

A Case for Socialized Innovation

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Abstract—Collaborative research and innovation may sound outside the realm of possibility in the real world. However, a number of organizations both public and private have willingly embraced it, increasing their innovative potential in the process. The objective of this article is not to define a roadmap for collaborative innovation. In fact, there really is no single innovation strategy that works for any organization. We also need to recognize that collaborative innovation is a possibility in limited areas such as information technology while specialized fields such as pure sciences and medicine still require the rigors, discipline and apparatus provided in a laboratory setup of more traditional research. Our attempt here is to provide a window into the world of socialized innovation through examples and insights where large and small organizations have hugely benefited from employee input. Our work here looks at how invention has changed to innovation and how organizations can harness them into their growth strategy.

Index Terms—innovation, organizational strategy, social, collaborative, invention

I. INTRODUCTION

Innovation and research are no longer restricted to laboratories and research centers. Today, new ideas and innovative approaches emerge every day from people working on customer facing situations and dealing with real life issues. In this day and age it is essential not only to harvest these ideas but to encourage and reward them as well. In this article we will talk about various initiatives and examples across companies and organizations that have brought about significant changes in the nature of innovation itself. Let us consider companies like Apple Computer, Google, Samsung, 3M, Virgin Group, Nokia, and Procter & Gamble. For these top performers, the winning equation is unassailable: “Innovation equals growth”. Innovation has changed in many ways and has taken numerous different forms over the last 50 years. In the beginning of the 20th century and even up till the late eighties, some of the most amazing inventions came from research labs where experienced scientists and thought leaders worked in dedicated think tanks and laboratories. However, the entire research and innovation world changed phenomenally with the information age where ideas started being generated and implemented on a day to day basis. Even in the recent past, there were companies like 3M that valued the fact that some of their most amazing inventions have been generated in trying to resolve simple client issues by their

sales force. The famous, patented 3M post-it was one such invention and since those days, 3M has had “creative time off” for its employees which is a concept that has been well embraced by many companies which officially recognize the need to “take a break” in order to invent or re-invent an idea. As Thomas Kuczmaski [1] puts it, “*There are inventors and there are innovators. One is creating a product with the dream of success. The other brings a product to market knowing with certainty that there is a need to be met. Understanding the difference and acting on it can provide an important stimulus for the economy in the challenging years ahead.*”

In the last two decades there has been a tremendous upsurge in innovation theory and research driven both by the academic query of the scholars in the field of advance management and propelled by the industrial imperative to seek higher gains in the competitive market. It has generated a great deal of content on the management and existence, diffusion and effectiveness of organizational innovations [2], [3]. Importantly, the interplay between organizational innovation and technological change is significant for the development of the ability to innovate, utilize new technologies and inventive resources as organizational and technological innovations are intertwined. The adoption of new technology can bring multifarious prospects and challenges for organizations, dictating the changes within [4].

The objective of this study is to critically examine the concept of organizational innovation versus invention, examine influences that have stimulated the movement from invention to innovation and to identify different strategies and approaches through which an organization can encourage socialized and collaborative innovation. For that end the paper in the beginning details out the innovation influencers and then it identifies and assesses the factors and strategies to encourage innovation and creativity at the organizational level.

II. INNOVATION INFLUENCERS

To define the concept of innovation more clearly, a distinction between creativity and organizational innovation is very useful. More than a decade ago Amabile [5] defined creativity as the “production of creative and constructive ideas” and innovation as the “successful realization of innovative ideas within an organization.” Oldham and Cummings [6] also attached creativity at the individual level and innovation at the

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organizational level. Though the distinction has been made in many studies, several researchers have rather defined organizational innovation in conjunction with the individual creativity, acknowledging individuals are the ultimate source of any new idea [7]. They justified their claims by arguing that new ideas by creative employees could be transferred to other employees and in a large scale lead to the development of innovative products at the organizational level.

In order to understand the modified landscape of companies and its underlying changes, we need to go back to the icon on innovation in the 20th century—the Bell Labs. The Bell labs were known for creating a fortress of innovation by collecting some of the best minds in engineering and electronics which led to some of the most ground breaking “inventions”. I call these inventions because yet again, based on our definition, these creations were the result of dedicated scientists working on research projects. These were not spontaneous innovations resulting from client problems.

This is not to say that these researchers were not “innovative” but the process of innovation itself was more standardized, legitimized and controlled. Many famous Bell Labs scientists, including Brattain, Kelly and the Nobel Prize-winning physicist Charles H. Townes, who helped develop the principles of the laser, grew up on farms or in small towns, which Dr. Townes argued were “*The perfect training grounds for experimental physics. Such childhoods, taught a person how to pay attention to the natural world, to work with machinery and to know how to solve practical problems and fix things innovatively, with what is on hand.*” [8] The research labs ceased to be the icon they were towards the end of the 20th century due to a number of reasons social and political. As per Mr. Gertner [8]

“AT&T’s original mission - to create and maintain a system of modern communications- has largely been fulfilled. The current Bell Labs president, Jeong Kim, believes that the future of communications may be defined by an industry yet to be created: a business that does not simply deliver or search out information, but also somehow manages and organizes the vast flood of data that threatens to overwhelm our lives.”

In addition, as a Bell Labs researcher named Andrew Odlyzko observed, the new business environment meant that “unfettered research” was no longer a logical or necessary investment for a company.

Are we breaking constraints on innovation that the old processes were subject to?

Over the coming decades, an accelerated pace of change will test the resilience of every society, organization and individual. Luckily, perturbations create opportunities as well as challenges. Hence the most important question for any organization is this: “*Are we changing as fast as the world around us?*”

Fig. 1, below illustrates the common factors that influence innovation in any organization. All of these could be rolled up to Information technology leading to increased collaboration.

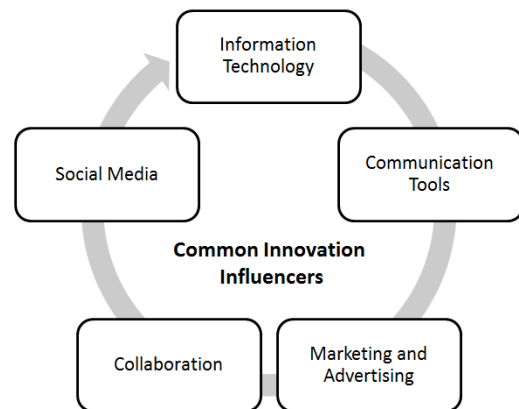


Figure 1. Common innovation influencers.

Online tools have socialized information, allowing the average-Joe to become content publishers. Other tools have socialized communication so that all those content generators can become peers. With the added dimension of community, information can be celebrated, enhanced, localized. According to Mayfield [9], “*Social media is a genie that will not be disappearing back into its bottle*”. Having human interaction as its base, it is not a new concept [10] though the intermediation of advanced information technology platforms has led to a metamorphosis of interpersonal interactions and communications globally [10].

As innovation is often created in networks, a company's business partners also influence its innovative outcome. Collaboration between intra and inter organizational networks have extend the theory by revealing that not only relationships with partners but also their properties—partner innovativeness—is a significant influencer. Marketing and Advertising is yet another influencer that has moved away from traditional agencies to the You Tubes and Twitters where people influence the popularity of products and services. Companies have to ensure that they are able to highlight the demands of the global business environment and adequately react to the trends. This ability of the company to highlight and react to the trend in the consumer market would ensure that it is able to develop a suitable competitive advantage. The core business functions such as marketing, advertising, customer service and public relations development; are dependent on the social media integration of the organization [11].

The advent of internet based communication channels has altered the nature of the global consumer market. Today, forward-thinking companies are using the technological spurt and the information overload from all sources including social media for more than just creative marketing campaigns. These companies can harness the power of collaboration (social media, blogs, twitters, yammer etc.) to promote a culture that fosters innovation, empowers effective collaboration with customers and partners, and streamlines idea development channels. The following sections delve deeper into analyzing how the process of innovation has changed over the past few decades.

III. THE CHANGING FACE OF INNOVATION

Now that we have established that “inventiveness” or innovation is being influenced by a number of different factors, the section below examines multiple aspects of the change and delves into further detail on the five major dimensions of innovation. Fig. 2 below captures the transition of these dimensions moving from invention to collaborative innovation.

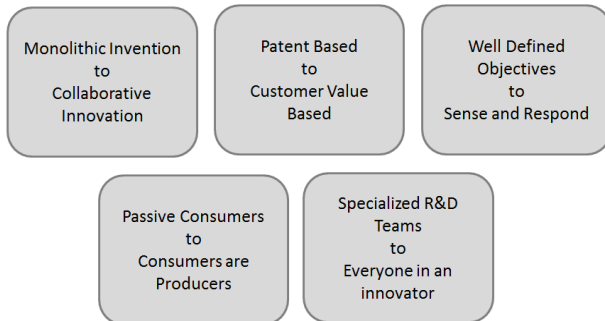


Figure 2. The changing face of Innovation

A. Silo-ed Invention to Synergetic Innovation

The idea behind collaborative innovation has a long history. Even as far back as Greek academies, there were mutual admiration societies amongst famous thinkers and researchers that were used actively to build social capital and to exchange and expand ideas. However, the nature of collaborative working today is such that the birth as well as implementation of new ideas takes place collaboratively not so much in research labs but by employees working in the field resolving customer issues or producing on demand solutions. This kind of innovation has become so huge that companies like IBM and HP have encouraged the growth of communities that foster innovation and they provide them with the capital support to sponsor a large part of these innovations. Even consulting companies like Deloitte, CapGemini, KPMG etc have “innovation” contests not only to encourage employee participation in the innovation process but because they are aware that some of the most innovative client solutions have been found as a result of these contests.

B. Patent Driven to Value Based

Probably one of the most controversial and exemplary inventions of the IT world is the “amazon one click” patent filed a few years ago. It covered the “invention” of a single mouse click as an on-line ordering technique. Opponents complain that the “one click” patent did not meet the main criteria for patentability, those of inventiveness or not being obvious to an expert in the field. And yet as a technology and a client solution it was a novel idea that other companies such as Apple have now started licensing. The very bases of invention or coming up with a novel solution has now moved into the hands of teams working on everyday customer facing solutions- people that deal with day to day issues, device new ways of dealing with these situations. In the world of information technology, it is even more common, where

research labs although still valuable in coming up with complicated encryption algorithms, are not the only place where inventions are taking place. Huge patenting giants like IBM are also encouraging this with the “Extreme Blue” programs where a group of employees across are brought together for 20% of their time over a period of one year, to work on a proof of concept for an “innovative” idea. In consulting companies like Deloitte, we see the advent of GovLab internships where high performing practitioners are taken off client work for a whole year and they dedicate their time towards working on innovative industry solutions.

C. Defined Objectives to Sense and Respond

In many ways, conventional research and invention is extremely focused. A researcher is working on a narrow field of study, with well-defined objectives, financed by a company, government or academic institution towards a particular goal. The “new” face of innovation is more “reactive”. Ideas are generated as a result of a reaction to an obstacle to a sticky situation. Consider the examples below:

How can media companies make 5 minute, 10 minute, 15 minute sports highlights clips? There are many different sports, many different games, and not enough editors.

- *Solution: Use the response of the crowds as a key to selecting highlight scenes.*
- *US6, 414, 914 Multimedia search and indexing for automatic selection of scenes and/or sounds recorded in a media for replay using audio cues.*

The customer keeps clicking the wrong thing accidentally, and doesn’t like it.

- *Solution: Put a box around the menu, and don’t let the cursor go past the barrier*
- *US6628315: System, method, and program for providing a barrier around a menu choice to reduce the chance of a user accidentally making a selection error*

These are everyday scenarios that lead to standardized methodologies which have been recognized as “inventions”. The difference is that these inventions came about as a “reaction” to everyday situations. The inventors didn’t start with the problem, they identified a situation faced while dealing with a user scenario and responded with a novel solution.

D. Passive Consumers to Consumers are Producers

Information technology and especially social media technologies have brought about another fundamental change in the consumer world. The consumer has changed from a passive consumer who used products that were researched by scientists, produced in factories and used by passive consumers that either liked or did not like the product. However, today we live in a world engulfed by social media and mobile technologies where the same people using the technology have easy access to the tools to enhance them as well. Solving real problems, consumers can lead to truly “innovative” solutions. You are a consumer as well as an employee.

Consider real world problems below:

How can I make sure my mom is ok? She's living alone and getting frail...

- *Solution: Use sensor readings to make sure she's moving around the apartment. Media industry technologies can be used for the elderly.*
- *US7095328: System and method for non-intrusive monitoring of "at risk" individuals (filed 3/01)*

My husband must have been on the phone for hours! I can't get through.

- *Solution: The telco knows who the account owners are. I should be selectively able to barge in without it being an emergency (and without an operator).*
- *US6418216: Caller-controller barge-in telephone service (filed 6/98)*

E. Everyone is an Innovator

There have been numerous research projects and multiple books written on capturing the inherent creativity in people. One just needs to harness that capability and the right kind of training and environment can provide that harness. Organizations such as 3M, Google, IBM and Intel have realized that potential by offering internal downtimes to their employees to be able to achieve that. Not only that, modern office designs are converging on this idea as well. Facebook's new offices are organized more as living rooms and DJ booths than cubicles. Elsewhere in office design, conference rooms are quickly being crowded out by lounge spaces. The inherent idea behind all these changes is one central theme – every employee has the potential to provide an organization with innovative solutions- we just need to provide right kind of environment to capture these.

Consider the case of a small company called SuperGroup Creative Omnimedia Inc. In its early days, Chris Wallace's company didn't always have enough work to keep its staff fully occupied designing interactive Web sites for clients. But he didn't want to lose any talent. So he and his co-founders decided to tell employees they could pursue their own interests in their downtime, doing just about whatever they wanted, on the clock. An unexpected side benefit emerged. Employees spent some of their spare time writing music and building photography and video skills. When the company needed ideas to pitch to potential clients, it tapped into employees' personal projects. The company leadership had meetings with potential clients where 40% of the work he showed them was done by employees in their downtime. His company has now grown to 15 employees and expects to post close to \$3 million in revenue this year.

IV. ORGANIZATIONAL STRATEGIES TO PROMOTE INNOVATION

The essential nature of the present day world underlies a very profligate and competitive society where the ability to dictate changes and transformation adds the utmost value. A competitive advantage in managing innovation and creativity is the key to this ability [12][13].

Any organization that has resolved to tap the innovation potential of its employee base is half way towards re-inventing or potentially producing some truly exceptional solutions. There are currently two well-known theories of innovation management which include resource-based view and a dynamic capability approach. The resource-based view emphasizes on the development of resource based capacities difficult for others to imitate or copy and makes performance difference with other firms based on firm specific, rent-generating and valuable resources and capabilities [14]. In the Dynamic capabilities theory, as discussed by Teece and Pisano [15], advocated for the “subset of the competences/capabilities which allow the firm to create new products and processes and respond to changing market circumstances”. These theories demand human resources and organizational learning, manufacturing process development, prioritization of R&D and other innovative outlets, the management of and inimitable capabilities and so on.

Though there are many other theories that discuss organizational innovation, this paper elaborates five simple strategies to approach innovation that is based on social collaboration or what we call “socialized innovation”. These strategies could be categorized into resource based, organizational strategies as each of these elements includes resources as well as management strategies to encourage and inculcate innovation in employees such that the entire organization works as an Innovation Platform, generating and capturing new ideas.

A. Environment

Generate an environment where creative ideas flourish, not just in R&D but all through the organization at every level. Consumers and Front-line staff are in the best position and the availability of technology to masses is creating innovation ecosystems out of the control of the large corporations. Transformational leadership influences creativity and innovation of the employees by rebuilding characteristics of their organization and by replacing with innovative organizational climate [16].

B. Opportunity

Provide an opportunity to prove the idea and surface the innovation to those that can make the change. Research conducted by Zhou [17] and Jung et al., [18] found that creative people demonstrated high performances under personal autonomy. It is important to create this opportunity by providing autonomy to the employees to process their thoughts and present their ideas. Think Fridays at IBM are an excellent example of this opportunity.

C. Networks

Connect the innovator to the sponsors and implementers- fast connections between senior leadership and grass roots have proven to be the most important enabler for an innovative organization. Collaboration across the lines of hierarchy is one of the key elements in capturing new ideas and taking action.

D. Diversity of Thought

Encourage diversity of thought process and get rid of limiting assumptions. Any organization needs to dispel and discourage the belief that disenfranchised groups cannot innovate. All groups need to be included in decision making so they can demonstrate their ability. Lack of diversity leads to two limiting assumptions:

“The dominant group is superior and so everyone should be (think) like them. Because of this superiority, it should naturally have power over the others”

Some examples of limiting assumptions in information technology are:

- “Only developers can do patents”,
- “Testers don’t know how to write code”
- “Architects generate the good ideas”

E. Goal Based

Focus on the goal and don’t measure the performance. Measuring innovative performance is perhaps the best way to stifle it. Research has shown that evaluating the innovation performance of organizations primarily based on positive outcomes may stifle the risky experimentation necessary for progress in difficult and unpredictable environments. A very high percentage of nonprofit and government innovation occurs against the odds, brought forth in organizations that are hostile to change. Pushing innovation success factors while disregarding prevailing organizational hurdles, may create negative outcomes and stifle innovation performance.

F. Some of the Other Enablers for Socialized Innovation Are

- Dual Career Ladder
- Mentoring programs
- Networking Events
- Webinars and brown bags
- Technical Conferences
- Jam and think sessions
- An association of subject matter experts such as academy of technology or a black belt group
- Innovation Think Tanks

All of these could be characterized as “Innovation events” or workshops organized for the sole purpose of collaborating and generating ideas. At IBM I worked on creating a “Women Inventors Community”, that held innovation cafes once a month. The number of patents filed by women nearly doubled in a year’s time as a result. At Deloitte I worked on enabling women through writing workshops and IP Factory sessions to encourage collaborative eminence and this resulted in a spurt in original works submitted by these groups.

V. CONCLUSIONS

Innovation is more than just a single “invention” and innovation is encouraged through culture rather than institutionalized in a process. Technological advancement and rising competition in the industrial and service companies have made innovation central to competitiveness, and organizations, particularly driven

technologically require being more innovative and pioneering than before to lead, to grow, to compete and to endure [18]. Commercial organizations need to be efficient to survive in the short term and encourage innovation and experimentation to survive in the long term. The advent of social media and technological advancements with business models changing from passive consumers to consumers as producers, establishments that have encouraged an all-round culture of innovation have seen the simultaneous emergence of new capabilities – from technologies, to skills, to global scale and new disruptive business models – and of new ways in which innovation happens. There are many theories of encouraging innovation across organizations. However, firm specific factors and specific steps to create a culture of collaborative, socialized innovation are critical for greater creativity and novelty at the organizational level.

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