
Who Needs Innovations?

Sulekh Jain, PhD
Materials & Manufacturing
Technology Solutions



World Health
Organization



WHAT IS INNOVATION?

- Process by which new ideas are generated is **CREATIVITY**
- Process by which new ideas are transformed into tangible and useful things is **INNOVATION**

WHAT TO INNOVATE?

- Products
- Processes
- Systems
- Procedures
- Rules
- Policies

Why innovate ?

- To innovate is to survive – it is the very basic technique for survival
- To meet existing and changing societal needs and to improve the quality of life
- To create new products, markets and opportunities
- Here are a few examples of innovation: **1.** Instant photography - from Polaroid to Digital photography **2.** Global Positioning System – help you to stay on course
- Desk top computers with large computing capacity Vs the PDP -11 main frame computers
- Cellular phones – for uninterrupted connectivity
- Sugar to Splenda
- Harness solar energy and to convert it in to electrical energy.
- stay competitive via Improving Productivity and thus increase profit and market share

Who should be concerned about productivity?

- Any one who serves a customer (Nearly every one has a customer)
- A Sadhu/Yogi/ Swami/Hermit (engaged in his/her own self purification) does not have a customer **but** he/she too wants to improve his/her productivity to achieve his/her own goals

Definition of a customer

- A customer is one who seeks a product, advice or services from another person, industry or a service provider.
- We all have customers (internal and external)
Example: A school / college or educational institution:
Students are the customers
- Business establishment - Buyers and users are the customers
- Doctors and Hospital- Patients are customers
- Religious places- Devotees and worshipper are customers
- All forms of Government - Citizens are customers

What drives productivity?

- **Sales revenues – Expenses = Profit**

(Here profit is whatever is left at the end of the day. This is an old equation. Here profit is a residual of the transaction)

- **Sales Revenue - Profit = Expenses**

New Equation and hence this is a new paradigm
Here expenses, and not the profit are the residual of the transaction. Here the entrepreneur decides what profit or ROI one wants and what is left at the end

What drives productivity?

- This new paradigm forces us to reduce expenses (continually)
 - Reduce unit cost and life cycle cost
 - Locate and reduce /avoid areas of wastage
 - Use the most cost effective technologies and processes to provide cost effective quality
 - Improve product performance
 - Innovate new processes, systems and products
- All of the above lead to continuous improvements

SKILLS FOR INNOVATION

- Kaleidoscope thinking
- Communicating Vision
- Persistence
- Coalition building
- Working through partners
- Sharing the Credit
- Flexibility
- Openness to Change

ROAD BLOCKS TO INNOVATION

- Lack of Challenge
- No time available
- Over management, Micromanagement and too much of close control
- Internally focused
- Lack of team-work
- Non – conducive environment



BUILDING INNOVATIVE ORGANIZATIONS



- Prime Tool of Innovations
- “ PEOPLE”

TO INNOVATE

- Empower People and Provide
- Leadership
- Shared Vision
- Shared Culture
- Training and development
- Demolish Hierarchy
- Reward risk taking
- Create a learning organization

CONCLUSION

- Innovate continually because
 - Nothing is simple any more
 - Whatever we do is not enough
 - Everything needs to be questioned
 - Everything must change

CONCLUSION

- Innovation is THE key to competitive advantage in this century of
 - Globalization
 - Technology change
 - Information Age

Innovating teams in the 21st Century

- In the 21st Century, more and more teams would become **Global**
- Wall Street and Dalal Street will control the destiny of corporations
- Very Short Product Cycle will come in to play and demand constant new innovations

Why global team?

- It is harder to see the borders now
- Boston, Bombay and Beijing are only a click away
- We are dealing with a 24 -hours society
- Kids in Dallas and Delhi have the same knowledge tools available to them, their skills and aspirations are the same and they are able to communicate instantaneously

Recipe for a successful innovative team

- **A team of members that is trusting, sharing and believing in collaboration**
- **Team members do not have hidden agendas**
- **Initial training in team forming**
- **Establishment of Norms and Best Practices for functioning and conflict resolution**
- **Understanding and sensitivity to global cross cultural issues and behaviors**
- **Participate in issues that are global rather than regional**
- **Have a dynamic, knowledgeable and visionary team leader**
- **Be flexible, adaptable, willing to accept changes and work with a De-layered organization/team**

How should and how does a typical global team look?

- Must Pay attention to the whole - LAB to Market (Science to business) or
- ART to PART
- Must be virtual- Share resources wherever they exist.
- Virtual Global teams will replace National and regional teams
- Brain power is the most important key - Developers of Technology such as universities, R&D Centers and Individual thinkers
- RISK TAKERS
- Venture Capitalists and entrepreneurs
- Government and its extension offices



How should and how does a typical global team look?



- Commercializers
- End users and private citizens
- The future innovative teams specially in the area of biotechnologies in addition to US enterprises should consider including enterprises from INDIA, CHINA, SINGAPORE AND SOUTH KOREA

Some facts to remember about India and China

INDIA

- Current population **1.1 billion and is growing**, with a significantly high % of young people
- Significant advance in lifespan resulting in a large % in their 70s and 80s. People are living healthier and longer.
- **Over 300 million** affluent middle class people and the % is increasing
- World's largest democracy which is stable and functioning well
- Proficiency in English language. Medium of instruction used is English, starting from elementary schools. Literacy rate is high in most parts of India.
- English language is used by most people like it is their mother tongue.
- Prominent news papers, journals and periodicals are in English.

Some facts to remember about India and China

INDIA

- Institutes of Higher education, Research and Development organizations in the field of Engineering, medicine, Pure Sciences and other areas, network to reap significant benefits from each other's learning
- Over 25 million Indian diaspora spread over more than 50 countries of the world. These expatriates are becoming a "powerhouse of change" in India
- Strong in history and culture, proficiency in Mathematics and Sciences
- Innumerable inventions have been made for over 3000 years, some of which have resulted in changing the lives of millions of people all over the world.
- Annual growth in GDP in India is currently hovering around 9-11 %

Some facts to remember about India and China

INDIA

- Many large US Corporations have already located their Central R&D centers in India, for example GE, IBM, Microsoft etc. By the end of 2008, it is estimated that over 70,000 IBM employees will be working in India.
- CEO of General Electric, Mr. Jack Welch recognized as early as in 1980s that China, India and Mexico are the 'mega markets' not only for GE but for the *entire world*. To put its words in to action, 15 years ago, GE opened its first and largest R&D Center outside USA, in Bangalore, India.
- At the time of this presentation, more than 500 companies have established their R&D Centers throughout India.
- Several Indian companies have acquired companies in Europe and USA. There is an increasing trend in this area.
- Investors and entrepreneurs in India are able and willing to take Risks

Some facts to remember about India and China

CHINA

- China boasts as the **fifth largest** # of millionaires in the world, 310,000; only behind US, Japan, U.K and Germany
- Rate of personal wealth creation from 2001-2006:

China stands at 23.4 % annual compound (top in the world) vs. global average = 8.6%

National savings rate (which means how much of a nation's wealth is retained):
China = 52 % and rising . **USA = 10 % and declining**

- 70 % of Chinese economy is driven by personal entrepreneurs.
- The sectors that account for the creation of millionaires and billionaires are: Retail, steel, Financial services, internet, paper, energy, apparel, food, auto parts and Real Estate
- Boston Consulting Group (BCG) estimates that over the next 5 years, there will be twice the number of millionaires' households as there are today, predicting an annual growth rate of 15%.

Some facts to remember about Singapore

- This City State is a miraculous Success story of the 20th Century.
- Singapore has become the manufacturing, Ocean trans shipment of freight and commercial and financial hub of the world
- The infrastructure of every thing including higher education and innovation are superb.
- Singapore's labor is highly skilled.
- In the 21st Century, Singapore's emphasis is shifting t from Ocean trans shipment to high Value added services and industries by utilizing the brain power rather the muscle power.

Some facts to remember about Singapore

- Singapore has identified **Bio -Technology** and wants to become a world Hub in that area.
- It has created many institutions and R&D Centers in that area and is training its workforce in these skill and technologies.
- The Government of Singapore is inviting Foreign establishment in business in these areas with open arms, economical incentives and great enthusiasm.

Excerpts from President Hu Jintano's speech to People's Congress in October 2000 "China's Development journey"

- In 1980s, when emphasis was on development, China gave a great deal of attention to learning from the experiences of the fast economic growth of Post War Japan
- Later, China looked at and followed US economic prosperity fuelled by information technology revolution as well as life style & consumerism
- As a result some people got rich earlier and a life style of Luxury was gaining popularity. Many young Chinese changed their dreams from Japanese Style small houses and small cars to American style big houses and big cars.
- Both China and Japan (compared to USA) have lack of natural resources, land resources, population and age etc.
- Now, like Japan, China must turn this lack of natural and other resources into dynamism in exploring brain power, especially in energy saving technology and management and environmental protection.

Excerpts from President Hu Jintano's speech to People's Congress in October 2000 "China's Development journey"

- After World War II, Japan went all out to import and digest advanced technologies from other countries. Later large enterprises all worked hard to come up with their own technology and most of the medium and small companies also spent decades in developing unique skills of their own and even created some world leading technological marvels, which served as a key driving force behind Japanese products competitiveness in the International Markets. Many Japanese put R& D as their core values.
- In the last two decades, China has used its access to open global markets to drive spectacular economic growth. It has lifted more people out of poverty more quickly than ever in human history. This growth is both a challenge and an opportunity for us in USA.
- China is not just the workshop of the world. It is a trade power, right at the Center of the Global economy and responsible for effective running of the global trading system.
- For many societies, when first the basic needs of Food, Shelter and Clothing are met, the people turn to Innovations. China and India are at that Cross Roads now.

Some innovative ideas that came from India

- Design of a new combustion chamber that dramatically improves fuel efficiency and acceleration of the vehicle.
- Script mail which you can input as a command into a computer by writing it in the language you know
- Food preservation - Keeps the food sealed, safe and nutritious for months on end
- Nanotubes- Helps create astonishingly sensitive devices with applications ranging from stealth to fighting disease

Some innovative ideas that came from China

- **Paper:** In 105 A.D. Cai Lun, a eunuch during the Eastern Han Dynasty, invented paper from worn fishnet, bark and cloth. These raw materials could be easily found at a much lower cost so large quantities of paper could be produced.
- **Gun Powder:** It was first invented inadvertently by alchemists while attempting to make an elixir of immortality. It was a mixture of sulphur , saltpeter, and charcoal.
- **Compass:** During the Warring States period, a device called a Si Nan became the forerunner of the compass. A Si Nan was a ladle-like magnet on a plate with the handle of the ladle pointing to the south. In the 11th century, tiny needles made of magnetized steel were invented. One end of the needle points north while the other points south. The compass was thus created.
- **Tea:** An unknown Chinese inventor invented the tea shredder, a small device that shredded tea leaves in preparation for drinking. The tea shredder used a sharp wheel in the center of a ceramic or wooden pot that would slice the leaves into thin strips.

Concluding

- India has 380 universities and 11,200 higher-education institutions churning out around 6,000 PhDs and 200,000 engineers, 300,000 science graduates and post-graduates annually. R&D investment has been growing at a compounded annual growth rate of more than 40%.
- The 3 important I's to remember: Invent, Improve, and Innovate in ways that generate the necessary payback: profits, knowledge, or an enhanced brand or organization.
- Innovation is not a black art, a roll of the dice, or a creative free-for-all. It is a combination of deliberate risk-taking, close management of a well-defined process, alignment of all the elements of the organization, and an unrelenting and highly disciplined focus on achieving payback.
- Innovation is here to stay; It is essential for our survival. You can ride along with it or get run over by it. The choice is all yours!!!

Contact information

Dr. Sulekh C. Jain
Houston, Texas, USA
281 494 7656
832 594 8005



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