A Case Study on the Journey of Understanding Creativity and Innovation

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ABSTRACT

Creativity and innovation is the Centre of developments in the society. Creativity can occur at individual level or at societal level. Innovation is driven by entrepreneurship and has creative ideas as its basic element. However this idea should be novel, useful, appropriate and original. The genesis of such ideas are considered to be daily occurrences which are stimulated by life challenges and activities. Receptions of ideas happens all times hence we need to pay attention to our surrounding in order to capture them.

Despite the fact that creativity and innovation are important aspects in society, not all innovations have good impacts to the society. Due to constant dynamics in the globe, some innovation have unintended consequences. This negative impacts maybe felt either at the onset of the innovation or at the future. This report finds that when engaging in innovation and creativity work we needs to be mindful of such impacts. The aim of responsible innovation is to find possible ways to proceed responsibly under those uncertain conditions.

The purpose of this report is to provide an overview of the knowledge on creativity and innovation as outlined in the theoretical framework. This report also shows how Insights from theories of creativity and innovation can be applied in our organization context. The report is divided into two section. Part A give the overview of the knowledge of creativity and innovation. Part B shows how this knowledge of creativity and innovation can be applied in the organizational context.

INTRODUCTION

In the past creativity concept existed as a divine creation. According to Saint Augustine's concept, the view of creativity looked God as the creator. This concept has changed in recent times. Currently creativity is defined in a complex approach involving social and individual aspects of creativity. Creativity can be defined from the individual, organizational and global perspectives. For example organizations are becoming more inventive in order to become competitive in the industry. Again, creative advantage is needed in the business world and companies are fully aware of the gains of creativity. At individual level, creativity is seen in everyday activities which involve giving solution to problems experienced at personal level or at work. From the global perspective, countries are incorporating creativity and critical thinking in the education system, this is to provide the workforce with skills needed to facilitate an innovation-driven economy.

Part A - Overview of The Knowledge On Creativity And Innovation

Understanding Creativity and Innovation

Defining creativity

Creativity is commonly defined as the ability to generate new and original ideas, solutions, or expressions that are both novel and useful (Runco & Acar, 2021). It involves cognitive processes such as problem-solving, divergent thinking, and the ability to see connections between seemingly unrelated concepts, ultimately leading to the production of innovative and valuable outcomes.

Level of creativity

Simonton (2014) states that creativity occurs at both a personal level and societal level. Creation that occurs at personal level are referred as Little-c Creativity while creation at societal level the Author refers to them as Big-C creativity. The Little-c Creativity are those creativities performed at a personal or professional life. Forexample developing a new recipe in cooking. This type of creativity is experienced in our daily life as we make decision and choices. For example thinking of which restaurant to go for lunch and what to eat. On the other hand the big C creativity is associated to the discipline or culture level and it can reach genius-level of creativity. For example Einstein's theory of relativity. However the author note that ideas which are perceived to be creative at the personal level may not be considered creative at the societal level.

At little c creativity the assessment is placed on surprise here, the idea is validated based on the creative outcomes, and being able to solve the task at hand effectively. Whereas, in the societal level, assessment is placed on utility and originality. In addition there should be a consensus of the field needed in order to legitimize the work as original. A scientific creativity cannot be an individual creativity, but an outcome of collaborative interactions among researchers.

Elements of creativity

Amabile (1988) breaks individual creativity into three main elements. The table 1 show summary of elements in Amabile model of individual creativity.

Table 1. Elements of individual creativity as explained by Amabile (1988)

Elements of creativity	**Motivations**	**Creativity approaches**
Domain-relevant skills	Knowledge about specific domains.	Using Specific mental ways to solve a given problem. Example experienced statisticians ,
Creativity-relevant skills	Through exploration and experiments	By understanding complexities.
Intrinsic task motivation.	Internal challenges at work or home.	Through the use of creative practice

Source: own tabulation using literature from Amabile (1988)

Defining innovation.

Innovation is a process which is organized and managed either at a startup venture or in a renewing venture, (Bissant and Tidd, 2015). The author indicates that innovation is driven by entrepreneurship. According to Amabile, (1988), the main objectives of innovation is value creation. Values can be measured by outcomes from economic growth, financial gains and development of social welfare. Hence innovation is about turning new ideas into commercialized valuable outcomes. Innovation can be distinguished by the type of changes that occurs to an idea before generating an outcome.

Table 2 dimension of innovation as explained by (Tidd 2015).

Type of innovation	**changes**	**Examples of incremental changes**
Product innovation	Changes in products and services.	Manual car to automatic car.
Process innovation	Changes in operational procedures and methods.	Counter banking to online banking services

Position innovation	Changes in positions and introduction in the market	Changes from Targeting the whole market to a particular market segment e.g., specific product for women
Paradigm innovation	Changes in the mental/ perceptions models that govern a market.	repositioning of drinks like coffee and fruit as premium designer products

Level of innovation.

According to Hawa (2020) Innovation is not always radical but it may include incremental changes on the existing ideas. Innovation may be experienced either at the micro level or at a macro level. At the micro level, changes may only be applied to a particular organization .While for macro level, changes are transformative and may influence behavior of the whole society. For example online communication and use of internet is a form of innovation that has impacted the whole world

Understanding the Genesis of ideas, problem and solutions

Defining the idea

Ideas has a deep philosophical history that is beyond our modern life. For example, Plato "a philosopher" describe an idea as mental expression of an 'ideal'. This description start from the mind, then it goes to describing what is in the mind to others while being accurate as much as possible (Hawa 2020). Using Plato's perspective then we may see the task of a creator as mainly as an idea conception then describing the characteristics of this idea you have in the mind to the world. Hence bringing the idea to existence. According to Plato, there is a big challenge in the ability to communicate the idea in the mind to others. Plato described this as the hardest part since is not easy to get a reality match of the exact version of idea.

However, there is a more recent expression of ideas seen in pragmatism, this is a philosophy from different philosophers who includes, William James, Charles Pierce, John Dewey and Herbert Dreyfus. These authors Critique Plato's philosophy. They argue that seeing an idea as an 'ideal' isn't good enough. Alternatively they describing an idea in direction of what it does is. According to these four philosophers an idea is a verb rather than a noun. For example an idea is defined as creative, if it is described in terms of what it does, what is its use to other people and how does it impact their lives. Both Plato's and the pragmatist's expressions have powerful consequences for how we define creativity and innovation. Hence ideas can be defined following these theories perspectives. By adopting the pragmatist perspective we move beyond the communication of idea as genius to describing the ideas actions. Again, creating new ideas, is not (an expression of our thinking but a description of the ideas outcome.

Sources of idea

Hawa (2020b) explain that idea are common events and they are often found in our daily life activities. The writer further indicated that source of idea it's not a rare activity which is found occasionally but it occurs in everyday life. This happens through challenges and problems that we face in our daily life. As result ideas are stimulated by problem and the urge to solve and fill the gap lead us into idea generation.

Another source of new ideas is by adopting a combinatorial perspective of knowledge. Schumpeter, (1939) viewed new combinations as an act of innovation. New ideas can be found through recombining existing knowledge in new ways. Recent studies has found that we can use what we know in new ways to create new concepts, rather than searching ideas outside the unknown. Combination has been used by most innovator for example in Picasso's innovation, the innovator used the concept 'Western art' and the concept 'African masks' and combined them together to produce a unique concept.

Godin (2015), indicates that new idea can also be found by imitating the existing ideas and applying them in a new context. This simply means, taking the ideas from others, and applying them in new way with intention to solve a challenge. For example designing of products or services by imitating the existing products or services

then you create a new design of different features. However imitation should be used carefully as there is thin line between imitation and copying. Copying is viewed as plagiarism. Being able to distinguish the two aspects in your idea generation then imitation is considered as powerful generator of new ideas and new innovation.

New ideas are also found in technological capacities. The use of technologies can generate new ideas at different levels and at time depending on their characteristics. Changes caused by technology are explained in the idea trajectories which view technologies as a powerful source of ideas and innovation. Advancement in technology's performance can lead to new ideas. Application of technology in new domains, new ways, and at certain times may create new ideas for many people at once.

Sources of problems and solutions

Problems are found in our daily life. This problem can be identified through reading, researching, talking to people about situations .According to Hawa (2020) the best way to find problems is to get out of your room and go out and live: this will put you in many situations whereby you are able meet people and experiences. This may lead you to seeing problems to solve.

Another source of problems is by looking the grand challenges facing the world. This may include climate change, emerging diseases, food security and poverty. However this grand challenges have deep interdependencies making their search for solutions incredibly complex (Hawa2020). Knowledge on a specific domain can lead to finding problems. For example - those well versed in a particular paradigm like food supply chain are more likely to see the problems to solve within that paradigm first. Problem can also be sourced from your own life experiences for example frustration you noticed as a consumer while ordering lunch in the food court.

The main task of innovation is to find solution to the identified problems, the demand from the problems lead ones to actively and creatively search for idea to solve it. The matching between a problem, and a new solution is what is viewed as the source of innovation.

Understanding the Innovation systems

Defining innovation system

According to Edquist (1997), innovation systems involve all aspects of economic, social, political and organizational factors. This factors are considered to influence the development and uses of innovations. Using Edquist considerations then we can define innovation system as a complex system where different actors are networking at the same time by sharing, accumulating and generating knowledge, (Lundvall 2007). The innovation system can be classified in terms of sectorial, geographical, and technological perspectives. Example of innovation systems include.

Actors in the innovation system

Etzkowitz (2003) indicates three main groups of actors that engage in the development of such innovation systems. These include governments, universities and industry. The author argues that the interaction between actors improves the conditions for innovation in a knowledge-based society.

Table 3 Triadic relationship of actors participating in an innovation system.

Actors	Entrepreneurial functions
Industries	• Aligning interventions with developments • Enhancing its R&D activities and aligning them with the universities' structures
Universities	• Creating an accessible platform for the exchange of knowledge with industry.

	• Adopting firm-like characteristics by translating their research and spinning out more companies.
Government	Giving a central purpose and direction for the society, • forming the rules of the games of the innovation system

Sources. Own tabulation using literature from Etzkowitz (2003)

Actors relationships in innovation systems

Within a productive innovation system we have both a formal and informal relationship between the actors. This creates a sense of belonging within the social arena. As result leading to collective knowledge which reinforce the region's innovative capabilities. Fromhold-Eisebith, (2004) state that presence of relationships and collaborations among players in the innovation system stimulate innovation. For example biotechnology cluster in San Diego uses communication and strong social bonds among the actors as base of that innovation system. Hence increasing competitive advantage.

Ferrary and Granovetter, (2009) explain venture capitalist as a type of relationship in an innovation system. The capitalist funds the startup ventures and at the same time influence the whole innovation system. For example at the Silicon Valley innovation system, studies find that start- ups ventures uses the funds to outsource their innovative activities to other groups of players within the field. This type of relationship generate a financial connections between ventures and their broader environment Innovation system operate in cooperative field relationship. However, studies have found that competitive behaviors are dominate in this relationship (Fligstein, 2013) .This type of relationship is perceived as rivalry which stimulate innovation within industry groups.

According to porter (2000) the knowledge abundance from different actors within the industry drives companies to adopt differentiated competitive strategies. However cooperation and competition within cooperative fields can complement each other and they works on a different level. For example competition operate in horizontal scale by focusing among companies that are competing over a specific market while cooperation operate on vertical scale by focusing on the relationships between buyers and suppliers agreements.

Understanding responsible innovation

Achieving Sustainable innovation

Despite the fact that innovations is the Centre of development in our societies, not all innovation and ideas are sustainably good. This bring the question of which innovation is sustainable. According to Hawa (2020) all actors in the innovation need to rethink the ways of innovating in consideration of sustainability aspects. For example, organizations need to be concerned on where and how to innovate. Hawa noted that irresponsible innovation are caused by overlooking the societal, economic or environmental contexts. This can also happens due to poor collaborations among actors in the innovation system. Through reactive governance responsible innovation could be achieved. However this has been found to be hard in regulating novel technologies that have no historical precedent. This is due to uncertainties involved with regard to present and future impacts. Some innovation have unintended consequences due to complex, dynamic and globalized phenomena. The aim of responsible innovation is to find possible ways to proceed responsibly under those highly uncertain conditions.

Elements of sustainable innovation.

The turning point to responsible innovation is to consider impacts of the innovation outcome, more so their purposes, motivations and reasons of innovation. The author advises that, in any innovation, one needs to be mindful of potential impact of a given innovation. The signs of responsible innovation is the ability to adapt, modify or even abandon an innovation in case it shows potential negative consequences in present or future.

Owen and Pansera (2019) view responsible innovation system as the awareness of the actors and ready to adopt to future changes in the external world of that particular innovation. This responsiveness is a collective commitment of care shown by all stakeholders in the innovation system. The care happens at present while anticipating for the future occurrence. The occurrence can be either positive or negative. During innovation process is good to incorporate Questions like “what if “and, "what else might we do? The elements of responsible innovation are the reflexive capital which may guide individuals engaging in the innovation space. This elements include anticipatory, reflective, deliberative, and responsive. By incorporating this elements in innovation process innovators may reduce potential harm and as result promoting innovations which are sustainable and equitable across all society levels (Hawa, 2020)

CONCLUSIONS AND RECOMMENDATIONS

Everybody in this world has level of creativity in them. Identifying those level of creativity needs mind tuning this can happens by either attending the innovation and creativity class, seminar or talks. This will help one to redefine their understanding of creativity. Using myself as the case, I can confirm that my understanding of creativity and innovation has be changed by this course. Hence I recommend so. Again, successful innovators not only generate innovations but also receive innovations by appreciating other peoples’ innovation. This shows that you have creativity eyes in you.

Overcoming the limitation of creativity can be achieved through passion drive and hard work. Creativity is like a muscle, it grows when used. In creativity one need to consider time in planning the model depending on the task at hand.

Culture should be used to develop innovation rather than using innovation to change culture. Research and continuous learning is required in creativity which may lead to great innovation. However trying to achieve perfection will lead to failure. the best way is to start small as you get feedback then improvements can be made in the process. Above all, the process of creativity require courage to overcome mental roadblocks, this can be achieved by enjoying the work you are doing and aligning yourself with a supportive environment.

Conflict of Interests

The author has not declared any conflict of interests.

Executive summary

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