to memorize things. And this goes in the whole system. In the elementary school, in the middle school, even in the university. Everything in my point of view is related in memorizing things which from my point of view makes it very difficult to jump to abstraction and to innovation. This is what I feel. At least based on my experiences, a PHD student which we hired, they were really experts in their field, really expert, because you can ask him about this publication or this, they know everything because they are excellent in memorizing, but if you ask them okay please use your knowledge

about this topic A and transfer to topic B then they are often struggling because they are not used to such a kind of way of learning and abstraction. This is where I see some obstacle. Another obstacle I think for creativity, you need to be, I would say free. And still I believe, even though if you go to Shanghai or Beijing you don't feel the system strongly but you should not forget that China is still a big dictatory system and therefore this has an impact how to build up innovation is respect of how you are able to build up a company, intellectual property, you have always the influence of the local government, of the regional government, this is where I think China need to improve to open up to creativity. So this is on the obstacle side. Now I'm going a little bit on the brainstorming side. On the other side what I can see and where I see some hope is that more and more – if I'm not wrong the Chinese call them the turtles – those are the people who receive an excellent education abroad in America, in UK, in Australia, in New Zealand – and these people are coming back to China and these people are bringing, I would say, the European way or the American way of innovation. And you can imagine as you mentioned as one point, 3 billion people if only 10, 20, 30 million are coming back its still a huge quantity which can have an impact. So this can be a hope for China to improve their creativity but I cannot judge at this moment the situation how many people it is and how big this influence can be, we don't have facts. Another thing from my point of view that we need to take into consideration that Chinese have another way of doing innovation. Germans are more in respect on long-term innovation, that means they want to have, yes they have a problem, then they think how the solution could be then they make a team they have a project and probably after five years, seven years they build a plant, and then they are that in 10 years, fifteen years still they could get a return on this investment, this is long term innovation. Chinese, and if you are interested I need to look there is also some interesting literature on this, Chinese are more short-term focused, more cash orientated and this leads also the innovation so they are more in trial and error, so if they have an idea they bring in a product which is 50-60% okay, they bring it to the market, the market they start selling it, then they get a feedback from the market, and then immediately they will improve the system they will bring it to version 2.0 – 3.0 – 10. and 20 but they make always this spiral, this means this improvement, this cycle of improvement. Which is another way of innovation and which I to be honest also very often admire because it takes some, you have some criteria for creativity in respect of taking risk to try things and not only do it conceptionally that means that I would say Chinese focus on other criteria or other ways of innovation. I'm not sure if I could make it clear but this is how I would see it at this moment.

**Okay, so definitely more short-term focused and try and error. Understood.
I read you my question about freedom so you can add something to it.**

2. Freedom/Autonomy 11:45

Here, really I can only guess because this is a quite sensitive topic and it's not a frequent topic that you discuss in China. My gut feeling is that the regime is an obstacle or puts limitations in respect, if you cannot use social media or not all social media, everything is under control, Google sometimes is not allowed, my gut feeling is it is an invisible barrier that is when I'm talking with colleagues, with friends, with customers, I always feel that I wouldn't say big brother is watching you but I always see "Oh I need to check with the local government, I need to check this" and it is not the same, of course also when we open here a plant we need to go to Münster and check to get our permission, it is a different way of relationship, this is my feeling.

So even in day to day behavior you can feel it. 13:50

Yes, that's my feeling.

3. Supervisory Encouragement

I was checking if I remember some insight because I think we need to distinguish between a multinational company located in China because of course we are trying to implement our culture, which is already very difficult because this could create misunderstandings. I think that the role of a supervisor in China has a different role. It is sometimes I have the feeling that at least in some ways, it's more like a father, I would say that on one side, you know if you have a really good relationship, you have a really trustful relationship with your supervisor and how a good father is treating his children this is their behavior. It goes to the fact that a supervisor in China is normally also responsible to assure that his employee is married. Only to give you an idea. It goes really more than I would say here in Germany. If he is using European ways of motivating people, like feedback, in the way that we are doing, I'm not sure, what normally a good supervisor is doing, he is doing it outside a meeting, that means he is doing it on a one to one relationship and he will do it normally in a way where he will not hurt you. Normally make very clear what he would like to do. Or where he sees your progress. And he would do it in a way that he's not hurting you. Therefore I would say yes, if it's a good supervisor he will give you feedback but I'm not sure, if he will give you feedback, that it is the same way how we are taught here in Europe, it will be in a different way. Let me give a simple example, personal example: After seven years I came back to Europe here in Marl, I had my jour fixe with my employees or my direct reports and I gave him a feedback how I was used to do it in Asia. The fact was that my employees or direct reports did not understand this feedback. It was too soft. It was too indirect, it was too polite. And at least here in the region of the Ruhrgebiet and Marl, they want to have here **(hits on the table)** this is the fact and I expect this, this and this, this is the deadline. Which in Asia would be absolutely unpolite. Only to give you an idea, yes they will give feedback but they will give it in a different way. Therefore I'm not sure if this answers your question.

You were answering the question in the multinational company framework right, not your impression of the local 19:00

In terms of the local, I think they will give feedback but more in a consulting, in a more advisory way, in a more coaching way I would say.

So you were actually adapting to the style in China. 19:39

Yes. And this I think, I would assume that the local are doing it because when I'm talking to my, when I was in China, my direct reports "Please give a feedback to this and this person", I always had the feeling that on very unpleasant things it was not done in the company but outside the company, it was done by dinner or by lunch or by coffee, to give also a certain environment, a little bit relaxing environment. And I had the feeling it took always hours. When I give a feedback, normally I don't know after half an hour it's done, especially here [in Germany], but there it took one hour, two hours and it was discussing and going around and going around. It was more a holistic way.

And did you have the feeling that creativity was somehow encouraged giving that feedback? 20:30

No, not in this way. I had the feeling that they had difficulties with innovation. So in our department I would say yes, because when I was in Asia I have built up an R&D lab in Singapore and in China, therefore innovation was the key and we have spoken very often and frequently about innovation and what is the expectation of innovation. But I understood that it took me literally years to convey this message of innovation, of expectation of innovation, but I had the feeling that we were more an exception. This was my feeling. And in other companies, when I was there, innovation as more in the aspect of copying things and not really where I can differentiate myself from the competitors. That was my impression. The only, I'm not sure if they are really doing it to foster innovation or creativity, what I see that the people who have more money are sending their children outside of Shanghai for the school system. Because they do not want that their children really go through this heavy or painful school system in China and they want them to be, let's say a little bit more open-minded and have a broader view. But again I'm not sure if they're doing this to foster the aspect of creativity or if they are doing it because they know that their children will have difficulties to pass the school system in China and therefore they want to give them a better future by sending them outside normally to New Zealand or Australia.

The development of the R&D department took place a while ago, do you think that it is changing right now? If you would have to implement innovation right now in China? Do you think it would be easier? 23:15

No, one decision to set up the major R&D part in Singapore was exactly the point that I had difficulties to get – open minded is the wrong word – good, creative people in China. It is easy to get well educated people, excellent students in Chemistry or whatever, but to get people who I could imagine that they would be able to develop a new molecule, when I was there I checked a lot of universities, I checked with a lot of companies, I was not convinced about this. This was one reason why we moved to Singapore and I don't believe that in the last 3 years the situation improved. I think it will take one or two generations from my point of view.

4. Sufficient Resources

And do you feel that there is a lack of resources? That there are not enough resources available to make creativity possible for example in terms of information and data and education and material? 24:35

I think, resources, if they have something, then it is resources. They have manpower, in people, they have the most advanced equipment in China. They have the strongest computers – no I don't think it is a lack of resources, I don't think so.

5. Work Group Supports

What about work group support, in terms of groups, do you feel like they foster diversity in team members for example? Or challenging their ideas in group works and commitment to projects, and trust? 25:25

I was thinking, because if they have this problem with diversity, because we for example in China, I mean in Germany there is a lot of discussion concerning diversity between male and female, which in China is absolutely no problem. Especially in China, you get the position if you're qualified, independent if you're male or female, you get the job. Therefore for example you don't distinguish between male or female, or you don't have

this problem. Nationality, yes, I don't think that at this moment any Chinese or a lot of Chinese companies would think about building up a team of multinational people, I never heard it, to be honest. Therefore in respect of diversity and different cultures or nationality, I don't think that they really foster this thought. However, I think in respect of group dynamics or in team building I think the Chinese are much stronger than European companies, this is my feeling. If you really have a good Chinese team, this team is much more stronger than a European team, because they really share their trust, they share information. It is a completely different level of commitment and team culture, team spirit than I have here ever experienced in Europe. And Europe for me, okay I'm here in Germany but I'm Italian, I have been working in Italy, I did studies in France, so I can compare at least this three regions, or three nationalities. And such a kind of team spirit, if you have a really good team, which I experienced in China, I never experienced in another European country. This goes ... only to give you one or two examples. For example even in a company the whole team they are spending a lot of activities with the family, they spend time over the weekend, they organized with the whole family trips over the weekend, if you have some special holidays, normally this team are going all in the same soccer team or badminton team and I'm not sure – of course you are familiar with this thinking of cycle – I think a good team is not completely in the inner circle because there are only members of one family, but you are very close to this circle, and then you are protected. That means they will protect you, and therefore there are big advantages from my point of view. If you have a good team.

6. Challenging Work

And in terms of creativity, do you think that they foster it in this team? Do you feel the urgency and relevance of solving problems and foster intellectually stimulating tasks among each other? 29:40

Uhm, I think if you ask me, are they thinking, in a management team and say, “should we foster creativity”, like we do it, or “should we foster innovation”, no, I think they will not do it. However another example, really recently, what they are doing, they say “okay I have a problem in the market”, “What can I do to solve this problem” and then they are very open to do that and they make a lot of experiments to solve this problem. That means in this respect, I would say, at this moment, from all regions the Chinese in my actual organization are the most innovative, uhm team members in respect of solving problems as they are really doing things, which we in Europe or in America would never do. But they say there is a problem, a solution is this, let us do it. Therefore I would say I think they are stimulated by solving a problem and then they are trying to solve this problem. And by solving this problem I would say that from our European eyes we say, oh this is quite an innovative solution. But I never see that my country manager say, “okay let us sit together and let us make some workshop on how to increase innovation”, I think if you would go there and say that, they would say “what do you want from me?”, this is a different way, I think that you need to stimulate them by giving them a task, a problem and then honor them. This is very important. And like every human being you need to honor them by appreciation but especially also by cash. This is I would say one difference between European – my feeling – between European and Chinese. They are more cash orientated.

What about a fear of failure? 32:45

It is not the fear of failure, it is more the fear of loosing face. Yes, this is there, a big topic. Therefore it is quite important that you have a protected environment. That means if

they have a protected environment in this cycle, they are very open and they have no problem also to make mistakes or to fail. But in a public [environment], this is a big issue, therefore – this is again my interpretation – they love to work in teams. And the solution is coming from the team. Because then not one person fails, but it is a collective failure. And I would say that they, Chinese would never admit that it's a failure, they would tell you that the environment at this moment is very difficult, or we need to postpone the project for a certain time, and at this moment its not a good timing to talk about the results and these are for me key words, especially if you are in a open meeting where you have also top management, then its better that you don't put the finger in the aspect. I would say protected it's no problem, at least when I was there with my team they were very transparent and open with me, what went good, what was wrong, but this took me roughly six to seven years to get this relationship to certain colleagues and these were only telling me when I was not officially his boss. That means my direct report when he talked about his biggest failure in the lab or in the office, he said “Geati can I invite you for a lunch outside the company”, this was for me a clear signal, okay something unofficial, not to his boss but to his friend. That his friend is also his boss is another story, but this is how a Chinese, at least when I was there, treats a topic of failure.

7. Workload Pressure

And in general, in the society, do you feel that people are under a lot of workload pressure which is undermining creativity? 35:40

I think that Asian people have another definition of workload. Uhm no. I would not think so, at least if you have a good job. Of course, if you have other problems. But I would say when people were working in a company and have a good salary I think its not the workload, what I see is they have a lot of social pressure. Where I could imagine that this could create or would depress creativity. Social pressure in respect of education of the children, that is really a big issue for a lot of Chinese, now a little bit less because they have now the two child policy, so its more open now, but in former times you have only one child and this must be successful. You have the responsibility of your parents, normally when you are in Shanghai and you want to marry, you need to first have an apartment, but an apartment costs a lot of money and if you don't get an apartment you don't marry, but if you're not married you cant have children and that means you have problems within the family. When I was talking with this colleagues or friends, I had always the feeling that such a kind of pressure was much, much more, higher than the workload pressure and this I would imagine could limit creativity. Because in their mind they always think, “okay how do I get this apartment, how can I get married, how can I educate my children”. I would say its more, I would see this more as a pressure.

8. Organizational Impediments

But in general you see that there are rigid and formal structures in the society, which cannot be broken, and this is undermining creativity. 38:10

Yes.

Some questions about your personal creativity, do you and your colleagues work as creatively in China as in other countries, would you say that? 38:50

Yes. And I would say that I was more creative in China than here in Europe.

Do you feel that China is effectively holding up its economic growth? 39:20

(Laughs, thinks) In the long term?

Yes, so would you agree that creativity is a precondition for innovation? 39:35

Yes, yes I absolutely agree and I'm struggling a little bit because what I see is on one side I that in the Chinese society a lot of indication where innovation is built. Uhm one, or two examples where I see the biggest, the competitor of Ebay Baidu, what he has built in 10 years is really amazing and he is using really completely new business models. Therefore I see really in the world scale big innovations. If you remember two or three years ago there was this influence virus, it was I think 2-3 years ago H5N5 and it was a Chinese company who was the first one who analyzed the DNA. Because they had the capability they had the equipment and the capability to do so. Therefore I see a lot of indication in innovation. Uhm, I think that the Chinese government has a long term strategy and therefore at least what I have seen in the last 5 – 10 years, the good thing in China is that they have really a long term strategy and they wanted to become the number one and they have confidence that they will do whatever they need to achieve it, and if its necessary to open or to release a little bit the rigidity they will do it. The other side what I'm seeing, especially in the last 2-3 years with the new government, at least what I understood from the past is that the system was in the last two – three years they increased the inflexibility in the society. That means they, if you talk with Chinese privately, they say "okay this new Prime minister, he put a lot of control, which is on the highest level in the last 10 to 15 years" which we from abroad do not see and at least what I'm hearing from Chinese colleagues they are saying that this anti corruption campaign is nothing else than to get rid of all his enemies in China. And all the new laws they put in place are to implement or to strengthen his power or to have more control in the whole organization. And this is something where at this moment I'm not sure how they will balance this on one side the necessity to enhance creativity, to enhance innovation where you have to open and have intellectual properties, to give freedom, you need, if you want to sue somebody you need to have a legal system which is in place and it must be based on laws and not on relationship and that means you need to open more and you need to improve more. On the other side I see that the system is becoming more and more strict and this imbalance, at this moment I don't have the feeling where it goes and therefore for me at this moment it is very difficult to answer your question, this is how I see it.

Okay, thank you for your explanation. Is there something you would like to add to our conversation? 44:10

The only thing, which I would recommend to you is from my point of view a fantastic book, it's called, I forgot it, it's about the way how people are thinking because I think this helped me a lot to understand China. The Chinese people are thinking in a completely different way than the European people. Consequently, I think that they are creative but I think if you use our European way of defining creativity and define innovation this could mislead to your analysis. This is what I was thinking when I read your questionnaire that I think you should at least take this into consideration how you define innovation, how you define creativity and the drivers for creativity because you have in your mind clearly some ideas, some thoughts, a mindmap what you define as a driver for creativity and for innovation and I'm not sure if you can translate this in this Asian Chinese context. This is not clear to me.

But its not specifically stated in your book. 46:00

No, in this book, which I personally like very much that is the way how Asian people are thinking. And I think this is very important when you talk about what is triggering innovation, because Chinese people having more a holistic way of thinking. They have more normally not a straight forward way of thinking, and therefore when I say or let me put it this way when I was in China I always had to defend my people against Germany, because the Chinese came with an idea which from the European point of view they say “what do you want? That makes absolutely no sense, this is nonsense” but if you look at it from the Chinese point of view it makes completely sense and therefore yes again I’m not sure you should take into consideration. That’s all.

Okay, I will. Thank you.

Local Employee Interview I

(early twenties, started working in summer 2015)

Personal Connection 3:00

How long have you lived in China and which company are you currently working for?

I am a Chinese girl, so I lived in China for 23 years, and I work in Samsung Electronic, a Korean company.

1. Organizational Encouragement

Its about your general perspective on creativity in China, so not only on your experience at your workplace but also on your friends experience or what you can read in the media, so everything in China, so do you think that organizations and institutions held to encourage creativity? Do you think that it's a big issue for many organizations? 3:50

I think in China its not a big deal, its not very important for the organization to encourage creativity because as you know the most creative people that I can think about are professors and teachers, and in China if you want to be a great professor or you want to earn good money when being a professor, you have to write a lot of essays and theses and make them. But this makes you only work on writing some essays but not create some very useful things or use your theory in the reality, so they don't try to work for creativity. I think it's a way to make them only think about writing theses or essays but they don't really want to create something that change people's lives a lot.

What about businesses? Do you think that for example Baidu is creative in a way because they are implementing many different applications and products right? Or QQ, is in a way also a creative product because it didn't exist in other parts? Do you think that companies are relating to that and encouraging this development of new products? 6:00

I think its something about the intellectual property. In China the law about this intellectual property is not very advanced. So QQ definitely uses a lot of unique applications but when I played some games on QQ, they are just copied from other companies' games, but it changed the character or the story but basically they are the same. So I think copying others is a very serious crime in other countries but in China nobody can help the other company to protect their intellectual property. So if I own a company and I have very creative ideas but if I release to the market my competitor will maybe copy my idea so my creativity may be useless at that time so I think one of the biggest problems about creativity is that the law is not very perfect for intellectual property.

Did you choose a Korean employer because of this issue? Did you decide against a Chinese company? 8:55

Yes, but its just one of the things I'm concerned about. Because in Korea Samsung is a very powerful company and it has a very good department about all the laws that can take care of this company. So if a Chinese company copy some thing, technology from Samsung, I think Samsung will definitely use the law against this company. But for

mobile phones or other electronic products, creativity is one of the shining points that people would like to pay the money to upgrade their software. So if Samsung can protect its technology I think the Chinese company cannot copy from Samsung. So Samsung may be take advantages in this market.

What about the general atmosphere, for example if you think about your friends working for other companies in China do you think that they are able to be creative in their job? Are they supported to be creative in general? 11:10

I think for me and my friends, I graduated last year, so I started to work for half a year, so people in small companies work more creatively than people working in large companies. So take me as an example, we are a really large company that all the roots meet in the headquarter which is in Korea so in China we have to do what the HQ says and even if its not suitable for the Chinese market, but we have to do that because it's a rule that if the company thinks that it should be applied to all the companies in the world. So even if I'm creative, but what I said, even if my boss and I think that some ideas of the headquarter are unreasonable but we cant change anything because its not easy for us employees to tell our ideas to the HQ which is in Korea. So even working for a large company it can be very hard to creative, even if they want to. And people work in small companies because, maybe they lack of experience and maybe they don't have many people in this company and the company is very young, so they can still make the rules in those small companies.

2. Supervisory Encouragement

You talked about your boss already a little bit, do you think that in China the supervisors encourage creativity for example in being supportive and constructive towards creativity? 13:45

I think it depends on whether the idea of creativity caters to the boss. Maybe the boss is old and has lots of experience and he has his idea about the things or the products so if your creativity is too revolutionary then he maybe cant understand so if the idea doesn't cater to what he thinks, he may think that his boss might not like it so he wont let your creativity become a real product.

3. Work Group Supports 15:13

I think we can't just say something about all the companies, because just like my company is about sales, so all you need to do is to follow the instructions of the headquarter and make sales go well. But in my, I used to work in the marketing department of Mead Johnson and this is about creating advertisement of products, something like that and in that department you need to have very fresh and new ideas to push to give some new ideas to the customers and make them want to buy your products. So I think its about in different departments and in different kinds of companies.

Do you think, for example when you worked in marketing, that the groups are put together in order to emphasize openness, for example in terms of gender, heritage who can inspire each other. 17:10

Yes I think so. Because typically in marketing we show great concern about the news, about the customers and sometimes about culture, about the society. So they take more

information into their minds and sometimes we have to share it with our workmates, so we can have new ideas so we can push our work forward. But in sales, all we need to do is to sell, do the PSI [production, sales and inventory planning] to make your customer buy our products, we don't need to promote our products or connect to our customer directly, so we don't talk about our ideas a lot so it's the difference between marketing and sales.

4. Freedom/Autonomy

In general, do you think that people act autonomously every day, in choosing what they work on, or which job they choose in China? 18:55

Yes I think so. So for me the worst thing to become creative is the control of the Internet. In China, I can't use Google, I think I can't use Wikipedia right now, many other foreign websites I can't get information from them. So I think, if I want to be creative, I need to have some information and get some new ideas from other people that can encourage my creativity. But I can't. And it's not about the political it's about the academic information, I can't get that information, so if I have to work all by myself I have to start from the beginning and I can't lend others good ideas. So if I have to work all by myself I think I'm slow and I can't be as creative as I could.

What you about when you changed from marketing to sales, did you feel free to change? 20:55

Yes, I'm free to choose my job. Because it's not a very political or confidential job, it's just a normal sales job so the government doesn't pay too much attention to my choice.

5. Sufficient Resources

You already talked about information as a resource, that it is not very available as a resource, even if it's not politics related. What about other resources that are available or not, that make creativity possible? For example, do you feel that your education was supportive of creativity? 21:55

Uhm I don't think so. For me I was in a university, which is very good at languages, but sometimes I think the focus in my library can't satisfy what I need. Although I don't really like theory books, sometimes I definitely need some very famous books for my essays or my thesis and it's a very classic book that I think every university should have like San Mao (三毛) is a very famous poet and Chinese writer but I think my friends tell me that the library used to have his books but somehow they withdraw these books and put them somewhere else. So I don't know why the books of this Chinese writer can't be in our library so without these books my thesis became very boring and I can't write some great ideas about my analysis of this poet.

6. Workload Pressure / Social Pressure & Challenging Work

Do you think that in China many people feel pressured or challenged by their work and like to go to work to achieve things? 24:15

Yes definitely, because it's still very hard for people just working in a normal company to buy a house in Beijing, Shanghai or Guangzhou, so people have to work really hard to maybe buy a car or a house and in Chinese concept a family is all about a house, so if they want to build a family they have to work really hard to get the money to buy a

house. So maybe this is one of the greatest pressures that pushes them to work really hard.

So do you think that the pressure is bigger than the joy in completing some tasks for example? 25:35

Yes, from what I can see from my colleagues. They are very worried about these questions. But for me I still think I need to have joy and learn something from my job, so I'm a little bit different from them.

7. Organizational Impediments

Do you feel that in companies there are very formal structures or that people are very conservative? For example the story you told about the old boss, that he might not be interested in new creative ideas, do you think that there are more examples where it is difficult to be creative than easy? 26:20

Let me think about that. Since I used to work in three companies, I think people in China still keep an open mind about creativity. They may listen to your what you think and they may think about what you say. But I think it's a problem that we can apply our creative idea into our projects is another thing we need to discuss about. So new ideas or creative ideas may be cost extra money and if the company doesn't have this budget or the boss is just really mean, maybe they like this idea but they don't want to spend extra money on it. And the government doesn't have any funds or support about the new ideas, so the company need to take the right to spend the money on the new project maybe it will cost a lot and make it become a loss.

Personal Creativity

What about your personal creativity? Do you feel that in general you can be creative in China? 28:50

That's a really hard question to answer. I think that I like to change my job. Yes, that's what I think about for months and I think after February after Chinese New Year Festival I will start to look for a new one because as I said, I graduated from university last year and this job makes me feel really bored because all I have to do is repeat and repeat what I did the day before. So I think I'm young and I can be creative now, but if I'm stopped and just sit in the same job every day then one day I will become just like a machine so I don't want to be someone like this. So maybe later I will change to a job which is about marketing or promoting and can help me develop the ability to think and to realize what I think. So I think it is important for me to choose a job that can satisfy me.

But you want to stay in China for that right? 31:05

Maybe now in China but if I have to chance it is okay for me to go abroad. Maybe I will work in some company which can connect China to some other countries that can also use my English skills as shining points.

Forthcoming Productivity

Do you think that China is in a good position when looking at its creativity and at its economic growth and that it will grow even more In the future? 31:45

It's very hard to say. I don't think in the atmosphere in China, creativity will make a big change rapidly, I think it will change China slowly but not immediately. Because as I can see for the education or for business or for other aspects I don't think China really does a good job to encourage creativity so I'm not sure whether it will make a change.

Want to add something? 33:05

I want to say that, maybe when we are young all of us have some idea about creativity but when we go to our primary school, middle school and university, our education is about following the rules and getting a good mark and become what the parents want, what the teachers want. So maybe many people got used to follow the rules instead of creating some rules or having some new ideas, which are totally different to other's people's ideas. So maybe people do have other ideas but they are afraid to tell others in this atmosphere. So I think if we want to change and encourage creativity we just need to start from the little children. They are what we can hope for.

Okay thank you very much! 34:45

Delimitation: She's working for a Korean company so for talking about China, she has to take a broader perspective than only talking about her job experience.

Local Employee Interview II

(late thirties, works in Product Development for a chemical firm in Shanghai)

Personal Connection 2:00

What's your connection to China? How long did you live there for? What company are you working for or are most of your projects related to China or do you work totally abroad?

I was born in China, so I grew up in China, educated in China university, so actually I have very close insights or let's say connection with China until let's say 2010, I have moved to Germany, abroad for 6 years, now I'm back to China doing business development. Of course during my stay in Germany, I still kept some connection with China project and also have connections with the China organization.

How old are you if I may ask? 3:00

35.

1. Organizational Encouragement

Okay, perfect thank you. So you're general perspective on creativity in China, do you think that organizations and institutions in general are held to encourage creativity in a way?

You mean organizations or...?

Yes, I mean state owned organizations, or private organizations in China or also multinationals in China.

Okay, so actually I would say the complete environment of China encourages creativity, how you call it, we don't measure its result, if we don't consider results the atmosphere is everywhere around us. Starting from the CC [Central Committee] I think last year the government have been encouraging let's say innovation creativity and so many projects ongoing with connection. It was actually from central government guideline, which located it to local government and of course this kind of guideline in China is always operating from the central to the local government and to the domestic, let's say state owned company. Of course as international company there is always, there is everywhere its always, say it was kind of overall encourage as kind of standard, but domestic company and the state owned company. But small company as private owner they are also doing a lot in creativity to win the position in China market. So if you want to do the business or you want to get the market share in this highly competitive market in China you must be creative.

2. Supervisory Encouragement

Uhm. You mean in a company? So in a company of course it's the employee who bring the let's say creative innovation ideas will be highly appreciated by supervisors. We can see, I can say it's highly appreciated. But there is no systematic how to measure it, how to reward it, how to encourage further, but it depends on this company and that company. So you cannot easily describe, but yes it's highly appreciated by the supervisor to be creative.

3. Sufficient Resources 7:00

Uhm yes so actually from this topic, with this topic overall generally question is I think they don't get enough. Its kind of that they don't get enough information resources to be creative for the company-wise. Maybe they have a creative idea, however this idea is more or less, lets say on a sky level which has no support about information or also maybe company strategy because I think the information flow in China is still very, is hierarchy controlled, so from this perspective I would say, yes I don't see, this is kind of a limitation for, in most of the cases, for the employee bring up the idea, or an idea that is more close to real life. So they need commitment.

So do you mean the information provided by the company is missing or in general access to information? 8:00

Uhm I think the information provided by the company is limited. The general information on the market or on China news and China report are valid.

And what about education for example? 8:20

Education, yes, I could say the current education level of the Chinese basic population is still limited. In a big city like Shanghai, Beijing, Guangzhou there are, lets say the creativity is more, however the local small two tier, three tier city levels, the education level is limited, so that's why its also limited. Let's say they have this mindset but it is limited, their capability, could be to have the real good valid idea.

But you said that the government is pushing a little bit towards more creativity, so do you feel that the education system is changing a bit? 9:00

It takes time to the education system. So now they just promote it, right now, in the past is the fast growth, so you see the GDP of China is slowed down and the whole world is discussing about it. So how to change from fast growth to develop, time to continue develop, so the Chinese government encouraged the industry to be creative, to innovation and it was kind of a new guideline from last year how to do it, so the first step they tried to attract the overseas talent, which has highly, lets say has studied abroad in the top universities, get professors or post doctors in different countries. I'm talking about Chinese. Also talking about other nationalities. They have a lot of encouraged program to bring them back to China, encourage them to join the company, because they have international talent program a lot. They sponsor these people to live in China. And also they sponsor this kind of person, highly educated people to establish their own business in China So they give quite a lot of subsidies to bring new innovation, technology, idea to China. So that's the first stage for the education system, there is something happening also to attract the talent back in the university to increase the lets say quality of the professors, teachers, but not on a level, until now, that detailed measures how to change the education system.

4. Freedom/Autonomy 11:15

I don't understand where the question come from but probably it kind of the Western world, who think that there is no freedom in China about ideas, but I don't think so. If you have still legal ideas, if its illegal there's no one control it, you can bring your idea on

the ground, and a lot of my friends they start their own business, they have good ideas, they can sell it. I don't think that some controls these ideas.

Yes that's perfect. No it was more like, for example, if one can say that a person is free to choose the job or a project to work on. Just following their interest. 12:05

Yea, I think that most people have educated background which is different with what they do in the future. There is a certain link between your education and your job because it's not easy for you to find a new position or a new area, anyway it has a link. We can't say it has no link. But this is no limitation. A lot of people changed their topic, or changed their way to be not using where they started or change for instance, they were a lawyer and now they are a businessman, so I won't say there's some limitation there. So we see in the market, and especially in Shanghai I was talking about the big cities. In the small cities, I think it's even less limitation, but on the basic line that the family must have enough food. Has enough income for living.

But you feel that to reach this on the countryside there are less limitations? 13:35

So because on the countryside the living cost, the pressure of life is much more low, so that's easier for the people to do a wild, let's say wild choice and to take the risk. Because the risk is not so big. And in the large city like Shanghai, that's a metropolis, it's difficult for people choosing because for a big risk you need to pay a big rental fee and big living cost so if you completely go to the wrong direction, if you failed your cost for failure is higher than in the countryside. That somehow can limit the ordinary people for tomorrow to change come up idea to realize it.

5. Work Group Supports

The behavior in work groups, do you feel when people work in a group they will support each other in being creative. 14:40

Yes, when you're talking about China, I would say yes. Because Chinese people are very team players, which is related to their education background and as I mentioned in the first question, creativity is kind of in the atmosphere in China due to highly developed market, which is demanding for this creativity. Therefore with a group of Chinese I see they are supporting each other about new idea and also creative ideas. Of course with other nationalities it's not the same story, we have intercultural differences.

Yes, but what about for example the diversity among Chinese people themselves. I mean it's a huge country so for example from different provinces? Do you feel that creativity is encouraged because this also creates a kind of diversity? 15:45

I don't see this, although China is big with different provinces I don't think it's limited, because might be not everyone in the same level – considering the education, the region, the cultural background where they grow up, not in the same level, – but if someone is creative I think the chance to get support from team are quite high because it's, I have mentioned two items, one item is because they are team players, so once the idea is brought on the table, it takes less effort in other word to get aligned.

6. Workload Pressure / Social Pressure

What about pressures. Negative and positive creative to find alternative solutions. Do you think that people are in that way encouraged to be creative? 17:00

I think finding alternatives is always driven by several facts. I think the facts of saving time, save cost is somehow the main driver for the creativity, for the organization. The pressure comes from maybe, that's the positive pressure, so normally in a team if you can bring these two values on the table or one of the values on the table its easy to get an approach through, but we cannot only talk about positive pressure. There are also of course negative pressures. So negative pressures are probably... I'm thinking about where negative pressure can come from...

For example maybe unrealistic expectations? So if the supervisor asks too much. 18:45

Yea, I think the negative pressure might be the supervisor, the supervisor plays a big role here because as I mentioned Chinese people are very good team players but not leaders, so it's the supervisor has the intention not to test, to avoid the failure, the chance of this would be, the chance of the idea pass through is very low so the complete team will follow the intention of the supervisor. So its very depending if its encouraged by the supervisor. If they can sell it. On the other hand it's depending on the communication skill, if the idea can sell in the good way. Because sometimes I think the Chinese people in terms of communication are much more not lets say in the Western world they are much more able to do marketing and communication. That's way in peoples perspective Chinese people are shy, the reason for shy is because the education system stop, in China is more examination, less presentation, less communication. In this terms I think a lot of good ideas that were not successful or failed is because the idea owner has not sold the idea in a way the idea values, so in the end the idea died in the beginning or in the middle, the reason is because communication skill and the selling point, marketing the idea is quite important, to let everyone understand the value.

7. Organizational Impediments

Do you think there are organizational impediments towards creativity we can name, for example a high level of controversy in organizations or rigid and formal management structures?

Yea I think it can, I think I pretty agree with that, if its contact with the management team and the idea is the negative impact will be not passed through, it will be negative pressure on the creativity.

Do you think that there are very formal structures, like you said with the hierarchy, right? 21:50

Yes its especially in big companies, like state owned companies. That's why the SOC is try to change it because private owned companies its much more easy because it has little organization size, it's smaller so the idea is easy to pass through to the decision maker. And through the larger organizations like SOC they have so many departments, so its difficult to pass through and also of course it could be a contradiction with the management idea so it would not pass through. But that's the reason the domestic, SOC's not losing the market share, in these days, towards private owned companies. Although there's a kind of new, changing let's say reform of the SOC to be more flexible and to accept the more ideas to be creative, but it still takes time.

Do you think that in organizations there is a lot of controversy in terms of arguments? 23:30

Its everywhere this controversy of arguments, but I didn't understand the reason you, where the question comes from?

In China, because some people say that harmony is more important than controversially discussing ideas. 24:00

I think, I saw where the question comes from. I think the Chinese are quite direct and open, if you, it's always depending on the manager, if he encourages open discussion or not. So in organizations if the manager does not encourage open discussion then there's no discussion at all, even if there is different contradicting arguments, it will not be spoken out. But its also when the managers encourages the discussion, I think for sure this is open on the discussion table.

Personal Creativity

So for you personally, do you feel more creative in China than in other countries? 25:10

Personally I feel China is more or less top, lets say very creative country compared with, in the world. I won't say number one but definitely in the top three or top five. The reason is, of course, it's driven by the economy because it's a fast changing world. It makes everyone catch the speed of the world and once you are not in the pace... well everyone's ready for change. So that's the reason, everyone's ready for change and when the idea comes people wont be afraid to change to support the idea or to be creative. On the other hand, I will say the culture of China also encourages to be creative. One is the economy, but on the other hand I think the culture is also supporting the creative. Of course this topic depends on which culture it's not overall, because there are some regional different especially for the south part of China, the culture strongly supports creative, compared to northern China, which is influenced by Confucius, by the old traditional culture which has limited a little bit, but in the southern China culture its highly encouraged the creativity. Why do I say so? For instance, the young people are more, you know in China we always have the culture to respect the old so the young people, the young generation should respect the old generation, which is from the traditional Chinese culture, Confucius, but in the southern China the young generation has a high position in the society, people always say they have potential, they have change, they bring the changes, so the younger generation can every time challenge the elder one, or the elder one is always their ears to listen to what the younger people says but somehow in some area in northern China there might be a little bit different, but its changing. I think it has been influenced by the Cultural Revolution in China, there was one positive, the only positive impact, from the Cultural Revolution in China in the 19th century.

So for example entrepreneurship and innovative business models are thriving more? 28:40

Yes that's, entrepreneurship is very strong in China. Because there is a lot of Chinese people become rich. You know the China, before 1948, starting from 1949 when People's Republic of China established when the Communist party took in control, so no one owns a private wealth, so everyone is equal. But during the development of China

economy also the limitation of the communist party is gone so it's a free market so a lot of people who have entrepreneurship to start do business will become today the richest people or the top rich people in China. So they build a good example to encourage the whole nation to follow the success steps. So I would say I see strong entrepreneurship I would say in my friendship or my classmates in the university there is highly percentage of people choosing to start their own business, myself I also start my own business, when I [was in] university. So I see that there is strong entrepreneurship in China because it's inspired by a lot of successful stories. It's always linked to the economy because it was a fast growth period in the last ten years, now the fast growth period has been changed, now China will slow down the economy will go to stable development. Might be in the whole changed atmosphere but today we still in the phase of strong encouragement for entrepreneurship and for creativity.

Forthcoming Productivity

The question is for you, do you think that China is effectively holding up economic growth? In terms of being successful in the global competition? 30:52

Yes, you mean hold the growth? I think China is trying to encourage growth. Yes, encourage growth, you see a lot of governmental policies coming up to inspire the growth, of course there is always a balanced part, there's in the past the growth of China is coming from the construction, the infrastructure construction, from the real estate, however somehow this market is mature, there is no more room for encourage and there is no more growth rate to be catch up of automotive, so now China is trying to transform to other kind of growth which is driven by innovation and creativity. This is coming from we see these years, I think especially last years, there's a lot of supporting policies come up I believe you have heard 'one belt one road', which is a cooperation with neighborhood countries and also driving domestic China development to supporting this projects and I think also there's a project called 'made in China 2025' that means China will be not the cheapest manufacturing cost country transfer in the past is because China has the cheaper labor so they want to transfer made in China is not standing for cheap but stand for quality or stand for high technology. So there is certain measures to transform the economy to hold the growth because the GDP of China is very big global wise as a whole China but individual household only is still very small compared with other top ten GDP countries, so definitely China want to hold the growth and encourage continue to grow to make sure the whole country, not only East coast but also the West coast the people can become richer, rich and they can afford a good living life and also create enough jobs for whole population because you know China is still growing the population.

So the creativity also exists for example in the rural population? Definitely. 34:10

Yes.

Do you want to add anything you would like to add to our conversation on creativity in China? 34:24

Uhm no, because I have probably answered. You have lived in China so you know how the life in China is, and how much change China can make in one year. So I was six years abroad now when I come back to China I saw so many life style has been changed during the six years and the people completely changed their living, it's a different world if you

ask me. Compared with Western world so how can I say, the creativity is no doubt, there is evidence, you see it in everyday life.

Okay that's great, thank you very much.

University Representative Interview I

(Professor at Copenhagen Business School whose primary research areas are China and cross-cultural cooperation)

Personal Connection

I have been in China all the time since 1974 so it's multiple years. And it was the first time in 74, I moved to live in China in 77, I have been there for 8 years in the 70s and 80s, but after that one year in the US and then coming here in 92, I've been here since but going to China every year, one, two, three times. So, I lived there for 8 years.

So you're still going there every year now? 00:40

Yes.

And your research is very related to China? 00:50

Yes, I'm working a lot, similar to Xin, I'm working on indigenous management trying to integrate Chinese management with more American management.

What does indigenous management mean? 1:10

Well there is a lot of discussion which we don't need to go into, for example about creativity. Is there an indigenous approach to this? Or universal approach? Or do we need both, is what we call universal approach is that actually more an American approach developed in the US? So there is this discussion going on in relation to management, and other aspects of management, not only creativity. So this is modern day issues that has come up through last few years because, as you say, China is becoming strong and that's the reason that they are more focused on what's going on in China. And this is the same I mean like you ask probably is creativity the same in China as here.

1. Organizational Encouragement 2:20

I think you need to distinguish between Chinese organizations and foreign investment enterprises. Chinese organizations are very hierarchical in the sense that it is top down and not too much space for innovation. In the FIEs, in the foreign invested enterprises, they try to push the Chinese employees, the Chinese middle management to be more innovative, which is seen from a Western perspective as a struggle. I have been interviewing companies, saying that they were celebrating errors, if people were there to make an error, they were buying them cakes or whatever, they were celebrating this because people didn't, were not active. So sometimes that's the perspective of the West point of view, that the Chinese are not very active. They tend to think that they are paid to do a job, they have to be asked to do a job otherwise they do nothing. Of course you can find very entrepreneurial people but not too many. Its again, it's a normal distribution and you will find people who are creative of course, but very few.

On a general basis, very few? 4:55

Yes.

2. Supervisory Encouragement

The buying the cakes was more in the foreign companies, that was the example you were relating to. What about supervisory encouragement in Chinese companies for example? So do supervisors in their relation with employees encourage creativity do you think? 5:00

I don't think so, but its something that is – of course the whole, this concept in the West in creativity is very, very much used in China now. And that's of course also the reason that it's a good topic you are choosing. And why is it so much discussed. Because there is a lack of innovation. And everybody realized that. But from realizing it to changing it, I think there is a process where one can say that maybe has started now on this process. Being on their way to. But in the whole society in the tradition in China you were asked to learn things and to memorize things by heart. You were asked not to think but to remember. And this is of course, combined with the hierarchy you will still have not too much space for creativity.

So in the relationship between the supervisor it's more task giving and asking to do the job. 6:30

I guess if you go all the way down to the operations, to the workers and so forth, they would not like to be innovative, they would say should we also have to think, I mean should we also have to change things. You're the boss, you decide.

Do you think that they want to on an overall level want to earn the money first before they get to this self-actualization level and be creative? 7:00

In particular at the bottom level, if you're thinking about operations, talking about operations, definitely they want to earn money, that's the only reason they are.

3. Sufficient Resources

So maybe this relates to question 6 about the resources, do you think that there are enough resources available to make creativity possible? 7:35

No, again, it's that what China is trying to do. Its trying to move up the value chain in a sense, at the beginning they were at the very bottom and they were low payed and everything and overall, it's the production factory of the world, I mean all the big companies are there. And why are they there, or were they there, some of them are actually moving back, but still 90% are there and the main reason they were there was that they want to have a cheap production, of course. Not that they want to drive change production, innovation. And then of course you don't pay very much and you see now the very low technical, very low requirements, like firecrackers or whatever, they are moving to even poorer countries, you can move to Bangladesh or to Vietnam is also cheaper.

So do you think that the change is happening right now, from the manufacturing to... 9:00

They are moving up. But it takes time. And by doing this I think the foreign western enterprises will become fewer. They might be some companies, and already now we see, in Denmark, Novo Nordisk is a big company in Denmark, and they of course keep the

production for China in China, but the rest of it, they move out. They build a new factory in (?), in Eastern Europe somewhere, Czech Republic I think.

So coming back to the resources for people living in China, do you think that there are enough in terms of for example information or education? That the people can access it and find inspiration in those resources? 9:50

The problem is, as I said before, that the education is not supposed to be innovative. It's supposed to that you learn something. I mean the Chinese look back in history they always learned from the past. They were the first country in the world that had something called history. They wrote down their history when nobody did that. And so they tend to look back. While I think the more innovative part of the world like the US, they tend to look to the future. So in that sense, it's hardly a question as you focus on resources, but it's also to change the mindsets. So that people become more ... this is not a good word to use, open-minded, but at least to be more open to changes. I mean it's very dialectical, because on the one hand Chinese know its going up and down and up and down, that's their philosophy, but on the other hand they tend to be passive. They tend to believe that they have a fate or something like that. And "this is my place in the world". And of course maybe we can say maybe workers in Europe tend to think the same, but still I think its easier in Europe to move up, even your parents think you can raise from that. It's easier to move up. It would be almost impossible in China. My parents were tilling the land, growing vegetables and flowers and stuff like this in the countryside. And I moved here in 73 I think, and this kind of thing does happen in China but very seldom.

4. Freedom/Autonomy

So maybe we're already referring a little bit to question number 5 concerning autonomy and freedom. So the question was, do you feel that people have high autonomy in their day to day conduct? 12:15

Well that's not the case. It's something that Western companies would like them to be more autonomous. Definitely. But so far at least until a couple of years ago, the employees tend to say to the expats, but you get ten times more value so you have to find out what I should do, it's not my job. So they in that sense are not that open to be innovative. They are there for the money I would say. And that's the main, absolutely the main purpose.

So they are not even interested in it yet. 13:10

No they have to change their mind set and I think that's what's going on now. I mean when you read, if you read Chinese newspapers, almost daily there is something about innovation and creativity and this is, for example they use LEGO, which can be combined in thousand ways as you probably know, this kind of thing they like very much. Because they think it enhances the creativity or the children and so forth. Yes, it's becoming more popular. But I mean, starting from three years old kids, it takes some time before you get in a way to see innovation, so 45 years or something. But now, I mean, of course they are on the way, one should not under evaluate them, they value more creativity, and you should definitely read the couple of articles from this journal I mentioned on Asian or Chinese creativity because they think they pretty much discussed is creativity in China the same as creativity in the West. What is your research question?

5. Work Group Supports

My research question is assessing the climate of creativity in China at the moment from different perspectives. Coming to question 4, we talked about the supervisory and the employee, but what about Chinese employees interacting among themselves, so for example in a workgroup? 14:50

First, I don't know much about this, because I seldom really have a chance to participate in something like that. I think still there is a team leader who tends to decide, again a little bit different from Chinese companies in general, and foreign companies. In foreign companies there is more autonomy and they tend to have more discussion. But again its not only to create the organizational framework its also to create the mindset. Essentially, you need people to be open to discussions; I mean there is no really traditional discussion in China. You are asked, its hierarchy, and its harmony. And if you want to keep the harmony you're not going to be way off by saying something that could offend you or the team leader. So it's a big challenge for China, they have started the process but not a long way. But you don't want me to make confusion. The freedom we should actually maybe talk a little bit more about, because even today in the newspaper today there are people criticizing, Chinese are criticized from a guy who was active way back in the 90s under Deng Xiaoping who is saying now there is too much control, they have too much control on the social media, and so forth. And this will have a negative impact on new ideas and creativity. So there is this discussion also under way in the communist party.

Yes I heard that Xi Jinping is putting more control on people. 17:20

Exactly. And this is what is criticized by one of Deng Xiapings followers.

6. Workload Pressure / Social Pressure

So the next two questions relate to the positive and the negative effects of pressures. So you can see a work as being challenging. So do you see that people go to work and see a challenge and like to be intellectually active and like to find alternative and finding solutions for example? We maybe already talked about this a little bit. 17:30

You have to, if you want to do this, you have to make it – Chinese go to work to be promoted. I mean, if you're not a worker, workers maybe think that they will forever be workers because they don't have skills and so forth, they don't have competencies. But as soon as you have them, then you become a team leader, and a middle manager and so forth, and then you basically go to work to be promoted. And if the condition for being promoted is to be more creative, you can put it in there, and they will try to be more creative. And now what we see in China today is that those people who do very well in foreign companies when they reach a certain level they jump to a Chinese company, because they would say but we are a Chinese and the boss will always be, let's say German. And we cannot be promoted anymore. But in Chinese companies there is no glass ceiling. So some of my friends they jump from a foreign company where they learned a lot but got stuck.

So it's not only about harmony in a workgroup and you feel like you're in a nice environment and you stay there? 19:15

No I mean that's something that's in-group, but there is this dichotomy, on the surface you keep harmony all the time, but you want to improve your own life I mean maybe everybody in the world is kind of selfish. We want to be promoted. We want to have a better life, better income, better work conditions. Who doesn't want that? So there is a kind of double, when you have those collectivist societies like China you have a public appearance which is very focusing on harmony. But in your heart you still try to promote yourself kind of. You still try to, you're still egoistic, I mean everybody can be egoistic in a sense. But you cannot show it, you cannot like in the West say "I am here to be promoted or something like that" I mean you don't say that. But you work for it basically.

7. Organizational Impediments

Do you feel that people feel more pressured in a negative way that is undermining creativity in organizations? 20:40

Probably mostly in this long hours, it is a lot of work more and more people are leaving the core family, that's the parents and kids, and in that sense of course you are quite stressed I mean we talk a lot about stress in the West for families do, with small kids who don't have time for anything, but its *also a waste of time*. I mean, first of all the nursery, until you are three years you cant go anywhere, and the maternity leave is at most half a year, so you have two and a half year there, so what to do? Normally you ask your grandparents or something like that to take care of them and then when they go start to go to nursery, when they are three years old they have to start learning characters, language and a little bit of math but that is learning *technique*. Also because the competition is so hard. You have some 1.2 billion people who all want to get into the best universities, so you have the entrance exam after high school which is extremely competitive. And of course there you don't learn anything about certainty so that the if you want people to get creativity you also need some creativity in the grow up phase, in the socialization and so on. If a person has always been busy what he was asked to do until he has reached a certain age, I think its kind of difficult to change people.

So do you think that there are also other pressures than only work pressure so for example family? 22:50

Definitely. I mean its hard everywhere but its much more in China. I don't know how the discussion is in Germany but here in the Nordic countries everybody is saying that families with small kids they don't have enough time. Probably a similar discussion in Germany.

I mean that's why people don't get children anymore.

Yes, *that's so*. But still many families have at least one.

Do you see other organizational impediments to creativity for example controversy in the working culture? 23:40

Of course this kind of harmony thing, which is so strong might be an impediment in the sense that, if you focus only on harmony you don't stand out, you don't want to stand out. Those who stand out get kicked down. There are a lot of sayings in Chinese about this. And of course more or less implicitly in the concept of harmony that although there are some discussions in the academic literature where you split up the concept of

harmony in harmony enhancement meaning building more relationships and being active and then a sort of conflict avoidance or how you call it, where you are more passive and adaptive to a situation. So there are also differences in the Chinese tradition but the overall picture will be that you don't create new things, there is not that much space for creativity.

Normally we say that change is enforced much faster in China. 25:10

There have been, no other country ever has industrialized so fast. So that's of course a kind of change. The thing is, if you look at how many patents they have compared to Western countries. I'm sure these 1.3 billion people have fewer patents than in Germany. This only came to my mind. So again compared to it's only a few.

Also looking at Nobelprize winners. 25:50

Yes. Of course there are Chinese now getting it, not so much in literature maybe, but in natural science you see something, more and more. I mean if you ask a Chinese they will always say why are there so few Chinese having them. But I mean compared to that they are 20% of the world population they don't have 20% of the Nobel prizes. But of course you can take any poor country. It's again important to realize that China was poor in the 50s and actually compared to even poorer during the Mao period. So they only started there in 77 or something, after Mao had passed away. The development started. And the real growth only started in 92. After the student protests. So China developed from 92 up till now and of course today to go – have you been to China? [Yes] – I mean to go Shanghai or some places like this its more or less like going to a new world.

Yes, to the future. 27:25

Yes

Personal Creativity

What about you personally? Do you feel like you have been, like China has been inspiring you and promoting your personal creativity when you lived there or when you were working with it? 27:30

Its hard to say but not so much actually, I've not really been to a big company and should do it. The expats do try to involve the Chinese more and to let them become more creative what I understood. I told you about that they celebrate if you commit wrong because the Chinese don't dare to do it, normally you are fired, in a Chinese organization you might be fired. But that's the reason you turn it upside down, in this company if you dare to do something wrong we give you a bonus, of course it has to be balanced but there is this trend.

But for you personally you don't feel more creative? 28:35

I learned a lot from China obviously, definitely, but is that creativity? I mean it's simply when you go deeply into another culture and you live with this culture for 40 years of course you change yourself. Definitely. Because you get a totally different perspective and everything. And you still have your own approach, so definitely I learned a lot from Chinese and from China and so forth. Whether this made me more, it made me more international in a sense that I see things from two sides. But whether this is creativity, I

don't know. Depends on how you define it. But of course you learn, always try to get out, get around in the world and be open-minded and learn from different cultures.

Forthcoming Productivity

Do you feel that China is effectively holding up economic growth at the moment? 29:45

They try to at least. The thing is with this question that we jump out of creativity because most of the Chinese development has been infrastructure, somewhere new roads and airports and so on, now building the world's biggest airport in Beijing. Secondly, buying resident houses, these have been the two. If you really take the Chinese companies, then there has been a lot of development but still nothing compared to others. And still the economic growth is very much, very closely connected to public investments in infrastructure. If you cannot get people to spend money, we have the same problem in the West of course, if you cannot get people to spend money, because of insecurity, because you don't know how much you have to pay for your child even if most only have one in China, going to school, and all other things. You put, the Chinese are putting money in the bank and they are saving money which we didn't imagine, and we never did that anyhow when we come to the first or the last day of the month you get some money to put on your account and you didn't, everything was free, education was free, hospitals were free so there was no really, you had pension systems, included in your salary. So in a Welfare System there shouldn't be any reason to save money but in China there is. And this is again one of the big, big problems in China if you can get people to spend money you can also get quicker development. But it's, of course it will go down, because if you move from one to hundred and then if you had one and you add one, and it's a hundred percent, so the percentage will always decline, steadily decline but it's higher, the basic amount. We have seen the same in Germany, Denmark everywhere after the Second World War higher growth rates but today we have very low. If the western countries, the developed country can have a 3% growth its enormous, normally Denmark has 0.something, very little so if the Chinese can keep up with the 6.something it's still very good. It's stable because it's from a higher basic level it's coming.

Yes but isn't it necessary for the people who are still poor, to have this amount of growth to make them become middle class? 33:20

Yes, that is what they desperately try to do. They try to we need to invest more infrastructure into the Chinese society. They try that. If you follow Xinhua news or People's Daily or whatever some of the public media in English, you see that they discuss this a lot and they try to do it. While we have on the other hand what we have seen is that the growth rates were declining in the last couple of years. It might still decline a little bit, it might go down to 5% or so, but it will not stop. Not now. And then of course there is this whole discussion about middle-income trap. And we don't know to be honest. It's again nowadays in China people are working very long hours. From 7 in the morning to 8 in the evening and they are not going to continue to do that. If you start getting a decent income, won't you then also require more leisure time, more time with your family, more time for whatever, sports activities? I mean you see it now they have lot of golf, people who are playing golf in China and so forth. And you can see you only want to work if you have a good economic basis. And that might make people more lazy. That's what we have seen. We've absolutely seen that. But not now. China can continue for the next few years, definitely.

But do you see that they are more focusing on infrastructure like you said than for example promoting creativity? 35:20

Its two different things. They are focusing on both. Infrastructure is something, if you have the money, and the state does have money in China, you can build roads maybe they are not that expansive and people driving on these roads they pay for this kind because this kind of development, state initiated development, you can do. Any state can do that. Creativity is more a slower process I think, its not only to I mean you need to educate people in a way that they can have some time to think out of the box and so forth. And this is very difficult at least as long as you have this system we say they keep what else do you have above the university entrance and so on. What can you find that is better than this system? It's very hard, because there is so many people who want to have a high education and many get in. But of course many universities are not very good. But then there are some exceptions the big universities in the big cities they are becoming very good. So creativity will also be enhanced. So there will be more and more creativity. But it will take a longer time.

Okay. Nothing to add? 37:10

No.

University Representative Interview II

(late twenties, Coordinator of International Students' Program, Office of International Affairs at Sun Yat-Sen University)

Personal Background

Yes actually I was born in China as you know. So until last year I have lived in China for 27 years and I lived in South China so mainly in Guangzhou, the furthest city in China and I've been, my past I've learned for my bachelors degree and then I have worked for five years so I have like five years working experience in China. As you know I worked in a Chinese university, for five years so that's the connection maybe yes.

1.Organizational Encouragement 2:40

I think compared to other, I mean for example French companies or maybe German companies actually it more focuses on the production and other things, they do not pay much attention to the innovation. However, they really understand that innovation is important and a core value to the organization. So they will have some measures to improve that. For example if you have some innovative ideas, normally you would get support from the organization and in each year they will try to award the most innovative ideas to give some bonus or something like that. But I think compared to the developed companies its like maybe at a really low level.

And in the university? How was it there? 4:00

Well to be honest, yep, I think that the university is in a better situation than the companies because the university focuses on the academic research, so they always have some new ideas and they can get support from the government and the education department to do their innovative ideas.

Yes, so you can feel that the creativity is the same or increasing at the university in the last couple of years? 4:35

Hm I will say its increasing to be honest. Because actually, I forgot which year it was but now the government is really encouraging the universities and companies to be innovative so they set up many funding to encourage the person who have innovative ideas. Especially in the university they have something called national organization funding, something, I'm sorry, I forgot the name, but there are a lot of fundings to support the new ideas. So I think it really encourages the people to give the new ideas.

2.Supervisory Encouragement 5:30

Actually, in my opinion I would say no. Because especially in a traditional Chinese company most of the directors they are really, they hope to be non-risky. So normally they don't like really innovative ideas, they prefer to do it based on their experience, based on their regulation. So for example, last year I give a new idea, new program to my director but after the discussion they say no, because sometimes if you do the new things it means you have to take a lot of risk and so they do not really want to do this kind of thing. And also the director or the managers in the companies or organizations, they have to consider about the evaluation, so if the new idea didn't work well the

innovation will be bad, so sometimes they prefer to do the really traditional things and then based on their experience. Well that thing I think is not really good in China.

3. Work Group Supports 7:15

Ya, for this question I would say yes. And actually it depends a little bit on actually the person who were born in the 1980s in China, most of them have a really high education background so they really are creative and they would like to have new ideas. So this kind of young people if they get together and work together normally they have good ideas and they will encourage each one to give some new ideas. But like the people who were born before who are now maybe in their 40s, normally they are really traditional, they don't like risk. So it depends on if the young people, actually they like new ideas. For example now in China there is a lot of small business. Its launched by a group of young people, like Xiaomi, as you know it's a really famous one, and also like the XinDongFang (新东方, New Oriental Education & Technology Group Inc), I'm not sure if you heard about this company ut its focused on the education. It gives the primary courses to the high school students and the senior students. And it's funded by a group of new people. They were teacher before and they just funded their own business. SO I think for young people its really great, they will have new ideas and when they work together sometimes, some good idea will come.

And do you think this is mainly in the big cities on the coastal areas of China? 9:20

Hm for me I would say the biggest cities will be better. They have a lot of information there and especially in Beijing there is a special area for this type of young business. SO they can tell a lot of young people who have new ideas, they are living together, they work in the same area. So they can tell this is a chance and they will be encouraged. But for example in the West China or maybe in some small cities, they do not feel that kind of environment. So I think the working environment is also really important to the innovation.

4. Sufficient Resources 10:20

Hm I will say I think the resources is really great in China. It's because some of my friends, they work on their own business, actually they found it very easy to borrow money from the bank. If you some new idea and good proposal. Because now the government encourages the young people to do their own Business and to give some new ideas, so it's really easy for them to get some investment. Also there are a lot of competitions now in China, so doing this type of competition if your proposal is very innovative and has a lot of advantage normally they can get investment from some bigger company and the government and also some banks.

5. Challenging Work 11:45

Do Well it really depends, but I communicated with some college students before and I found that they will, I don't say it's control, but they will be affected by their parents sometimes. Because in China the family connection is very important. So sometimes the parents will have great influence on their children. So I know that some young people, at the very beginning they want to do their own business, to develop their new ideas, however when they are graduated from the college maybe their parents will say "its

very risky and it's better for you to be a normal employee in a big company". So normally some young people they create their ideas and went to the normal companies and become a normal employee. So this kind of situation always happens. Because I think they young people also have pressure from their company, ah from their families.

And do you think that the most important impediment or worry is the money and later they are more likely to take some risk? 13:25

I would say it really depends where they get the investment. Because as far as I know they have several ways to get the investments. So the first one is from the bank, so they will have much pressure because they need to return the money to the bank in a limited period. And the second way is they get the investment from the company, like some big companies they will invest in you and support you to make your result into practice. So this will have less pressure, however it's difficult to find a bigger and great company to support your idea. Because you need to communicate with them well. So I think this is the best way for the young people also like a difficult way. So the final way is to get the funding from the government, that is the really low pressure because they don't need to return the money and they only need to show their results and its not like with an investment, its just a funding of the money. So to this way, I know that some students, when they want to develop these new idea, they get the money from the government and they lost their motivation, so finally maybe they will just quit and will have the money and take it as a scholarship or something and then create ideas. So it really depends on [on the person] ya, ya exactly. Because they need to have their self motivation and they should be very confident about their ideas. It's really difficult to continue the ideas.

In general do people like to go to work and like being creative? 15:45

I will say there are kinds of people who really like it to have their own business. But normally they are not, how to say, normally they are the students who have working experience. It's difficult for the student when they are graduated to just have their own business. So normally they would work for 5 years or 10 years and then they will develop their new ideas and have their own business. So it really depends on, as you may know after five or ten years, they will loose their self motivation sometimes. So I think now in China the most difficult thing is about the tradition. Because it's the culture I mean. Because in China the culture, usually, you should, how to say that, they don't like risk. And also they try to become normal persons. So if you have really crazy ideas, new ideas, the people will try to convince you "wow, you should work like others". So I think the culture is really not, against to innovation. So as far as I know the people who go on their new ideas, normally they have their overseas background. They saw the situation out of China, and they become a little international and they will know that innovation is really important and they should not work like everybody.

And is the government encouraging this international exchange? 17:50

I didn't quite get your question, I'm sorry.

No problem, do you feel that an international experience is encouraged in that many people go abroad and make some experiences, because it's approved?

Ya, ya, ya exactly, exactly. Well actually each year all the quotas are used up. It means even each year we try to make new programs. But normally the quotas will be used up. The only problem for the Chinese student is maybe the CPI in other countries are quite high so some students cannot afford their fees outside. So some students have to create the opportunity. But if they have the resources, their family supports them, they really like to spend one semester, or one year overseas especially in Europe and US.

Okay. What do you mean by the “quarter” is used up? 19:20 [Misunderstanding]

For example most of the exchange program and even the degree program is based on corporations. So for example we send 10 students to your university and your university will send 10 students to our university. So it becomes a balance. So each year we will update the balance. So each year we will have the new quota to see how many seats are available to the students. So now in China most of situation the seats will be used up. There are more competitor than the seats we can offer. Does it make sense?

Yes, yes it makes sense!

6. Work Pressure 20:10

I will say that there is a lot of pressure from, how to say, really internal because as you may know a new idea, if you want to develop it, it may take maybe five years, maybe ten years longer time. However if you go to have a normal job in a company, maybe you can get a higher salary and you don't need to wait for the return and you will feels safe. That's the thing I mentioned it's about culture. Most of the Chinese like to have safe. That's why a lot of young people go to the task of the government officer. So there are a lot of news saying that a lot of people would like to become an officer in the government or maybe to the national owned company. I think it's all because of culture. We like to have stable job and to be safe and have a really stable salary. So for the new ideas it's really risky because you cannot say if I can get the money back in five years or maybe ten years. So I think the reasons behind is about the welfare system is not very well in China. Like if my parents have an illness or something, I have to pay for them because they cannot get a lot of support from the government. SO most of the people have to safe their money and they have to take care of their parents and their children and they get little support of the government. Not like in France. So I think that is the reason behind.

Do you know if the government is changing this? Do you think they will change it in the future to a better system? 22:30

Ya, I think they are changing and they like to learn something from Europe. I think most of the cultural learning from the EU because the welfare system is really great. But the thing is, you know in China there are actually a lot of poor people. I'm not sure in how many years the government needed to build up this health system. Because it costs a lot of money. Like the year before, maybe two years before, I forgot exactly, they are trying to make everybody into the social insurance system. But they found it's very difficult. Because a lot of people don't have work and they are farmers. And if you have this type of system you have to invest a lot of money. And then to make sure they can be taken care after they are old. It will maybe take more than 20 years, it's difficult to say.

And isn't it also difficult because in your own region to get health insurance, it's bound to the region where you live right? 23:45

Ya, ya, ya actually the money depends on your CPI in your city. That's the policy in China. For example because if you live in a bigger city, the CPI is higher, but if you live in a village, even if you only get 1000RMB in one month, you can live very well. So the condition is very different from city to city. So the government is making a lot of research so set the standards.

7. Organizational Impediments 23:40

It depends on for example, I know now in China, only the big companies like Huawei, they have their own R&D, their Research and Development Department. I think it's because of the industry, actually China is very famous for it's lower labor cost. So there are a lot of companies who don't need to do their own R&D. I think that's one problem. And another thing is, now actually a lot of Chinese companies are trying to encourage innovation, so they build up their own R&D and then to recruit their technology person and then to invest in the R&D. So now the situation I think it is the big companies that are trying to be innovative. But a small business, it's difficult for them to do that. Because the competitive advantage is the low cost. They do not have the ideas to be innovative and also they do not have the motivation to be that.

8. Personal Creativity 26:25

I think the situation is, when I was working in China, I think that I was innovative because when we have a group discussion or when we are trying to plan the work for the next year, I can have some new idea and they really appreciate my new idea. But when I moved to France and to study in my Master Program I found that I was not so innovative actually. Because I think the education matter and also the way of the teachers teaching it's very different. So yes now when I have teamwork with other students I found actually they are very innovative and they have many new ideas. So I would maybe say compared to other Chinese I am good, but compared to students from other countries sometimes I can tell I'm too traditional Chinese (laughs).

Maybe it's because you have that international experience and you learn a lot more than the others a lot quicker. 27:45

Yea, exactly. And I found for example the university I now study in, they really like case study and group work but in China we are doing my bachelor program it's normally just teaching, learning, doing exam. And doing the homework by yourself, it's your personal work. So it's different and I have to say teamwork really does good to innovation. Because it exchanges ideas, it exchanges your opinion. It's really helpful. Sometimes all by yourself it's not possible to become innovative.

Yes but I remember that at Sun Yat-Sen University we had a lot of teamwork right. 28:45

Ah ya, that's what is changing. Because you know, two years ago we became accredited by the ESSB and EQUIS. So they have to change something. If you went to the normal Chinese university, actually they are just teaching and learning and doing homework. But now, like SYSBS and other business schools, they are trying to be accredited by the international accreditation. So they are changing. That's really good news.

9. Forthcoming Productivity 29:30

I will say actually now China faces a lot of problems. The thing is, yes the Chinese economy is growing. The thing is in China the gap between the poor and the richest has become bigger and bigger and then the basic system, the system of the (?) and the system of the education, it's not good and... I'm not sure if it can become better and meet the requirement of the people. Because a lot of Chinese question the government even if now the salary and the economy is great in China, why the living condition in China is still so low. So there are a lot of problems inside, like the pollution and the unfairness. But I would say that most Chinese are very confident in this leadership generation. I mean Prime Minister Xi (?), he is doing something good. So I think I'm positive to China.

Would you like to add anything? 31:25

Well, I will say actually China is a very big country, so each region has their own situation. SO maybe as I live in South China, in Guangdong province, so maybe my idea is a little different from people who live in the North, in the West. So I'm not sure if your research is covering the whole China or maybe focus on one region. But I will say that the situation is sometimes a little different in different regions. You know we are all Chinese, but sometimes there are differences.

Yes. Do you think that when companies select people for job do they look at the background in terms of region in order to have diversity for a team for example? 32:25

I mean like this kind of requirement do not show on the table. However you can tell. For example in Guangzhou, in the Guangdong province sometimes you're asked if you can speak Cantonese. And also in the North they will care about which region you come from. Especially about the salesmen and the people who work in distribution and marketing. Because if you're from the same region sometimes it's very easy to communicate with each other. But if you're from different one, the culture is a little different. The language is a little different. You have to learn a lot from them if you work in new city. So I think that's why a lot of Chinese don't move to another city very often. They prefer to work and live in the city where they grew up.

Okay. Thank you.

Chinese Student with International Experience Interview I

(early twenties, experience from living in China and Germany)

Personal Connection

What is your connection to China? How long have you lived there for? 3:20

I was born in China and I lived in China in the last 23 years I guess. I have only been abroad one year during the time that I joined the exchange program in Germany. So I think I got a very strong connection to China, I suppose.

Have you worked for companies there? 3:50

Actually I did two internships when I was in China but I have never really worked for any company. I mean if you count internship, then yes, I worked for two companies.

1. Organizational Encouragement

Do you think organizations and institutions are held to encourage creativity in your perspective? 4:50

I think they do encourage creativity. But it more like a slogan. I mean not really for activity. In my perspective. I know they like, we talk about creativity basically through my whole studies when I was in primary school, and we were always talking about, we need to be creative, we need to really have our point of view some times, but just I think our educational system is not in that right form. So even though we talked about creativity and our officers in the government and teachers we talk about, we need to get our students to be creative, so I see that we have the source of our innovation and then the country grows, something like that, but the problem is now, I don't think the system or the books, or the courses design can really can really deliver that thought.

Okay so its superficial? 6:25

Kind of. (laughs) Like in my perspective I think it's a little bit superficial.

And that concerns your education but also you think the government and companies as well? 6:40

Uhm, I think for, I mean if you mean it needs to invest a lot of money, to put a lot of money in research, I think like that I believe I know there is a great amount of money that is spend on the government plan or something, that each give a lot of money that goes into that direction but just I don't really feel that in our course that we have anything related to that. Or at least, even though we have some kind of courses, which is encouraging us to build up something from scratch, like some handcraft courses or competition like national competition about creativity, but I think the real course that we need to pass, like for the exams it's all related to the books so not really related to creativity.

2. Sufficient Resources

But do you feel that people have in general the resources to be creative? 8:00

But I think if you can decorate (?) the creativity concept a little bit, if you're meaning that creativity for example some, building some new machine or have some new business idea, I think that might be a little bit weak, in my opinion. But for the life-creativity, I mean when you're trying to making jokes or a lot of funny photos, or even having a brilliant idea about student activities, an entertainment idea I think they are really creative. So it depends on the direction. Because we got a saying that when we are so creative in Internet, on the social media, like every day you log in, you saw so many interesting posts and really couldn't other people come up with those stories or way to market something? But just for, I think for real techniques, we are lacking of that kind of creativity. We are lacking creativity that build the techniques ... for scientific stuff, for that kind of products, but for the marketing stuff or maybe just selling stuff, I think we can be really creative.

Okay, yes that's great. So I'm asking about resources, do you think that there is a lot of information available that people can look at in order to inspire them and make them more creative? 10:30

Resources that make people creative?

Yes for example information, or money, or other material to use, or education. 11:00

I think maybe Internet is the biggest resource. Because nowadays not everybody can afford to join some program or maybe in the little cities we don't have that much public buildings, like library, or exhibitions, stuff like that. But I think for basically everyone who got a phone or a computer at home they really can access so many news and information around the world.

3. Supervisory Encouragement

Do you think that in general, between the superior and the employee, that they have a good relationship and that creativity is encouraged? 12:25

You mean in the company is creativity encouraged in general?

Yes. 12:57

So, I must say not really. Because my perspective, when I was in.. uhm I know that we got a lot of company university, you know like academic problems or program like an internal education system within the company were more related to how to get the job done, how to work faster or mainly about management topics. Maybe that was when I was related to business topics. I don't know other companies who are more focused on innovation. But just from my experience I don't think that is related to creativity.

So the relationship between the boss and the employee for example is more about being effective than about being creative? 14:00

Yes, I would say so. Of course I think sometimes you need to be creative in order to get the job done. For example if you're dealing with a lot of data for example in an excel file and there is a lot of ways to filter the data or to make macros, I think it's called macros, that can make you finish your task faster, but you have to got the idea that you can do so then you can really do that. If you don't have that kind of idea then you just use the

firm's original way to finish the task or maybe you need three days if you have that idea but you need one week if you don't have that idea.

And do you think companies think like that, that they think about ways of being creative and making things more efficient for example? 15:15

I will say that mostly depends on the employee but not the employer. I mean, for example, I myself as an employee wanted to get my job done faster, so I tried something that I know or I asked my friend or search the Internet for a better way but I think the boss will just concern the outcome most of the time.

4. Work Group Supports

Do you think that employees encourage each others creativity? 15:55

Do you mean will my colleagues encourage me?

Yes when the boss is not involved, but it's the employees that work together, so for example do they trust each other? 16:20

Yes, I would say so. I think if the atmosphere in a company is pretty nice. I mean days can be worse, because they work under the same boss, so the performance is really important for them, but if people are in a company where they are more keen on helping the colleagues and not against them then I think that, yes, they will try to finish one thing. Like if I got a problem and I don't know how to fix it, I think I can get help from my colleague and she might have an idea about how to make it done better.

What about diversity for example? Do you know, I mean China is a big country, do you think that the employer will look at that if the people come from different backgrounds work together to make it more diverse and maybe inspire each other? 17:40

I will say no. Actually they don't look for typical background. Because during the interview or like when you decide to hire this person its not because of his background. Sometimes, I think it's more related to the working ability or the overall abilities whether he or she fit that job. So I think the background is playing a minor role. – If I were the boss I'm not trying to build up a team that includes people from different provinces in China. For example I need one guy from Jiangxi, one guy from Guangdong, one guy from Jiangsu, it's like we don't really look at that I think. Basic it's the educational level, and the performance of the interview like how good is the CV and maybe sometimes your reaction to certain people but I think for, if the diversity you mean that depends where the people are from, their hometown, I think that doesn't really matter a lot.

5. Freedom/Autonomy

Do you feel that people in China are autonomous, free to choose job that they work in, the project that they work on. 19:35

Uhm I would say no. Its like now, its for me, my friends who were in the same major like me, the Human Resource Management, she couldn't get what she wants actually. She has to I think one third of my former classmates didn't really get the job that they wanted to and they had to pick up a job that they don't want to because they need to get a job and

get some money. So I think for the situation its like, yeah I think a job is not an easy thing in China nowadays, so when you have a job, you would definitely want to keep it but I think on this basis there is not many choices that you can really choose. Like the project you work for depends on the boss. If your boss says you need to get in this project or you need to get away from this project you just do that. Because nowadays even getting a job is not that easy so I don't think you are picky about your projects.

6. Workload Pressure / Social Pressure 21:35

Do you think people feel pressured?

I would say they probably try to, because if the workload is really high, I mean if the pressure is high, they will try to get it done as soon as possible because they don't really want another three hour overtime. So this pressure, I don't know the real situation, but I thought it might, maybe inspire them to find some other way to do the stuff. But of course I think for high pressure, I mean because my friends that I know they basically doing related to management, so they got a lot of templates and original rules how to do this stuff so they and just need to follow them. I think it will not be very helpful if they are creative. I mean, you got to follow that rules anyway.

7. Challenging Work 23:05

Do you think that people like to work creatively in their day-to-day work?

I would say from the feedback of my friends who are now already working they would rather escape from their work and are not enjoying it. I mean its like, its not really joyful to work. But its necessary for them to work.

8. Organizational Impediments

I there a lot of controversy, debates, negative impediments to creativity? Do you feel in organizations generally it's hard to be creative? 24:50

I think sometimes. I mean high pressure, basically what I know now from my friends who are, no matter if they are working for a very big company like Tencent or supposed to be a very creative company, because its like an IT company, or who work in the government department, for example the custom, I think they are more creative when they are having informal activity by the company. Like activity for the employee for HR, I don't know how to call them, maybe is it called year party or? At the end of a year you throw a party usually. I think they could be very creative on that kind of stuff or some image promotion project, if they are making promotions for the company in overall. Because I got a friend who works in the custom and she got a project like in every new employee needs to participate and the purpose is that you make a film, like a micro film or a PowerPoint, that shows what custom is about kind of. So they could use material to kind of promote themselves to the public. And I think the film that they make is really creative, really creative. But for their formal work, they cannot be creative because its related to a lot of rules and laws. You rather get it done, but not trying to do it in a different way. Because normally this is not allowed.

And that similar in many companies in China, you would say? 28:10

That is more a particular department on customs, its maybe more strict on rules but I think for my friend in Tencent, who is now actually working in the HR department, I think she got a really high pressure because usually she wont get home until 12 so she

got a lot of overtime, but I think she enjoys her work even though. I tried to really get it done better because I think this is what she believes in something that valuable, like she is creating value to the company or maybe she is making herself outstanding through this process so she tries to really invest in this process so I think this is what you call trying to really be creative. I think pressure may not really lead to “uncreativity”, I mean it can also just be a status of job for me, because it is normal stuff for them to work late and to have high pressure.

Personal Creativity

Do you think that you were creative in your work? Or more now that you're abroad that you're being creative? 30:00

I would say maybe its more related to my characteristics. I think I'm not really a creative person overall, I will not say that I'm a creative person. So no matter when I was in China or when I am abroad now, I don't think there is a difference because maybe of my characteristics.

Forthcoming Productivity

Do you think that China is economically successful in the global competition? 31:15

I would say that sometimes we don't really rely on other markets because we have a huge market ourselves so if a company is successful in the country its basically a successful company in the world because they don't rely on other markets, for example, for the technical companies like Huawei, nowadays, Chinese brands, which don't actually have export but more rely on the local market, they really generate a lot of profit and I think it contributes to the growth of our country. I would say in my opinion, that we are successful in the global competition because we are a big country and we got population. But I will not say it's because of creativity.

Do you want to add something to our conversation? 33:10

I will say that I actually probably am not the best person to say so because I always think I'm a girl who lacks of creativity, since I was very small maybe primary school. Maybe I'm giving a lot of negative information? That is just kind of my experience and also it's because I was more into things like maybe more into cooking and reading, stuff like that, so not really technical stuff so I don't know the situation in the technical area.

34:25 But you feel that there is a lot happening in that area in China? Creative-wise? In the technical area?

Hm I don't know maybe there is but I have no clue because I don't focus on that area. I assume that it might be.

Okay perfect, thank you.

Chinese Student with International Experience Interview II

(early twenties, experience from living in China, France and Denmark)

Personal Connection

Please describe your connection to China and how long did you live there for? 1:45

Since I am Chinese, I've always been in China for the past 22 years and I'm a student, so I don't have too much working experience, but I have done two internships. And creativity was not very important to my job. In one of them I worked in for the national development and reform commission, so it's for the government, so there was no creativity required. Yes I was just working with a program where you have to organize events between the United States and China, so it was just organizing events and no creativity included. It was just doing whatever they told me to do. Yeah, and the other one was for an exporting company. But what we exported was arms, for the military, so still not too much creativity.

1. Organizational Encouragement 3:00

I think these days they are more encouraging than before. Because as you said in China right now the labor costs are rising and the resources they were used too much before so right now probably creativity is more important. In general, so that's what the government is saying or the companies are saying, people should be more creative at least that's what they say. But I don't know if that's really true.

So you read that in the media? 3:40

Yea, its always people just say, it's always companies say we encourage creativity. It's always the same, yes.

And can you elaborate on this a little bit more. How the companies encourage creativity, from your past experience or maybe not with your job or with other people's jobs? 3:50

Uhm for me not really, because I don't know too much. But I looked in some information in China and what quite a lot of people say is that, even though they say that they encourage creativity, sometimes its just too hard. You know its very famous for China that the hierarchy is very, it's a problem, its people when they have, like I read about design companies, when they come up with really good designs and they hand it up to their boss. If their boss don't agree then it's just over. You have to change. I think that's a really big problem in China. People cannot just express what they want. They always have to obey, it's the boss the head, what they say is the real thing. That's I think is a really big problem.

2. Supervisory Encouragement

That's actually already concerning my next question, so maybe you can elaborate on this a little bit more because the next question was going to be about the supervisor. So how they encourage creativity, do you see different examples of it or is it normally the supervisor decides because he's higher in the hierarchy? 5:10

Yea, I think that's the case. I also asked my friend who worked in the car manufacturing, it's when you design something it's always the boss who says, its probably they say that now we're going to make some kind of thing and then you start to work on it. Maybe its always from top to down but its seldom from down upward.

3. Work Group Supports

One workgroup on one level how are they interacting, if they put different people together so that they can inspire each other? 6:00

As far as I'm concerned it's always just one task after another. But of course there are still meetings between people in the same group where they can encourage creativity.

And would you say that in a company they would put people from the north and the south together in a group so that they can inspire each other? 6:50

I suppose they wouldn't consider "okay we should put different people in a group" they would just see which one is more suitable for a job. They wouldn't take this into account while they are choosing but I'm not sure. But I think it would be a good idea to put people from different, with a diversity in a group.

Okay. So do you think that people in china, there is a lost of trust in the work environment? So that you trust your supervisor and you maybe come up with new ideas and tell him or her your ideas because you can imagine that it will be developed in the future? 7:30

Yea, I think they would definitely do that but whether the supervisor accepts it that is another thing.

And its not like peple are discouraged from presenting their ideas in the first place? 8:20

Uhm maybe. I think they would be okay to propose their own ideas if they think that the idea is good.

4. Freedom/Autonomy 8:40

I think not really. At least for me, its just always obeying. Maybe it's because of internship. All my friends when we do, you don't have much power to say whether you want to do this or that its just always obeying. I think again it's the hierarchy, you always have to listen to your supervisor, the one who is a bit higher than you and you're always listening to.

And how do you choose the company you do the internship for? How did your friends choose the company they are working for? 9:30

Uhm out of interest. They might try.

So they are actually free to choose? 9:40

You mean for the company?

Yes I mean for example I prefer to do marketing, sales, accounting. 9:45

Ah you mean before when you apply for the job? Yes that of course. But once you're inside I don't know if you can move to another department.

But before that? 10:00

Yes of course. You mean when I'm applying for a job? Yes definitely I can apply to whichever department I think.

And before going to university? Do you think people are free to choose? 10:15

Ah this is different. Like the education because we learn all the same during high school. Maybe in the high school there is liberal arts and there is math and science, but for the schools, sometimes because the competition is really fierce, and then it doesn't really depend on which one you want to go, it's actually your ability. Especially in Beijing, what happens is you have to choose a school before you know your results for the exams. And then if you fail to enter the school, then probably you will fail. We have we apply for the school, just in Beijing, you have to choose beforehand but in other parts of China they can choose the schools after they know the exam results. But because in Beijing the exams are easier. So that's like a balance between, like for us the exam is easier but you have to choose the school before. So even if you get a really high score, but you chose a school that's not as good, you have to go to that school, yea that's yea.

So do people choose their schools freely then? 11:35

Uhm yes, but sometimes the parents would affect our opinions too. Yea, and I think for the university its kind of hard for us. I didn't know what I liked. There wasn't a clear interest for me before. But I know that maybe in France and other European countries there is a chance for you to develop interests before. So that you know what you want to do in a certain time. But for me, for maybe a lot of students, they just go to the ones that have a good reputation and then not really for their interest.

What about later, when you have chosen your first job and you realize "oh maybe I want to do something else"? 12:13

I think this is another difference, because I know a lot of foreign friends that when they don't like the job they would just quit and then try another one, but I think that would be a really tough decision for a Chinese person because usually that would maybe just, even if they don't like their job, if its stable, they would just try to keep it on, its harder for them to quit a job I think.

So do you think this is because they want to earn the money? 12:50

Maybe. Maybe pressure from home or... Yea I think Chinese people are more, not conservative, but they feel safe, they don't like to change a lot or try new things maybe. Yes it's the security. If this one is good, then they try to continue with it. I feel. Yes.

5. Sufficient Resources 14:25

Creativity is very broad, actually I think that education plays a very big role. For me, as I studied in Europe when I was young for a bit time, I really feel that its more open, the education system. And it's true that when we do group work, we learn more. It's more dynamic, the way, unlike in China the courses. Yea I think it's actually true that the education in China doesn't encourage as much creativity as compared to maybe foreign countries. But it's probably changing now. They realize that its really important, to let the students and the children since they are young know that. So by now it's probably better than before.

And have you heard of an example where they are changing the education system already? 14:50

No not really. I don't know about that. But I feel that they are probably promoting more.

What about information? 15:05

Information in terms of creativity?

For example if you have an idea and you want to develop your idea and you search for information to get new input, to get inspiration from somewhere. 15:10

Ah, well the Baidu, the Google in China, that works pretty well. Maybe they can always... People discuss a lot. They like to post things on the Internet. So maybe they could be able to get information on these websites. But there is one thing, because I read in some people's reviews, in China a very serious problem is, they don't have protection for patents. For rights. So sometimes this is very complicated for creativity, for designs. There is one person saying that there is a case, that when you come up with a new idea and you try to tell your boss and your boss will try to, because there is always the government has to control there is always really complicated processes to work on whether they approve of your project or not. And during this time sometimes maybe one of the staff who was working on the project, they just sell this to other people this could happen because the patent rights are not protected in China. And then it's true that there are a lot of people who copy a lot. That could be something that stops, slows creativity.

Because I said that creativity is necessary to for example invent products, so in these terms it will be very bad. 16:40

Yes I even saw people's reviews in China that some people even think that what's the point of creating, once you create it and someone is going to copy it so they can just copy, so there are certain negative views like this. So maybe yea, the system has to change a bit.

6. Challenging Work 17:05

Do they face with challenging work in order to generate creativity? Uh this probably depends on the person. Yes some people they just want to create solutions. They would try their best but maybe in some cases its just you just have to finish whatever you have at hand and its done. But really I don't know maybe in other countries it's the same case, I don't know, how creativity is developed in other countries.

7. Workload Pressure / Social Pressure

Yes it definitely depends on your personality as well. So it can also go into the other direction that people don't feel that they have the time to be creative, do you think this is more the case than on a positive side? 18:30

Maybe it still depends. In which... probably for the designers. If they have pressure. But for most of the cases they have to listen to, they obey to their supervisor's idea so probably the supervisor will give them pressure.

Or for example if they think okay, my family says that I need to get money so I will just focus on doing my tasks and not work outside the box. 19:25

Yes, that could be... yes... because it is very important to just earn the money and not.

Is that anchored in society do you think? That overall it is required to be wealthy, to earn your money and found a family? 19:50

Yes I think that could be, yes, for me that is very important. I think also people, they would prefer a job where they could earn a good money and then even though its too tiring they would still go for it, just for the money yea. Yes maybe.

So in choosing the work its not really about if you can be yourself and to realize yourself. 20:30

Yes I think it's more about money. Yea maybe that's how we are learned, its just really important to us, I feel, or maybe yes even when there is a family gathering during new year and a lot of time your relatives would ask you what job you're doing and you know that could be a pressure. So it would be nice to have a really good job and a really good earning, to – maybe we compare a lot in China I think. Yea, you have the pressure, for example “Am I better than the other kids from other relatives?” that kind of feeling. That could be one of the feelings where it comes from.

8. Organizational Impediments 21:40

I don't have many experiences of that. I think the companies in general, they would still promote creativity. Its just that whether the supervisor accept it or not. You can always propose your ideas or opinions but it depends whether the leader like your idea or not.

But its not that people get angry at you for proposing an idea or in general that people are angry a lot that there is a lot of fighting going on. 22:15

Um I haven't heard of cases like that. Yea maybe it differs from company to company too.

That's true. What about rigid and formal management structures like a steep hierarchy. 22:30

Yes that does exist. Especially in the SOCs, I think for the SOC there would be less creativity as they are always subsidized by the government so they have less incentives, yea – [to find new solutions] - yea, and then its true that a lot of students would like to work for SOE because, you get good money [and security] yes, but you don't have to work a lot for trying creativity, trying new things. That could be another problem too.

Personal Creativity**Do you feel you are more creative in Europe in the same way? 23:30**

Well what I feel is, I don't know if it's a personal reason but what I feel is that Europeans are much more creative. Like whenever I'm in a group discussion I feel the opinions that you think of, generate are really special in a way. And for me that's where I think you're really good at study, that's what I feel but I don't know if its because of me or because of Chinese students.

But did it inspire you? 24:20

Yes I think its always really inspiring to work with [Europeans/Westerners]. Yes.

Forthcoming Productivity**Do you think that China is successful in a global landscape? 24:30**

Yes, maybe its improving. Like there are problems and they are trying to solve it and then maybe its hard but still be are aware of the problem and we're trying to solve the problem, so yes.

Would you like to add something? 25:25

I think we covered most of it. Yes.

Interview with the 'Expert'

(late thirties, building up an R&D department for a chemical company in China)

Confidentiality statement.

On the Person 1:00

What is your personal background and how did your interest in creativity in China evolve?

Okay, regarding the personal background, I am a PHD in chemistry with a major in organometallic chemistry and catalyst design majoring from Bielefeld university, back in 2005 and yes, this is a proof that Bielefeld the city is existing despite that there are rumors that this is not the case. So from that point of view I went through the classical German education of a scientific chemist let's say, then I entered Wacker Chemie in Munich in the corporate R&D so basically the fundamental R&D department, which is a pretty smooth entry also quite R&D institute like from the management and hierarchy point of view. After two and a half years in doing fundamental R&D projects with nevertheless quite close attachment to market relevant topics, I switched over to the market side, so my next function was again in Wacker but the one of a technical marketing manager, having lots of direct customer support, product design, also, contributing to marketing and product roll out strategies, catching up the trends, in the paper label and adhesive tape industry at that time. And in 2008 the decision was made by the Wacker executive board to build up a dedicated Wacker Chemical innovation department in China, which means an R&D department with the overall mission to design local products for the local market needs, which we learned over doing 20 years of business in China are sometimes significantly different from the product portfolio we have originally built up mostly driven by European/Western needs. So that was the time I relocated to China and that was the time when my specific interest, coming to the second part of your question in creativity in China evolved. Before, I have to admit, I was not that attached to this topic, maybe even a little bit pre-biased, which is I think the usual when you work in a very knowledge and let's say IP, intellectual property, sensitive industry in Germany where the evolving industry in China was regarded to be rather a threat than an opportunity for a certain while but luckily this has changed. And my first task was to build up the R&D department here, to staff it, so recruit the proper people to manage these tasks in the future, stable people chemically competent people, creative people because R&D is doing new things outside the box and evidently in that way I was forced to deal with this topic.

The interviewee's conception of creativity in China

Of your experience, do you think that the concept/understanding of creativity is the same/similar in the Western and the Chinese perspective? How did you approach your task? 4:15

It's different. Like many things it's different between the Western and the Chinese or in general maybe Asian perspective. But in Asia again, China is a particular case due to the different state system, due to the different educational system, due to the different family structures people here are growing up with. So I think the western concept of creativity allows more freedom without such as clear target behind. The Chinese creativity is maybe more pragmatic. So Chinese creativity is a tool, which is not even called creativity so much in China. It's just the way how Chinese people channelize their

lets say indigenous tendency to play because Chinese people are not uncreative in that way, they like to play, they like to try new things. But this is usually triggered by a task they are given. While I think overseas people or German people more take the freedom by themselves to play around to explore new shores, even though it might be not directly contributing to resolving an issue. So from that point of view, you know just to give you an example, in our R&D management we usually say about 80-90% depends on the type of function you're working in should be very much task oriented, predefined by project structures, predefined by the overall company strategy to realize innovation, to achieve a business target, to set ourselves up for the future and present and another 10-20% is what we call free R&D which means the people are allowed to bring in their own ideas, not even allowed but encouraged and this is a certain amount which I think people in Germany deliberately use because they are doing relatively easy in creating own ideas and own approaches, so usually they enjoy this kind of freedom. While on the Chinese side its sometimes a bit different. My impression is the creativity is channelized to resolve a task, to resolve an issue. Very often to work around some standard case. Because Chinese people are not the ones who per definition follow a predefined process straightly because when they encounter an issue a roadblock, a hurdle which is not possible to overcome with their existing knowledge or toolbox they become extremely creative. By utilizing other people, by utilizing information sources, which we would not even think of, by sometimes also finding solutions to the problem which we would not call sustainable so we wouldn't even call it a solution but for them it is a solution because at least for one month they get rid of the problem. Not preventing them from running through the same process again a month later. So from that point of view the utilization, you know, what does not work in China is the typical brainstorming concept. We all sit in an empty room there are no hierarchies, forget about the president who sits on the table, forget about the lab assistant who sits on the table, forget about the R&D director in between, which would be me, you guys, you all have five minutes to consider about a certain buzz word you're given and then you just open your mind and speak out whatever comes to your mind. This is not working in China. This is the kind of creativity which is originating from the western world in particular the US, even in Germany its not always that easy, but in China this discussion is dead even before it starts. Chinese people do it the other way, the mechanism is you have a continuous improvement process, you follow a certain procedure and then suddenly you get blocked and then the creativity comes in. The creativity is used as a tool to overcome certain issues but not to lets say create something out of nothing. And from that point of view, some people who are still very critical with China they still say the creativity lies in very, very few minds only and all the others they are just the executers. Which carry out a task and which resolve a problem but I wouldn't call it uncreative, I would call it more pragmatic, down to earth creativity in smaller things. Not that visionary, yea that's the difference to my perspective.

The compatibility of creativity and a high power distance culture

Okay and do you think that teamwork or hierarchy goes against creativity in this case then? 9:30

Chinese people when they enter a western company structure for example, and I heard the same for Chinese people doing some post graduate studies in the Western world in the academic environment, usually it gives them a hard time to adapt to the team concept in the first place. So they need a certain while to get settled to that and to understand that it's a giving and taking and together at the end of the day the mind pool is stronger and its easier for all of the team members to achieve their targets but this is

something which the Chinese education system, starting in the families in the very early ages, is not really facilitating. And I can see that, I mean what we did not talk about when we initially discussed my background, is of course my private situation so I'm a father of two little daughters. One is six, one is three, they both go to school here in Shanghai, international school but lots of half Chinese or completely Chinese kids around as well and you can see a significant difference in how they play, how they explore the world. Because the Chinese kids again, they are basically waiting for advice and they are not that self-sufficient in stepping over borders, in doing trailblazing things, which are really outside their box what they have been taught, what they have been told. So that's the main difference, which means Chinese people so far are pretty attached to the hierarchy concept and if they are given the task to be create, they try to be. But that they are by themselves, of course there are some of these guys who can do it, but compared to the Western world its still less.

His impression of creativity in the day-to-day conduct

Okay. In what way is creativity valuable in your point of view, maybe in relation to your business in particular? 11:20

So I mean, R&D means bringing new technologies, bringing new solutions to the market and this at the end of the day doesn't work without a certain power of imagination because if you only circle around within the box you are familiar with within your comfort zone then of course the real innovation won't happen. Neither the breakthrough one nor the incremental one which we are mostly doing here, but this is also, shows the difference, China, so far and so does our company here sets the main focus on incremental innovation, which means optimizing the existing products we have, adapting them, improving them, improving their performance, tailoring their performance rather to the Chinese requirements, which are often different from the Western world as we talked before or simply, which is not simple to execute, improve the cost position of our products, since usually the average selling price here in China for most products and applications and services is way lower than in the Western world. So to keep up our profitability its important that we have efficient processes how to for example how to manufacture our products. And for all these tasks creativity and knowledge are both very important but this is I think a very important note, you know, I think creativity is always one thing and creativity is more related to personality and maybe to the very early ages of your growing up but in a target oriented way that you can really bring it in efficiently and contribute to the success and future of the company it's always linked to knowledge. So if you do not have the proper toolbox in place, if you don't know the dos and don'ts in the first place you cant judge, which don't is worth to try to turn it into a do. Otherwise you will just run around wild and the probability of your success is next to nothing, and that means, in Germany usually people have this very high knowledge level, they also do relatively easy to create new ideas, to find new paths, and to combine maybe things from two different worlds they both understand which might have never been combined by anyone else before. And this approach in China is not so pronounced yet, because transferring or combining knowledge in creativity these are, there is a certain gap often in between often here, and this is based on the educational system. Because the educational system in China really encourages straightforward learning by heart, very linear approaches, so if you have a Chinese kid, six years old, in year one, they can perfectly read and write already they are able to do the math at least in a room from one to twenty in number and the western kids are totally underdeveloped compared to that. But if you sit them down in front of a blank sheet of paper and you just give them a topic and they should make something out of

that the Chinese ones are usually done after two minutes and it looks very, very simple and superficial and the Western ones are much more creative in, you know, bringing different dimensions into it, using different materials, telling a story about it which is behind the visible picture so there is much more imagination and fantasy around, which those kids learn to use at a very early age. And in China its more like, I mean in an impolite or very harsh way, in more military way of learning which maybe is kind of limiting the creativity development in that early age. And this is why the translation of knowledge into new approaches for some people is still a hard task to accomplish over here. But this is what we need to do in R&D of course, just to add on that, I mean without that, I mean if you are only creative but you don't have the knowledge you cannot bring your horsepower down on the road, if you are super knowledgeable but if you are not creative you will only drive on the highways which are already existing and you never find a new path to a new place.

Situation in China – the change of perception of creativity by the public

So you mentioned the critique that many approaches are incremental instead of radical in China so do you think that it's becoming more desirable today to be creative in China so in a more radical way and has that changed over time? 16:20

Yes it has it has it has and overall I mean in China everything starts from the top normally. Because the government has also realized that Chinese people cannot continue their rapid economical development and their quality of living improvement, nah I wouldn't necessarily say quality of living but standard of living at least in an economical sense, doesn't mean that they are more happy than 20 years ago, but this trend cannot continue with the “workbench of the world approach” because the times that companies come to China because of cheap labor are definitely over. Just to give you an idea, the expectation of salary increment in the Chinese society is usually at least 2-3% higher than the average GDP growth and that means on the one hand how can you create more and more value in non-margin intensive industries which are maybe very labor intensive like the textile industry for example which is always an early indicator in upcoming industry these areas are not the most favorable for China anymore and that is why they already moved out. So if you look at textile, which made China big about 25 years ago this has moved to Vietnam to Cambodia, to India, and even partially back to the South or south east of Europe. There is still a major share of textile industry located in China I guess about still 25-30% of the world production but they have changed their product portfolio, they are going more for the middle end stuff, so might be loved H&M T-shirt for 5€ ten years ago you can see the label in there and it said Manufactured for H&M in China, and nowadays its coming from Vietnam and from other places. So for these kind of industries probably the time is over, over here in China and that means the government is now setting up new policies and trying to steer the entire socio-economical development into a different direction, which means into a more innovation capable industry, more downstream, more value added technologies which need a deeper understanding of the products, of the mechanisms behind, and of course they need new products. So I think the education system has not fundamentally changed yet, what you can see is a strong impact of the multinational companies like us, because we train our people in a different way and the way to make them productive in this way is longer than in Germany so until an R&D guy really pays off in China, even though he's still cheaper, it takes more effort from the company side than compared to the Western world for sure because they come in with less of these secondary skills and soft skills but nevertheless the news and policies are pointing in that direction and I mean some people use a very mono-causal, a very simple explanation they say its all based on the

one child policy. Because the one child policy is triggering how the Chinese call it little emperor phenomenon, so the one kid which gets everything ready made by their parents and grandparents and even the ayi, their nanny, which all live at the same place more or less, at least close to each other and he gets a 360 degree overall care concept until he's almost an adult and this does not really help to build up an own feeling of ownership, an own feeling of responsibility and is not really pushing you to discover, ya, new challenges for yourself, or search for your own task. So this is certainly still an issue but I mean my perception is still pretty much biased on this, on the one of a multinational company and in all fairness Chinese people have one outspoken strength and that is their adaptability. They are extremely flexible and they can change also their mindset and they're absolutely open to try to meet these requirements when they come into such a new structure, like a company such as Wacker. And that's why I'm saying it is improving significantly. I've been building up this team for five years now, four and a half basically, and I can say most people are still and firstly anyone except for one is still on board but she had to leave because she had to marry and get a kid and her husband was rich and lived in another city so... But overall these people who stay on board, who are committed who take up the challenge they can develop in this, of course you cannot wipe out thirty years in history and growing up as a human being but they try really hard and they spend a lot of effort on that and sooner or later with the gaining knowledge and the awareness that mistakes are not deadly punished this debottlenecking of mindset really takes place. And there it comes to another important aspect, which I just mentioned it's the failure culture. How do you deal with someone failing? And Chinese people in a traditional way still have the perception you're badly punished for it. And it takes a while and they have to make some mistakes without super negative consequences until they realize that's different. And in particular if you do R&D, without mistakes or without any trial and error same as nature, there is no learning. And of course you shouldn't repeat the one and the same mistake and your mistakes should be reduced to a minimum which you can do by systematic R&D approaches: there are IT tools, there are design of experiment tools, there is the simple common sense logic and smartness of the people which all helps to accomplish that, but at the end of the day people have to realize that they are allowed to make mistakes. And this is the first hurdle you have to overcome so you need to build up this trust to the people.

Creativity development/training by a Western company while making sure that the knowledge base/the workforce does not leave the company afterwards

One question that came up is the turnover, the turnover in general in China is very high right? So how does Wacker manage to keep the employees and in general multinational firms in China? 23:00

Ya, I mean okay, firstly attrition how we call it, so we do not necessarily call it turnover, usually fluctuation or attrition but it's quite the same term, this is firstly and this is proven by let's say global experience of the last 25-50 years always coupled to the GDP growth, more or less proportionally. Because the same phenomenon that you can observe here in China now, you could observe 25 years ago in Singapore and nowadays the Singapore attrition rate with a fully developed society is at the same level compared to the Western world, I would say somewhere between Europe, which is relatively low, and the US, which is a little bit higher, but overall really stable and thus of course also the competence build up in such a more stable organization is more sustainable. But here in China, you're right we need to go different way and okay, the first way is of course to pay people properly, that doesn't mean necessarily the highest salary overall, but you have to know that in China the social economic pressure is very high on the

individual, in particular in young years. So when a fresh graduate comes in usually the first target is, and this is the Chinese society mainstream expectation, to somehow come into a stable relationship, to marry, to buy an apartment, which is often linked to each other so you can't do the one without the other, so you can't buy property without being married. And then of course to give birth to at least one kid and in the meantime also to counter these trends which we talked before, also the switch of the age pyramid in China which will be dramatic if this trend continues over the next 30 to 40 years if we talk about an aging society. You might have heard the news that just this week the Chinese government has eased the one child policy and basically abandoned it, so there is two children now. Which is the new directive. So this is the expectation young Chinese graduate have to make sure that they really increase their salary dramatically in the first years. And if you have a quickly growing society with a lot of opportunities even for the not so good ones maybe for the average people, then you see these examples when people are jumping up one two three levels, which would take sixteen years in Germany and really, really solid performance and a bit of good luck and the right opportunity at the right time and place and here in China people are just blown up like in a chimney and very often people end up at levels where they actually do not have the competency yet to meet the expectation. But here it comes to the key point. If you can make your staff understand that you have these developments perspectives in your own company this is even more important than the actual today salary. Because when they know, and this is lucky for my team because we're a growing department we're getting more and more headcount we're getting new functions and new career paths to develop, if people have the feeling that they are an element of this quickly moving, growing, strong structure and at the same time they can learn a lot and they're getting more and more professional then this is a very good setup to keep the people. So you need to spend much time, effort and resources on training the people you need to be creative in developing the people on their career path and on the other hand which is maybe a bit unpopular to say or sounds a bit harsh but from the management point of view you should not be afraid of attrition. Reducing attrition to zero is not good for an organization. If you try to keep anyone, even the non-capable guys even those guys who are spreading an, let's say, not very favorable attitude to the entire team, then you're on the wrong path. You need to get rid of some people at some point. Because otherwise you don't have the chance to naturally heal and improve and strengthen your organization but of course an attrition level of 20 or 25% as western companies had it in China in the past is not healthy. Because usually then the tendency is also that the very first ones who go are the good one and this is not what we want of course. So long story short, for the short-term you need to pay properly, not necessarily the highest because there will always be some new companies still coming to China and pay more because they need to buy an army of workforce in a very short period of time and they don't care much about the cost at the very first place but it should be reasonable that at least those, let's say, eight out of ten guys regarding their skill set those you are able to keep and internal career development is becoming more and more important in China because the fluctuation, the attrition is decreasing according to the new normal in the Chinese economy and that means those companies who do well now in bringing up their own talent and developing them better than the other companies can do, they will be the ones who are in a very strong position in a couple of years from now. And just to give you a figure, for us here in Wacker Shanghai last year the attrition rate has been significantly below 10%, so at a range of year between 7 to 8 %. In my R&D team over 4,5 years out of 25 people we have now on board one person ever left and that was for purely private reasons. Going in line with a lot of tears during the farewell.

Situation in China – every day life topic

Coming to a more general focus again, going away from the Wacker perspective or from the multinational company perspective, do you think that the focus on creativity in China changed in recent years in terms of is it an “every day life topic”? Do people discuss new innovations or inventions? Is it discussed by the media? 29:25

Each of these sub questions I can answer with a clear yes. So it is an everyday life topic, people discuss it constantly, innovations and inventions, and its super present in the media in German language on you can google later a proper translation is innovation “die Sau die hier überall durch’s Dorf getrieben wird” (literally: the pig that everyone chases through their villages; = a bandwagon) uhm nevertheless the one to one link to creativity is maybe not fully valid as we have discussed before. Because to really make innovation happen it needs more than creativity, you need knowledge, you need teamwork skills, you need cross functional communication skills. And this is very often still the roadblock I see, you know. Chinas society is still not going into that direction of super ground breaking innovations which are, you know, moonshine out of space innovations, whatever, but China has become very, very efficient in these incremental innovations and already more than incremental. But is creativity the most decisive factor for that? I would doubt that. In my case, my experience here and not only in working life, but also in daily life is that very often misunderstandings lack of willingness, patience or diligence to listen to the other partner who comes with a different language, who comes in with a different educational background, who comes in with a different mindset or cultural background, this is very often the hurdle which is making things getting stuck and which costs a lot of time and a lot of extra effort to overcome that and to clarify what is really the problem finally. So I would say the biggest hurdle still is more the working style and the soft skills and the personality development of the people, you could also call it their team orientation and their communicational pattern, than the necessary lack of creativity because I personally think if people would understand better what other people coming from other directions are heading for they would be automatically more creative because they would widen their horizon, but people are very often still, especially those with a higher educational background, still too narrow in their expertise. So this is the issue I see, but its China’s age of innovation and there are statistics over here that more and more R&D centers are building up and the focus of the R&D centers has totally changed. R&D centers or development centers of multinational companies foreign invested companies for example who opened up in China in the years 2000-2008 they were predominantly cost reduction driven. They wanted to bring cost efficient new products for example in a certain industry to the market. In the years in between, let’s say from 2008 to in an easy way now, its more about incremental innovation. It’s not about making existing products cheaper, it’s already about creating new products and tailor-making them, better products which better fit to the Chinese market. And the nowaday trend is to even bring real knowledge geared R&D to China, so to understand more the mechanisms which are needed over here to investigate more the focus areas of course where there is a certain business relevance behind because why you bring R&D to China?, as we learned before, it’s not because its cheaper here in China mainly but its because the markets are here and you can catch up the trends more quickly then and this is exactly the current development almost anywhere and China is propagating R&D a lot and China is government wise also incentivizing R&D. To give you one example from the industrial point of view, the Chinese government has defined a certain so called high tech status for local companies, even for multinationals, we can apply for the same, so its basically for anyone, whether

its not discriminated and the decision criteria always applied the same fair way is another question but this is another topic we can't cover not today and you need to make some certain criteria so you have to proof that a certain share of your sales revenue is reinvested into innovation that a certain share of your headcount is doing innovation tasks, you have to disclose the educational background of these people who work in your R&D department, you have to create IP so which means you have to get patents granted and apply for patents, Chinese patents are enough, doesn't need to be accepted on a global base, but in China is enough and when you meet this certain catalogue of requirements then you are granted the so called high tech status certificate which directly leads to tax incentives, so you can get significant tax deductions and subsidies which is of course helping your business development again. So very clear focus on innovation in China – one hundred percent linked to creativity development of people? Maybe not yet.

Multicultural exposure and it's effect on creativity

You mentioned the intercultural difficulties that can arise, do you have the impression that multicultural exposure is fostered in companies and by the government? 35:20

It is, yes it is. I mean there is certain discrimination around, especially when something bad happens, so if we would have in the chemical industry incident like recently in Tjianjin with this massive fire and finally figuring out that there were a lot of things in the background which were not managed properly, corruption, inventory, safety standards, environmental standards. So overall a bunch of issues which led to this catastrophe, if that would happen to a multinational company it would give them a really hard time to keep operations up in China and it would have implications on any other multinational as well. But so nevertheless foreign companies are still attracted to come to China definitely, and I would not even reduce it down to intercultural issues in communication. The communicational issues I was referring to are rather more between the Chinese people among themselves even. Because due to their relatively narrow and specialized educational background which was very straightforward and linear and only performance oriented, not so much communication and collaboration oriented also not presentation or representation oriented because these guys when they come in they have no idea how to give a lecture, how to give a speech, how to give a powerpoint presentation. No idea, its total chaos. So you know there is no focus, there is no clear line in between there, they're jumping back and forth and back and forth and also the visualization of the message they would like to convey is usually not very pronounced, lets put it this way. And all of these skills they are not subject to the Chinese education system yet. And this is why I think its still giving a pretty hard time for Chinese these experts and there are experts in certain fields already available on the market to make them collaborate smoothly and this is one of the major roadblocks as I still see. And this is an issue also further multiplied by the diversity within China. So my team for example is purely Mainland Chinese, but nevertheless the people are all over different, they are more different then if you would mix up one out of each European nation and call it a team. Because people from the Southeast of China are totally different than from the very West of China from the North of China, the country is so huge and its based on an ancient tribal culture with lots of different languages and cultures around which makes it not always easy for them to align with each other yet. And combined with this educational specification on one very narrow field we see a certain lack in what we call here at Wacker, maybe this is a Wacker specific term, the "knowledge cloud" or the "competency cloud". Because in a cloud there are not real limits, no real borders, a cloud

is a matrix which is all over and everything is linked to each other, it is somehow dynamic it can move together into one direction or it can fall apart. And to build up this dense competence cloud we need to spend a lot of effort there and this is why I think a full switch to an innovation based society is on the way but its still quite a rally to go for because before these skills are not there its very hard. To give you a very easy example a sales manger goes out to the customer, the customer decides to do some new things, because also customers constantly reinvent themselves here, either they close down or they reinvent and start to do new business cases with new technologies and new target markets, and the sales manager comes back and he talks with his technical manager, who is the application expert, and the technical application manager he talks to the R&D guy finally who is up to provide the new chemical solution to the problem. You cannot imagine how many information are lost on that way and in between. Because it starts with the sales guy who absolutely usually has no technological competence in China, while sales experts in Germany are very often in the chemical industry at least graduated chemists or chemical engineers who settled up with an MBA or whatever but over here its really pure sales talking against or with but sometimes unfortunately against the pure technical community people. And there is a lot of mismatch and a lot of misunderstanding kept in between, which needs to be overcome first. How do we tackle that? We send them together to the customer. We sent them together, the sales guy, he identifies the need for innovation at the customer and comes immediately back to us and he's making a joint appointment where we bring the different parties on one table and together we can work out a relatively reasonable approach how to start this totally new thing. But if you rely on this cascade-like communication, which relatively well works in the western world because people have worked in more different functions and have maybe a broader background and more willingness to understand the others also, this is really a challenge over here.

The diverse population within China and its effect on creativity

And the criteria for selecting the people for your team back when you assembled the members of your team, did you look at their background and that it was diverse, that they were coming from different areas in China or did it just happen?
41:15

I looked at it. Because R&D and diversity is usually linked quite well to each other and you know if you have a production entity for example which is running a very straight forward process and its all about repeatability, reliability, accountability and very lean management then usually it has proven that its favorable to have rather similar people in place, also for backup options. And also they're easier to replace. This is another thing in an attrition environment from the managerial point of view. But in R&D its all about cross-fertilization, so the people need to talk, the people need to have some freedom, people need to exchange and to fertilize each other to widen this understanding and this is what it makes capable R&D guys at the end of the day. And I think this is the cradle of creativity. If the creativity had not the chance to evolve at the very early ages already where the Chinese society family and states education system is maybe not fully ready for yet. So, I had some tough times in the beginning and discussions with our HR department who does the initial round of screening, because I can't do that all by myself because just to give you an idea, Chinese universities, maybe you have heard the number, but they are producing, and I'm intentionally using the term "producing" about 7 million graduates a year. So imagine, 7 million university graduates. Bachelor, Master or PHD. So, how to sort out the right ones? And of course not all of them are chemists and not all of them, only few of them even, are chemists which are relevant to our field,

but nevertheless even that is still a huge, huge mass of people and the screening in the first stages needs to be done by a centralized department which is specialized on that and which gets the criteria catalogue from my side. And after I had the first two people on board which I both was very happy with, what HR in China did here, they just copied, they basically thought – I gave them different profiles, because the roles, the technological tasks, the technological focus areas, they were different for the next people to join. But they thought these people should all have the same kind of personality, the same mind-set, probably the same background preferably from the same university from the same city. And I realized when I recruited my third report at that time, back in 2011, and I said “okay guys, you’re sending me basically copies of the two I already have on board, but there might be a misunderstanding around because this is exactly not what I was looking for. I don't want to multiply the existing ones; I want to build up a structure, which is exponential in their build up in the long run, which is complementary. Because if you have a football team with the 11 best goalkeepers in the world, you will not conceive many goals but still you will never win a match. And on the other hand if you have the 11 best strikers in one team you will score a lot of goals but you will probably also loose almost every match still. So its relatively simple and this took a while for them to adapt to that concept but in the meantime they have understood that I want a diverse team and if you look at the team now, it is quite diverse, both in terms of sex, gender, both in terms of origin, where they come from in China, also the institutes they come from and their different backgrounds, so I hired people who worked in state owned enterprises before, which is usually not so common since these people often, they don't speak proper English and they also have a very different working style, but I had people just were in there for very short so, and they learned that this is not the right platform for them, for their personality so they joined, I have people directly from university, fresh graduates, especially the young ones, on the still a bit lower level. And I have people with quite significant job experience already up to ten years industry experience, both from local and multinational companies. And what I'm looking for now just to give you another example and to further elaborate on that is for people with overseas educational background, so overseas graduates, returnees who maybe did their graduation in the US or in Europe and then decide to come back to China, or to Shanghai because of their family or because of the opportunity back here. So this is the next stage of recruiting and uhm since we want to expand R&D further and bring it even more on eye level with the global structure, also transferring global tasks to China, we have some already but this will be significantly focused on in the future, we need this different profile of people now.

The international background of the current workforce pool in China

But the number of these people who have an international background now is also increasing already right? 46:30

Yes, yes exactly. There are more and more who come back, do the very, very best come back? Maybe not. Because they often have good opportunities also then to work in the US or they do the first step in the US or in Europe and looking forward to the perspective to be transferred back to China later at higher levels already. So Procter & Gamble, who is one of our key accounts customers and I'm in very close contact with usually people in my roles, they are mostly localized already but these people are not mainland Chinese graduates, so their R&D directors they are usually coming in to China or returning to China with a background of having worked about ten years in the headquarters structure in P&G Cincinnati in the US and then they are transferred to a somehow exposed position over here. But you know there are many reasons to come back,

Chinese people are very family oriented so their family structures are much more tight and stronger, powerful than in our Western background and so I think for many of them still its enough after three or four years. And then you have the other trend that you have very capable guys here who made a very promising career in a multinational company in China but we still loose them because at a certain point in time they have collected enough money and enough network that they want to emigrate out of China just to give their kids and their family a better life. Or they want to have two or three kids, which was not necessarily possible here before. So we lost a couple of people in the middle management over the recent years, who then simply relocated to Canada to Australia or to the US for good. Thee guys come back once per year for Chinese New Year with their family to visit the rest of their family and they still have their property here because they can have a great income with renting it here in Shanghai, additional income, which gives them more flexibility even if they don't find a job immediately overseas they're still good economically but these people are gone, basically, so they won't come back. Maybe after retirement but probably even not that, because then their kids will have kids again and they are new Canadians.

The progress of the society as an incentive to think creatively for the overall workforce in China

In the literature that I read on the subject there it was said that many Chinese people are motivated in terms of creativity because of aims to progress the society as a whole. So you mentioned that they are task focused and that if they are asked to be creative they can be innovative and that it is an external force that gives them the incentive as well. So in some literature perspectives they say that it is the progress of the society as a whole that is triggering motivation, but do you see as you were mentioning that the people were leaving China, do you think that this is not a big thing for modern Chinese anymore? 49:00

So you mean the drain China might be suffering from because of people leaving. [Yes] Of course this is a challenge right. And also you know many of these families who already made it to a high level, they send their kids outside of China, finally they sell their business, these first generation entrepreneurs who made China big over the last 30 years, and these kids also they see themselves as future US Americans or whatever and so they do not necessarily come back. So yes there is a certain drain of "elite" out of China but on the other hand if you look at the absolute figures, the mass in China is so massive that overall I think this will I think this not endanger this society, also capital is flowing out of China but on the other hand there is so much capital influx into China, that again the overall system is probably not endangered by this. This is my assumption for now. And you know, the government in that regard, we have to give some certain credit of smartness to them even though of course it's totally different the way they manage their company uh country from our perception and our appreciation. But they look at it and they look at it punctually and whenever they see the pressure getting too high to take action they do and there is one major difference in taking action in China compared to taking action in the Western world in particular when it comes to official bodies, implementation has no timeline basically. It's happening with immediate effect. So there are no 20 years of discussion of course in the environment here, this political set up about a highway being build or about a policy that you have to fasten seatbelts or whether you are allowed to smoke in a restaurant or not. This is something you know its not touched for 20 years or has never been touched before, then suddenly some rumors come up that there might be discussions about it and from first of January, which means next quarter from now, its implemented and heavily fined if you don't follow. So that

means implementation over here is much, much quicker and this is of course how influence basically is taken. And I assume if they would see too much of this tendency they would try to intervene in one or the other way, either by creating further incentives in China or by simply blocking a certain drain, which is the prohibitive way which of course the Chinese government has no problem to execute while Western societies luckily are more cautious with now.

But I mean I agree to the point that what you described, if the entire society develops into this direction and it is regarded to be appreciated to be creative and its very popular to call yourself an R&D guy, of course this is creating own dynamics. This is a trend then and everyone gets aware of this trend specifically the new capable intellectual people being released to the workforce market soon so the upcoming or just finished fresh graduates and that's creating the trend and then everyone wants to be there. Because Chinese people communicate a lot and they are extremely, extremely closely networked so much more than in the Western world still, despite of social media. I mean even though Twitter is blocked and Youtube is blocked, in China and WeChat – no see I already turned my perspective – Whatsapp is blocked there is WeChat and there are the other platforms here like SinaWeibo and others and of course they have such as massive group of users and so frequent users that Chinese people, within the scope of what they are allowed to know they are very, very well informed and trends are created extremely quickly over here. So if its popular to be an R&D guy, then everybody wants to be an R&D guy in very simple words and this is a kind of a trend we see currently and also we are referring to that or responding to that from a company management point of view. Simple example again, in Wacker Germany a technical manager who provides the application support to the customer and who is directly responsible for sales revenue together with his sales colleague, he usually is allocated in a higher salary profile than an R&D guy in Germany. In China, it's the other way around, my people can basically expect a wider salary range development without promotion without changing the original function compared to a technical service manager. Because technical service is more regarded to be a routine job while R&D is being regarded really, really fancy and very much needed to integrate the companies, the technologies and the society in to more value added business basically.

That seems to make sense 55:18

Yes I hope so. I have been fighting for that for 3 years and now we implemented it, so if it doesn't make sense then finally people will blame me.

Trends that underline the importance of creativity in China require different responses than in the rest of the world

But transferring that to Germany is not an issue? 55:30

Transferring to Germany... hm maybe, I mean I worked on both side, myself, I worked in R&D in Germany and on the market side in Germany and at that time, you know people say, sometimes the R&D people are, don't cite me on that please, and its not the proper word, but are a bit more “nerdy” let's say. Very highly qualified but maybe they do not come up with such as broad profile and such a broad interest or maybe a personality that you can put them on stage and have them a great show to deliver customers to acquire projects and so on. And this is maybe the perception in Germany why these more compatible functions are valued a bit higher. On the other hand we in Germany, I mean we are a totally innovation driven society otherwise we cannot keep up our standard in this world and live up to our role but we got used to it already, you know, we

don't need to incentivize it. We have enough graduates, we have enough highly skilled people in many areas, not in all of them and this is why maybe we don't need to attract them additionally by for example salary. And the other point is you know R&D people in this way, when they are really so fascinated by a subject they do they don't define themselves so much about money. You know when you're fascinated by the work you do and you retrieve your satisfaction out of scientific achievements, maybe there is not so much need to pay them extraordinarily high because they bring a lot of self-motivation. So then its more important to create an environment that they can realize themselves and their ideas and implement them, maybe this is what makes the people stay with your company and this is what keeps them up and keeps them productive and creative for 35 years of business life.

The development and the positive connotation of creativity

I think question number seven is already answered in this way, do you think that the perception of creativity among Chinese citizens needs to be more positive than it is today in order to have a bigger impact on the society and economic development? Its developing and its becoming more positive. 57:45

Definitely, definitely. And *it will be the major contributor* to the future development of the overall macro economy in China because the workbench approach is basically over.

An industry overlapping evaluation of creativity in China

Then the next one, in which domain do you see the biggest development of creativity in China, visual art, literature, music, business, science, education, everyday life, if you can make a judgment on this? 58:20

Uhm I cannot judge all of these categories in an equally qualified way, but some of the categories mentioned in here are still limited by state control and when our phone connection is now being switched off in a couple of seconds then you know it's right what I'm saying. Because the first ones you mention like arts, literature, music – these are all areas where there is not the total level of freedom still for the people to develop. So naturally they will be more cautious and they will stay inside their box, they will use the partial freedom they have and the reality is Chinese people have much more freedom now then 20 years ago, this is very often forgotten in the Western world, they all think its all bad here but in the Chinese local perception over the last 25 years, almost every aspect of life has improved. Also the freedom. But this is why I for example, now the big picture, I don't see a revolution potential in here for now. Because you know there were these discussions when the Hong Kong quarrels came up last year, people said “This will spread over from Hong Kong to all of China now and all the young people and there are so many of them they will go on the street and in these big mega cities this will gain a momentum which is uncontrollable for the state” – it didn't happen at all and even in Hong Kong it was finished after a couple of months with a certain degree of violence, which has to be condemned but still much less violence than in comparable cases in the past, when you think of 89 Tiananmen Square Beijing, which was a massacre basically. So, I personally think business makes the most significant progress over here, followed by... science but science the gap to be world-class is still quite wide. And education I think is not adapting quick enough. Because as long as the educational system is not giving more freedom to the people to explore their own skills and interest and to elaborate on that as long as this is the case, the certain limitations in creativity we talked about and in communication to other people, whatever other people means, so could be cultural background or language, or educational background, subject, profession,

whatever as long as this is not changing properly these gaps will still remain and will be roadblocks in efficiently transforming creativity into success, in which way ever.

Factors impeding creativity in China

Okay, and then the next question, what factors are impeding the development of creativity in China in your opinion, you already mentioned some, for example the political control or intellectual property, what else do you have in mind? 1:01:20

I think this is it. And of course the microstructure in the family at early, or not only early ages, basically due to the entire childhood and adolescence, because the people are not handed over enough responsibility. It's very much controlled and also the CVs I get here mostly all of them have some social activity they can show but they have been active in some you know communist party organized events where they got a certain degree or even certain credit for some excellent organization of whatever but it's a pretty narrow field and it's not really like "go for what you are born for", you know, it's still too much calculated, it's too narrow personally my perception. So the platform to develop your skills, your strengths and to discover them by yourself is not broad enough in China yet. And it starts with the parents who are very, very competitive. They have this one child and they all, maybe you're still – sorry to say that, no sorry for me actually – a bit too young to remember, but you definitely remember Steffi Graf, the greatest female Tennis player of all times. And Steffi Graf, you know she was famous, her dad was maybe kind of infamous because he was really pushing her to these high levels under any means and you never could see Steffi Graf laughing in the first five years of her professional career even though she won a couple of titles, most important titles. Later on she managed to free herself up from this bias and to develop an overall I think holistic personality, which when I see her now just in an interview I'm totally impressed, she looks like a completely different person and I think this is the same happening here. So the parents and the whole family and the whole expectation – and when I say family I mean the wider family, so overall the relatives – the social pressure is so prohibitive to failing that the people don't there maybe to step out of the mainstream. And if you don't step – I mean, who are the people who really realized the breakthrough innovations, the milestones, the trailblazing progress in visual art, in literature, in music – are these the guys who always sit in the first line at school, nodding to the teacher and always behaving best? Are these those kind of people? I don't think Eminem was one of them right? Just as an example, this is why I think the way how the kids are grown up is still too narrow, and the way how they are further grown in education in the educational system later is also too narrow and this does not adapt quickly enough to my perception. And this can be based on the fact that this would go in line with further loss of control for the system, because if you give this freedom to the people, to elaborate and to create their own personalities, become stable, strong and do their own thing and make their own judgment no what they have been told what's right or wrong, only, then this might lead to a certain point that they are scrutinizing and critically questioning, challenging the status quo. And if these people then also learn to organize themselves on a large scale, which is also not necessarily a Chinese strength yet, as a team then they can bundle the forces and this will multiply of course their influence. Whether this is appreciated at the moment by the overall Chinese government and those guys who turn the big wheels, probably not yet and this is why this development is as I see it a bit slower. But maybe I'm not living long enough in China, you know, if I lived here for 20 years I would maybe see tremendous progress in there, but actually talking to people who lived here for a long time working in similar fields as I do, they basically confirm to what I just said before. They do not see the big progress on that yet.

Conclusion

Okay. For the last question to sum it up, what are the most important factors influencing the development of creativity in China today, what do you think? 1:06:20

Yea, so the creativity development is fueled by the need for innovation. This is on the pro-side. It is somehow still hindered by the educational system and some very at the same time traditional and competitive family structures. And I think its almost enough. These to mention them. In general, by their nature, Chinese people, – I mean we need to be careful what we say, nothing is genetic, you know nothing is genetic, – but the word can also be used in a figural sense, in a non literal sense, Chinese people genetically are creative. They like to play they like to try things, sometimes you just have the feeling they forgot about it when they grew up. And they forgot about it very early because they wouldn't ask for doing it. So if you ask them now, if you push them to do it with some gentle encouraging positive push, not a push, rather a pull, then it can still happen. They need maybe a bit more time for that, but overall it can happen. And I think there will be more and more people bringing in these skills and this will become visible at a certain point for the rest of the world. If you work in a multinational company you can already see examples, who manage very well. And there is a certain reason why R&D directors with Chinese background, born Chinese people, who have the skillset and who are some of these few examples who can deliver to this expectation, usually they get a higher salary than me. Because their market value is higher, because they don't have the disadvantages I have, they can speak Chinese.

To sum it up, the development of China is mainly triggered by the movement from quantity towards more quality, so [right] towards more innovation and this is of interest for the government and the society in general. 1:08:50

Exactly.

Great. Okay, perfect. Thank you so much.

Yes thank you too.

List of Abbreviations

GDP – Gross Domestic Product

PRC – People's Republic of China

GII – Global Innovation Index

PwC – PricewaterhouseCoopers

MKR – McKinsey Report

FYP – Five Year Plan

CPC – Communist Party of China

ICT – Information and Communication Technology

BRICS – Brazil, Russia, India, China, South Africa

S&T – Science & Technology

R&D – Research & Development

IT – Information Technology

SOE – State Owned Enterprise

MNC – Multinational Company