

An Art of Transiting Ideas into Innovation

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Abstract

Ideation is the base for creativity which supports novelty. Innovation could be an original idea of an innovator or an imitation favored by the sharing of cross-industry resources. Creativity has become imperative to individuals as well as to organizations. After conducting a literature review, this study has put forth a generic creative problem-solving (CPS) model with real-world corporate examples. The paper has listed the factors that could block creativity and described CPS tools and techniques that support ideation and creativity. Additionally, it has critically analyzed the innovator's DNA (Dyer, Gregersen, & Christensen, 2009) which purports the five basic skills needed to be creative: associating, questioning, observing, experimenting, and networking, and further has examined the controlling factors of innovation equation (Bahcall, 2019) which has emphasized the organizational structural variables like equity fraction(E), fitness ratio (F), management span(S) and salary growth (G) as the parameters for promoting the transition of ideas into the innovation.

Keywords: people management, critical thinking, negotiation, quality control, service orientation.

Introduction

Creativity, Invention, and Innovation

Creativity is a mental ability to conceptualize new ideas and define the relationship between the seeming disparate variables. Thus born completely new domain is called the invention, which later is converted into new realities as innovation in the form of a new product, process, or service. Though various taxonomies rise across the spectrum, the fundamental base for generating creativeness is ideation. Linearity can be inferred among creativity, invention, and innovation; Sarooghi, Libaers and Burkemper (2015) stressed the existence of a strong positive relationship between creativity and innovation at an individual level and further added that the larger firms are more creative in comparison to the smaller firms which could be due to the abundance of resources.

The late CEO of Apple, Steve Jobs rare ability to conceive new ideas and connect the diverse spectrum into one modality, i.e., combining an mp3 player, internet browser, a GPS, cell phone, video camera et cetera to iPhone made the company one of the most creative and competitive of the globe (Harmeyer, 2015). However, innovation is scarce, whereas imitation is pervasive; Levitt (1996) suggested the relevance of imitation to bring innovation. The already existing solutions for one industry are being used in another; this utilization and imitation have foster cross-industry innovations (Enkel & Gassmann, 2010). Banu, Dumitrescu, and Purcarea (2015) have also recognized the intertwining relationship between innovation and imitation.

It will not be wrong to infer that imitation and modification are crucial to making the company innovative. These can be in the form of product or process innovations. Flannery (2010) went so far as to suggest creativity as the combination of learning from others and adding what we have to get a competitive advantage; this amalgamation of creativity and imitation is coined as an "imovators."

Discussion

Creativity and Market Dominance

Creative organizations are dominant in the market, but adaptation must be sustainable; though Diners Card created credit cards, it later lost the market to Mastercard (Flannery, 2010). Brodherson, Heller, and Remley (2017) emphasized tasks like embedding creativity into daily organizational practices, becoming customer fanatics, feeding the need for speed, and adapting to prevent dieing foster innovations. Apple and Amazon, the first two trillion dollar behemoth, relied on the principle stated above. These companies have been stretching and breaking their paradigm way beyond what it was initiated for. Apple created many products from phones to laptops, tablets, desktops, and Amazon from online book stores to full-powered e-stores, elaborating their product portfolio as per the need and expectations of their customers. Indeed, innovative companies are not only dominators, but they can boost the global economy (Duarte, 2015). ServiceNow, Workday, Salesforce.com, Tesla, and Amazon are 2018's most innovative companies with their innovation premium 89.22%, 82.84%, 82.27%, 78.27%, and 77.4% respectively("The World's Most Innovative Companie", 2018).

Important of Creativity

Creativity has an immense implication in individual and organizational performance. The organizations having resilient knowledge workers have a higher absorptive capacity, which entails going beyond the R&D of the company and getting an idea from the outside environment (Garner & Ternouth, 2011). The event of

globalization and liberalization has spiked competition, and those who cannot innovate themselves have lagged, i.e., Nokia Inc. and Kodak Eastman. A creative and liberal mind opens numerous dimensions to see things differently. Diversity of thought promotes creativity and enhances problem-solving skills; indeed, a team based on diverse thinking styles is more innovative than a homogeneous team (Verkerke & Callanan, 2018).

According to the World Economic Forum (2018), machines will do more tasks than humans by 2025, and the robot revolution will create 58 million net new jobs in the next five years. Table 1 depicts the paradigm shift in the skill required in the 2020 job market relative to 2015. Complex problem solving, critical thinking, and creativity would be inevitable skills to outperform, which happened due to the Fourth Industrial Revolution (4IR).

Table 1

Ten skills to thrive in the Fourth Industrial Revolution (Gray, 2016)

In 2020		In 2015	
1	Complex Problem Solving	1	Complex Problem Solving
2	Critical Thinking	2	Coordinating with Others
3	Creativity	3	People Management
4	People Management	4	Critical Thinking
5	Coordinating with Others	5	Negotiation
6	Emotional Intelligence	6	Quality Control
7	Judgement and Decision Making	7	Service Orientation
8	Service Orientation	8	Judgement and Decision Making
9	Negotiation	9	Active Listening
10	Cognitive Flexibility	10	Creativity

A Generic Model in Unlocking Creative Problem Solving (CPS)

Creativity has become ubiquitous for the survival and sustainability of the organization. The scholars for CPS laid various models; Proctor (2014) went forward with nine- stage process for solving creative problems; it starts by analyzing the environment and follows steps like objective finding, fact-finding, problem finding, understanding the assumptions, idea findings, solution findings and acceptance of the solution along with the controlling mechanism for post-implementation. Indeed, in general, Creative Problem Solving (CPS) is the problem-solving process that addresses unclear problems; it provides flexibility and alternatives in choosing pathways to solutions and develops new outcomes (Nazem, Mozaiini, & Seifi, 2014).

After going through a plethora of scholarly papers, articles, and publications, the following six steps have been crafted that would fit in most creative problem-solving scenarios, leading the practitioner to get a competitive advantage. Figure 1 illustrates the generic process of CPS carried by "Fairphone"; a European phone manufacturer, to overcome environmental and ethical issues.

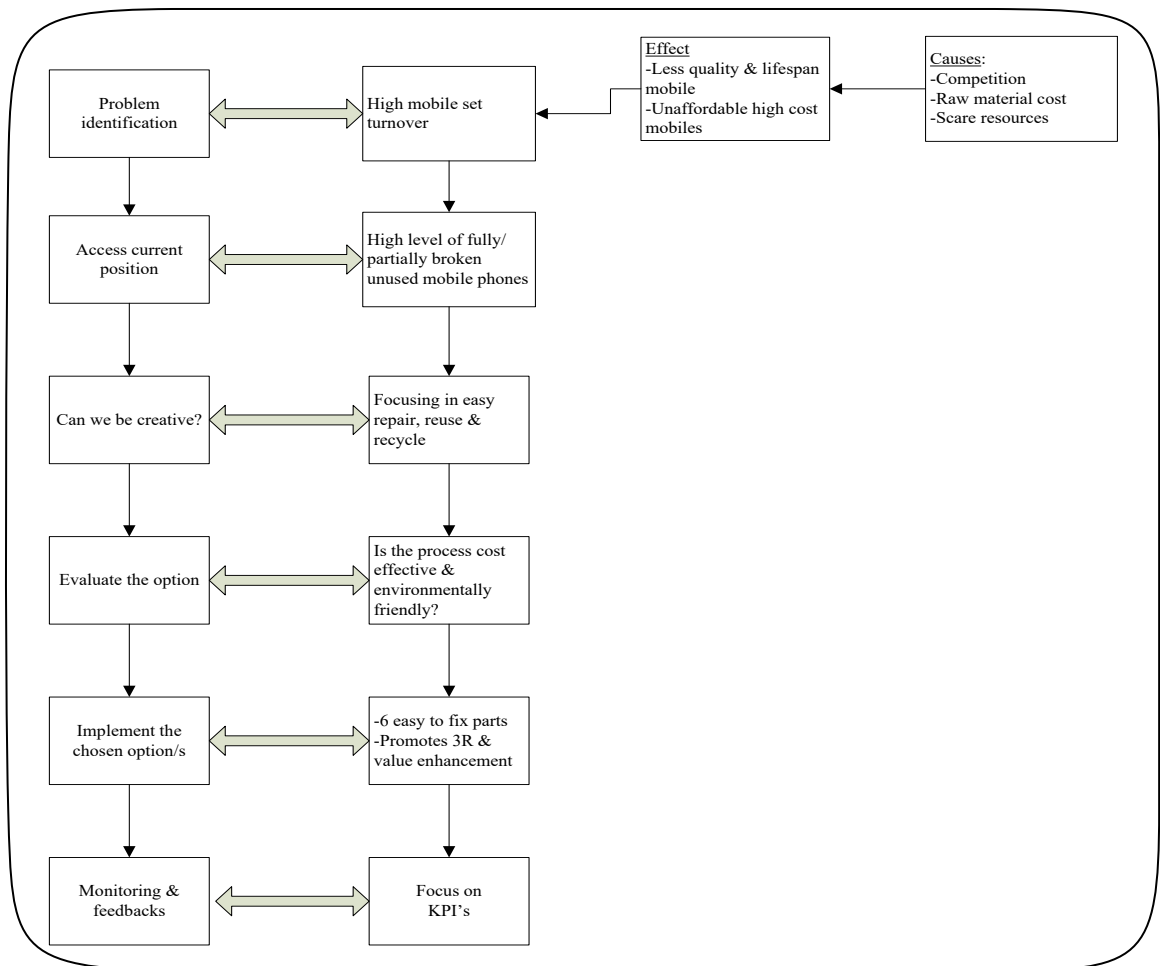


Figure 1. Creative problem-Solving in respect to Fairphone.

"Fairphone," the world first ethically produced mobile phone, is based on the principle of a circular economy that stresses recycling, reusing, and remanufacturing of the resources (Upadhayay & Alqassimi, 2018). Their innovation can be reconciled with the CPS process, as shown in Figure 1. It started by addressing the problem, which is the rapid mobile turnover rate. The phone comprises six easy-to-fix parts, facilitating the user to fix-it, use-it, and prolong its life. Fairphone has been a "paradigm breaker" compared to other mobile set producers; it innovated itself to reduce the environmental footprints.

Problem Redefinition, Improvisation, and Growth

Identifying the problem is one of the organization's most significant challenges; they often confuse the problem with the symptoms. The problems are challenges to the organization and could also be an opportunity to the organization. Problem redefinition is the process of revisiting the problem scenario from a different perspective with multiple approaches (Proctor, 2014). Often, with the change in the market expectation, the problem scenario might change, creating a new organizational requirement; this creates the

possibility of improvisation that harness the growth and sustainability for the organization. Figure 1 states the differential approach taken in restating the problem by "Fairphone," rather than being content with the higher revenue, looked at the issue from an environmental and ethical perspective.

The multi-national drinking behemoth Coca-Cola was founded by Dr. John Stith Pemberton in 1886 as a nerve tonic ("The Chronicle of Cola-Cola," 2012). Had the company remained the way like that, it would not have produced more than 500 brands under the same company logo. This classic example from Coca-Cola can be seen as a creative way that provided growth to the company. It has produced sugary drinks and has also been into energy and diet drinks; interestingly acquired Costa coffee, the UK drinks (Lyengar, 2018) and is currently planning to be into cannabis-infused drinks (Isidore, 2018).

From the case of Coca-Cola, we can infer that the company's mission often changes with the trends and challenges that appear in the market. The soda company was revisited from multiple dimensions, as a recreation drink for entertainment, holiday, energy booster, coffee, and now for marijuana. The learning from the market helped the company improvise itself, which sustainably supported innovation and growth through paradigm preserving and paradigm stretching techniques.

Blockage to Ideation and Creativity

Blockages are the resistance to creativity which dampens the invention as well as innovation. Netflix engulfed blockbusters; Amazon is proliferating as a wildfire across the e-commerce platform, Sears is on the track of filing bankruptcy, and Toys R Us is already liquidated. As per Sull (1999), Nokia lost its charm due to its previous arrogance of success, and over-confidence in reel-based photography makes the Kodak-Eastman out of business; Sull (1999) infers this kind of organizational blockage as "active inertia." Burkus (2013) stated that innovation is not an idea problem. However, it is the inability to recognize the problem, as happened with Xerox, which was the first to develop personal computers but was later taken by Apple.

Similarly, individuals also have blockages, and it should be of paramount importance for the manager to take care of those obstructions, as these hampers the ideation process. Personality plays an important role; more divergent thinkers have higher chances of ideation than convergent thinkers (Proctor, 2014). The initial one is more into out-of-box thinking, and later, one is structured and constrained. The cultural values, previous experiences, and beliefs also shape the individual's capacity to think. Creativity comes with knowledge; a person in the project must have in-depth knowledge about his field (Proctor, 2014). Garvin, Edmondson, and Gino (2018) inferred that organizations promoting learning culture appreciate the differences, bringing novelty.

Unequivocally, the organization should foster a conducive environment for creativity; the availability of knowledge workers, also called human capital in an egalitarian work environment, opens up innovation, and organizations with more absorptive research and development departments are more absorptive innovative (Levitt, 1996). Similarly, functional conflicts, also called productive accidents, are the constructs of creativity and innovation. Reluctance to change, negativity to organizational philosophy, over-stress, depression, and inclination towards self-virtualization and egoism often close the loops for creativity (Proctor, 2014).

Creative Problem-Solving Tools

The creative problem-solving tools support and expedite the creative problem-solving process. We should opt for CPS tools and techniques whenever the problem is unstructured, of a unique type, and ill-programmed. Approaching it with lateral thinking rather than vertical thinking even creates ample opportunities for creativity. Proctor (2014) stated that the innovation could be either paradigm preserving, stretching, or breaking.

The use of CPS tools depends on the type of problem scenario; all time, the logic does not work well; it limits the practitioner's ideation process in a predefined and confined boundary (Proctor, 2014). Leaders should be equipped enough to provoke and invoke their employees. Promoting lateral thinking, inducing and motivating to think out of the box beyond the orthodox taboos, should be the manifestation of the leader. Often synectics is used where series of analogies are used to create a real problem scenario inducing the participants to think through and across the circumstances.

Problem switching is a break to the brain to relax and redefine the problem from multiple dimensions. Visualization and mind mapping are brain games whose ability is profound (Proctor, 2014); these intangible plots give the practitioner numbers of hit and trails to experiments. A newer dimension to creativity and ideation has been biomimicry; it is a process of learning from nature and is proven as nature is adapting and perfecting it for ages. For example, the design of bullet trains in Japan was brought from the Kingfisher bird.

Locating Innovators DNA

An organization with innovation at the center outperforms, but the question raises how those employees could be traced, and is their DNA different from non-innovators? Dyer, Gregersen, & Christensen (2009) stated that innovator comes with five distinct skills; associating, questioning, observing, experimenting, and networking listed in Table 2.

Table 2.

Skills Needed to be an Innovator (Adapted from Dyer, Gregersen, & Christensen, (2009))

Skills	Meaning
Associating	Ability to connect unrelated ideas, questions
Questioning	Ability to ask question that challenges common wisdom
Observing	Carefully, intentionally & consistently look for details
Experimenting	Actively try out new ideas by creating prototypes
Networking	Finding & testing ideas through diverse network of individuals

A person behind marvelous projects like Hyperloop, Space tourism, and Tesla is non-other than Elon Musk, but this vanity of success has not been easy. He is a divergent thinker, and his ability could be reconciled with the set of skills listed in Table 2. He associated and thought of never-catered issues, reusing the rocket body for a space mission to minimize the cost, using hyperloop to get rid of Los Angeles traffic, and capitalized in his networking abilities with his charismatic leadership skills and constructive creativity. He thoughtfully observed the gap that was in the market, termed echoed by Drucker (1985) as "incongruity," and questioned the validity of the ventured; he tested and re-tested his mission, it took series of unsuccessful tests to come across his first successful mission of rocket called "Falcon" with satellite to the space. Musk's

another project, Tesla, has brought paradigm changes in the automation industry (Fry, 2017), and as per Forbes (2018), Tesla stands out as the fourth innovative company in the world with its innovation premium of 78.27%. Musk is a perfect apotheosis of a divergent thinker with disruptive innovation.

An Equation for an Innovation

Bahcall (2019) went beyond analyzing the cultural factors as an impacting variable for innovation. Instead, the focus was on the organization's structure where the competing forces were "stake in outcome" verse "perks of rank," i.e., if the employees feel higher the gain from the group collective output, they will invest their effort. However, if they feel the reward is worth more in upscaling the career ladder, they will stop taking chances that may risk their career and focus more on their promotion rather than innovation. Bahcall (2019) proposed "M" as the maximum number of people who can work well together to encourage innovation. And suggested four controlling variables: equity fraction(E), fitness ratio (F), management span(S), and salary growth (G) with the following equation.

$$M = \frac{E \times S^2 \times F}{G}$$

The equity fraction represents the incentive linked to the outcome and could be hard or soft, i.e., financial or non-financial; the fitness ratio is the ratio of project-skill fit (PSF) and return on politics (ROP), an employee with an unmatched skill to the project will reduce the numerators and would get involved in politics, increasing ROP but reducing the value of overall fitness ratio, as per Bahcall (2019) management span is the average number of the direct reports the executives have, if the organization have many hierarchies, promotion is in everyone's mind. However, if the management span is high, the hierarchy is low, and their focus will be more on work. Lastly, the significant increment in the salary upscale the hierarchy will make the people focus more on the career ladder. However, the low salary step-up rates induce employees to put extra effort into work rather than politics. Bahcall (2019) inferred, M increases (keeping organization innovative at greater scale) with higher E, S, F and decreases with the G, and has suggested focusing on outcomes rather than rank, using soft equity in combination with the hard equity as a reward, get the politics out from the workplace, provide training to fit the skills with the post will increase the value of "M" and enhances the chance of innovation.

Conclusion.

Creativity is imperative to maintain competitiveness. Depending upon the problem situation and the company's resources, the modality of innovation is chosen, i.e., it could be paradigm preserving or paradigm stretching. In addition to the cultural factors, organizational structural variables also influence innovation. Moreover, the innovator's DNA could be developed with the habit of associating, questioning, observing, experimenting, and networking by using creative problem solving (CPS) tools and techniques like brainstorming, synectics, mind-mapping, heuristics.

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