Innovation and Creativity as the ‘Nucleus’ of Entrepreneurship

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Abstract

This paper lucidly presents why creativity and technological innovation is considered as a major force in the field of entrepreneurship and the fulcrum of economic growth. It also focuses on some of the most distinctive features of innovation. The psychological study of creativity is essential to human progress. If strides are to be made in the sciences, humanities, and arts, we must arrive at a far more detailed understanding of the creative process, its antecedents, and its inhibitors. One of today’s primary management challenges is the development of organizational cultures that value innovation, change, and creativity. The adoption of an ethic of innovativeness allows the organization to stretch the limits of individual and collective knowledge, skill, and ability to meet complex consumer needs. Creativity within organizations is influenced by management practices in conjunction with creativity-relevant work group skills.

Keywords: Creativity, innovativeness, value addition, competitiveness.

Received: 18/12/18 Accepted: 04/09/19

Introduction

“The first step in winning the future is encouraging American innovation. None of us can predict with certainty what the next big industry will be or where the new jobs will come from. Thirty years ago, we couldn't know that something called the Internet would lead to an economic revolution. What we can do -- what America does better than anyone else -- is spark the creativity and imagination of our people. We're the nation that put cars in driveways and computers in offices; the nation of Edison and the Wright brothers; of Google and Facebook. In America,
innovation doesn't just change our lives. It is how we make our living.” President Barack Obama, 2011 "State of the Union” address,

Drucker (1985) argued that innovation is the tool of entrepreneurship. In addition, both innovation and entrepreneurship demand creativity. Creativity is a process by which a symbolic domain in the culture is changed. New songs, new ideas, new machines are what creativity is about (De Bono, 1992).

Creativity is the ability to make or otherwise bring into existences something new, whether a new solution to a problem, a new method or device, or a new artistic object or form. Wyckoff (1991) defines creativity as new and useful.

Creativity is the act of seeing things that everyone around us sees while making connections that no one else has made. Creativity is moving from the known to the unknown. Culture exerts a negative force on creativity according to Pearce (1974), however, “were it not for creativity, culture itself would not be created.” No entrepreneur or enterprise, however successful and big, can continue to hold a place of leadership unless it recognizes that modern business operates in a world of galloping change which creates new problems, risk and opportunities and for which they have to mobilize the enterprise’s resources before changes make their impact felt. To do successfully, the entrepreneur and enterprise should know where this firm is going and how the firm will get there. This is turn requires a clear definition of the company’s business which will enable it to continually adopt operations to the realities of the market place, ‘the very corner stone of survival and growth”

Innovation is defined as adding something new to an existing product or process. The key words are adding and existing. The product or process has already been created from scratch and has worked reasonably well. When it is changed so that it works better or fulfils a different need, then there is innovation on what already exists. Innovation is the successful exploitation of new ideas.

All innovation begins with creative ideas. Creativity is the starting point for innovation. Creativity is however necessary but not sufficient condition for innovation. Innovation is the implantation of creative inspiration.

Creativity and Innovation in an Entrepreneurial Organization
Growth and development cannot be sustained without additional innovations (usually in the product or services or in its marketing) with additional innovations, firms become

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ISSN: 2251 - 0486    Science and Education Development Inst., Nigeria

Electronic copy available at: https://ssrn.com/abstract=3504150
“glamorous” Introducing new products is usually seen as part of the process of innovation, which is itself seen as the engine driving continued growth and development.

The “winning performance” of the entrepreneur and the organization focuses on:

- Competing on quality not prices;
- Domination of a market niche;
- Competing in an area of strength;
- Having tight financial, and operating controls;
- Frequent product or service innovation (particularly important in manufacturing).

Porter (1985), argues that, while successful businesses will each employ their own strategy, they achieve competitive advantage through acts of innovation. Learning and problem-solving are common activities in many working environments today, but some people believe that true entrepreneurship occurs when individuals ignore the established ways of thinking and acting and seek novel ideas and solutions that can meet customers’ needs. Entrepreneurship is, therefore, the innovatory process involved in the creation of an economic enterprise based on a new product or service which differs significantly from products or services offered by other suppliers in content or in the way its production is organized nor in its marketing (Curran and Burroughs, 1986).

It has been argued that small businesses have a greater proclivity to innovate than their large counterparts and are, therefore, crucial in helping a country respond to myriad changes in the economic, technological and social environment. (Acs and Gifford, 1996). For instance, the OECD points out that small firms are innovative in different ways and are especially active in developing new approaches to management and marketing. (OECD/DST/IND, 2000).

Creativity
Creativity is marked by the ability to create, bring into existence, to invent into a new form, to produce through imaginative skill, to make to bring into existence something new. Creativity is not ability to create out of nothing (only God can do that), but the ability to generate new ideas by combining, changing, or reapplying existing ideas.

Some creative ideas are astonishing and brilliant, while others are just simple, good practical ideas that no one seems to have thought of yet. (Harris, 1998). Everyone has substantial creative ability including you the reader. So you should count yourself and believe it that you are a creative genius (Coase, 1960). All you need is to be reawakened.
and be highly committed to creativity. I want you to start thinking now, in the process something new will flow (Cropley, 2001). Explore that something new today and you will be a different personality tomorrow. Creativity is also an attitude, the ability to accept change and newness, a willingness to play with ideas and possibilities, a flexibility of outlook, the habit of enjoying the good, while looking for ways to improve it, we are socialized into accepting only a small number of permissible or normal things, like chocolate-covered strawberries, for example. The creative person realizes that there are other possibilities like peanut butter and banana sandwiches, or chocolate-covered prunes. Harris (1998). Creativity is also a process.

Creative person works hard and continually to improve ideas and solutions, by making gradual alterations and refinements to their works. Contrary to the mythology surrounding creativity, very few of creative excellence are produced with a single stroke of brilliance or in a frenzy of rapid activity. Much closer to the real truth are the stories of companies which had to take the invention away from the inventor in order to market it because the inventor would have kept on tweaking it and fiddling with it, always trying to make it a little better, (Harris, 1998). A product is creative when it is “novel” and “appropriate”. A novel product is original, not predictable. The bigger the concept, and the more the product stimulates further work ideals, the more the product is creative (Sternbering and Lubart). Creativity requires passion and commitment. Out of the creative is born symbols and myths. It brings to our awareness what was previously hidden and points to new life. The experience is one of heightened consciousness-ecstasy”- Rollow May

**Types of Creativity**

According to Boden (1998), there are three main types of creativity, involving different ways of generating the novel ideas:

a) The “combinational” creativity that involves new combinations of familiar ideas.

b) The “exploratory” creativity that involves the generation of new ideas by the exploration of structured concepts.

c) The “transformational” creativity that involves the transformation of some dimension of the structure, so that new structures can be generated.

**Objectives of Creativity**

Main objectives of a creative thinking process are to think beyond existing boundaries, to awake curiosity, to break away from rational, conventional ideas and formalised procedures, to rely on the imagination, the divergent, the random and to consider multiple solutions and alternatives (Candy 1997, Sikszent, 1997). The result of the creative
thinking process is especially important for businesses. Managers and managerial decisions and actions, confronted with fast-changing and ambiguous environments in business, need to develop creative solutions and creative action-based strategies to solve problems, as they allow to increase understanding of problematic situations, to find multiple problems, to produce new combinations, to generate multiple solutions that are different from the past, to consider possible alternatives in various situations that could occur in the future and “to expand the opportunity horizon and competence base of firms” (Ogilvie, 1998).

The Sources of Innovation and Creativity
Creativity arises through the confluence of the following three components:
1. **Knowledge**: All the relevant understanding an individual brings to bear on a creative effort.
2. **Creative Thinking**: Relates to how people approach problems and depends on personality and thinking/working style.
3. **Motivation**: Motivation is generally accepted as key to creative production, and the most important motivators are intrinsic passion and interest in the work itself.

THE ENTREPRENEUR AND CREATIVITY
The entrepreneur is primarily concerned with developing new products, processes or markets, the ability to bring something new, product, processes or markets, the ability to bring something new into the market. The entrepreneur indulges in original thinking more than any other person thinks and he is able to produce solutions that fly in the face of established knowledge.

Entrepreneurs are inclined to be more adaptable and are prepared to consider a range of alternative approaches. They challenge the status quo, which can sometimes bring them into conflict with their colleagues. They dismiss their detractors and are sometimes regarded as aloof (Mohammad, 2011).

Creative outcomes seldom emerge in an instant: a recognized process is involved, even if it appears to be rather chaotic. It begins with recognition of a problem or anticipation of an opportunity, and then, through understanding the situation and reflecting on the issues, new linkages are contemplated and possible new combinations of components are aired: From this emerge visible solutions or possibilities that are subjected to valuation, which may be continuous with judgment being suspended while the search process is prolonged in pursuit of genuine newness.
Entrepreneurs take bold creative steps but situations encourage creativity. Creativity is, however, enhanced when people have some freedom, but not too much; high internal commitment to the task; but not too high a commitment; high proportion of intense rewards, but some extrinsic rewards as well; some competition but not winner- take-all competition. Thompson (2001). Entrepreneurial activity depends on the process of innovation following creativity, not on creativity alone.

DEFINING INNOVATION
Innovation can be defined as the application of new ideas to the products, processes, or other aspects of the activities of a firm that lead to increased “value.” This “value” is defined in a broad way to include higher value added for the firm and also benefits to consumers or other firms.

Innovation is about helping organizations grow. Growth is often measured in terms of turnover and profit, but can also occur in knowledge, in human experience, and in efficiency and quality. Innovation is the process of making changes to something established by introducing something new. As such, it can be radical or incremental, and it can be applied to products, processes, or services and in any organization. It can happen at all levels in an organization, from management teams to departments and even to the level of the individual.

Innovation is the process of making changes, large and small, radical and incremental, to products, processes, and services that results in the introduction of something new for the organization that adds value to customers and contributes to the knowledge store of the organization.

Innovation is the process of bringing the best ideas into reality, which triggers a creative idea, which generates a series of innovative events. Innovation is the creation of new value. Innovation is the process that transforms new ideas into new value- turning an idea into value. You cannot innovate without creativity. Innovation is the process that combines ideas and knowledge into new value. Without innovation an enterprise and what it provides quickly become obsolete. The dictionary defines innovation as the introduction of something new or different. Innovation is the implementation of creative inspiration.

The National Innovation Initiative (NII) defines innovation as “the inter-section of invention and insight, leading to the creative of social and economic value” Innovation is “value” – the creation of value adding value to customer’s satisfaction- “delighting the customers”. Innovation is the basis of all competition advantages, the means of

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anticipating and meeting customer’s needs and the method of utilization of technology. Innovation is fostered by information gathered from new connections; from insights gained by journeys into other disciplines or places; from active, collegial networks and fluid open boundaries (Okpara, 2007).

Innovation arises from organizing circles of exchange, where information is not just accumulated or stored, but created. Knowledge is generated a new from connections that were not there before (Okpara, 2000). Innovation requires a fresh way of looking at things, an understanding of people, and an entrepreneurial willingness to take risks and to work hard.

An idea doesn’t become an innovation until it is widely adopted and incorporated into people’s daily lives. Most people resist change, so a key part of innovating is convincing other people that your idea is a good one - by enlisting their help, and, in doing so, by helping them see the usefulness of the idea- Art Fry. Enterprises throughout the world are experiencing what can be legitimately described as a revolution: rising energy and material costs, fierce international competition, new technologies, increasing use of automation and computers.

All these are major challenges, which demand a positive response from the entrepreneur and management if the enterprise is to survive and prosper. At a time when finance is expensive, the firm’s liquidity is bordering on crisis, the need for creativity, and innovation is more pressing than ever and as competitors fall by the way side, the rewards for successful products and process are greater.

The instigation of new development is the responsibility of the enterprises themselves, which, through experience, are aware of the difficulties created when undertaking innovative investments in a period of great uncertainty.

Innovation calls for special entrepreneurial and management skills, the cooperation of a committed workforce, finance and a climate which will create the optimum overall conditions to encourage success. Gardner and Policastro (1999) believes that the concept of innovation, described as the use of an invention to create a new commercial product or service, is the key force in creating new demand and thus new wealth. Innovation creates new demand and entrepreneurs bring the innovations to the market. This destroys the existing markets and creates new ones, which will in turn be destroyed by even newer products or services.
THE NATURE AND IMPORTANCE OF INNOVATION
A product innovation is the act of bringing something new to the market place that improves the range and quality of products on offer: for example, the Apple iPod is an innovation compared with the Sony Walkman, which was an earlier portable device for playing music.

A process innovation is a new way of making or delivering goods or services: for example, going to visit the doctor and recording that you have arrived for your appointment by touching a screen instead of talking to a receptionist.

THE ELEMENTS OF INNOVATION
Innovation is the successful development of competitive advantage and as such, it is the key to entrepreneurship. The entrepreneurs are the “dreamers”, who take hands on responsibility for creating innovation. It is the presence of innovation that distinguishes the entrepreneur from others. Innovation, must therefore, increase competitiveness through efforts aimed at the rejuvenation, renewal, and redefinition of organizations, their markets or industries, if business are to be deemed entrepreneurial.

THE ELEMENTS OF INNOVATION
Fiona Fitzpatrick identified the following elements of innovation:
1. Challenge: What we are trying to change or accomplish-the “pull”
2. Customer focus: Creating value for your customers - the “Push”
3. Creativity: Generating and sharing the idea(s)- the “brain”
4. Communication: The flow of information and ideas -the “life blood”
5. Collaboration: People coming together to work together on the idea(s) - the “heart.”
6. Completion: Implementing the new idea-the “muscle”.
7. Contemplation; Learning and sharing lessons lead to higher competency-the “ladder”
8. Culture: The playing field of innovation includes:
   - Leadership (sees the possibilities and positions the team for action-the role model)
   - People (diverse groups of radically empowered people innovate –the source of innovation)
   - Basic values (trust and respect define and distinguish an innovative organization-the backbone).
   - Innovation values (certain values stoke the fires that make the “impossible” possible-the Spark).
9. Context: Innovation is shaped by interactions with the world.

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FORMS OF INNOVATION

In a start-up, the entrepreneur is regarded as the key actor in developing a business idea, marshalling resources, and creating an enterprise to bring a new product or service to the market.

In a competitive business environment, the entrepreneur and the enterprise should continue to seek out new opportunities and make the necessary arrangement to convert them into new goods and services. Innovation should, therefore, impregnate the entire enterprise for the creation and invention of competitive edge and relevancy in the market place (European Commission, 1998).

Innovation can take several forms:

i. Innovation in processes, including changes and improvement to methods. These contribute to increases in productivity. Which lowers cost and helps to increase demand.

ii. Innovation in products or services. While progressive innovation is predominant, radical innovation opens up new markets. These lead to increases in effective demand which encourages increases in investment and employment.

iii. Innovation in management and work organization, and the exploitation of human resources, together with the capacity to anticipate techniques.

Innovation centres on people, culture, structure, process and technology. Innovation is the process through which the entrepreneur converts market opportunities into workable, profitable, and marketable ideas. Innovation is an application of something creative that has a significant impact on an organization, industry or society. Entrepreneurship is the continuing generation of Innovation in response to perceived opportunities in the business environment.

INNOVATION AND ENTREPRENEURSHIP

The terms entrepreneurship and innovation are often used interchangeably, but this is misleading. Innovation is often the basis on which an entrepreneurial business is built because of the competitive advantage it provides. On the other hand, the act of entrepreneurship is only one way of bringing an innovation to the marketplace. Technology entrepreneurs often choose to build a startup company around a technological innovation. This will provide financial and skill-based resources that will exploit the opportunity to develop and commercialize the innovation. Once the entrepreneur has established an organization, the focus shifts toward its sustainability, and the best way that this can be achieved is through organizational innovation.
However, innovation can be brought to market by means other than entrepreneurial startups; it can also be exploited through established organizations and strategic alliances between organizations.

INNOVATION AND CREATIVITY
Creativity is regarded as a key building block for innovation (Sikszent, 1997) and is an inherent capability in all human beings. Creativity is a mental process that results in the production of novel ideas and concepts that are appropriate, useful, and actionable. The creative process can be said to consist of four distinct phases: preparation, incubation, illumination, and verification (Ogilvie, 1998). Later revisions of this process have added a final phase, elaboration (Okpara, 2000), in which the idea is structured and finalized in a form that can be readily communicated to others. Creativity entails a level of originality and novelty that is essential for innovation. Although creativity is a fundamental part of innovation, it is wrong to interchange the terms. Innovation encourages the further processing of the output of the creative process (the idea) so as to allow the exploitation of its potential value through development.

INNOVATION AND INVENTION
Invention need not fulfill any useful customer need and need not include the exploitation of the concept in the marketplace. Innovation differs from invention in that it is more than the creation of something novel; it also includes the exploitation for benefit by adding value to customers. Invention is often measured as the ability to patent an idea. If this can be achieved, then it is an invention. The success or failure of an invention depends not only on the ideas chosen by the organization but also on how well their implementation is managed. Invention is often about creating something that has yet to be desired by a customer. Numerous inventions never lead to innovation because they are never brought to the marketplace (Okpara, 2007).

INNOVATION AND GROWTH
Innovation is about developing growth. According to Drucker (1985), innovation can be viewed as a purposeful and focused effort to achieve change in (an organization’s) economic or social potential. Bottom-line growth can occur in a number of ways, such as better service quality and shorter lead times in nonprofit organizations and cost reduction, cost avoidance, and increased turnover in profit-focused organizations.

INNOVATION AND DESIGN
The term design in the context of innovation is defined as “the conscious decision-making process by which information (an idea) is transformed into an outcome be it tangible

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ISSN: 2251 - 0486 Science and Education Development Inst., Nigeria

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(product) or intangible (service)” (Drucker, 2002). The design activity draws heavily on creativity to resolve issues such as the aesthetics, form, and functionality of the eventual outcome. In this way, during the exploitation phase of the innovation process, organizations engage in design activities that will produce an output that provides the optimum fit with market requirements. Although design is an integral part of the exploitation phase of an innovation, it is only one aspect. Exploitation can include other elements, such as process development and market preparation.

INNOVATION AND EXPLOITATION

There are numerous alternative definitions of innovation. One popular alternative is to present innovation as an invention that has been exploited commercially (Martin, 1994). In this alternative definition, the term invention has the same meaning as mentioned earlier, that is, something new that has never existed before. This creation of something new derives from the creative capability of the organization and provides opportunities to be exploited. This alternative definition of innovation has been expressed as follows (Aihara and Hori, 1998):

Innovation = Invention + Exploitation

Therefore, innovation can be viewed as the systematic approach to creating an environment based on creative discovery, invention, and commercial exploitation of ideas that meet unmet needs (Amabile, 1998). This definition fits in very well with many high-profile examples of innovation, such as the invention of the transistor used in computers or radio-frequency identity (RFID) tags used on ID cards. However, it also masks the millions of innovations that are often much smaller in scale, do not involve an invention, or are not necessarily exploited in the same commercial sense. Not included in this definition are innovations such as changing customer expectations regarding the purchase of airline tickets or dramatically improving waiting times at accident and emergency departments through improvements in patient screening. This alternative definition also has a strong technology focus because many inventions are technology based. Replacing the term invention with creativity makes the definition more applicable to organizations not actively engaged in product innovation. Therefore, a more encompassing restating of this alternative definition might be this one:

Innovation = Creativity + Exploitation

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INNOVATION AND CHANGE
Although we view innovation as resulting in change, it is incorrect to equate innovation with all forms of change. In order for change to qualify as innovation, it must have some degree of desirability and intentionality (Amabile, 1998). When we examine the output of innovation and change, another difference becomes apparent. This is that change can have a positive or negative impact on the organization, whereas innovation by definition must be positive because it must add value to the customer. Therefore, we may conclude that although all innovation can be viewed as change, not all change can be viewed as innovation.

INNOVATION AND FAILURE
One of the first writers to emphasize the importance of innovation was Schumpeter in 1940, who described innovation as “creative destruction” that is essential for economic growth (Amabile, 1992). Innovation is essential for helping organizations grow. Growth is often measured in terms of turnover and profit, but growth can also occur in knowledge, human experience, and the efficiency and quality of products, processes, and services. The innovation process will naturally involve unsuccessful ideas. These are seen as a natural byproduct of the innovation process. In order for some ideas to succeed, many more must fail. Organizations can learn from these failures and bring new knowledge (and sometimes technology) to use in future innovative actions that may benefit the organization. Organizations that can successfully sift out the good ideas from the bad will be more adaptable than those that cannot do so. In managing the innovation process, destroying poor ideas is often as important as nurturing good ones. Destroying poor ideas early on allows scarce resources to be released and refocused on new ideas.

INNOVATION AND CUSTOMERS
An innovation must add value to customers to make them purchase or consume the product or service or perceive an improvement. An important part of the exploitation process is ensuring that the innovation adequately fulfills prospective customers’ needs. The better the innovation fulfills customer needs, the more likely customers are to adopt it. A common mistake technology companies make is to focus on the technological capability of their offering rather than on how that technology can satisfy customer needs. It is important to emphasize that a customer is anyone who purchases or uses a product or service. Customers can include students who purchase a book in the university bookstore, patients who use services in a hospital, or members of the public who use the services of a local library. Customers can also be internal to an organization. University lecturers who offer a service to students are in turn customers of the library, for example. Doctors who deliver a service to patients are also customers of support laboratories, and...
librarians are customers of the library’s computer service department. When we use the term organization in this book, we refer to the organization around which innovation is focused. This can be an entire company, a department within a company, or a team of individuals.

INNOVATION AND KNOWLEDGE
Innovation is built on a foundation of creativity and sometimes on invention, resulting in the creation of new knowledge and learning within the organization. Even when failures occur, the learning gained can be a valuable asset for the organization. The scope of innovation exists primarily within the realm of the individual and the collective knowledge of the organization (Boden, 1998). This has become increasingly evident as the complexity of technology and markets has increased. Therefore, the knowledge reservoir of the organization determines the type and level of innovation possible. If an organization’s culture and routine are capable of capturing knowledge from past failures, then future innovative efforts will not repeat the mistakes of the past. Organizations that develop such knowledge systems are in a better position to store and share this knowledge so that it will improve the innovation process through enhanced idea generation, better decision making, and more effective exploitation. In this way, all ideas, whether successful or not, can contribute to the organization’s long-term success.

INNOVATION AND SOCIETY
Innovation is an attribute that is beneficial to a large society such as a nation or region. Not only can innovation introduce new products and services that enrich the lives of individuals both nationally and internationally; it can also contribute significantly to economic growth. Process innovation also increases the amount of economic growth by providing cost competitiveness within a nation and attracting investment by organizations that establish bases there. National economies develop through the innovation and manufacturing abilities of their organizations and from selling the resulting innovative products on the global market. These activities not only bring increased revenue streams into the economy, increasing the gross domestic product, but also provide employment opportunities (Bullinger, 1999). On the other hand, innovation can have a negative impact on society by wiping out traditional industries or having other unintended side effects. For example, although a certain chemical innovation may allow farmers to grow more crops per acre, it may also pollute the environment, kill wildlife, and even cause human health problems by working its way up the food chain. In order to balance the advantages and disadvantages of particular innovations, specific regulatory bodies such as the Food and Drug Administration have been established; if side effects are deemed to be too dangerous, the product can be blocked from reaching

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ISSN: 2251 - 0486
Science and Education Development Inst., Nigeria
the market. Many national governments have established agencies to promote and foster a more innovative culture in order to increase wealth and reduce costs for the nation. In this respect, performance indicators such as gross national product, export sales, direct foreign investment, R&D expenditure, employment levels, and new business startups suggest the innovative potential of a large society.

DRIVERS OF INNOVATION
Various factors encourage an organization to innovate. Each of these drivers demands continuous innovation and learning so that the process can be repeated continuously. These drivers also help to create a sense of urgency around the need to create new organizational goals and generate new ideas for meeting these goals. These drivers can be summarized as follows:

- Emerging technologies
- Competitor actions
- New ideas from customers, strategic partners, and employees
- Emerging changes in the external environment

EMERGING TECHNOLOGIES
These have the potential for significant innovation across the organization and can be the basis for innovative products, processes, and services that can revolutionize the fortunes of an organization. In the past, organizations developed technologies in large R&D laboratories; however, in today’s environment the sources of emerging technology are often far too prolific for any one organization to develop internally. Consequently, organizations expend more resources scanning the environment for potential technological opportunities. Sources of emerging technology can include universities, high-technology startups, and competing organizations (Ogilvie, 1998).

COMPETITOR ACTIONS
The innovative actions of competitors and other organizations can be another driver of innovation. Competitors can provide a benchmark regarding which projects and initiatives to pursue. Copying competitor innovations reduces risk because the products may have already been adopted by the market. Although such behavior is unlikely to increase market share, it can be effective in maintaining the status quo by counteracting the advantage to the competitor.

NEW IDEAS
In the past, innovations were developed from the insights of a small number of designers and engineers. Now, however, with greater technological complexity and market segmentation, modern organizations are engaging as many stakeholders as possible in
the innovation process. This can result in increased scanning capabilities and better information about market needs. Engaging employees, suppliers, customers, and other lead users can reveal new opportunities that otherwise might have gone undiscovered.

EXTERNAL ENVIRONMENT
All organizations are affected by changes in their external environment; these changes can be another driver of innovation. Environmental changes can occur because of competitor actions that have revolutionized the business environment or can happen through macro shifts in the political, economic, cultural, or technological environment. As organizations struggle to realign with their new business environment, they must innovate their products, processes, and services accordingly (Porter, 1985).

CATEGORIES OF INNOVATION
The term innovation is often associated with products. When we think about innovation we think about a physical product: a television, car, or digital music player. However, innovation can also occur in processes that make products, services that deliver products, and services that provide intangible products. Many services don’t involve physical products at all (Geroski, 1995).

Product innovation is about making beneficial changes to physical products. Other differences between products and services include the following:
1. Inventory: Products can be stored; services cannot.
2. Response time: Products have a longer lead time; services have a shorter lead time.
3. Resources: Products tend to be capital-intensive (e.g., machines), whereas services tend to be labor-intensive.

PRODUCT INNOVATION
Product innovation is about making beneficial changes to physical products. Related terms that are often used interchangeably include product design, research and development, and new product development (NPD). Each of these terms offers a particular perspective on the degree of changes to products. The degree of change can include the following (Chakravorti, 2004):
- Incremental improvements
- Additions to product families
- Next-generation products
- New core products
Established organizations typically have a portfolio of products that must be incrementally improved or adjusted as problems are identified in service or as new requirements emerge. It is important that they also work on additions to the product families. One of the main activities of the product design team is the work it performs on next-generation products or new models of products. They may also work on designing radical new products or new core products that expand the portfolio significantly and often involve radically new processes to create them. These new core products ideally offer the organization the possibility of major increases in revenue and growth, which can also create the potential of a temporary monopoly in the market.

THE PRODUCT DEVELOPMENT PROCESS
The product development process for next-generation and new core products follows a familiar cycle in most organizations (Candy, 1997):
1. Ideation
2. Preliminary investigation
3. Detailed investigation
4. Development
5. Testing and validation
6. Market launch and full production

Each of these steps involves interaction with customers, who may participate in idea generation and feature recognition. Key performance criteria in the design process revolve around the following (Goto, 1997):
- Time to market
- Product cost
- Customer benefit delivery
- Development costs

These criteria can be traded off against one another. For example, development costs can be traded against time to market, customer benefits can be traded against product costs, and so on. Three design methods have established themselves as providing a management system for effective product innovation: phase review, stage gate, and product and cycle time excellence (PACE).

PHASE REVIEW
This method divides the product development life cycle into a series of distinct phases. Each phase comprises a body of work that, once completed and reviewed, is handed over to the next phase. No attention is paid to what may or may not happen in the subsequent phase.
phases, mainly because of a lack of expertise or exclusive focus on the tasks in the current phase. The phase review method is a sequential rather than concurrent product design process; that is, each phase is executed and completed before the next phase can begin. Phases typically are carried by different functions or departments within the organization. All tasks, decisions, and tradeoffs are made solely in the context of the phase being executed. A significant criticism of this approach is the poor coordination between phases, which can result in significant delays and rework.

**STAGE GATE**

The stage gate method is a concurrent product design process that follows a predetermined life cycle from concept generation to market launch (Candy, 1997). The stages in this method are primarily cross-functional. Stage gates appear at the end of each stage, where a design review takes place. Each stage gate reviews the agreed deliverables for completion at the end of the stage, a checklist of the criteria agreed for each stage, and a decision about how to proceed from a particular stage. This method identifies a number of roles for people involved in the process, including gatekeepers, who are typically senior managers. Other features of the stage gate process include “fuzzy front-end” stages of customer opportunity identification, which incorporate gates that are contingent on future events.

**PACE**

The PACE method is concerned primarily with developing product development strategies (Goto, 1997). The method links product strategy with the overall strategy and vision of the organization. A key feature is deploying the voice of the customer throughout the product design process. Strategies are divided into six product strategic thrusts: expansion, innovation, strategic balance, platform strategy, product line strategy, and competitive strategy.

Product innovation methods and processes are one element in an organization’s mission to create value for customers. Too often functional groups within organizations have focused exclusively on the NPD process in their department as an end in itself rather than taking a broader business perspective. Interaction with functions such as marketing, warranty, manufacturing, and senior management offer design teams a more holistic perspective in the design process. This also ensures that the goals of the design process form strong relationships with the goals of the organization as a whole. Taking this broader perspective can encourage design teams to engage in new core product development, that is, to develop products that are radically different from what already exists in the organization. As customer needs change and as markets adapt to a changing
competitive environment, design teams often fail to recognize changes or disruptions to existing product requirements (Gardner, 1997). Successful organizations are capable of taking a broader perspective, recognizing the potential of disruptive technologies and then creating new products that meet the unforeseen needs of customers.

**PROCESS INNOVATION**

Process innovation can be viewed as the introduction of a new or significantly improved method for the production or delivery of output that adds value to the organization. The term process refers to an interrelated set of activities designed to transform inputs into a specified output for the customer. It implies a strong emphasis on how work is done within an organization rather than what an organization does (Drucker, 1985). Processes relate to all operational activities by which value is offered to the end customer, such as the acquisition of raw materials, manufacturing, logistics, and after-sales service.

**SERVICE INNOVATION**

Service innovation is about making changes to products that cannot be touched or seen (i.e., intangible products). Services are often associated with work, play, and recreation. Examples of this type of service include banking, recreation, hospitals, government, entertainment, retail stores, and education. In the past decade a vast number of knowledge-based services have been offered through Web sites. These services involve intangible products, have a high degree of customer interaction, and are usually activated on demand by the customer. Defining a service can be somewhat problematic. Some define service as a sequence of overlapping value-creating activities. Others define service in terms of performance, where client and provider co-produce value (Diane, 2012).

There are three types of services operations:

- Quasi-manufacturing (e.g., warehouses, testing labs, recycling)
- Mixed services (e.g., banks, insurance, realtors)
- Pure services (e.g., hospitals, schools, retail)

Services can clearly involve products that form an extended part of the product life cycle, from initial sales to end-of-life recycling and disposal. Service industries in areas such as finance, food, education, transportation, health, and government make up most organizations in any economy. These organizations also need to innovate continuously so they can increase levels of service to their customers. A key attribute of a service is a very high level of interaction with the end consumer or customer. The customer is often unable to separate the service from the person delivering the service (sometimes called...
in homogeneity) and so will make quality assumptions based on impressions of the service, the people delivering the service, and any product delivered as part of the service. Another characteristic of some service organizations is that their output may be perishable; therefore, the product must be consumed as soon as possible after purchase. Therefore, the timing of the delivery and customer perception of quality are crucial to success. The concept of service quality is of particular relevance (Okpara, 1997). The unique characteristics of services, such as intangibility, customer contact, inhomogeneity, and perishable production, also offer significant scope for innovation. Another major driver of service innovation comes from the possibilities afforded by new information technology platforms, particularly the Internet. The Internet is a valuable resource on which new service relationships between organizations and their customers are being developed every day.

THE IMPORTANCE OF PRODUCT INNOVATION

The greater attention paid to product innovation may result from the following:

- Individual product innovation projects are often of longer duration and greater investment than those of process innovation.
- Product innovations are more visible to the external market than process innovations.
- Product innovations are viewed as the domain of the R&D and design departments; alternatively, process innovation is viewed as the domain of the operations and quality departments.
- Irrespective of the reasons behind this mindset, organizations must realize the potential offered by both product and process innovation. Every new product must be produced before it reaches the customer. If the production process cannot produce a product at the right level of cost, quality, and reliability, then the product innovation can be rendered useless (Drucker, 1999).

INNOVATION AND OPERATIONS

In many organizations, tension exists between operating the system that provides existing products and services for the customer and changing the system in order to add more value to the customer, which disrupts the established operations. Some organizations often try to maintain the status quo and resist innovative change. Innovative organizations, on the other hand, embrace the challenge of maintaining a balance between serving the needs of the existing customer and meeting the future needs of the market. Metaphorically, operations can be seen as a rotating wheel. If no changes are made to products, processes, or services, then the wheel will continue to turn; the organization will continue to serve customers with existing products and services for a
time. But changes will occur outside the organization. Customer expectations, business conditions, and competitors will change. Innovation is about oiling the wheel, making it run more smoothly and more efficiently – making enhancements to products, processes, and services that better meet the changing needs of customers.

THE ROAD MAP TO ORGANIZATIONAL RE-INVENTION
Creative ideas are not enough for your business to survive. You need a process organization and culture that will help you maximize your creative assets. This is innovation capability that helps your pull together the best thinking within your business, enabling you to connect the organization dots (Porter, 1985).

Shapiro argues that perpetual and pervasive innovation is the key to long-term sustainable success in the relentless competition for customers. To survive any competition, you must rapidly and repeatedly re-invent yourself. The road map to re-invention starts by applying the seven R’s.
1. Rethink your underlying assumptions.
2. Reconfigure how you carry out work.
3. Resequence when work takes place
4. Relocate where work is done to cut down on handoffs and delays.
5. Reduce the frequency of carrying our specific activities.
6. Reassign who does the work by asking if anyone else could achieve the same result more effectively and efficiently.
7. Retool the technology that supports getting the work done.
Could new software and automated equipment transform our ways of working?

Conclusions
Successful entrepreneurs require an edge derived from some combination of a creative idea and a superior capacity for execution.

The entrepreneur’s creativity may involve an innovation product or a process that changes the existing order. Or entrepreneur may have a unique insight about the course or consequence of an external change. Entrepreneurship is the vehicle that drives creativity and innovation.

Innovation creates new demand and entrepreneurship brings the innovation to the market. Innovation is the successful development of competitive edge and as such, is the
key to entrepreneurship. Creativity and Innovation are at the heart of the spirit of enterprise.

It means striving to perform activities differently or to perform different activities to enable the entrepreneur deliver a unique mix of value. Thus the value of creativity and innovation is to provide a gateway for astute entrepreneurship—actively searching for opportunities to do new things, to do existing things in extraordinary ways.

Creativity and Innovation therefore, trigger and propel first-rate entrepreneurship in steering organization activities in whatever new directions are dictated by market conditions and customer preferences, thereby delighting the customers to the benefit of the stakeholders. Innovation also means anticipating the needs of the market, offering additional quality or services, organization efficiently, mastering details, and keeping cost under control.

No doubt, the current economic environment is a volatile and violent one. The new environment demands renewed dynamism of approach. Creativity and innovation is the new name of the game. Only the discerning organizations can manage the changes inherent in the new environment. It is the duty of the entrepreneur to keep his/her organization lean, young, flexible, and eager for new things to continuously delight the customers, which is the purpose of every business.

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