Leadership for India Inc: Practical Concepts and Constructs

Prof. C Bhaktavatsala Rao
Prof. Ajit Singhvi
Department of Management Studies
Indian Institute of Technology, Madras

Week - 09
Transformational Leadership Models – 1
Lecture - 44
Intellectual Leadership Model

Hi Friends. Welcome to the NPTEL course Leadership for India Inc: Practical Concepts and Constructs. We are in week 9, discussing Transformational Leadership Models part 1. In this lecture, we will focus on Intellectual Leadership Model.

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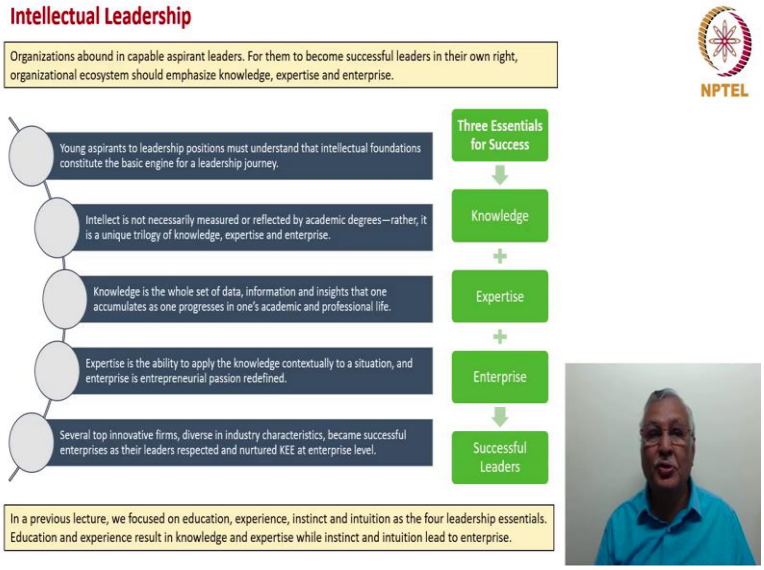

We have considered intellect as one of the dimensions of the cubic leadership model in the earlier lecture. In this lecture, we will develop this concept further and also try to understand three factors that are extremely important for developing and unlocking the intellectual leadership potential in everyone.

Organizations abound in capable aspirant leaders. For them to become successful leaders in their own right, organizational ecosystem should emphasize knowledge, expertise and enterprise. Young aspirants must also understand that the intellectual foundations they generate or they develop would constitute the basic engine for a leadership journey.

Intellect is not necessarily measured or reflected only by academic degrees – rather it is a unique trilogy of knowledge, expertise and enterprise. Knowledge is the whole set of data, information and insights that one accumulates as one progresses in one's academic and professional life.

Expertise is the ability to apply the knowledge contextually and consistently to a situation, and enterprises entrepreneurial passion redefined. Several top innovative firms, diverse in industry characteristics, became successful enterprises as their leaders respected and nurtured the KEE trilogy at enterprise level.

In a previous lecture, we focused on education, experience, instinct and intuition as the four leadership essentials. Education and experience result in knowledge and expertise while instinct and intuition lead to enterprise.

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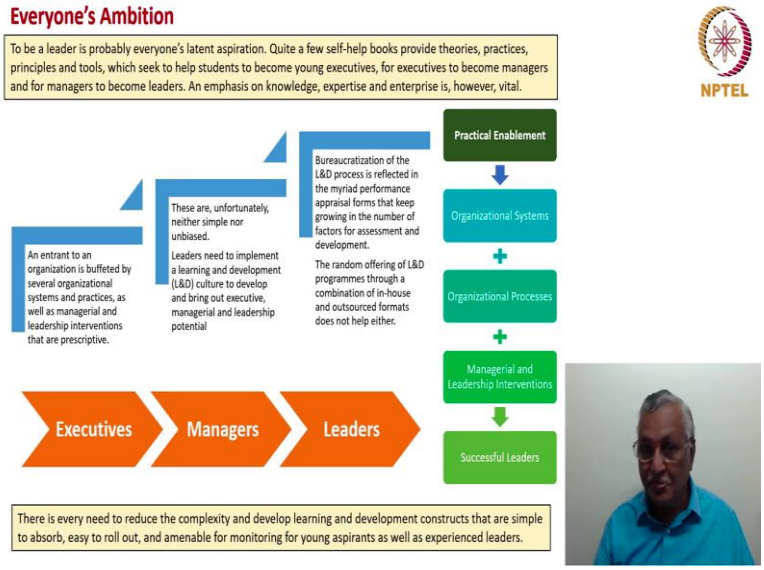

It is everyone's ambition to become a leader. It is probably latent in every individual. There are several self help books that provide theories, practices, principles and tools for students to become young executives, for young executives to become managers and for managers to become leaders.

An emphasis on knowledge, expertise and enterprise is however vital. We need to understand the ecosystem enablers for this to happen. An entrant to an organization is

buffeted by several organizational systems and practices as well as managerial and leadership interventions. And all of these are either normative or prescriptive.

These are unfortunately, neither simple nor unbiased. Leaders need to implement a learning and development L&D culture to develop and bring out executive, managerial and leadership potential in young executives. Bureaucratization of the L&D process is reflected in the fact that performance appraisals only tend to become larger and more complicated in terms of the factors for assessment and for development.

The random offering of L&D programs through a combination of in-house and outsourced formats does not help either as young entrants try to become successful executives and then managers and then leaders. There is every need to reduce the complexity and develop learning and development constructs that are simple to understand, absorb and easy to roll out. These should be amenable for monitoring for young aspirants as well as experienced leaders.

At a practical level, if we have organizational systems, organizational processes and managerial and leadership interventions in such a manner that learning and development for the purpose of enhancing knowledge, expertise and enterprise are in place successful leaders would emanate in such an ecosystem.

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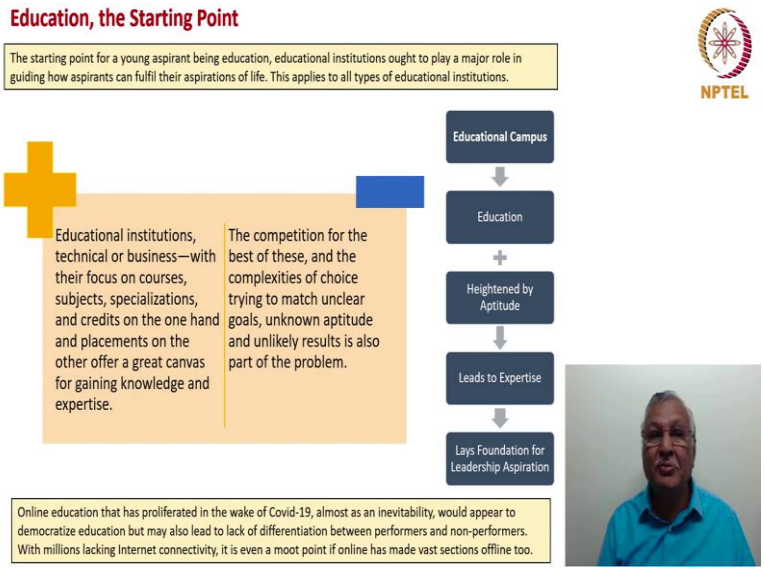

Education of course, is the starting point. Educational institutions ought to play a major role in guiding how aspirants can fulfill their aspirations of life. This applies to all types of educational institutions whether they are of Ivy League type or non-Ivy League type. Similarly, educational institutions whether they are technical or business in their context and despite their focus on courses, subject, specializations, and credits on one hand. And placements on the other should look at essentially offering a canvas for gaining knowledge and expertise.

The competition for the best of these, and the complexities of choice trying to match unclear goals, unknown aptitude and unlikely results, as far as one individual or any individual is concerned is also part of the problem.

Online education that has proliferated in the wake of COVID-19, almost as an inevitability, would appear to democratize education but may also lead to lack of differentiation between performance and non-performers with millions of our population lacking internet connectivity.

It is also a moot point if online has made vast sections of our population offline too in terms of educational requirements.

So, how do we handle this? Educational campus must be the hub of knowledge and expertise and to be able to do that we should have an appropriate suite of educational programs which should be taken by an individual based on the aptitude and then expertise would automatically come along with knowledge and this lays the foundation for leadership aspiration. In always and always education is the starting point for the KEE trilogy.

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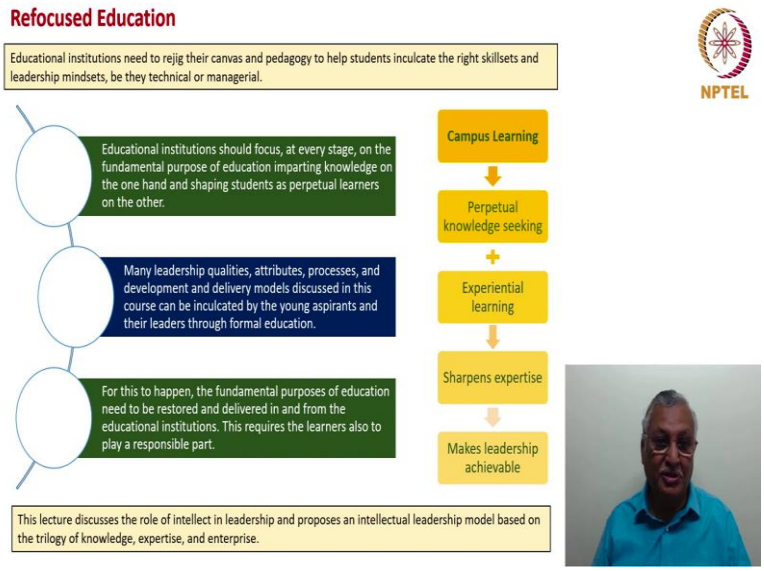

To help students attain their fullest leadership potential both within the campus as well as outside educational institutions need to rejig their canvas and pedagogy. This will help students inculcate the right skill sets and leadership mindsets, be they technical or managerial.

Educational institutions should focus, at every stage, on the fundamental purpose of education imparting knowledge on the one hand and shaping students as perpetual learners on the other. Many leadership qualities, attributes, processes, and development and delivery models discussed in this course can be inculcated by the young aspirants and their leaders through formal education.

For this to happen, the fundamental purposes of education need to be restored and delivered in and from the educational institutions. This requires the learners also to play responsible part. Campus learning must be one crucible of perpetual knowledge seeking. There must be experiential learning which should sharpen expertise and make leadership achievable.

This lecture discusses the role of intellect in leadership and proposes an intellectual leadership model based on the trilogy of knowledge, expertise and enterprise.

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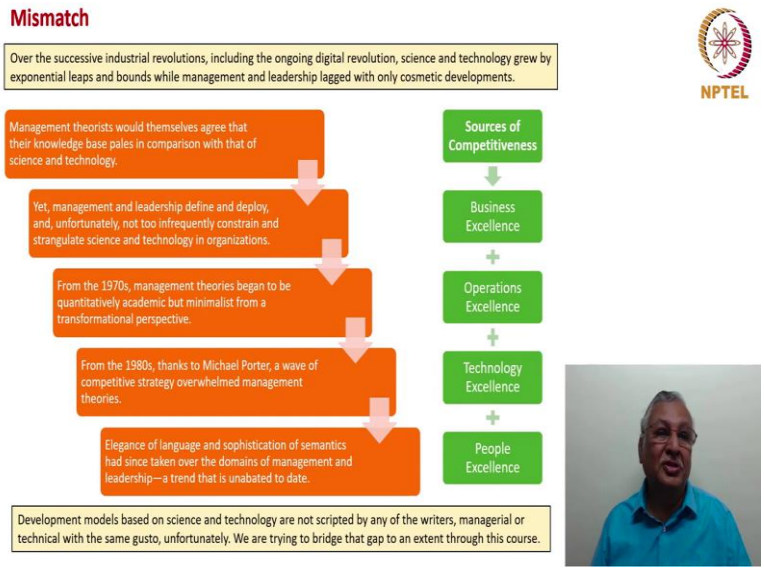

Over the successive industrial revolutions, including the ongoing digital revolution, science and technology grew by exponential leaps and bounds while management and leadership lagged with only cosmetic developments. Management theories themselves would agree that their knowledge base pales in comparison with that of science and technology in terms of bringing forth new concepts and new validated hypotheses and theorems.

Yet, management and leadership define and deploy and unfortunately not too infrequently constrain and strangulate even science and technology in organizations. From the 1970s, management theories began to be quantitatively academic in terms of publishing of papers or publishing of review notes, but minimalist from a transformational perspective. From the 1980s, thanks to Michael Porter, a wave of new thinking and writing on competitive strategy overwhelmed management theories.

Elegance of language and sophistication of semantics had since taken over the domains of management and leadership – a trend that is unabated to date. Sources of competitiveness are seen in terms of business excellence, operational excellence and somewhat in terms of technology excellence and people excellence. These are the four aspects of competitiveness that are being discussed and provided as management theories by the new age gurus.

Yet, development models based on science and technology are not scripted to the extent that is required by any of the writers, managerial or technical with the same gusto, as they would on business excellence and operations excellence. We are trying to bridge that gap to an extent through this course.

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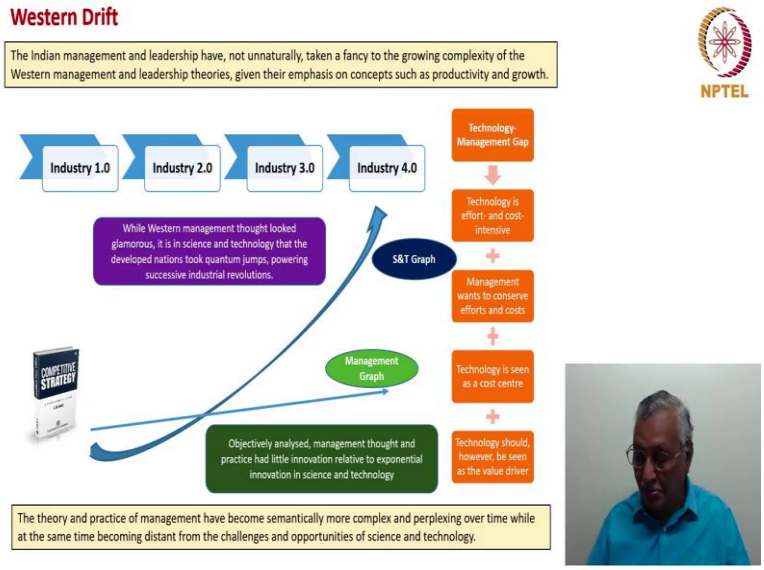

The Indian management and leadership have, not unnaturally, taken a fancy to the growing complexity of the Western management and leadership theories, given their emphasis on concepts such as productivity and growth which are seen to add value to a business. Industry 1.0 to industry 4.0, the progress of Western management thought certainly looked glamorous.

But, it is in the science and technology domains that the developed nations took quantum jumps powering successive industrial revolutions. Japan as a nation does not have the kind of structured management programs as the Western world has. However, Japan has become a leader in terms of technological development as well as business development.

So, there is definitely something to look at in this. If you see the S and T graph, it has grown exponentially as a conceptual depiction. However, the management graph in terms of the relevant theories and practical applications has only grown in incremental way. Objectively analyzed, management thought and practice had little innovation relative to exponential innovation in science and technology.

Some of these aspects I have covered in my book Competitive Strategy, a Contemporary Retake. So, when you look at this technology management gap, you will appreciate that many leaders consider technology as being effort and cost intensive. As a result, managers and leaders want to conserve efforts and costs of technology. Technology is seen to be a cost center whereas, the truth must be that it is a value driver.

The theory and practice of management have become semantically more complex and perplexing over time while at the same time becoming distant from the challenges and opportunities of science and technology. Again, through this course, it is my endeavor to bridge this gap and also restore technology to a position of importance in management thought.

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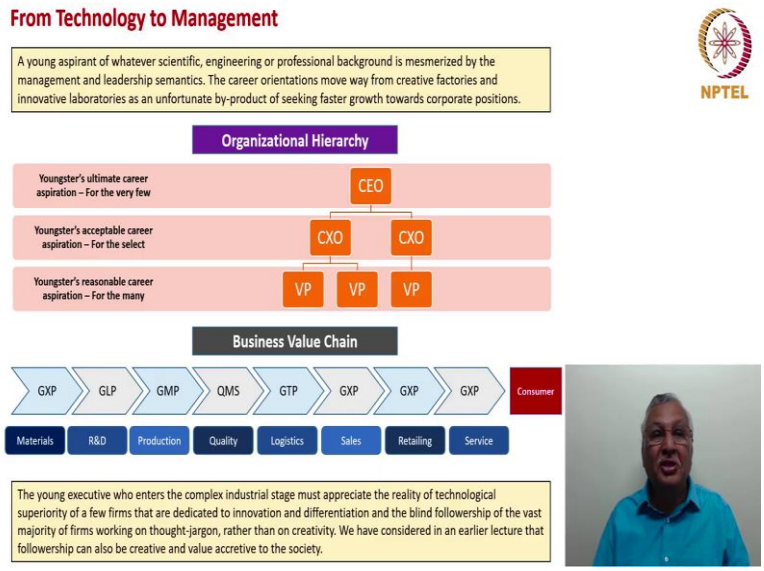

From technology to management, how does this work out? A young aspirant of whatever scientific, engineering or professional background is often mesmerized by the management and leadership semantics. The career orientations move away from career factories and innovative laboratories as an unfortunate by-product of seeking faster growth towards corporate positions.

Organizational hierarchy which typically could be seen in terms of three layers at the very top level attracts youngsters in a very interesting manner, for a youngster with a reasonable career aspiration and which could be many people amongst the young crowd. Being a vice president by the end of the career could be a laudable objective.

For certain other youngsters who are more aggressively poised towards career growth, being a CXO is a career goal and for a very ambitious and aggressive youngster becoming a CEO is the aspiration. However, all of these career progressions are being looked at generally from a position of being in a corporate office or be in a position to control multiple sites and multiple domains.

The real challenge that an youngster must have in terms of creating wealth through innovation on the shop floor, in the R&D laboratory or in terms of design thinking at the marketplace is not getting the kind of attention that it must have. If you see the business value chain in a particular pharmaceutical company, it starts as a good laboratory practice when I say GXP; X can be replaced by any letter.

So, it starts with good laboratory practice in the R&D division, then goes to good manufacturing practice, then quality management system, good transportation practice, then good sales practice, good retailing practice and again good service practice. All of these things from materials procurement to final servicing of the product after the sales process benefit the consumer and therefore, benefit the firm.

In all of these value chain components, there are huge leadership opportunities and those leadership opportunities can completely transform the way that part of the value chain gets executed and therefore, how the total value chain gets executed in the company. But, many people are not aspirational to put their knowledge, expertise and enterprise in those areas, rather they would like to be corporate executive.

The young executive who enters the complex industrial stage must appreciate the reality of technological superiority of a few firms that are dedicated to innovation and differentiation and the blind followership of the vast majority of firms working on thought-jargon, rather than on creativity. This differentiation youngster must have.

We have considered in an earlier lecture that followership can also be creative and value accretive to the society, why are science and technology based the startups found to be so valuable, even when pharmaceutical products are only in phase 1, phase 2 or phase 3 they would have valuations of US dollar 1 billion to US dollar 10 billion depending upon the nature of the products to be acquired by the big pharmaceutical companies.

It is because of the value that has been brought up by science and technology in such startup forms. This appreciation must seep in from a young age and that can seep in from a young age only when the educational institutions also endeavor to really take up science and technology as the key driver of leadership potential in youngsters.

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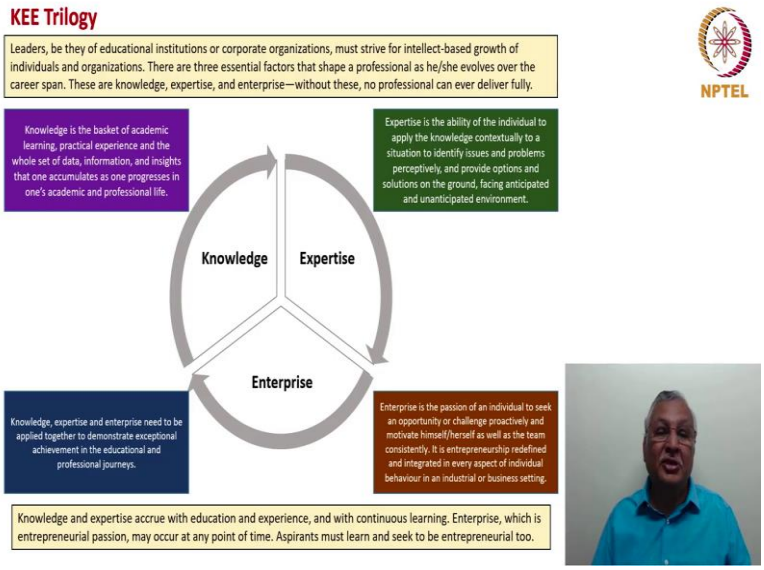

So, what is this KEE trilogy as I propose? Leaders be they of educational institutions or corporate organizations must strive for intellect based growth of individuals and organizations. The three essential factors that shape a professional as he or she evolves over the career span are knowledge, expertise and enterprise, without these no professional can ever deliver fully.

Knowledge is the basket of academic learning, practical experience and the whole set of data, information, and insights that one accumulates as one progresses in one's academic and professional life. Expertise is the ability of the individual to apply the knowledge contextually to a situation to identify issues and problems perceptively and provide options and solutions on the ground, facing anticipated and unanticipated environment of course, in this process.

Enterprise is the passion of an individual to seek an opportunity or challenge proactively and motivate himself, herself as well as the team consistently. It is entrepreneurship redefined and integrated in every aspect of individual behavior in an industrial or business setting. This would actually not be a new concept for you. You would have

heard the term this individual is enterprising; this company is an enterprising, this is an enterprising way of reaching out to the customers.

So, the concept of enterprise is felt by you knowingly or unknowingly. What I am trying to do is to bring the entrepreneurial flavor of the concept of enterprise into our day to day activities. When you have knowledge, expertise and enterprise together and they are applied together you can demonstrate exceptional achievement in the educational and professional journeys.

As I said, knowledge and expertise accrue with education and experience and with continuous learning. Enterprise, which is an entrepreneurial passion in a variation, may occur at any point of time. Aspirants must learn and seek to be entrepreneurial too.

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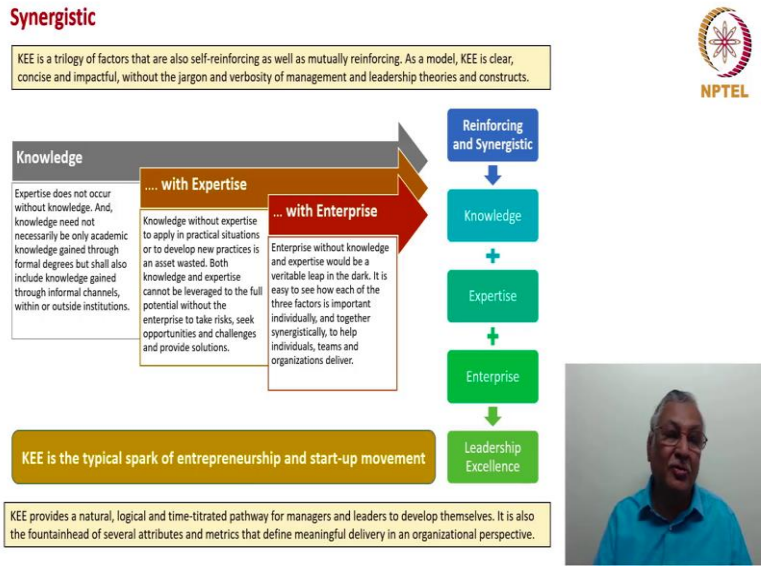

KEE is a trilogy of factors that are also self-reinforcing as well as mutually reinforcing. As a model, KEE is clear, concise and impactful, without the jargon and verbosity of management and leadership theories and constructs. Expertise cannot occur without knowledge.

And, knowledge requires a lot of study, lot of understanding of basic concepts the fundamentals of science, technology and arts. And, it did not necessarily be academic knowledge as I said earlier, but should also include practical knowledge it could occur with degrees or without degrees.

Knowledge without expertise that could be applied in practical situation is an asset that is wasted. We need both knowledge and expertise to be able to contribute to our organizations or to contribute to ourselves as individuals. However, both knowledge and expertise need enterprise to be able to have the optimal impact.

And, this enterprise enables an individual to take risks, seek opportunities as well as challenges and provide solutions. That said, having only enterprise without knowledge and expertise is like taking a leap into the dark. It is therefore, easy to see how each of the three factors is important individually and together synergistically to help individual's, teams and organizations deliver.

KEE is the typical spark of entrepreneurship and start-up movement that exists in entrepreneurial and start-up firms. It is a natural, logical and time-titrated pathway for managers and leaders to develop themselves. It is also the fountainhead of several attributes and metrics that define meaningful delivery in an organizational perspective. Many of those attributes we have covered earlier too.

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Let us look at some KEE leaders. Why KEE is very important is illustrated by their illustrious careers? All pioneering leaders who created and developed new markets and industries around innovative products reflect the KEE model in one way or the other. From Graham Bell to Akio Morita and Konosuke Matsushita to Bill Gates, Steve Jobs,

Larry Page and Mark Zuckerberg, leaders who combined knowledge, expertise and enterprise became pioneers.

Knowledge is emphasized by the organized laboratory research as carried out by Graham Bell with passion. He discovered telephony as we know. Knowledge includes practical industrial development of the software operating system as Bill Gates and Paul Allen did. Expertise is what Steve Jobs achieved in calligraphy, which translated into the elegant designs, layouts and fonts of Apple's products.

However, all the three had fair measure of knowledge, expertise and enterprise together to be able to convert their knowledge, expertise and enterprise dimensions into full-fledged products and full-fledged businesses. With expertise Japanese automobile leaders such as Taiichi Ohno san transformed the car manufacturing process to better efficiency and productivity.

Knowledge, expertise and enterprise led Larry Page and Sergey Brin to launch the path breaking Google search engine. Knowledge, expertise and enterprise also led Mark Zuckerberg to launch Face book as the foremost social media site. Enterprise serves as the spark and catalyst for high leadership. Enterprise that is entrepreneurship is what motivated knowledge experts to take to business, leveraging their knowledge and expertise.

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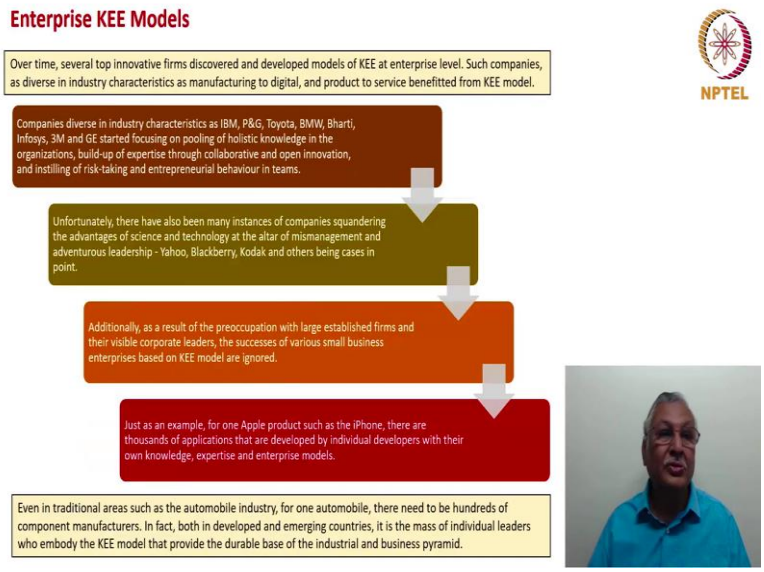

What are the enterprise KEE models? Over time, several top innovative firms discovered and developed models of KEE at an enterprise level. Such companies, as diverse in industry characteristics as manufacturing to digital, and product to service benefited from the KEE model.

Such companies could be listed like IBM, P&G, Toyota, BMW, Bharti, Infosys, 3M and GE very varied in their product focus in their manufacturing spread. But, they all started focusing on pooling of holistic knowledge in the organizations, building up of expertise through collaborative and open innovation and instilling of risk-taking and entrepreneurial behavior in teams.

Unfortunately, we also have many instances of companies squandering the advantages of science and technology at the altar of mismanagement and adventurous leadership. We have companies such as Yahoo, Blackberry, Kodak which were really pioneers in terms of technology or inventive business processes, but they squandered the advantage provided by their early science and technology in terms of mismanagement or wrong method of leadership.

Additionally, as a result of the preoccupation with large established firms and their visible corporate leaders, the successes of various small business enterprises based on KEE model are also ignored. Just as an example for one Apple product such as the iPhone, there are thousands of applications that are developed by individual developers with their own knowledge, expertise and enterprise models.

Even in traditional areas such as the automobile industry, for every single automobile there would be hundreds of components that need to be developed manufactured and provided. So, for every one new electric vehicle that would come up, there would be similarly scores of components that would be required to be developed and manufactured from ground up.

These are the opportunities for knowledge, expertise and enterprise. In fact, both in developed and emerging countries, it is the mass of individual leaders who embody the KEE model that provide the durable base of the industrial and business pyramid. The takeaway I am trying to provide is that one need not be hung up only on being part of a large organization and trying to move forward towards the leadership goal.

We can be an individual, a start-up entrepreneur or a member of small team having the KEE model in us knowledge, expertise and enterprise and contribute to the industrial infrastructure and therefore, to our own welfare and progress.

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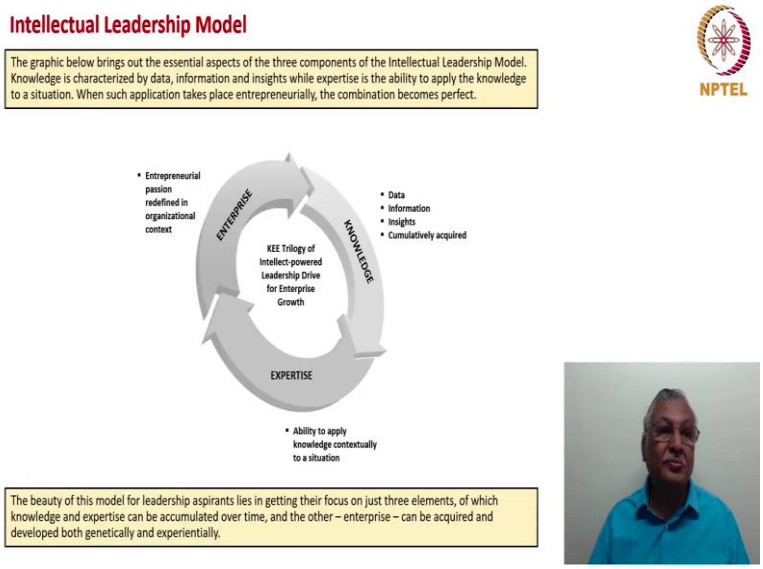

So, what is this intellectual leadership model? How can it be graphically presented? If knowledge, expertise and enterprise are the three interlocked parts of the circle we have to look at knowledge in terms of data, information, insights and keep on accumulating them cumulatively. There should never be an end to what is being acquired.

Expertise is the ability to apply knowledge contextually to a situation. We may have succeeded in applying the knowledge in one particular manner at some point of time, but that should not stop us from exploring more innovative, more creative ways of applying the knowledge in a similar circumstance or in a new circumstance.

Therefore, the expertise itself also grows with time and continued application of the available knowledge as well as the new knowledge. And, to be able to do that in the manner the maximum value is built is the entrepreneurial passion. This entrepreneurial passion or enterprise gets redefined in the organizational context.

The beauty of this model for leadership aspirants lies in getting their focus on just three elements of which knowledge and expertise can be accumulated over time, and the other enterprise can be acquired and developed both genetically as well as experientially.

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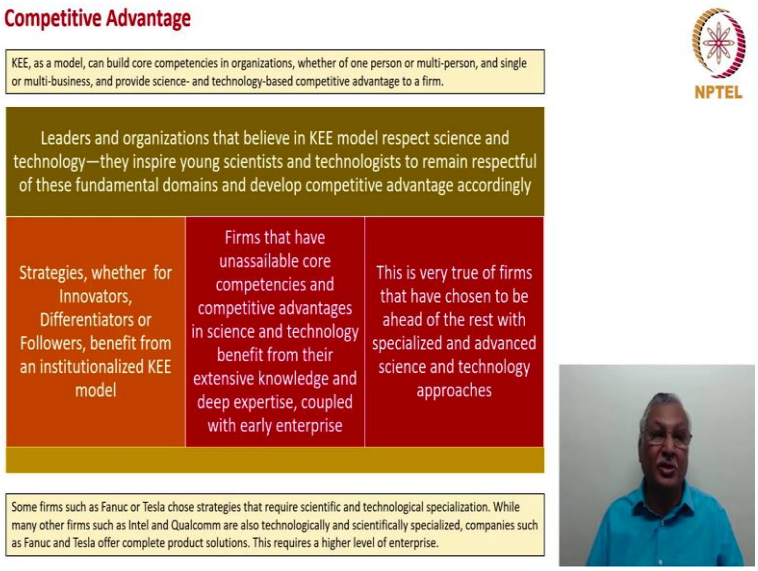

So, how does KEE bring competitive advantage? It brings because KEE as a model builds core competencies in organizations and whether the organization is of one person or multi-person and whether it belongs to a single business or caters to multi-businesses, it will provide science and technology based competitive advantage to a firm.

Leaders and organizations who believe in KEE model respect science and technology – they inspire young scientists and technologies to remain respectful of these fundamental domains and develop competitive advantage accordingly. If NPTEL courses are being offered by seven IITs and one IISc, it is because several years ago these technological institutions perceived how the technology of digital learning can be provided and how the vast universe of digital learning can be activated through technology.

So, the respect that comes from understanding of science and technology is a characteristic of established technology and science based educational institutions as well as industrial firms and that provides the competitive advantage because from KEE we can do anything that is possible in this universe. But, for KEE to occur in us, we need to have proper education, proper expertise and proper enterprise.

Strategies whether for innovators, differentiators or followers, benefit from an institutionalized KEE model. Firms that have unassailable core competencies and competitive advantages in science and technology benefit from their extensive knowledge and deep expertise, coupled with early enterprise. This is very true of firms

that have chosen to be ahead of the rest with specialized advanced science and technology approaches.

There are some firms for example, Fanuc in robotics and Tesla in electric autonomous cars which chose strategies that require scientific and technological specialization. While many other firms such as Intel and Qualcomm are also technologically and scientifically specialized, companies such as Fanuc and Tesla offer complete product solutions. This requires a higher level of enterprise as well.

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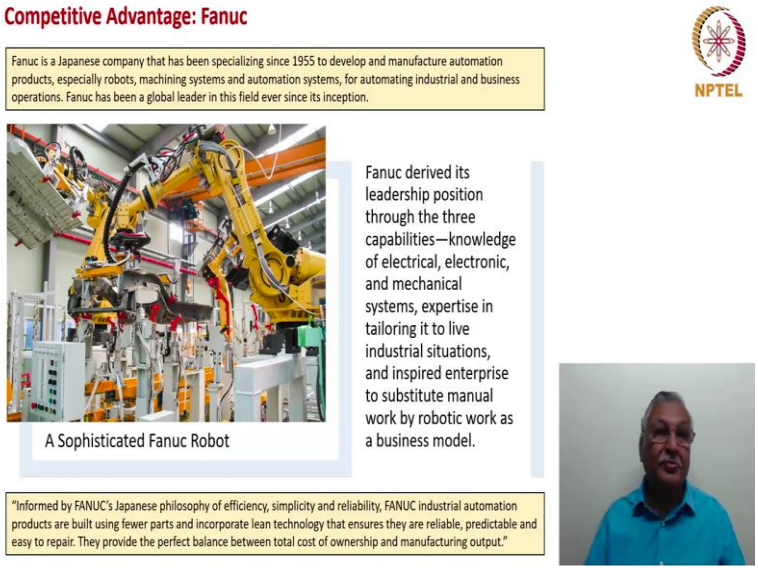

Let us study Fanuc – how it gets the competitive advantage and provides the competitive advantage to its customers. Fanuc is a Japanese company that has been specializing since 1955 to develop and manufacture automation products especially robots, machining systems and automation systems for automating industrial and business operations. Fanuc has been a global leader in this field ever since its inception. What you see here is a sophisticated Fanuc robot.

Fanuc derived its leadership position through the three capabilities: knowledge of electrical, electronic and mechanical systems, expertise in tailoring it to live industrial situations, and inspired enterprise to substitute manual work by robotic work as a business model.

If you study the history of Fanuc, you will understand that the base knowledge in electrical, electronic and mechanical domains has been expertly conveyed and converted into a product profile which served the customers exceedingly well. Informed by Fanuc's Japanese philosophy of efficiency, simplicity and reliability, Fanuc industrial automation products are built using fewer parts and incorporate lean technology that ensures that they are reliable, predictable and easy to repair.

They provide the perfect balance between total cost of ownership and manufacturing output. This is a philosophy that has been expressed by Fanuc describing their capabilities.

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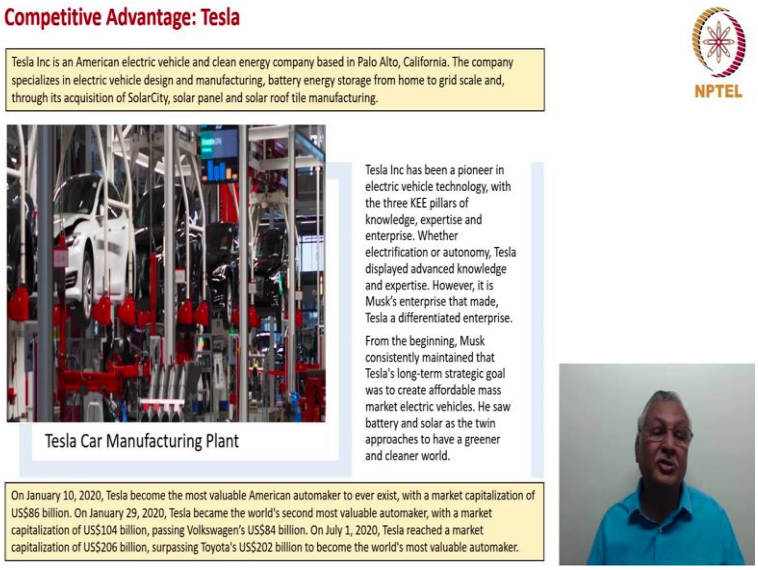

Let us look at Tesla. Tesla Inc is an American electric vehicle and clean energy company based in Palo Alto, California. Everyone who follows automobiles knows about Tesla. The company specializes in electric vehicle design and manufacturing, battery and its storage from home to grid scale and, through its acquisition of SolarCity, solar panel and solar roof tile manufacturing.

What you see here is a Tesla car manufacturing plant. You may find that it is somewhat similar to the other car manufacturing plants, but what is different of course, is the way the drive is incorporated, the way the driving is made autonomous. Tesla Inc has been a pioneer in electric vehicle technology with the three KEE pillars of knowledge, expertise

and enterprise, whether electrification or autonomy, Tesla displayed advanced knowledge and expertise.

However, it is Musk's enterprise that made, Tesla a differentiated enterprise. From the beginning, Musk consistently maintained that Tesla's long-term strategic goal was to create affordable mass market electric vehicles. He saw battery and solar as the twin approaches to have a greener and cleaner world. He thought about it more than a decade ago.

On January 10, 2020, Tesla became the most valuable American automaker to ever exist with a market capitalization of 86 billion US dollars. On January 29, 2020 Tesla became the world's second most valuable automaker with a market capitalization of 104 billion US dollars, passing Volkswagens 84 billion US dollars.

On July 1, 2020, Tesla reached a market capitalization of 206 billion US dollars surpassing Toyotas 202 billion US dollar market cap to become the world's most valuable automaker underscoring this is the KEE capability of Tesla.

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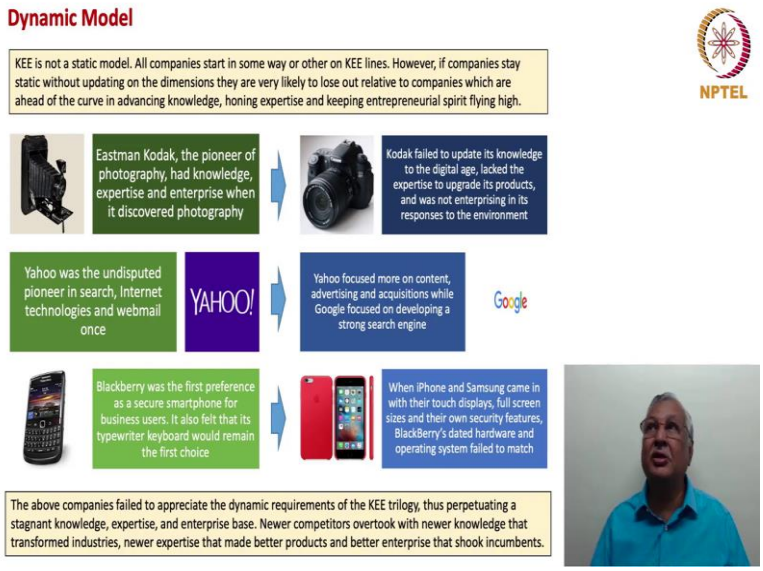

Let us look at why KEE should be a dynamic model. KEE is not at all a static model. All companies start in some way or the other on KEE lines. However, if companies stay static without updating on the dimensions they are very likely to lose out relative to

companies which are ahead of the curve in advancing technology, advancing knowledge, honing expertise and keeping entrepreneurial spirit flying high.

Eastman Kodak, the pioneer of photography, had knowledge, expertise and enterprise when it discovered photography. And, it was a leader in photography as we all know at some point of time. However, Kodak failed to update its knowledge to the digital age, lacked the expertise to upgrade its products, and was not enterprising in its responses to the environment. As a result, Kodak faded out of the photography as a whole.

Yahoo was the undisputed pioneer in search, internet technologies and web mail once. However, Yahoo focused more on content advertising and acquisitions while Google focused on developing a strong search engine. As a result, Google became the dominant leader in this search business.

Blackberry was the first preference as a secure smart phone for business users. It also felt that its typewriter QWERTY keyboard would remain the first choice and forever. When iPhone and Samsung came in with their touch displays, full screen sizes and their own security features, Blackberry's dated hardware and operating system failed to match.

The above companies failed to appreciate the dynamic requirements of the KEE trilogy, thus perpetuating a stagnant knowledge, expertise and enterprise base in their companies. Newer competitors overtook with newer knowledge that transformed industries, provided newer expertise that made better products and displayed better enterprise that shook incumbents. That is the dynamic model aspect of KEE. KEE should never be seen as a static model.

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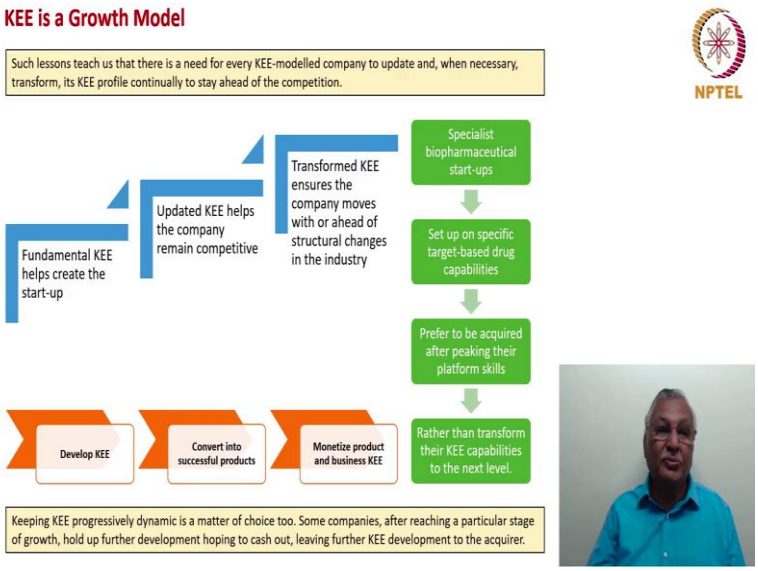

KEE is also a growth model because the lessons that we have seen so far the great successes of Tesla and Fanuc as well as the other great failures that we have seen and the corresponding great success of the newer competitors, we can realize that there is a need for every KEE model company to update and when necessary transform its KEE profile continually and continuously to stay ahead of the competition.

Fundamental KEE helps create the start-up. Updated KEE helps the company remain competitive. Transformed KEE ensures that the company moves with or ahead of structural changes in the industry. So, the three component strategy that leaders must have used to fundamentally develop KEE, convert it into successful products, monetize product and business KEE.

And, then iterate this continuously so that newer levels of knowledge, expertise and experience become available for newer types of products and services as well as newer types of businesses and monetization possibilities, this is a continuous cycle.

Let us look at specialist biopharmaceutical startups. They were set up on specific target-based drug capabilities and they prefer to be acquired after picking their platform skills. Rather than transform their KEE capabilities to the next level. Is this adding the greatest value to the biopharmaceutical industry? The answer could be yes and no.

It adds value as long as that monetized value is again reinvested in other biopharmaceutical or personal medicine companies and new modes of knowledge is practically put into place. As I understand from the pharmaceutical scene that is actually happening in the bio pharma space.

Keeping KEE progressively dynamic is a matter of choice too some companies after reaching a particular stage of growth hold up further development hoping to cash out leaving further KEE development to the acquirer. But, the value generated in getting acquired always provides the financial wherewithal which probably was not there at the beginning stage of the startup KEE to power a new generation of KEE developments.

This is the growth perspective and the value building perspective that KEE companies must keep in mind.

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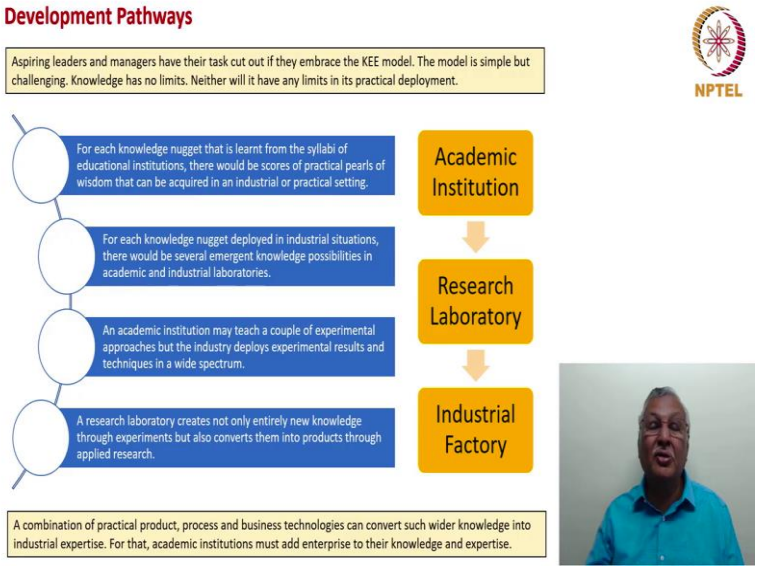

What are the development pathways that are available, whether it is an academic institution, research laboratory or industrial factory? Aspiring leaders and managers have their task cut out if they embrace the KEE model. The model is simple, but challenging because knowledge has no limits. Neither will it have any limits in terms of its practical deployment.

Those who understand knowledge and expertise, know that it is only the enterprise that is limiting their application and not knowledge or expertise per se. For each knowledge

nugget that is learned from the syllabi of educational institutions there would be scores of practical pearls of wisdom that can be acquired in an industrial or practical setting. For each knowledge nugget deployed in the industrial situations, there would be several emergent knowledge possibilities in academic and industrial laboratories.

We would have seen maybe 30 years ago lot of coolant oil being poured over components that are getting machined to dissipate the heat and then try to recollect that coolant oil in terms of recovery. But, that was really a wasteful way of doing things. One would have thought at a different level of higher KEE that the machining should be such that the heat dissipation or heat generation is minimized and heat dissipation is automatic and of the highest order.

That could have been the first level of KEE, but the ultimate level of KEE which we are seeing today is to have additive manufacturing so that we do not need to take out any material. The component would be manufactured just to the right size and right specifications therefore, with every practical application you can get the idea of a new knowledge nugget and it can be developed.

An academic institution can teach a couple of experimental approaches, but the industry has to deploy experimental results and techniques in a wide spectrum. A research laboratory similarly creates one fundamental knowledge body through experiments, example nanotechnology.

But, industry can convert them into products through applied research and this process of conversion becomes even more exciting if academic institutions, research laboratories and industrial undertakings collaborate to make this happen on a wider scale.

A combination of practical product, process and business technologies can convert such wider knowledge into industrial expertise. For that, as I said academic institutions research laboratories and industrial factories must collaborate. Industrial laboratories must become more research oriented and academic oriented whereas, academic and research laboratories must have more enterprise built into their personalities. That is how the KEE model will work mutually collaborative.

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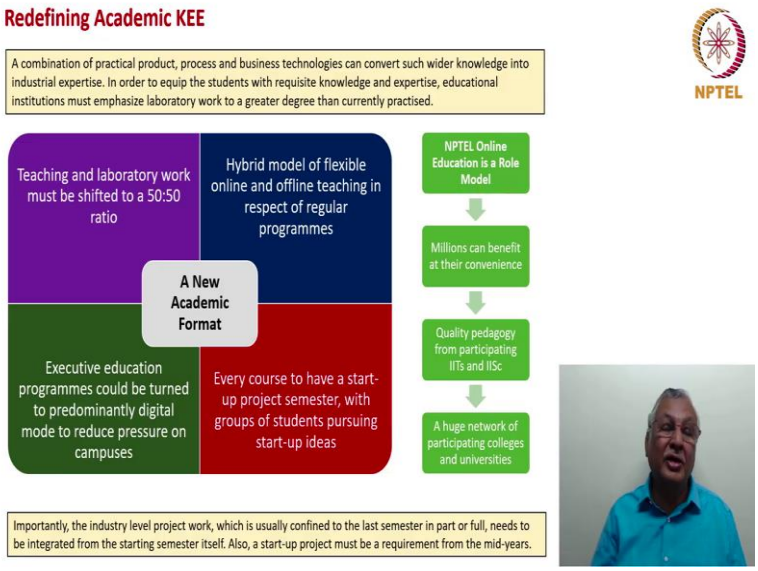

How do we redefine academic KEE? Because if you want to get KEE ingrained in individual's profile as they pass through educational institutions or as educational institutions try to provide on-campus as well as off-campus learning we need to have a new academic format.

Because such a format enables a combination of practical product, process and business technologies which can convert wider technology into industrial expertise, educational institutions must emphasize laboratory work to a much greater degree than currently practiced. So, I would suggest that teaching and laboratory work must be shifted to a 50–50 ratio, it is just a proposal of course.

Hybrid model of flexible online and offline teaching must be there in respect of regular programs. Whereas, executive education programs could be fully or predominantly in the digital mode to reduce the pressure on campuses and provide greater universal applicability and universal reach for these executive programs which are in the nature of continuous learning and updating of skills.

Every course must have a start-up project semester with groups of students pursuing startup ideas. When you look at NPTEL online education, it itself is a role model. Millions can benefit through NPTEL at their convenience. Quality pedagogy is available from participating IITs and IISc. A huge network of practicing colleges and universities

has happened over the last few years and the courses come with AICTE approvals and they also have their credit applicability.

Like this, every educational institution can have some path breaking change to the academic format and create more experiential learning and more academic experimentation for the industry. In respect of the project work which used to happen and which still happens in the final semester we need a paradigm change as well.

The industry level project work which is usually confined to the last semester in part or full must actually get shifted to the starting semester itself. Also a startup project outside of the normal project work should be a requirement from the mid years onwards. That is how practical experience as well as entrepreneurial spirit could go hand in hand in an academic setting.

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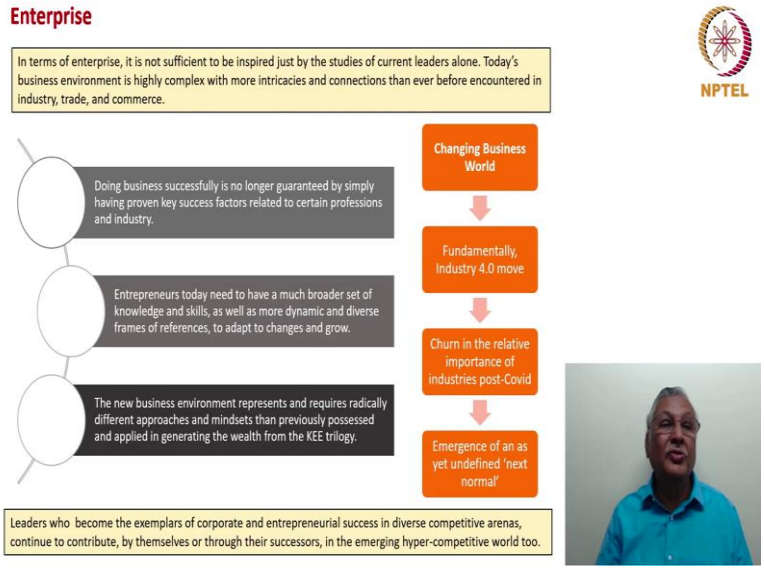

How do we ensure that all of us the individuals who are aspiring to become leaders become enterprising? It is not sufficient to be inspired just by the studies of current leaders alone. Today's business environment is highly complex with more intricacies and connections than ever before encountered in industry trade and commerce.

Doing business successfully is no longer guaranteed by simply having proven key success factors that are related to certain professions and industry. Entrepreneurs of

today need to have a much broader set of knowledge and skills, as well as more dynamic and diverse frames of reference to adapt to changes and grow.

The new business environment represents and requires radically different approaches and mindsets than previously possessed and applied in generating the wealth from the KEE trilogy. If a start-up has developed a consumer product, the start-up founder must also know how to market this through the different social media outlets that are available, so that the fixed marketing costs are not piled on the company but at the same time the reach is extensive and effective.

Changing business world means that industry 4.0 will deepen itself and widen itself in all products and services. There would certainly be an additional churn in the wake of post COVID. A new normal or a next normal has not yet been defined. We do not know what exactly will be the composition and the drivers of the new normal in terms of product, industrial and service offerings.

Leaders who become the exemplars of corporate and entrepreneurial success in diverse competitive arenas, continue to contribute by themselves or through their successors in the emerging hyper-competitive world too. So, we need to keep on looking at new role models which can inspire us on the path of enterprise.

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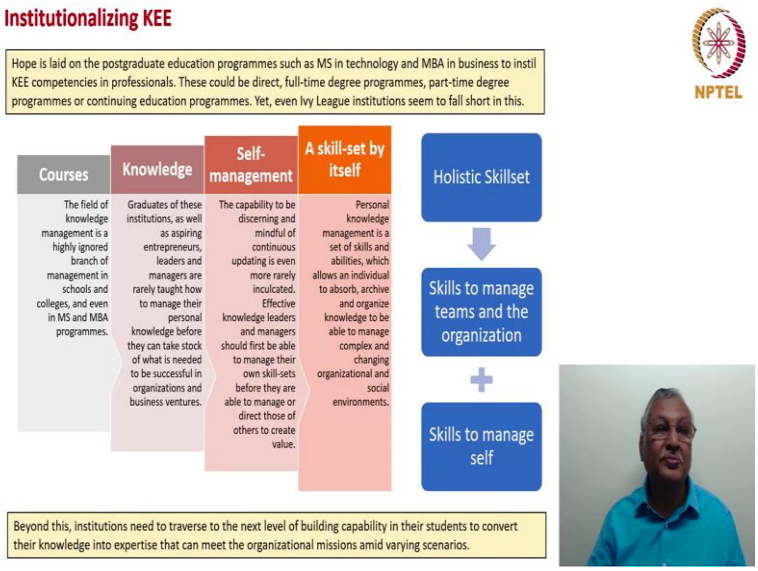

How do we institutionalize KEE? We do hope that the postgraduate education programs such as MS in technology and MBA in business provide certain additional leg up for instilling the KEE competencies in professionals. These could be direct, full-time degree programs, part-time degree programs or continuing education programs.

We can also have hybrids of MBA and M.Tech, B.Tech and management, management and leadership and so on. Yet even Ivy League institutions seem to fall short in making this shift in the paradigm very quick and effective. The field of knowledge management is a highly ignored branch of management in schools and colleges and even in MS and MBA programs.

While knowledge is encouraged, the field of knowledge management how to develop knowledge in a very structured and effective and aggressive way and how to deploy it in a very creative and innovative way – that is the field of knowledge management and that is not emphasized as much as it should be.

Secondly, knowledge is an asset. Students are not taught, not all enabled to experience how this knowledge as an asset can be utilized by individuals for them to be successful in their student life or in the working life, that the ability to convert the knowledge into expertise must be ingrained in these students.

Thirdly, as youngsters become managers and leaders, they should have the capability to self manage their knowledge. The capability to be discerning and mindful of continuous updating is even more rarely inculcated in the educational systems and must be a integral part now onwards. Effective knowledge leaders and managers should first be able to manage their own skill sets before they are able to manage or direct those of others to create value.

Therefore, looking at this, it is the skill set by itself personal knowledge management is a skill set by itself because personal knowledge management is a set of skills and abilities which allows an individual to absorb, archive and organize knowledge to be able to manage complex and changing organizational and social environments.

So, you need a holistic skill set, you need to convert those skill sets into management of teams and the organization and into skill set that could manage self. That is the self management, knowledge management skill sets that the leaders and the youngsters as

well must possess. Beyond this, institutions need to traverse to the next level of building capability in their students to convert their knowledge into expertise that can meet the organizational missions and amidst varying scenarios.

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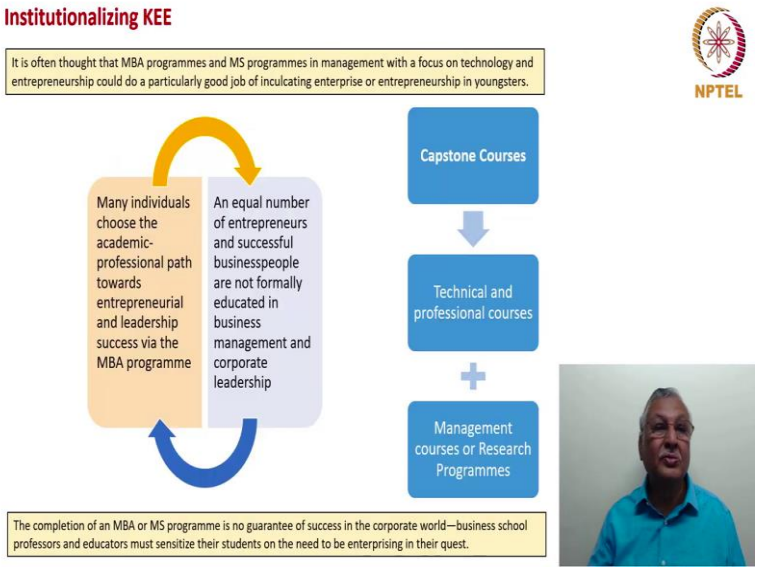

How do we institutionalize KEE is therefore, the challenge MBA programs and MS programs in management with a focus on technology and entrepreneurship could do a particularly good job of inculcating enterprise or entrepreneurship in youngsters.

Many individuals choose the academic-professional path towards entrepreneurial and leadership success via the MBA program and that helps, because you are able to conceptualize, analyze in a totally different manner as a result of the MBA program.

But, an equal number of entrepreneurs and successful business people are not formally educated in business management and corporate leadership and as we saw some are not even educated in the normal aspects of science and technology. Yet, they have been able to absorb science and technology, develop their own knowledge, create their own new knowledge nuggets and apply them practically in new products and services.

So, we have to keep in mind that on one hand from the point of view of encouraging and institutionalizing structured ways of KEE program we should have capstone courses which comprise technical and professional courses as well as management courses or research programs that is a fundamental requirement.

The completion of an MBA or MS program is no guarantee of success in the corporate world. We should all realize that it is a holistic paradigm. You should have knowledge, you should have expertise and you should have enterprise and you should also have the ability to self manage KEE always consistently going up at in the level of KEE.

Business school professors and educators must therefore, sensitize their students on the need to be enterprising in their quest on the back of the knowledge and expertise they have gained over the time of their education.

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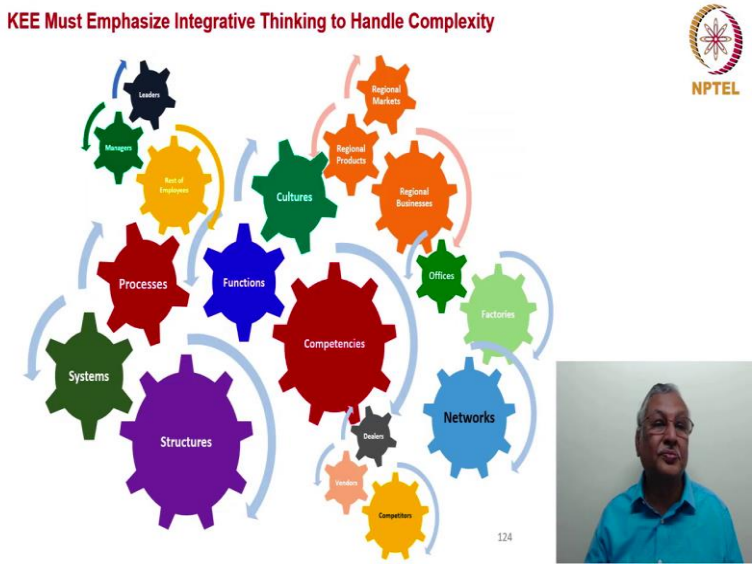

KEE must also emphasize integrative thinking to handle complexity. When you look at an organization, when you enter the industry you will find that there are so many moving parts in an organization. One set of moving parts – leaders, managers and rest of employees; another set of moving parts – structures, systems and processes; another set – competencies, functions and cultures; regional businesses, regional products, regional markets constitute the other set.

Networks, factories, offices that is another set; competitors, vendors, dealers another set A leader or a team of executives supporting a leader need to manage this complex network of moving parts that is defined as an organization or an ecosystem and to be able to do that everyone needs to have integrative thinking.

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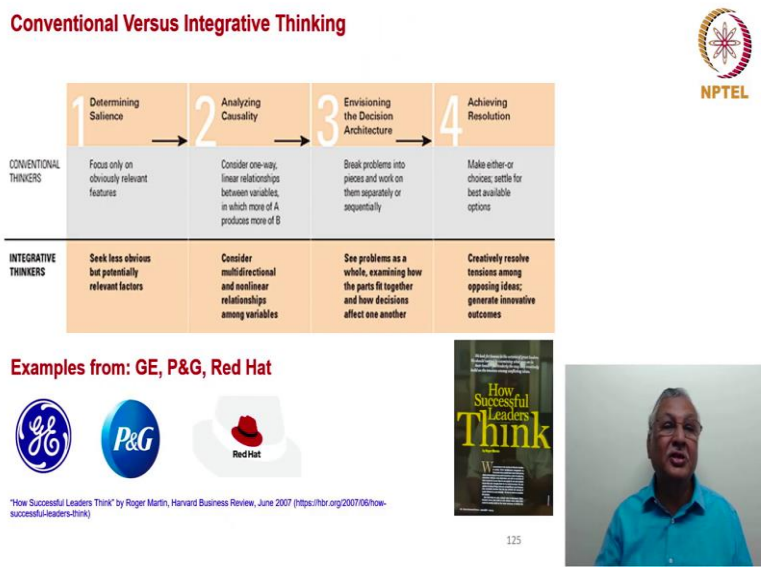

And, what is integrative thinking? Integrative thinking is quite different from conventional thinking as shown in this particular table. Conventional thinkers are salient in terms of focusing only on obviously relevant features; whereas, integrative thinkers seek less obvious, but potentially relevant factors.

Conventional thinkers look at one way linear relationships between variables in which more of A produces more of B. Integrative thinkers look at non-linearity. They consider multi-dimensional, multi-directional and non-linear relationships among variables. Therefore, they analyze casualty in a much different way.

Conventional thinkers envisage the decision architecture into simple ways. They break problems into pieces and work on them separately or sequentially. However, integrative thinkers look at the problem as a whole, examine how the parts fit together and how decision affect one another.

And, in terms of achieving resolution conventional thinkers make either or choices, settle for the best available options; integrative thinkers creatively resolve tensions among opposing ideas, generate innovative outcomes. I talked about the integrative thinking of V Krishnamurti as the chairman and managing director of Maruti Udyog Limited when it established itself and started manufacturing 800 CC high technology small cars at that point of time.

If the CEO did not have integrative thinking the CEO would have had to choose between quality and cost, but he said that I must have the highest possible level of quality at the lowest possible level of cost.

That was integrative thinking. Similarly, the ability to be a mass player as also be a niche producer of automobiles to be able to be a public sector undertaking, but also have the agility and enterprise of a private sector corporation, to be dependent on the foreign company for technologies, but also have the passion to indigenous those technologies.

So, that was integrative thinking at it is best in an Indian sitting on the part of V Krishnamurti of Maruti Udyog. We have in the international arena several examples from GE, P&G, Red Hat which demonstrate integrative thinking and here is a book that talks about integrative thinking as well.

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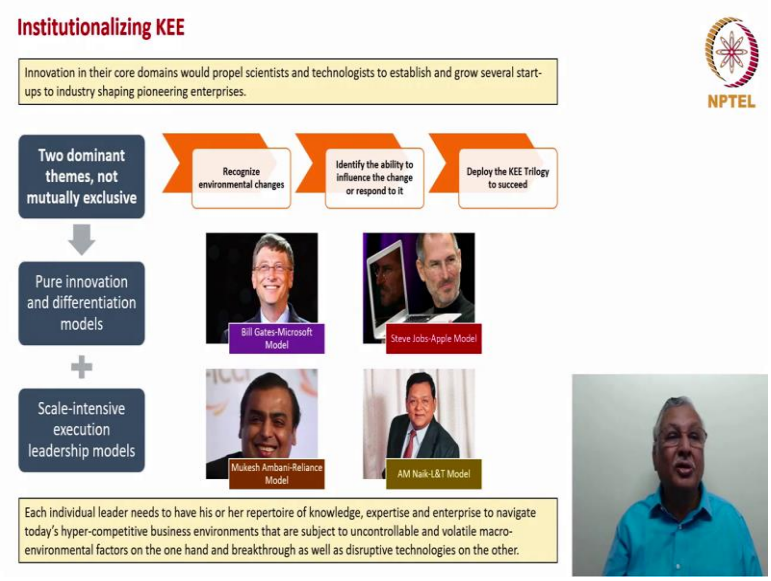

In order to institutionalize KEE we have to institutionalize innovation at first in the core domains. This institutionalization of innovation would propel scientists and technologies to establish and grow several startups to industry shaping pioneering enterprises. There are two dominant themes, not mutually exclusive; pure innovation and differentiation models; scale-intensive execution leadership models.

You must recognize environmental changes, identify the ability to influence the change or respond to it, deploy the KEE trilogy to succeed. Bill Gates Microsoft model is one,

Steve Jobs Apple model is another, Mukesh Ambani Reliance model is another one and AM Naik L&T model is another one. There are four models I have proposed here.

Each individual leader needs to have his or her repertoire of knowledge, expertise and enterprise to navigate today's hyper-competitive business environments because these are subject to uncontrollable and volatile macro environmental factors on one hand and breakthrough as well as disruptive technologies on the other.

So, whether you create a new desktop operating system and envision the transformation of mainframe computing system to personalize desktop computing system, you are institutionalizing a KEE platform to be able to bring that change. If you foresaw the convergence of multiple technologies at a high level and brought them together in a very exciting and innovative way that is Steve Jobs for you and the Apple model.

If you looked at scale, scale leading to higher efficiency and better business growth it is Mukesh Ambani and Reliance for you. On the other hand, if you want to identify yourself with nation building and participate in a wide range of nation building activities based on high technology and high competencies in people and talent management, it is AM Naik of L&T for you.

So, each individual leader can play a different model of KEE, but the underscoring facts are knowledge, expertise and enterprise.

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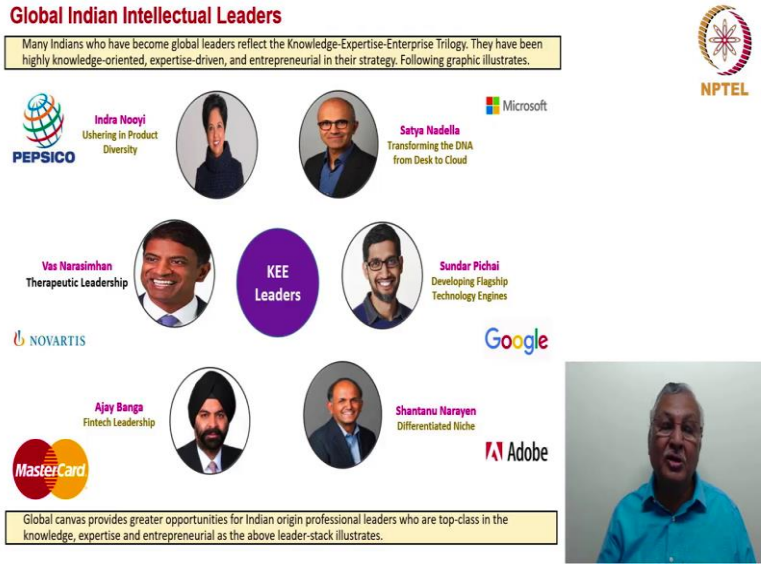

We have great intellectual leaders of Indian origin in the global arena many Indians who have become global leaders reflect the key trilogy knowledge expertise and enterprise. They have been highly knowledge-oriented, expertise driven and entrepreneurial in their strategy. Let us see this graphic.

Indra Nooyi she ushered in product diversity. We have discussed in the previous lecture how it moved from pure junk to junk plus health. Satya Nadella transformed the DNA of the Microsoft corporation from Desk to Cloud. Sundar Pichai he became famous for developing flagship technology engines.

Shantanu Narayan he was in the forefront of developing a niche for Adobe in terms of documentation management digitally. Ajay Banga provided Fintech leadership for MasterCard. Vas Narasimhan brought in therapeutic leadership for Novartis. Global canvas provides greater opportunities for Indian origin professional leaders who are top class in the knowledge, expertise and entrepreneurial skills as the above leader stack illustrates.

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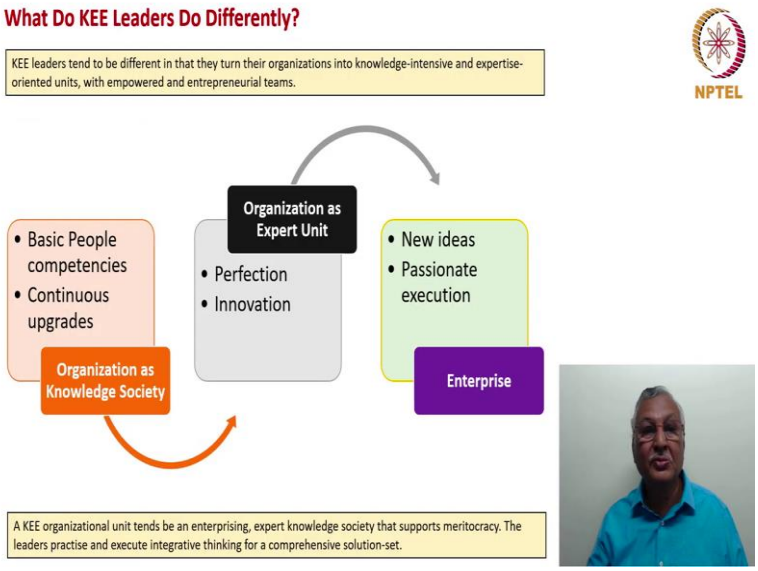

We should also appreciate what the KEE leaders do differently. KEE leaders tend to be different in that they turn their organizations into knowledge intensive and expertise oriented units with empowered and entrepreneurial teams. They convert their organizations into knowledge intensive domains. They are led by experts and together all the teams and the team members are empowered and entrepreneurial.

So, organization as knowledge society is the first building block for a leader who wants to head a KEE organization, must ensure basic people competencies and ensure also continuous upgrades. Then he should see the organization as an expert unit perfection, innovation – the concept of perfect innovation I mentioned in the earlier lecture. Then enterprise that is always inspiring the organization to think of new ideas and getting them executed in a passionate manner.

A KEE organizational unit tends to be an enterprising expert knowledge society that supports meritocracy. The leaders practice and execute integrative thinking for a comprehensive solution-set that is KEE leadership for you in organizations.

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We have an organization called KMWorld which undertakes a survey and study of top 100 knowledge management companies in the world. They publish a list of top hundred companies globally with focus on information technology and digital space. Only two Indian companies Infosys and Zoho figure in that. The reasons why only two companies figure in a knowledge management survey related to technology and digital space certainly needs to be analyzed and remedied with solutions.

The annual list of 100 Companies That Matter in Knowledge Management reflects the urgency felt among many organizations to provide a timely flow of targeted information. Among the more prominent initiatives is the use of artificial intelligence and cognitive

computing, as well as related capabilities such as machine learning, and natural language processing, along with text analytics.

Despite this emphasis, however, there is also an understanding that the use of automation in products and services does not replace but, instead augments and enhances human capabilities. Most of the 98 corporations, barring established giants such as Accenture, Amazon, Google, IBM, Microsoft, Salesforce and Xerox in the list of 100 are start-ups that have grown over the recent years through IT and digital technologies.

Therefore, there is so much scope for KEE to be a model of growth for even small, medium and micro enterprises.

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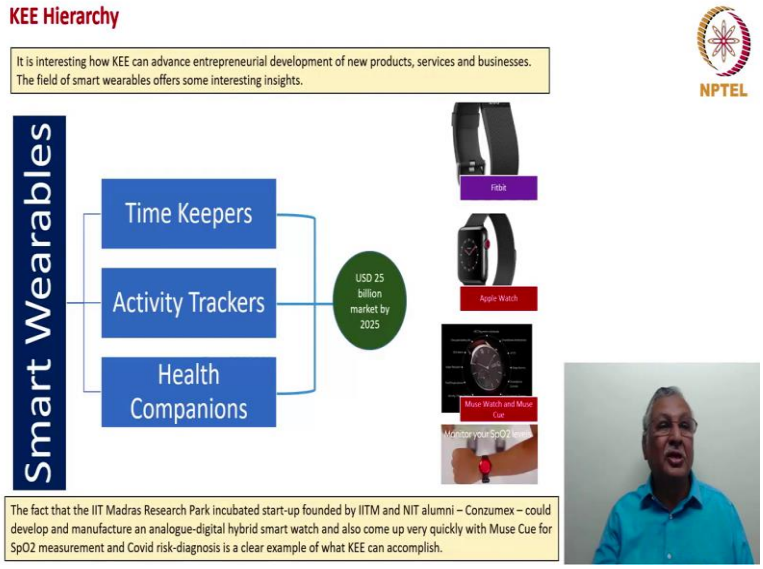

So, let me illustrate KEE hierarchy from a practical point of view. It is interesting how KEE can advance entrepreneurial development of new product, services and businesses. The field of smart wearables offers some interesting insights. When smart wearables started as a product line, it was just value added timekeeping. Then activity trackers came on in a big way, Fitbit conceptualizes and demonstrates that. Now, with Apple we have health companions in terms of Apple watches.

However, an IIT Madras Research Park incubated start-up founded by IIT Madras and NIT alumni-Conzumex developed and manufactured an analogue digital smart watch which is a combination of the elegance of the analog watch and the digital capabilities

especially in the health field of a digital watch. It also came up with Muse Cue for Sp O2 measurement and COVID risk diagnosis when COVID -19 struck the world.

This demonstrates what KEE can accomplish for a company whether the company is a start-up or an advanced established company. Let us understand with a greater focus as to how Conzumex could do that.

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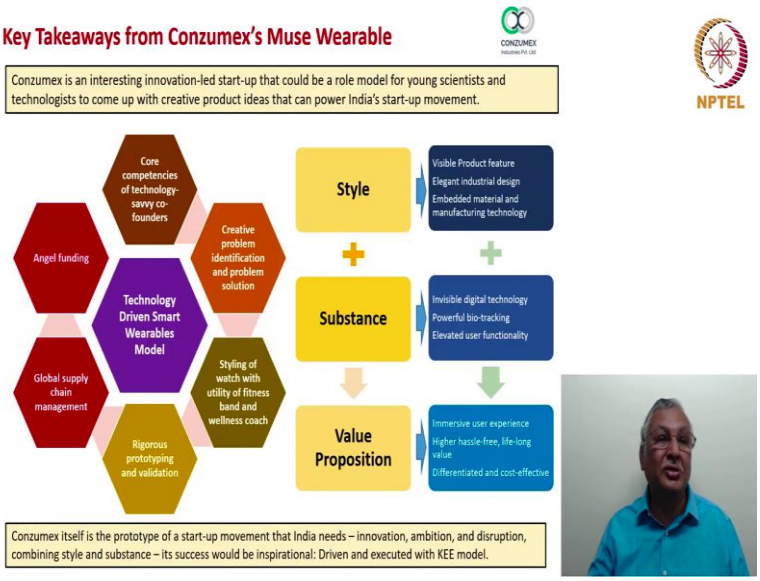

The key takeaways from Conzumex's muse wearable are many. It is an interesting innovation led start-up that could be a role model for young scientists and technologists to come up with creative product ideas that can power India's start-up movement. So, what is this technology driven smart wearables model?

One core competencies of technologies savvy co-founders; creative problem identification and problem solution; styling of watch with utility of fitness band and wellness coach; rigorous prototyping and validation; global supply chain management and of course, angel funding.

It is a classic demonstration, it is an innovative demonstration of the combination of style and substance to have a great value proposition. How did style work out? Visible product feature, elegant industrial design, embedded material and manufacturing technology. Substance in terms of the invisible digital technology, powerful biotracking and elevated user functionality and how was it a value proposition?

Immersive user experience, higher hassle free and life-long value, differentiated and cost effective and something to proudly own and display. Conzumex itself is the prototype of a start-up movement that India needs - innovation, ambition, disruption and that combined style with substance – its success would be inspirational. Driven and executed with KEE model, that is, knowledge, expertise and enterprise.

This is the suggestion I would make for all young executives, young managers and even accomplished leaders that the focus should be on building up the levels of knowledge, expertise and enterprise in individuals, teams and the larger organizations. With that only India can become a huge power industrially and a global economic superpower ensuring peace and prosperity for our society.

Thank you, we will see in the next lecture.