



## International Journal of Marketing and Technology

### CONTENTS

| Sr. No.  | TITLE & NAME OF THE AUTHOR (S)   | Page No.       |
|----------|--|----------------|
| <u>1</u> | <b>The Review for Web-Page testing And Quality Assurance</b><br>Mr. Piyush Mohan   | <u>1-15</u>    |
| <u>2</u> | <b>Do because we must – E marketing in developing countries</b><br>Zehra Zulfikar and Dr. Kavita Chauhan   | <u>16-32</u>   |
| <u>3</u> | <b>Creativity and Innovation for Enterprising Entrepreneurship</b><br>Dr. Santosh Sadar  | <u>33-57</u>   |
| <u>4</u> | <b>Botnets: Lifecycle, Attacks, Detection and Prevention</b><br>Ms. Mriga Gupta  | <u>58-80</u>   |
| <u>5</u> | <b>Wireless Telephone Services In India - An Appraisal of Service Quality</b><br>Dr. Ramesh Lal Dhanda and Ms. Ritu Jain                                     | <u>81-108</u>  |
| <u>6</u> | <b>Getting Values from Digital Marketing</b><br>Mr. Manish kumar and Dr. Bhuvnender Chaudhary  | <u>109-128</u> |
| <u>7</u> | <b>E-Business and Its Effectiveness on Banking System with Special Reference to Gramya Bank</b><br>Mr. Sanjay Kumar Panda                                    | <u>129-140</u> |
| <u>8</u> | <b>To study Consumer Decision making process for Second Hand Car as a replacement of Two Wheeler (Bike)</b><br>Mr. Nikhil Monga and Dr. Bhuvnender Chaudhary | <u>141-161</u> |

## Chief Patron

**Dr. JOSE G. VARGAS-HERNANDEZ**

Member of the National System of Researchers, Mexico  
Research professor at University Center of Economic and Managerial Sciences,  
University of Guadalajara  
Director of Mass Media at Ayuntamiento de Cd. Guzman  
Ex. director of Centro de Capacitacion y Adiestramiento

## Editorial Board

**Dr. CRAIG E. REESE**

Professor, School of Business, St. Thomas University, Miami Gardens

**Dr. S. N. TAKALIKAR**

Principal, St. Johns Institute of Engineering, PALGHAR (M.S.)

**Dr. RAMPRATAP SINGH**

Professor, Bangalore Institute of International Management, KARNATAKA

**Dr. P. MALYADRI**

Principal, Government Degree College, Osmania University, TANDUR

**Dr. Y. LOKESWARA CHOUDARY**

Asst. Professor Cum, SRM B-School, SRM University, CHENNAI

**Prof. Dr. TEKI SURAYYA**

Professor, Adikavi Nannaya University, ANDHRA PRADESH, INDIA

**Dr. T. DULABABU**

Principal, The Oxford College of Business Management, BANGALORE

**Dr. A. ARUL LAWRENCE SELVAKUMAR**

Professor, Adhiparasakthi Engineering College, MELMARAVATHUR, TN

**Dr. S. D. SURYAWANSHI**

Lecturer, College of Engineering Pune, SHIVAJINAGAR

**Dr. S. KALIYAMOORTHY**

Professor & Director, Alagappa Institute of Management, KARAIKUDI

**Prof S. R. BADRINARAYAN**

Sinhgad Institute for Management & Computer Applications, PUNE

**Mr. GURSEL ILIPINAR**

ESADE Business School, Department of Marketing, SPAIN

**Mr. ZEESHAN AHMED**

Software Research Eng, Department of Bioinformatics, GERMANY

**Mr. SANJAY ASATI**

Dept of ME, M. Patel Institute of Engg. & Tech., GONDIA(M.S.)

**Mr. G. Y. KUDALE**

N.M.D. College of Management and Research, GONDIA(M.S.)

**Editorial Advisory Board**

**Dr. MANJIT DAS**

Assitant Professor, Deptt. of Economics, M.C.College, ASSAM

**Dr. ROLI PRADHAN**

Maulana Azad National Institute of Technology, BHOPAL

**Dr. N. KAVITHA**

Assistant Professor, Department of Management, Mekelle University, ETHIOPIA

**Prof C. M. MARAN**

Assistant Professor (Senior), VIT Business School, TAMIL NADU

**DR. RAJIV KHOSLA**

Associate Professor and Head, Chandigarh Business School, MOHALI

**Dr. S. K. SINGH**

Asst. Professor, R. D. Foundation Group of Institutions, MODINAGAR

**Dr. (Mrs.) MANISHA N. PALIWAL**

Associate Professor, Sinhgad Institute of Management, PUNE

**DR. (Mrs.) ARCHANA ARJUN GHATULE**

Director, SPSPM, SKN Sinhgad Business School, MAHARASHTRA

**DR. NEELAM RANI DHANDA**

Associate Professor, Department of Commerce, kuk, HARYANA

**Dr. FARAH NAAZ GAURI**

Associate Professor, Department of Commerce, Dr. Babasaheb Ambedkar Marathwada University, AURANGABAD

**Prof. Dr. BADAR ALAM IQBAL**

Associate Professor, Department of Commerce, Aligarh Muslim University, UP

## **Associate Editors**

**Dr. SANJAY J. BHAYANI**

Associate Professor, Department of Business Management, RAJKOT (INDIA)

**MOID UDDIN AHMAD**

Assistant Professor, Jaipuria Institute of Management, NOIDA

**Dr. SUNEEL ARORA**

Assistant Professor, G D Goenka World Institute, Lancaster University, NEW DELHI

**Mr. P. PRABHU**

Assistant Professor, Alagappa University, KARAIKUDI

**Mr. MANISH KUMAR**

Assistant Professor, DBIT, Deptt. Of MBA, DEHRADUN

**Mrs. BABITA VERMA**

Assistant Professor, Bhilai Institute Of Technology, INDORE



**Ms. MONIKA BHATNAGAR**

Assistant Professor, Technocrat Institute of Technology, BHOPAL

**Ms. SUPRIYA RAHEJA**

Assistant Professor, CSE Department of ITM University, GURGAON

## **Reviewers**

**Dr. B. CHANDRA MOHAN PATNAIK**

Associate Professor, KSOM, KIIT University, BHUBANESWAR

**Dr. P. S. NAGARAJAN**

Assistant Professor, Alagappa Institute of Management, KARAIKUDI

**Mr. K. V. L. N. ACHARYULU**

Faculty, Dept. of Mathematics, Bapatla Engineering College, Bapatla, AP

**Ms. MEENAKSHI AZAD**

Assistant Professor, Master of Business Administration, GREATER NOIDA

**Dr. MOHD NAZRI ISMAIL**

Senior Lecturer, University of Kuala Lumpur (UniKL), MALAYSIA

**Dr. O. P. RISHI**

Associate Professor, CSE, Central University of RAJASTHAN

**Ms. SWARANJEET ARORA**

ASSISTANT PROFESSOR, PIMR, INDORE

**Mr. RUPA.Ch**

Associate Professor, CSE Department, VVIT, NAMBUR, ANDHRA PRADESH

**Dr. S. RAJARAM**

Assistant Professor, Kalasalingam University, Virudhunagar District, TAMIL NADU

**Dr. A. JUSTIN DIRAVIAM**

Assistant Professor, CSE, Sardar Raja College of Engineering, TAMIL NADU

**Ms. SUPRIYA RAHEJA**

Assistant Professor, CSE Department, ITM University, GURGAON

Title

CREATIVITY AND INNOVATION FOR  
ENTERPRISING ENTREPRENEURSHIP

Authors

Dr. Santosh Sadar

Associate Professor & Head,

Dept. of Business Administration and Management,

Sant Gadge Baba Amravati University,

Amravati, Maharashtra PIN 444 602

**ABSTRACT:**

Innovation is outcome of creativity and a key to become successful entrepreneur. An innovator could become successful entrepreneur, as innovation is backbone of entrepreneurship. The products in the market are representing a particular segment with its innovativeness. The products in automobile, telephone services, food and beverages, automation, consumables or likewise in same range are in market with its separate entity because of their innovativeness. A motorbike with identical features and capacity manufactured by different manufacturers has their separate class of customers and existence in market because of innovativeness in all the product range. The innovativeness requires intellectuals because it supports creativity. An innovative entrepreneur is always a good leader and visionary. The Pen drives with 170 GB capacity at Rs 300/ is not only innovation in computer hardware technology but it is creativity in the field of application of technology for common man at affordable price. The innovativeness and creativity is directly co-related with an entrepreneur's vision. An entrepreneur is always aware, enthusiastic analyzer. The success of an entrepreneur and building of successful entrepreneurship is depending on innovation of the person concern.

**Key words:** Creativity, Innovation, Innovative Entrepreneur and Enterprising Entrepreneur

**Introduction:****Entrepreneur, Entrepreneurship and Enterprise**

Entrepreneur is a visualizer, creator, innovator, decision maker, risk taker and leader. It is an attitude of a person to keep our self actively engaged in seeking change by exploiting opportunities. Creativity of an entrepreneur and his innovative ideas helps him to generate and exploit more and more business opportunities. There are certain innovations whose impact may not have been immediate but they gradually entered people's lives over the time. Conversely, there are some innovations, which may have made an immediate splash but faced obsolescence with the passage of time. There are still more innovations whose impact remains as big as on day as it was on the day they were announced. Entrepreneur is always ready to accept risk as part of the process and self-motivated for seeking the opportunity to create financial surplus or profit.



Entrepreneur ensures production and marketing products in a viable manner and at affordable price in any part of life including medical science. The disease, Diabetes is a medical condition where the human body cannot produce or use insulin properly. Therefore Human Insulin became as a blessing to mankind when Dr. Frederick Banting and his assistant Charles Best first made insulin from animal pancreatic extract in 1922. Later on Eli Lilly joined hands with the scientist and in 1982 along with Genentech launched the world's first insulin-Humulin. Innovation of insulin and its application by entrepreneur successfully gave relief to lakhs of diabetic patients throughout the world. The global sale of insulin was expected to double at around \$15 billion by 2010. The successful entrepreneur in the field of insulin Danish company Novo Nordisk is the global leader with 45 per cent market share followed by its American rival with about 30 per cent market share. Entrepreneur is the person who initiates the change by expanding and diversifying the operational behaviour of the enterprise. An entrepreneur expanded and diversified the area of games and sports. The approach of innovation and its impact changes the status of a game and makes it popular. Day night cricket matches are innovative diversification. Night games played under floodlights dates back to the 1880s. The big league baseball clubs first adopted the gimmick of flood light tournaments on May 24, 1935. In cricket Kerry Parker and his World Series Club circus saw a match being played for the first time under lights. Presently it is most popular game in cricket playing countries. The England and Wales Cricket Board introduced 20-20 in the UK with the first set of matches being played on June 13, 2003. Board of Cricket Control of India (BCCI) has introduced Indian Premier League (IPL) in 2008 were also an innovative entrepreneurship. The launching of IPL tournaments 2009 become equally significant issue as compared to 15<sup>th</sup> Lok Sabha elections in India.

Entrepreneurship is a process of action to be completed by the entrepreneur. It refers to a process by which entrepreneur is required to complete the innovativeness by initiating new or latest technology, idea or perception. Entrepreneurship is a risk taking phenomenon as every thing is supposed to bear the risk available in the organization process if any. Introducing and selling baby diapers were really risked taking idea for an entrepreneur. By 1960s selling baby diapers door to door was difficult job even in western countries. In case of India and Asian countries the use of manufactured baby diapers might be an out of mind concept. But slowly the pitch has turned with change in life style and diversification in standard of living. Today Huggies (Kimberly Clark) and Pampers (P&G) are two biggest diaper entrepreneurs globally.



The Indian disposable diaper market is currently pegged of Rs. 100 crore each year. A huge chunk of the market share i.e. 60 per cent hogged by Kimberly Clark's Huggies, while P & G Pampers comes second with 30 per cent share. Domestic companies like Godrej and Wipro are also in the business apart from some Chinese brands in the gray market. Swedish company Paulistorm manufactured the first disposable diaper in 1942. Later the world saw modern, comfortable and reasonable diapers for their babies.

Entrepreneurship is an important factor of an economic development of a country. The degree and quality of entrepreneurship differs from entrepreneurs to entrepreneurs. Entrepreneurship changes the direction of national economies, industries or markets. It initiates new products and develop organizations and means of production to make them marketable. It introduces quantum leaps in technology and forces the reallocation of resources away from existing to new and productive uses. It also disrupts the status quo and reshapes the process of economic development and society on new courses. Online shopping proved a significant activity to move the economic with speed. It is a universal franchising or online networkings are the realistic proofs for the same. In the world of online shopping the first online bookstore was set up by Charles Stock in 1992, it was Book Stacks Unlimited and later it became Books.com. After couple of years Leff Bezos started Amazon.com from his garage. In the same period Netscape introduced SSI encrypt in i.e. to improve security of the data transferred online, what is essential for online shopping. In 1996 eBay was started as an online swap shop for Californian geeks. The online auction website was founded as Auction Web in San Jose by French born Iranian computer programmer Pierre Omldyar and Phil Fischer. At present, the World Wide Web has thousands of online shopping sites that one can use to get the best deals. Online shopping is an alternative to shopping at retail outlets and is especially being used by younger, or techno savvy people in India. Online shopping diverts the economy in differently. The customer finds it convenient at least for products available online and not in local market. The innovative entrepreneurship that makes world closer and things available wherever you want. The concept and innovation of a universal franchising brought the world closer and in conveniences of customers. It is a model where business owners let independent operators use their company name and supplies in exchange for a fee. Perhaps the first franchising effort dates back to the 1650s when American entrepreneur Isaac Singer – a sewing machine specialist wanted to step up distribution of his product. The telegraph system operated by Railroad Company and controlled

by western Union is another innovation in the same period. During the early year's product franchising means collecting royalties on specific product and not on gross sale. But food services companies modernized the franchising model around the mid 1930s. Howard Deering Johnson teamed up with Reginald Sprague to establish the first modern restaurant franchise. In the business model franchising generates more than \$ one trillion in US sales annually while the US has 2000 franchise systems. India has 800 but it is only expected to grow by about 30-40 per cent in 2012. At present franchising in India accounts for only two per cent of the total retail sales of about \$ 405 billion that speaks volumes about its potential.

Online social networking is another example of innovation that changes direction as it forges new relationship, deals, and links. The social networking really goes back to 1979 when a couple of undergrads from Duke University from Truscott and Jim Ellis started tinkering with their Usenet, an internet discussion system to get social virtual groups organized to foster communication so that readers could read and post public messages. Networking websites have taken over the world by storm- if Myspace cropped up in 2003. Face book changed the face of social networking a year later in India. The process really gets underway through Google's Orkut. Today Orkut (it is named after a Turkish software engineer Orkut Buyukkokten) has the second highest number of users from India at 18 per cent after Brazil at 51 per cent.

Enterprise is the tool to achieve the objectives of entrepreneurship rather the capacity to assume risk independently and individually with an objective to earning profits and encashing the available opportunity to maximize earnings.

### **Entrepreneurship: Concept and Meaning:**

Entrepreneurship is the practice of starting new organization, particularly new business generally in response to identified opportunities. It is the process whereby enterprise is employed and leads to the pursuit of opportunities through new ventures. It is one special form of human capital that is important in an economic setting and considered as one of the factors of production. Entrepreneurship is about being alert to a set of opportunities having a subjective expectation as to the values of such opportunities in the market and having the resources. It is a function that combines land, labour and capital in a cost effective way and uncovers new opportunities. The



innovation of Wheel by unknown Mesopotamian Tradesman, innovation of Clock by Tycho Brahe Astronomer or a Physicists Robert Boyle's invention of Matchsticks changes the life of human beings throughout the globe as it become mass productive and applicable to all under innovative entrepreneurship.

According to Higgins B. Entrepreneurship is meant the function of seeking investment and production opportunity, organizing and enterprise to undertaken a new production process, raising capital, hiring labour, arranging the supply of raw materials, finding site, introducing a new technique and commodities, discovering new sources of raw materials and selecting top managers of day to day operations of the enterprise. This definition deals with the functions of an entrepreneur. It included handling economic activity, undertaking risk, creating something new and organizing and coordinating resources. John Metcalf, Blind Fiddler invented Modern Roads, William L. Potts, a policeman invented Traffic Signal and Zebra Crossing invented by Ernest Murples a public servant. All these inventions become significant when an entrepreneur made these innovations commercialized in the interest of society. In the process of commercialization there exists a risk and uncertainty.

Schumpeter J.A. defines Entrepreneurship, as essentially consist in doing things that are not generally done in the ordinary course of business routine. Schumpeter emphasized on the innovation process to be undertaken by the entrepreneur. Entrepreneur is required to gather resources, organize talent and provide leadership to make the business a commercial success.

According to Peter F. Drucker, Entrepreneurship occurs when resources are redirected to progressive opportunities not used to ensure administrative efficiency. Further Drucker stated that entrepreneurship is not natural, it is not creative, it requires entrepreneurial management and entrepreneurial management requires policies and practices in four major areas. 1) the entrepreneurship must responsible to innovation and willing to perceive change as an opportunity rather than a threat, like innovation of power generation, its distribution and mode of consumption 2) systematic measurement or at least appraisal of a entrepreneurial performance as entrepreneur and innovator is mandatory as well as built in learning to improve performance, an innovations by unknown Neolithic Hunter for Beer and innovation of Tea by unknown Chinese Apothecary and Kaldi, Sherpherds's innovation of Coffee occupied place throughout the world market because of entrepreneurs performances 3) entrepreneurial management requires specific



practices pertaining to organization structure , to staffing and managing and to compensation, incentives and rewards and 4) there are some do nots and things not to do in entrepreneurial management.

Drucker tried to give management orientation to entrepreneurship, while claimed that it a process of innovation that reallocates resources to new opportunities often creating new opportunities through unusual combination of resources and the skills of risk taking entrepreneurs.

Entrepreneurship has certain characteristics namely dynamic process, innovation, risk taking, decision-making, accepting challenges, organization, skillful management and making enterprise a success. It is innovation where new products and services and more efficient production techniques are introduced by the firms that have identified new market opportunities or better ways of meeting existing demands. It is like a product and service innovations of mobile phones. Martin Cooper, a Motorola researcher and executive invented the practical portable mobile handset and made the first call on a handheld on April 3, 1973. He foresee that the product would shrink and world and connect billions across countries and continents. About 35 years later, over 60 per cent of the world's 6.6 billion people own a mobile handset, while 80 per cent have access to one. India being the world's fastest growing telecom market with over 10 million new mobile users being added every month, enters 2009 with just under 350 million customers. It is likely to exist the year with a cellular subscriber base of 460 million.

### **Creativity and Entrepreneurship:**

Combined impact of market forces and other environmental forces, motivate and compel entrepreneur to take a closer look at how creativity and innovation could go hand-in-hand in helping enterprise for adapting the changing market environment, influence the environment or shift domains in present and future. The opportunity to pursue creative and innovative changes can provide individual and group challenges that motivate employees and entrepreneur alike to higher performance. Enterprise problem or opportunity sparked spontaneous creativity and innovation as it is a creative activity and success in enterprise demands constant innovation. Creativity is a mental process involving the generation of new ideas or concepts or new

associations between existing ideas or concepts. Creation is the act of starting something for the first time, introducing something new especially a new product or a new way of producing something innovation. It is a process and skill, which can be developed and managed throughout the entire enterprise. Creativity is the ability to bring something new into existence. Creativity is marked by the ability or power to create-to-bring into existence, to invest with a new form, to produce through imaginative skill, to make or bring into existence something new like Video Conferencing (VC). It took its baby step to transform the world into village. In 1920s engineers at Bell Telephone Laboratories started thinking of ways to transmit voice and video over phone lines. On April 7, 1927, Bell Labs office played host to an initial demonstration of what would later come to be known as video conferencing. This two way television as a system of communication was refined further only in 1956, when AT&T made the first Picture Phone test system, a kind of visual telephone. In the 1990s VC systems resorted to open standards and were no more expensive proprietary equipment and software. Soon, Internet Protocol-based video conferencing became possible and later advances shifted it to personal computers as well. VC has revolutionized not only the way business is done, but has also facilitated telemedicine, tele-education and helps the business environment. It has brought down time and expenses on travel as business meetings can be done with participants in distant places.

A product is creative when it is (a) novel and (b) appropriate. A novel product is original not predictable. The bigger the concept and the more the product stimulate further work and ideas, the more the product is creative. The facets of creativity are approach of (a) outputs of creative efforts, (b) novel hypothesis, (c) creative process and (d) state of the being. Creativity is the root of innovation and innovation is the backbone of entrepreneurship. The world, which boasts of having dedicated TV channels on every possible subject, traces the origin of Cable TV to the states of Arkansas, Oregon and Pennsylvania in US. In a bid to provide television entertainment in rural areas (where television signals were not accessible), a TV sets salesman came up with the idea of using cables in 1948. But James Y. Davidson, Leroy Ed Parsons, John Walson and Martin Malarkey in the US did the pilot transmission almost simultaneously. This was followed by English movie channel HBO becoming the first to use satellite mode of transmitting content in 1976. From the basic analog terrestrial broadcast in the 1920s to Cable & Satellite TV, the mode of transmission for providing content has now transformed into direct-to-home (DTH), internet Protocol Television (IPTV) and even mobile TV, Cable & Satellite Television, which



started in India during the Gulf war. Now it is one of the cheapest forms of entertainment for consumers.

### **Innovation and Entrepreneurship:**

Innovation is the process of making improvements by introducing something new. The innovation includes act of introducing something new, something newly introduced, it may be a new idea, method or device. The innovation includes 1) development of new technology 2) refinement of existing technologies or 3) development of new applications for existing technologies. The innovation is the process that translates knowledge into economic growth and social well-being. It is the process whereby ideas for new or improved products, processes or services are developed and commercialized in the market place... It is development of new products, processes, organization, management practices and strategies. Innovation is an evolutionary process of increasing the capabilities to apply a technology, applying in new contexts expanding the capability of a technology or improving the capability, standard, method, tool or use of a tool, often contrary to or radically different from established standards, processes or tools. An innovation lowers the cost and/or increases the benefits of a task. It increases the benefits-to-cost ratio to such an extent that it enables to do something. It is a process, which leads to improved engineering, technology, methods, state of mind and organization. Innovation is the process of converting knowledge and ideas into better ways of doing business or into new or improved products and services that are valued by the community. The innovation process incorporates research and development commercialization and technology diffusion. The best things in life are for free and need to be kept that way. Tim Berners – Lee, physicist and Oxford University graduate, believed in it. The man who invented the World Wide Web WWW in 1989-90 could easily have become a trillionaire, had he decided to monetize his invention. Today thanks to him, million of users worldwide post and access multimedia data on the internet, adding to the steadily growing mountain of casual, business, informative, academic and entertainment-related content online. Despite its popularity, the WWW is not an easy concept to understand. Indeed many consider it synonymous with the Internet. But as experts say WWW is a subset of the Internet. However, the Internet owes its massive popularity to the Web. In 1989, Berners-Lee, then working with CERN (the Geneva-based European Particle Physics



Laboratory), proposed a global hypertext project based on his research. The project proposed to make hypertext documents freely available to users everywhere. Today, if we are able to raid the Internet's bounties for everything from the history of Macchu Picchu to Nehru's famous, "Tryst With Destiny", it is because of the point and click system Berners- Lee and his associates pioneered. One can view WWW pages that may contain text, images, videos, multimedia and navigate between them using hyperlinks.

No one currently enjoys proprietary status of the WWW. Voluntary groups like W3C (WWW Consortium led by Tim Berners- Lee himself), ICANN and Internet Governance Forum under the UN ensure that the WWW remains like the commons in medieval England-to be shared and maintained by all. The Web now has over 1.4 billion users worldwide and this number is growing fast.

Innovation means doing new things or doing the things that are already being done in a new way. It includes new processes of production, introduction of new products, creation of new markets, discovery of a new and better form of industrial organization. According to Schumpeter innovation may occur in the forms of

- (1) The introduction of new goods that is one which consumers are not yet familiar with or of a new quality of goods, perhaps no other idea has had the kind of impact that the small, embedded inside devices, and silently working chip has had on people's lives. It is ubiquitous in everything from computers, cars, cell phones, coffeemaker, space shuttles, smart toasters, washing machines, and so on. Not surprisingly, the global chip market is over \$ 200 billion a year and the market for all the products that use a chip is well over a trillion dollars. Chips perform various tasks by design. The most sophisticated chip is a microprocessor, whose transistors can execute hundreds of million of instructions per second. The chips (integrated circuits as they were called when first developed) introduced by Jack Kilby of Texas Instruments and Robert Noyce who later founded Intel, the world's largest chipmaker, invented it. Kilby recorded his initial ideas concerning the integrated circuit in July 1958 and successfully demonstrated the first working integrated circuit on September 12, 1958. Robert Noyce won the 2000 Nobel Prize in Physics for his part of the invention of the chip, six months after Kilby. Noyce's chip solved many practical problems that the microchip

developed by Kilby had not. Today a world without chips is inconceivable and in the not-so-distant future, microchips will process information faster than the human brain.

- (2) The introduction of new method of production that is one not yet tested by experience in the branch of manufacture concerned, which by no means be founded upon a discovery scientifically new and can also exists in a new way of handling a commodity commercially, It is said that the ultimate success of a product lies in its brand name becoming a verb, Google is one such brand. Imagine carrying the world's knowledge in the brain and giving out near-results whenever someone pops a question. The web search engine has managed to do just that, and in the process, made hard-copy monoliths like the Encyclopedia Britannica run out of business. Google began as a dissertation project in January 1996 by Larry Page, a Ph.D. student at Stanford. It later evolved as one of the most popular inventions on the Internet. His mate, Sergey Brin, on the thesis, soon joined Page. Now Googling is officially listed as a verb in the Oxford and Merriam Webster's collegiate dictionaries.
- (3) The opening of a new product market that is a market into which the particular branch of manufacturer of the country in question has not previously entered, whether or not this market has existed before. Innovation and applications of Credit Card is a case of opening of new market as far as mode of exchange is concerned. Nothing has come to represent cash the way credit cards have. The idea of using a card to make purchases was first drawn up by Edward Bellamy in 1887 in his novel Looking Backward and its sequel Equality. The U.S. was the first country to launch it in the early 1990s although the usage was at time restricted to being unorganized. It was Dinner Club International, the first independent credit card company in the world and American express, which changed the way cards were used. They developed it into a tangible business phenomenon. In India, the concept of plastic money caught on in the late 1960s, only after private sector banking came into practice. Today all private sector banks and many nationalized banks offer credit cards the market leader being ICICI bank.
- (4) The conquest of a new source of supply of raw material or half manufactured goods, irrespective of whether this source already exists or whether it has first to be created, Outsourcing is plain vanilla sub contracting process, traditionalist content. Actually, it goes back to 19<sup>th</sup> century manufacturing when the sweating system prevailed in American cities.



Suppliers used to outsource the work of making garments and boots for the American Forces to sub contractors. The process continued to remain in manufacturing with large-scale sub contracting of production, work to suppliers in Asia by companies like Nike in the 1970s. Many companies also decided to set up subsidiaries in Asia to handle some of the production work. In the 1980s outsourcing moved beyond the realm of manufacturing with services, such as travel booking and payroll processing, being forked out to players like American Express and EDS. But outsourcing's heydays really took wing in the 1990s with IT as American firms handed over their applications development and maintenance work to foreign vendors, such as Indian IT and BPO companies.

- (5) The carrying out of the new organization of any industry, like the creation of a monopoly or the breaking up of a monopoly position. It looks a 007 for the world to fully come to terms with Global Positioning System (GPS). As Korean Airlines Flight 007 strayed into former USSR prohibited airspace in 1983, it was dully shot down. The world was shaken and the then US President Ronald Reagan stirred into action by issuing a directive making GPS freely available for civilian use for the greater good. The GPS, simply put, uses a constellation of 24 to 32 Medium earth Orbit satellites that transmit microwave signals, which enable GPS receivers to determine their current location, time and velocity. Though it is managed by the US Air Force's 50<sup>th</sup> wing, civilians for navigation now commonly use GPS. The GPS has revolutionized the way people find each other. GPS devices now fitted in mobile phones, PDAs, laptops cars, bikes, airplanes, cycles, ships, parachutes and even trekking shoes. Such devices are now used for finding stray dogs and cats to accurately dropping missiles and bombs in battle zones.

In short innovative entrepreneurship increases the benefits of product or reduces its costs. In this context transfer of knowledge and skills into social well-being and economic development is entrepreneurial innovation. Likewise development of new technology and applications or refinement of technology and application in the interest of customers at minimum cost and in the convenience of users is innovation and it is the real sense innovative entrepreneurship.

### **Innovation: Types and Phases:**

Innovation is the transformation of creative idea into useful application but creativity is a prerequisite to innovation. Schumpeter described entrepreneurs as innovators who are the



process of shatter the statuesque through new combinations of resources and new method of commerce. Peter Drucker also elaborate that innovation is a specific tools of entrepreneurs the means of which they exploit change as an opportunity for a different business or a different service. It is capable of being practiced. Entrepreneurs need search purposefully for the source of innovations, the change and their symptoms that indicate opportunities for successful innovation. It translates an idea into an application. There are two types of innovations

(1) Technical innovation is concerned with innovations in the processes by which production takes place and also with innovation in the products themselves. It is creation of something radically different from existing technologies or products. It is treated as pure innovation. An innovation may have no competitors as its birth, thereby giving a monopoly to the individuals who hold the legal rights to the invention. New inventions can create new products thereby new industries. It is also treated as product oriented innovation, which involves developing goods and services that incorporate entirely new and novel breakthrough advances. Nobody can dispute the revolution that e-mailing has brought about. A small kilobytes sent on the information superhighway has made a giga-leap for all mankind. The Massachusetts Institute of technology (MIT) Compatible Time-Sharing System (CTSS) is believed to be the first computer to demonstrate e-mailing. Users of CTSS could store files online from a remote location, just like emails today are stored on Yahoo or Google servers. Like some of the other technology inventions, the roots of e-mailing can also be traced to the US Department of Defense (DoD). E-mailing became a regular feature for the users of DoDs ARPANET (the early form of internet). It was here that use of the sign @ became popular in 1970s. As the Internet evolved, web-based mail became a regular but paid feature offered by many ISPs Lycos.com used to offer paid e-mail as early as 1995. But look an Indian, Sabeer Bhatia; in 1997 to popularize the use of free e-mail via his free web mail service- Hotmail.

(2) Non-technical innovation is concerned with innovation mission, styles of management, growth strategies, management systems, and organizational structures to office décor and flexi time. It is also treated as process innovation. The purpose of this innovation is to make existing industries more efficient. It refers to small and service delivery that firms make to keep their product up-to-date and their cost down. It involves making improvements to existing products and production or organizational process like packaged foods. The category cropped up in the

19<sup>th</sup> century to cater to the infantry on foot and horses. The practice of freezing foods to preserve them dates back to 1000 BC. But it looks American entrepreneur Clarence Birdseye to finally make frozen foods a reality in the 1930s. In many markets packaged foods took a giant leap in the late 1970s and 1980s thanks to consistent and innovative marketing. It was around that time that the invention of microwave ovens led to the actual category escalation. The late 1990s saw the beginning of a complete transformation of convenience foods-the-health and wellness boom. Within Asia, Japan is the largest food processing market.

### **There are two phases of innovation**

Much divergent thinking and creativity, brainstorming mark the design phase, search for alternatives etc. The management of the design phase needs to be marked by great administrative flexibility and authority exercised by the expert in a given situation, open communications, sharing information, much discussion etc.

Implementation phase requires a very different mode of management. Much planning needs to be done, careful coordination and control and evaluation of progress is also required. From the first floppy disk in the 1970s that found a way into most of our lives, the concept of how much may be stored has come a long way. The floppy, which had a capacity of around 80KB, pales in significance when compared to 170GB pen drives. Undoubtedly, memory storage devices have evolved. Compact disks, which were first commercialized by Sony and Phillips, in the mid 1980s, have moved to storage of sophisticated DVDs and now Blue-ray discs. Twenty years on, and Sony is pushing the Blue rays on its Play station. Now is the age of iPods, gaming consoles and external hard disks that store music, movies and files. The future is probably the dumb-bell shaped rotaxane molecule, which has been used by UCLA and the California Institute of Technology to fabricate memory at a density of 100 billion hits per square centimeter. All these innovations lies risk, uncertainty, diversification of markets for an entrepreneur to introduce it into business.

### **Risk, Creativity and Innovation:**

The risk is the condition of not knowing the outcome of an activity or decision. The risk is capable of being evaluated for relative probabilities. If there is no risk, return is certain. Risk is a



limit to ever expanding entrepreneurship. Risk bearing means provision for capital in order to enable the entrepreneur to establish and operate the business. Almost seven out of the top 10 profit making airlines in the world are low-cost. Freddie Laker believed to be the pioneer of the low-cost model in the 1970s, can certainly be credited with revolutionizing air travel across the globe. Though it took some time to travel to Asia and a little more to India, the low-cost model gave wing to millions who would have otherwise waited for years. In India, aviation experts do not hesitate to divide the country's aviation history into pre-and-post Deccan. Captain G.R. Gopinath, who founded Air Deccan in 2003, is considered to have made air travel affordable to even a blue-collar worker.

Uncertainty is a situation in which the entrepreneur understands the problem but does not have complete information on the possible alternatives and likely consequences of each alternative. If there is no uncertainty then the business environment can be perfectly known. Entrepreneurs working under a condition of risk have enough information to estimate the probable outcomes of each alternative; they have insufficient information to estimate probable outcomes when they operate under a condition of uncertainty. Most of the decisions entrepreneurs make occur under condition of uncertainty, primarily because environmental uncertainty makes the future unpredictable. October 23, 2003, mark that date, when Apple Inc launched the iPod, which in the words of Apple boss Steve jobs will put 1000 songs in your pocket. That saw the end of Sony walkmans and ushered in a new generation of music players. Ever since storage capacities have come a long way. The first iPod was developed within one year and had a storage capacity of 5GB while other MP3 players, none of which could ever capture the imagination of the mass market like the iPod did, used a Flash drive for storage, the iPod has an internal hard drive. This was a technological innovation for that time says Prof. Veni Madhavan who heads the Society for Innovation and Development at IISc Bangalore.

There are different types of uncertainties like structural uncertainty, strategic uncertainty, resources uncertainty, customer uncertainty etc. Creativity is best nurtured in a permissive climate; it encourages the exploration of new ideas and new ways of doing things. Many managers find it difficult to accept such a climate.



### Sources for Innovative Opportunity:

Innovation is the specific instrument of entrepreneurship. It is the act that endows resources with new capacity to create wealth; it is the act that creates resources. Innovation has potential of wealth producing process in already existing resources. Innovation is an economic or social rather than a technical term. J.B. Say defined entrepreneurship as changing the yield of resources, or as a modern economist would tend to do, it can be defined in demand terms rather than in supply terms, that is, as changing the value and satisfaction obtained from resources by the consumer. Innovation is a systematic, purposeful activity, which is planned and organized with high predictability both of the results aimed at and likely to be achieved. Therefore systematic innovation consists in the purposeful and organized search for changes, and in the systematic analysis of the opportunities such changes might offer for economic or social innovation. Successful innovation exploits change and innovation themselves constitute a major change. The discipline of innovation is a diagnostic discipline, a systematic examination of the areas of change that typically offer entrepreneurial opportunities. An old adage sticks out to this day like sore thumb-Boys never make passes at lasses who wear glasses. Well, critics would slam-dunk a lot of yada-yada and admonish that adage claiming, say glasses are now for the masses. Let the eyes speak for themselves. In the run of things, contact lenses seem to fit just fine. In 1508, multifaceted Renaissance raconteur Leonardo da Vinci penned a method of changing corneal power by submerging the eye in a bowl of water. Taking a cue, German physiologist Adolf Eugen Fick developed the first usable glass contact lenses in 1888. These were quite unwieldy and seven decades later in 1959, Czech chemist Otto Wichterle and Drahoslav Lim came up with the first soft (hydrogel) lenses. The latest to come in were the silicon hydrogel lenses, which were more comfortable and easier to wear for extended hours. With coloured options like blue, green, brown and so on, contact lenses have also become a fashion accessory of the times. According to Peter F. Drucker systematic innovation means monitoring seven sources of innovation opportunity.

The first four sources lie within the enterprise. Therefore they are visible primarily to people within that enterprise. They are basically symptoms, they are highly reliable indicators of changes, which have already happened or can be made to happen with little effort. They are

1) The unexpected success, the unexpected failure, the unexpected outside event,

2) The incongruity between reality as it actually is and reality as it is assumed to be or as it ought to be.

3) Innovation based on process need.

4) Change in enterprise structure or market structure that catch everyone unawares. The second set of three sources for innovative opportunity involves changes outside the enterprise 1) Demographic/population changes, 2) Change in perception, mood and meaning and 3) New knowledge, both scientific and non scientific. Drucker stated that these seven sources are seven windows of a building on different directions and every window shows some features on either side of it. But the view of the centre of each is distinct and different. Each window has its separate analysis and its own distinct characteristics. However no area is inherently more important or more productive than the other. Innovations are likely to come out of an analysis of symptoms of change, as they are to come out of the massive application of new knowledge resulting from a great scientific breakthrough.

### **Principles of Innovation:**

A successful entrepreneur should follow basic principles of innovations.

1. The purposeful innovation resulting from analysis, system and hard work is all that can be discussed and presented as the practice of innovation. The innovations that are not developed in any organized, purposeful systematic manner are result of a flash of genius rather than a hard, organized purposeful work.
2. There are number of things that have to be done purposeful and systematic. Innovations begin with the analysis of the opportunities and thinking through sources of innovative opportunities. All the sources of innovative opportunity should be systematically analyzed and studied. The search has to be organized and must be done on a regular systematic basis.
  - 1) Innovation is both conceptual and perceptual. The second imperative of innovation is therefore to go out to look, to ask, to listen. Successful innovators look at figures as well as people. They work out analytically what the innovations has to be to satisfy an opportunity.
  - 2) The innovation goes out and looks at the customers, the users, to see what are their expectations, their values, their needs. Innovations have to reflect so that the people who have to use it will want to use it and see in it their opportunity.
  - 3) An innovation to be



effective has to be simple and it has to be focused on need of the masses. If innovations are not simple, it would not work. The innovation that creates new uses and new markets should be directed towards specific, clear, designed applications. It should be focused on a specific need that it satisfies, on a specific end result that it produces. 4) Effective innovation start small, they try to do one specific thing. Innovation had better to capable of being started small, requiring at first little money, few people and only a small and limited market. 5) A successful innovation aims at leadership. All strategies aimed at exploiting an innovation, must achieve leadership within a given environment.

3. There are number of things that have not to be done 1) Innovations have to be handled by ordinary human beings, if they are to attain and size and importance at all. Anything too clever, whether in design or execution is almost bound to fail? 2) Don't diversify, don't splinter, and don't try to do too many things at once. Innovation that stray from a core are likely to become diffuse, they remain ideas and do not become innovations. There has to be a core of unity to innovative efforts or they are likely to fly apart. An innovation needs the concentrated energy of a unified effort behind it. 3) Don't try to innovate for the future, innovate for the present. An innovation may have long-range impact; it may not reach its full maturity until twenty years later. Unless there is an immediate application in the present an innovation.
4. Innovation applies three conditions 1) Innovation is work; it requires knowledge and often great ingenuity. Innovation is hard focused, purposeful work making very great demands and diligence on persistence and on commitments as there is talent, ingenuity and disposition. 2) Innovation is no different from other work. Innovators must build on their strength. Because of the risk of innovation and the resulting premium on knowledge and performance capacity. 3) Innovation is an effect in economy and society, a change in the behaviour of customers. It is a change in a process – that is, in how people work and produce something. Innovation therefore always has to be close to the market, focused on the market, indeed market drive.
5. Innovative entrepreneurs are conservative, they are not risk takers rather they are risk reducers. They try to define the risk they have to take and to minimize them as much as possible. Innovators are successful to the event to which they systematically analyze the source of innovative opportunity, then pinpoint the opportunity and exploit it. Whether



opportunities of small and clearly definable risk, such as exploiting the unexpected or a process need, or opportunities of much greater but still definable risk, as in knowledge based innovation. Innovators are not risk focused but opportunity focused.

### **Conclusions:**

Vending machine more commonly called dispensers was quite literally Greek to the rest of the world. The invention goes back to a first century Greek engineer-mathematician called Hero of Alexandria, whose machine upon accepting a coin dispensed a fixed amount of holy water. Cut to England in the 1880s, the height of the Industrial Revolution, when the first coin operated vending machine came to be used for dispensing post cards. Thereon, gums, candies, cigarettes, newspapers and even cash dispenser became commonplace. In the amusement sector, the birth of slot machines can be traced to these early inventions. Closer home at the newly built Hyderabad airport, a smart beverage vending machine stares passerby on the face. It is unique feature allows it to pay out the remaining money (change) with currency notes and coins, making it the first of its kind in the world. Prior to 2000 all vending machines were imported in India. The innovation and its acceptability for business by entrepreneur could certainly diversify the life style of common man but changes the economy. Similarly it reduces the cost and increases the uses.

It is not everyday that one strikes upon a drug to treat impotence. So when scientist in the UK found during clinical trials that hypertension molecules (sildenafil) induce marked penile erection, the company (Pfizer) decided to develop and sell the medicine as the world's first oral drug to treat erectile dysfunction (ED) and capture the global unmet for ED. As expected Viagra immediately became an instant blockbuster drug once it was launched in 1998. More than that, Viagra became one of the world's best-known brands, subject of millions of web pages and at least a dozen books have been reportedly written on the drug. It is estimated that over 1.8 billion Viagra pills have been dispensed to over 35 million men across 120 countries. Simply out, six Viagra tables are sold every second, raking in about \$ one billion for the company annually. The British media says Peter Dunn and Albert Wood are the inventors of the drug, a claim disputed by Pfizer. The innovative entrepreneur could make the life of common man simple, easy and free from tension and worries.

Innovation and entrepreneurship goes hand – in – hand. Where in innovation is backbone of successful entrepreneurship. Innovation may be constructive or destructive but directly relates to approaches and attitude of entrepreneur. In fact innovation should be constructive particularly to exploit opportunity in present instead of considering future. Innovation should be market driven and have capacity to change in the behaviour of consumers. Innovation should be developed in organized and purposeful and systematic manner. In short innovation should be in the interest of society in terms of increase in benefits and/or cost-benefits.

### **REFERENCES:**

- Dollinger, marc, J, Entrepreneurship, Pearson Education Ltd. New Delhi, 2003, p.33.
- Drucker Peter F., Innovation and Entrepreneurship, William Heinemann Ltd., London, 1985.
- James Ulterback, the process of technological innovation within the firm, Academy of Management, journal Vol.12, 1971, p.75-88.
- Penrose E., the Theory of the Growth o the Firm, Johan Wiley, 1959, New York, p.56-57.
- Shukla M.B. Entrepreneurship and Small Business Management, Kitab Mahal, New Delhi, 2<sup>nd</sup> ed. 2006.
- Tom Burns and G.M. Sacker, The Management of Innovation, Tavi Stock London, 1961, p.14.
- Economic Times, Mumbai, January 30, 2009