MANAGING INNOVATION FOR EXCELLENCE IN KNOWLEDGE MANAGEMENT
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Can we talk of managing innovation at all? Innovation apparently occurs in an unpredictable manner and managing on the other hand involves an element of planning. In fact it is worth recalling what Jack Welch says about productivity and management.

> *"The world of the 1990s and beyond will not belong to 'managers' or those who can make the numbers dance. The world will belong to passionate, driven leaders – people who not only have enormous amounts of energy but who can energize those whom they lead."*
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> *"I simply dislike the traits that have come to be associated with 'managing' – controlling, stifling people, keeping them in the dark, wasting their time on trivia and reports. Breathing down their necks. You can't manage self-confidence into people. You have to get out of their way and let it grow in them by allowing them to win, and then rewarding them when they do. The word manager has too often come to be synonymous with control – cold, uncaring, button-down, passionless. I never associate passion with the word manage, and I've never seen a leader without it."*
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> *"Somebody who can develop a vision of what he or she wants their business unit, their activity to do and be. Somebody who is able to articulate to the entire unit what the business is, and gain through a sharing of discussion – listening and talking – an acceptance of the vision. And [some on] who then can relentlessly drive implementation of that vision to a successful conclusion."*
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> *"Too often we measure everything and understand nothing. The three most important things you need to measure in a business are customer satisfaction, employee satisfaction, and cash flow. If you're growing satisfaction, your global market share is sure to grow, too. Employee satisfaction feeds you productivity, quality, pride and creativity. And cash flow is the pulse –the key vital sign of a company."*
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> *GE leaders always with unyielding integrity*
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> - *Create a clear, simple, reality based customer focussed vision, and are able to communicate it straightforwardly to all constituencies*
> - *Reach, set aggressive targets, recognize and reward progress, while understanding accountability and commitment*
> - *Have a passion for excellence, hate bureaucracy, and all the nonsense that comes with it*
> - *Have the self confidence to empower others and behave in a boundaryless fashion; believe in and are committed to workout as a means of empowerment, are open to ideas from any where*

- *Have, or have the capacity to develop, global brains and global sensitivity, and are comfortable building diverse and global teams*
- *Have enormous energy and the ability to energize and invigorate others, stimulate and relish change and not be frightened or paralysed by it, see change as an opportunity, not a threat*
- *Possess a mindset that drives quality, cost and speed for a competitive advantage*

"Growing productivity must be the foundation of everything we do. We've been chasing it at GE for years. We once thought we could manage it into business operations, with control and hierarchies and vinyl books with charts. All we did was stifle people, sit on them, slow them up, and bore them to death. In the early 80s we fell in love with robots and automation and filled some of our factories with them as our employees looked on sullenly and fearfully. It didn't work.

We now know where productivity – real and limitless productivity – comes from. It comes from challenged, empowered, excited, rewarded teams of people. It comes from engaging every single mind in the organisation.

When a business becomes productive it gains control of its destiny."

"Productivity is not the squeezing our of a rag. Productivity is the belief that there's an infinite capacity to improve anything."

"What we have done has barely scratched the surface. It turns out that there is, in fact, unlimited juice in that lemon. The fact is, this is not about squeezing anything at all; it is about tapping an ocean of creativity, passion, and energy that as far as we can see, has no bottom and no shores."

"Just as surely as speed flows from simplicity, simplicity is grounded in self confidence. Self confidence does not grow in someone who is just another appendage on the bureaucracy… whose authority rests on the bureaucracy….. whose authority rests on little more than a title….. people who are freed from the confines of their box on the organisation chart, whose status rests on real world achievement…. Those are the people who develop self confidence to be simple, to share every bit of information available to them, to listen to those above, below and around them, and then move boldly.

2. If the icon for management in the 20^{th} century thinks that management is really controlling and by controlling you cannot produce any innovation, are we facing an oxymoron in this term of "managing innovation?"

3. A little reflection will show that perhaps there is an indirect relationship between managing and innovation. Innovation it is true ultimately depends on the individuals and their bright spark of ideas. But what can be done by managing is to create an environment in which such innovation can flourish. Perhaps the best example of managing innovation is the United

States. The American government has policies of citizenship in such a way that it tries to attract the best talent. The first point in managing innovation should be to get the right people in the organisation and give them the freedom to exercise their imagination and skills. At a corporate level we have all seen how 3M has a policy of ensuring that at least 40% of its turnover comes from products that did not exist four years ago. This in turn would mean building a culture in which there is easy exchange of information. The PostIt pad is an example of such culture. Further 15% of the company's time can be used by every employee on his pet project, according to the policy of 3M.

4. Another example of managing innovation is the way in which the American patent regime system operates compared to the Indian system. Sam Pitroda studied in India and went to United States and got half a dozen patents which made him rich by about 25 million dollars. After this he could come and do wonders in India. If he was in India he would not even have got a single patent because in India it takes six years to get a patent whereas in America the average time is 22 months. We should therefore make a distinction when we talk about managing innovation and the enormous significance of the talented individual who has to be nurtured, which is at the root of innovation, and simultaneously creating environment in which such talent can flourish.

5. Mukesh Ambani made a point in a talk that 40% of his employees were public sector employees. While they were in the public sector they could not innovate but when they are in the private sector they are able to perform extremely competently and innovatively. Again this brings out the significance of managing the environment to nurture innovation.

6. We are not only exploring managing innovation but the focus is on excellence in knowledge management. For this we will have to first understand what is knowledge management.

7 We are living today in a knowledge economy. This will be obvious if we compare a product like steel with software. One kilogram of steel is 90% iron, cobalt, nickel, manganese, chromium etc and 10% is the steel technology. On the other hand, in software, 95% is knowledge or technology and hardly 5% is the material. The dominant role played by knowledge in the economy therefore is obvious.

8 It is therefore not surprising that the most dominant technology today is information technology. The human kind has progressed because of better management information but there is a hierarchy of refinement in the impact of the information gathered. We move from data to information to knowledge and on to wisdom. We can therefore appreciate that when a poet like T S Eliot says "Where is the wisdom we have lost in knowledge and where is the knowledge we have lost in information". Perhaps we can add today "where is the information we have lost in data".

9 As the economy becomes increasingly dependent on knowledge we have to manage the knowledge. Perhaps we can consider knowledge management as an exercise in wisdom. There are people who define wisdom as knowledge with experience. But for professionals in product management, software engineers, sales and marketing, human resources, training, quality,

strategists and knowledge workers, the important point is to have skills for knowledge management or the wisdom for how to utilize the human capital available in an organization and the knowledge available with them effectively. The knowledge available with the human capital in any organization consists of two elements. One element is the skill of doing any activity. The other is the experience content which provides the requisite critical input needed about which type of skill is to be adopted. In fact knowledge management has also meant somehow to capture in the computer or the information system this elusive X element of individual's skill. For example an experienced surgeon has not only a high degree of information and knowledge about the particular area of surgery. He also has tremendous skill in applying that knowledge by performing the operations. When in every operation he comes across critical challenges, it is this X factor of the knowledge he has which helps him to find out the solutions and the right choice at the right time and right place. Having an idea about why our economy today is a knowledge economy and the significance of information technology and how we move across the spectrum from data to information to knowledge and wisdom and appreciating the significance of knowledge and knowledge management, we can now take up this issue of the strategies for a knowledge economy.

10 I think the most elementary strategy must be to somehow ensure that one is able to pick up the brains of the people around oneself in any organization for management. As an IAS officer I have realised that the most important strength of IAS is ignorance. IAS officers are generally put in charge of departments at fairly high levels. The danger the IAS officer faces is that he may think that like the Vikramaditya's throne which is supposed to confer wisdom on anyone who sat on it, the chair in which a person sits because of his position automatically confers wisdom on him, which is not true. I have realised right through my career that I am ignorant on many subjects. So the first method I adopted for the last more than 32 years was to send questionnaires to all the officers who work with me in the entire organization on the day of my taking over charge of any department or at best within a week. For example when I became Chairman, Telecom Commission, I sent questionnaires to almost 5000 officers. In the questionnaire I put across basic questions like "what is the objective of the organization" "are we reaching the objectives" "if not, why not" "what are the problems we are facing and how they can be tackled" "is your talent being fully utilized" "are we doing things which we need not do and are we not doing things which we need to do". I gave a time of 30 days for reply. Normally 15-20% of the people replied and that gave an opportunity to me to get an immediate feedback about how out of the total people working in an organization only 15% will perform within a time limit and those who were thinking about the job. In this way, probably I got not only access to information but also developed knowledge by reading the information and with these ideas developed new strategies about what action should be taken in the organization. I find that Jack Welch has been using the same strategy in his workouts.

11 In this age of the knowledge economy as Andrew Grove points out in his book ONLY THE PARANOID SURVIVE it is only companies which come up with imaginative solutions who will succeed. In an article on 4.12.1999, the Economist pointed out how big companies are getting afraid of small companies.

Innovation has become the buzzword of American management. Firms have found that most of the things that can be outsourced or re-engineered have been (worryingly , by their competitors *as well) the stars of American business tend today to be innovators such as Dell, Amazon and Wal-Mart, which have produced ideas or products that have changed their industries.*

A new book by two consultants from Arthur D Little records that, over the past 15 years, the top 20% of firms in an annual innovation poll by Fortune Magazine have achieved double the shareholder returns of their peers. Much of today's merger boom is driven by a desperate search for new ideas. So is the fortune now spent on licensing and buying other's intellectual property. According to the Pasadena-based Patent & Licence Exchange, trading in intangible assets in the United States has risen from $15 billion in 1990 to $100 billion in 1998, with an increasing proportion of the rewards going to small firms and individuals

And therein lies the terror for big companies: that innovation seems to work best outside them. Several big, established "ideas factories", including 3M, Procter and Gamble and Rubbermaid, have had dry spells recently. Gillette spent ten years and $1 billion developing its new Mach 3 razor; it took a British supermarket only a year or so to produce a reasonable imitation. "In the management of creativity, size is your enemy" argues Peter Chermin, who runs the Fox TV and film empire for News Corporation. One person managing 20 movies is never going to be as involved as one doing five movies. He has thus tried to break down the studio into smaller units, even at the risk of incurring higher costs.

It is easier for ideas to thrive outside big firms these days. In the past, if a clever scientist had an idea he wanted to commercialise, he would take it first to a big company. Now with plenty of cheap venture capital, he is more likely to set up on his own. Umagic has already raised $5 million and is about to raise $25 million more. Even in capital intensive business such as pharmaceuticals, entrepreneurs can conduct early stage research, selling out to the big firms when they reach expensive, risky clinical trials. Around a third of drug firms total revenue now comes from licensed-in technology.

Some giants, including General Electric and Cisco have been remarkably successful at snapping up and integrating scores of small companies. But many others worry about the prices they have to pay and the difficulty in hanging on to the talent that dreamt up the idea. Everybody would like to develop more ideas in-house. Procter & Gamble is now shifting its entire business focus from countries to products; one aim is to get innovations accepted across the company. Elsewhere, the search for innovation has led to a craze for "intrapreneurship" - devolving power and setting up internal ideas-factories and tracking stocks (so that talented staff will not leave).

Nobody could doubt that innovation matters. But need large firms be quite so pessimistic? A recent survey of the top 50 innovations in America, by Industry Week, a journal, suggested that ideas are as likely to come from big firms as from small ones. Another sceptical note is sounded by Amar Bhide, a colleague of Mr Christensen's at the Harvard Business School and the author of another book on entrepreneurship. Rather than having to reinvent themselves, big companies he believes, should concentrate on projects with high costs and low uncertainty leaving those with low costs and high uncertainty to small entrepreneurs. As ideas mature and the risks and rewards become more quantifiable, big companies can adopt them.

Indeed the current panic in many large firms may be driven less by any real crisis of innovation than by the inflated valuations of small Internet firms. Those valuations siphon away talented staff from big companies; they also allow companies without profits to remain independent, rather than becoming the prey of a big real world company. And of course there is the psychic drumbeat of jealousy. Amazon is taking business from real-world booksellers, but would a profitable established retailer such as Barnes and Noble really be going quite so bananas if it was worth more than a profitless virtual rival such as Amazon?

Adding to the big company's feelings of inadequacy is the way the concept of innovation is being stretched beyond product pipelines and R&D budgets. Ronald Jonash of Arthur D Little points to how Chrysler built partnerships with suppliers. Wayne Sanders, the boss of Kimberly-Clark, thinks that innovation must include how the firm deals with retail customers and how it integrates mergers. Even in Kimberly-Clark's somewhat earthy industry, marketing ideas - for instance - selling toilet paper because it cleans well rather than because it is even softer - can be just as innovative as technological ones. No wonder firm's feel that innovation is threatening them form every side.

And yet, even though the insecurity about innovation is getting out of hand, the basic truths are hardly comforting. Unlike cutting jobs, or making an acquisition, innovation does not happen just because the chief executive wills it. Indeed it is confoundedly difficult to come p with new ideas year in, year out - especially brilliant ones. Underneath all the guru's diagrams, lists and charts, most of the available answers seem to focus on two strength that are difficult to create by diktat: a culture that looks for new ideas and leaders who know which ones to back.

12 The question therefore is how do we maintain a sense of creativity in the knowledge economy? Perhaps the best model is 3M which itself as mentioned above may be afraid of new companies. 3M has a culture in which there is free interaction between different divisions and also as a company policy it allows 15% of the time of the employees to be employed in creative and pet projects. That is how they could maintain their policy that at least 30% of the sales should come from the products that did not exist four years ago. This would mean continuous innovation and a culture of innovation has to be built in. Here the basic management principle that he values which an organisation cherishes have to be built up in its systems and procedures. After all as Jeremy Porrass and James Collins pointed out, the companies which outlive normal companies which have a life time of only 15-20 years are visionary companies because they are able to build values into their systems and procedures. Peters and Watermann also pointed out in their book IN SEARCH OF EXCELLENCE that hands on value driven is one of the characteristic of an excellent company.

13 For building this spirit of innovation into the organization, one can perhaps follow the work out method of Jack Welch or the standard suggestion scheme. When I was Managing Director of the Gujarat Narmada Valley Fertiliser Company (GNFC) I organized a suggestion scheme. Every Saturday we used to collect suggestions and within eight week we took decisions about accepting or rejecting suggestions. Every four weeks we were giving awards to the suggestions that were accepted in the presence of the workers, top management and union leaders of the company. The net result was that in five years we got about 5000 suggestions out of which 450 were accepted. The company made a profit of Rs.65 lakhs per year from these

suggestions and the total cash award given during the entire period of five years was about Rs.1 lakh. It shows that there was tremendous potential in the human beings if you only know how to tap them.

14 Another method of encouraging creativity would be to adopt the technique of six hat thinking or lateral thinking championed by Edward De Bono or by going in for brain storming sessions. The whole idea is that one should not be satisfied with the level of innovation or performance and one should be constantly aiming for improvement.

15 After all why should one think of ideas from only within the organization? We can also tap ideas from especially the customers, suppliers and even competitors. After all Japan made remarkable progress in the 70s and 80s by the art of what is called follower-ship and not leadership. One need not invent a new technology but one can follow up and improve upon the performance so that the follower beats even the pioneer.

16 Or one can go totally outside the system and try to tap the young brains. For example in 1997 Bill Gates came all the way to India to give awards to a dozen youngsters in the age of 8 to 18 who had participated in a contest conducted by Microsoft. I asked the boy who was a winner who was sitting next to me "What was your answer in the contest". He said that he was asked to define a cool computer and his reply was, "A cool computer must be able to mend broken hearts". That gave him an award. The winners, the boys and girls were taken to Seattle to the Microsoft headquarter and encouraged.

17 Some years back I read for example how Sony conducted an international competition about what the future of the TV was going to be, in which a boy from Chennai got an award. So in the age of the knowledge economy the top management should be constantly acting as a radar scanning all horizons and tapping ideas not only from within the organisation or the network in which the company operates but also outside in the general environment.

18 We can therefore look up at the entire knowledge management as consisting of three dimensions. One dimension is the need for continuous quest for improvement, development of new knowledge, new ideas, new horizons to explore and skill required. The second dimension is honing the skills and perfecting them so that gains are got through productivity and quality by application of skills. The third is trying to capture the elusive X factor by techniques like consulting the most advanced, productive people and making them articulate them and record it in a readable form. We can also use multimedia so that the training is better. Mentioning perhaps may be one method by which one can build a system by which the knowledge, skill and wisdom is transmitted through a process of osmosis of knowledge.

19 Excellence is a word which was made popular by Peters & Waterman in the book "In Search of Excellence" became a Management classic in 1982. They identified the following eight factors of a excellent company

- Bias for action
- Close to the customer,
- Autonomy and entrepreneurship

- Productivity through people
- Hand on value driven
- Stick to the knitting
- Simple form lean staff
- Simultaneous loose tight properties.

20 We have seen therefore the significance of managing innovation, the concept of excellence and what knowledge management means. How are we going to create such an environment? I think the first challenge of managing innovation for excellent environment is attracting and retaining the talent. Attracting and retaining talent means that one must be able to practice the policies of good corporate governance. Good corporate governance means having transparency so that accountability can be fixed and the right value given to those who invested in the system. The Companies, which are perceived to be corrupt, do not attract talent or retain talent for long. Enron is a recently classic instance of how a company may go gloriously and ultimately collapse because of lack of values. So I would suggest in the era of globalisation, absolute transparency in the system is vital to develop credibility and ultimately success in the market place.

21 This would mean that the systems and procedures should be based on the dignity of the individual. Every individual must feel that he is getting fair treatment and system is transparent so that the atmosphere for innovation is created. When I was the Managing Director of Gujarat Narmada Valley Fertilizer Company, I introduced the suggestions scheme. One of our anxieties was whether the suggestions given by the juniors to the seniors will be appropriated by the latter and credit derived to the juniors. Fortunately, it did not happen, because I think basically we have started with a young set of people in the Company. The average was thirty. Suggestions were collected every Saturday, within eight weeks a decision was taken about accepting or rejecting and every fourth week awards were given in presence of Unions and senior Managers of the Company. In addition to financial incentives, there were non-financial incentives by way of Roll of Honour in every plant in Ammonia, Urea, Sulphur recovery etc where the names were prominently displayed of those who have made contribution by their suggestions. The net result was over a period of five years between 1982-87, five thousand suggestions were received and 450 were accepted. The Company made a profit of Rs.65 lakhs per annum on these suggestions and the total cash awards given during the entire period of five years was just one lakh of rupees. It shows the tremendous scope in human potential. The suggestion scheme can be became a simple method of managing innovation and encouraging ideas.

22 Jack Welch had followed a more aggressive strategy of workouts. Again, as the passage quoted at the beginning of this paper shows he was out to remove the bureaucracy, which stifles innovation and release the energy of the people. It will call for a very serious commitment at the top-level executives, if the Jack Welch strategy is to be adapted. It is not only the procedures and systems but also the commitment of the top management that is responsible for creating the right management environment. A third approach to managing innovation may be to use standard management techniques but use them in combinations or in an innovative way to get better results. These are 1) The industrial engineering techniques of elimination, combination, resequencing, substitution and modification; 2) business process reengineering; and 3) brain storming, 4)Lateral thinking strategies recommended by Edward De Bano can be very useful.

23 There are other methods of innovation. Instead of only looking for talent within the organisation, one can look for talent outside. This could be of two types. One would be going for well-established consultants who can be stimulating and give better ideas. The other would be to tap the fresh brain of youngsters. I have seen, for example, Microsoft conducting competition for Indian students in the age of 8-18 and rewarding them to tap their brains about innovative methods of designing computers and what could be done in IT. How many of our Indian companies have done this I wonder? It is really surprising that Microsoft from the U.S. can come and tap our youngsters' brains but our own companies seem to be indifferent to the idea.

24 Another method may be to recall the suggestion of the Bhagavat Gita given in the second chapter is one of the characteristics of *stitapragna*. According to Lord Krishna the stitapragna keeps awake when others sleep and vice-versa. Probably, there is a need for contrary thinking being deliberately developed to encourage innovation.

Ya nisha sarva boothanam tasyam jagriti samipmi
Yasyam jagriti boothani sa nisha pashyato muney

25 Ultimately, in the age of knowledge economy, they are looking at human being as not only as human resources but also as human capital. The significance of the individual is increasingly recognised. Because in knowledge economy when the employee walks out he takes actually also a part of the capital of the enterprise of the day. So the best method may be to have a collective enterprise of coming together enjoying together, pulling the skills available, moving from darkness to light, removing the poison of misunderstanding and hatred. That advise of Taittiriya Upanishad is still be a reliable formula for managing innovation and excellence in management in the twenty first century.

Sahanavavatu sahanau bhunaktu Sahaveeryam karavavahai
Tejasvinavadheetamastu mavidvishavahai Om shanti shanty shantihi.

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