Leadership for India Inc: Practical Concepts and Constructs
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Week - 09
Transformation Leadership Models - I
Lecture - 41
Pioneering 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. Before I go further, I want to take stock of what we covered so far. During week 1, we covered Introduction to Leadership; in the first two lectures, we covered Leadership; The Business Context and Leadership and Management as an Integrated Paradigm.

The next three lectures covered the Revolutionary Management Thoughts provided by various management thinkers over several years of their work in the past. During week 2, we looked at Leadership Theories that have been established and research based. We covered Triad Theory, Behavioral Theory, Situational Theory, Path Goal Theory and Leader Member Exchange Theory, as part of that tentative.

During week 3, we covered Leadership for Sustainable Growth, the objective was to establish these foundations of ESG leadership that is Environmental empathy, Social responsibility and corporate Governance being the three critical themes for leadership. Accordingly, we covered in five lectures Technology Leadership, Climate Leadership, Resource Leadership, Global Leadership and Crisis Leadership.

During week 4, we looked at Competency Leadership. I developed a framework of 20 leadership attributes; 10 developmental and 10 performance which are extremely important for someone to qualify as a leader. In the next lecture, I followed up with Apex Leadership Attributes which are 10 apex leader attributes that should supplement the 10 developmental and 10 performance leadership qualities I outlined.

Lecture 18, 19 and 20 respectively covered Leadership Essentials, learning to lead and Indian leader competencies. Lecture 20 in particular looked at my personal experiences

of working with three great leaders of India and presented their leadership qualities, as well as their leadership models.

During week 5, we covered Leadership Processes, I covered the topics of Self Actualization, Leadership Balance, Paradox Management, how to be agile and precise and the adaptive processes that could underline good leadership practice. During week 6, I discussed Leadership Structures; covered topics such as stature versus Title, Strategy Structure and Execution, Organization Structures, Effective Execution and Building Perpetual Corporations.

Week 7 was another crucial lecture week; in five lectures, I looked at enablement as development, instilling development passion in potential leaders, CEO succession was covered in lecture number 33 and I looked at success factors for succession through several case examples.

Lecture 35 closed that week with the topic of the enterprise setting the stage for leadership stature. In the last week that went by, we covered Functional Leadership Models, I covered R&D leadership, operations leadership, marketing leadership, finance leadership and human resource leadership.

We are now in week 9; discussing the first part of transformational leadership models. Having gone through such an extensive canvas of leadership; what I am going to propose from now onwards is that every leader would need to have a particular dominant theme in the leadership and that dominant theme is related to the personality capabilities that the leader possesses but also is related to the context in which they firm and the industry are situated.

The fact that dominant theme exist does not mean that the leadership of other dominant themes would not exist in the leader or that the leader cannot transpose himself or herself from one dominant leadership theme to another dominant leadership theme. This integrative framework will certainly consider as we go through that.

During this week, as well as in the forth coming week; I will consider ten transformational leadership models. The first five will be by and large very much oriented towards performance aspects of transformational leadership. The next five

lectures will focus on the developmental aspects of the transformational leadership. In this lecture, we will cover Pioneering Leadership Model.

We will follow this up with performance leadership model, corporate longevity model, intellectual leadership model and leadership accountability model. In the forth coming week, we will discuss charismatic leadership, people leadership, follower leadership, dependence-independence leadership and connected leadership. After that, we will have leadership philosophies and certain legendary leadership models for discussion in week number 11 and week number 12.

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So, let me explain to you what pioneering leadership is, the act of pioneering is the act of being new to something; that is the leader who does the pioneering activity does that particular activity ahead of anyone else doing it. Pioneering does not necessarily mean doing it in an innovative way or basing the activity on a first time discovery or first time innovation.

Pioneering could also mean moving into an area which others have not really moved and that is the pioneering leadership model that we will discuss and it integrate certain physical and emotional dimensions in a very unique manner such that the firm derives sustainable competitive advantage. Every successful leader tries his or her best to be pioneering in one aspect or the other during the leadership journey.

I said that there are two triads that need to be combined for pioneering leadership. One is the physical triad that is the products, the processes and the facilities which manufacture the products and the business; these are the physical aspects of leadership triad. There is also an emotional triad which stems from the soft skills the leader has, the intuitive power, the passion and the focus.

The resultant from these two triads being combined in a pioneering leadership model is that the leader would be able to provide innovation leadership or differentiation leadership or cost leadership and the enablers for the leader in this process are science and technology, the various human factors and also the digital edge. Pioneering leadership is not individualistic, it is an institutional process; embedding the physical and emotional aspects of conducting business for competitive advantage.

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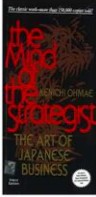
In doing this thematic leadership model, I was also inspired by Kenichi Ohmae's book on the Mind of the Strategist. Kenichi Ohmae is the famous Japanese professor who has written a landmark book; The Mind of the Strategies, first published in Japan in 1975 and republished in 1982 by McGraw Hill. Ohmaesan provided several useful insights on strategic thinking.

Although this book was based on the perspective of doing business in Japan, the takeaways have a universal and timeless appeal. What the author said was that the strategies should identify the key success factors for the industry and the key strength for

the firm. The strategies should then proceed to cause events that favor the firm strengths. The other insights related to differentiation of winners from losers, in terms of specific attributes and distinguishing businesses from products.

Ohmae suggest a relentless focus on customers and their needs to consolidate the business base and an entrepreneurial thinking to drive growth. The high point of the book is that which is typical of Japanese thinking; addressing of the problem rather than the symptoms. Ohmae made and immense contribution to the theory of management by requesting the readers to look at the problems in their core rather than looking at the symptoms at the superficial.

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There have been several follow through books. Many strategy experts came up with subsequent works which presented multiple approaches for becoming winners rather than losers in the business area. My own take on this aspect is that winners can be those who are stronger or smarter or both; ideally the winner should be strong and smart together.

Some of the works I have talked about have already been covered in the previous lectures on the management thought and practice. But I would talk about four representative works here; Competitive Advantage by Michel Potter; The Core Competence of the Corporation by Dr. Prahalad and Gary Hamel, Reengineering the

Corporation by Michel Hammer and James Champy and The Fortune at the Bottom of the Pyramid again by Dr. C. K. Prahalad.

These and similar works focused on the attributes and methodologies that would help companies gain advantage over the competitors. Such hypotheses; however, become relevant only in the context of emerging or established industrial structures. When we look into the abstract future, these constructs are not very helpful; you need to be a pioneer to be able to get into the abstract spaces.

In the established and emerging spaces, the forces of competition and the sources of competitive advantage can be well identified; enabling an effective strategy potentially. On the other hand, such strategy prescriptions tend to be less relevant in the first to lead kind of business ventures; that is where pioneering leadership counts as an important aspect of leadership modeling.

C.K. Prahalad's later day classic fortune at the bottom of the pyramid; there have been very few prescriptions of how strategists need to think and act in pioneering businesses or with sunrise technologies. In fact, that work itself is a pioneering effort to address the issues relating to the bottom of the pyramid consumers in this vast universe.

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What are the pioneering or sunrise sectors? These are sectors which are like no other, they would not resemble others either technologically or commercially. Many times

these are seen to be domains for startup and entrepreneurial firms or established companies with entrepreneurial thinking. These pioneering areas would have no established business models; they would have an inviting, but unclear regulatory framework.

They would require experimental technologies, manufacturing requires multipronged collaboration because the equipment also would not be set for the kinds of products which are still under imagination and under development. Proven talent tends to be scarce and customers themselves tend to be cautious and unsure.

In other words, all the classic strengths of an established firm in established industry would be absent for a pioneering firm, in a sunrise sector. The only strength is that of being the first in terms of business ideations and technological commercialization. Even this strength may be eroded by the likely competition from more efficient and effective follow on technologies. Therefore, whoever is the pioneer better be right on time and correct in introduction.

That is also the important requirement of a pioneer who enters the market for the first time; otherwise the pioneer will only enter the market and open the load for various other more efficient and more effective companies to come in and eventually overwhelm the pioneer himself. Catch up players are definitely will have the benefit of watching the pioneers right and wrong moves and accordingly moving with much greater force and much greater accuracy.

Yet, we have countless examples of how pioneers from Sony and Microsoft, to Google and Facebook built new industries around their first to think and first to right ventures. How then is the mind of a pioneering strategist different from that of an established strategist?

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Pioneering has three facets; product, process and business; let us look at the first aspect of the physical triad product.

These three factors can be present in an enterprise independent of each other or all together as a combination; with the latter being certainly more advantages. Additionally, information technology or digital technology emerges in all these as an enabler. Let us assume that a smart phone, tablet or notebook is self charging because either it is exposed to light, sunlight or its own heat.

So, if you have a very efficient heat exchange mechanism and heat conservation engine in the smart device; it would be a product innovation. However, if that device combines the ability to project whatever that is being prepared on to a screen, it would be a more significant product innovation.

If you are able to embed artificial intelligence, machine learning into that device bringing fore the latest futuristic digital technologies; then they would be pioneering products. So, from a product innovation, to a value added product innovation, to a pioneering product there are certain steps. All these will remain truly pioneering products, when the design is novel even if manufacturing and commercialization are through established methodologies.

Fundamental pioneering takes place through product designs and it does not mean that manufacturing also needs to be pioneering; let us look at some examples.

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In the previous examples of product area, we have seen that the products are essentially made out of the manufacturing process that we have, but the products themselves are completely different compared to the other products in terms of their capabilities.

We are looking at this second aspect of the physical triad that is the process. You may have a product which is essentially the same product; however, by manufacturing it in different ways; you can make the product differentiated. Let us look at a conventional bus, it is an automobile of established design, manufactured out of body built on ladder chassis.

Let us look at integral bus, it is an automobile of modern design manufactured out of just two monocoque; single shell pressings; upper and lower. Let us say we look at multi deck bus; it is an integral bus of multiple decks, to enable optimal passenger capacity with the requisite social distancing for the current times. New age buses deliver unique strength and lower cost; instead of bolting or welding together multiple sections as in the earlier practice.
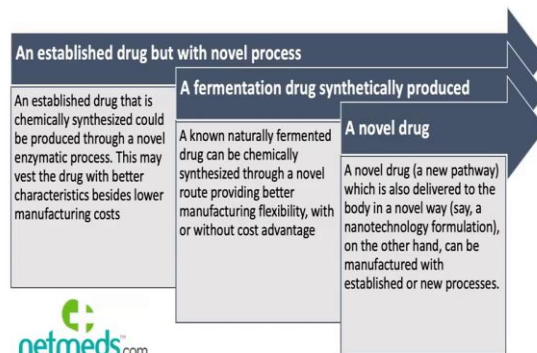
Automobiles of similar design manufactured through unconventional process could still be marketed in conventional business models. What happened here, a new breed of buses

has been brought into the system; not by changing the product profile, but by changing the manufacturing process. Therefore, just as product design is an enabler of pioneering leadership; process design could also be an enabler of pioneering leadership.

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Let us look at the business aspect of the physical triad; independent of novel product and process concepts, business can be established in a novel way by such product and process concepts. A few examples are given below with business expectations driving product and process configurations. The first is an established drug, but with novel process; an established drug that is chemically synthesized could be produced through a novel enzymatic process.

This may vest the drug with better characteristics besides lower manufacturing costs. If you have enzymatic process many of the chemical steps can be eliminated and the product can be made with much greater efficiency and lower pollution. Therefore, the whole profile of the drug manufacturing changes, that is one model of doing business with technology.

Another one could be this way; a fermentation drug can be synthetically produced. A known naturally fermented drug can be chemically synthesized through a novel route providing better manufacturing flexibility with or without cost advantage. Sammy which is a biotechnology product can be synthetically produced and provided with greater manufacturing flexibility and lower costs as well.

A novel drug can be manufactured; that is a new path way which is discovered, can be delivered in the body with a drug in such a way that the established products and established process could be used through different way of delivering inside the body for actual work, on a new pathway; that is a novel drug working for you.

All these will remain truly medicines of various degrees of pioneering nature, even if commercialization is through establish methodologies. In each case, the pioneering process provides unique advantages and challenges as a product or for its marketing; even though the fundamental way of pioneering takes place through product design. We also have examples of the age old, time tested and highly resistant method of selling drugs through physical distribution has been challenged by online pharmacies.

Netmeds dot com is a great example and there are several other examples in the food delivery on the other areas where the business models have worked to change the way the pioneering takes place in certain sectors.

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Let us look at how the business models work in a greater detail; conventional products manufactured through conventional process could be delivered through pioneering business models and deliver greater values to the customers and hence to businesses.

Amazon when it pioneered e-commerce, did exactly the same; from marketing and distributing of books through the web and leveraging electronically physical

infrastructure and eventually moving to a whole spectrum of e-commerce the business models have been completely rewritten digitally.

Grameen bank which was set up by Professor Muhammad Yunus pioneered; I will underline the word pioneered, micro finance for the future. Microfinance is not a new activity at all; it is providing finance; however, providing micro finance for the poorest of the poor, disbursal of loans to under privileged sections of the population through microfinance business models, through self help groups.

Through help more particularly unemployed women in the rural areas was a pioneering thought and it created a pioneering micro financial intrusion called Grameen bank and it led to a whole series of microfinance institutions in India and throughout the world. Then, we have the example of pioneering mobile money M PESA is a mobile wallet representing an innovative, on the go 24 by 7 platform for all online payments. It constitute another novel business model pioneered in Kenya.

We also have Teladoc which is a pioneering tele health business model; it was one of the earliest pioneers of tele medicine in the US, for a wide range of disease conditions, allowing non-emergency consultation and at convenience of the patient. Some of the above incorporated a novel business model which was rendered effective and expansive by digital technologies.

So, the close personal touch with the underprivileged drove the emergence of Grameen bank. Similarly, close touch with the patients as well as with the doctors drove the pioneering of telehealth platform. And the sheer need for the excluded population to get into digital transactions drove the growth of M PESA and of course, Amazon pioneered the whole new way of doing E-commerce.

So, business model pioneering is also a very important aspect of pioneering leadership model.

Another example, established business models working in completely different way because of the product and process innovations. There could be product and process innovations that are delivered through established business models such innovations would significantly expand the reach of the companies in the market place and in turn required tweaking of business models.

The COVID 19 pandemic can be halted by appropriate vaccines; however, you can have three types of preventive mechanisms; one live viruses which could be again attenuated viruses or inactivated viruses. It could be through protein mechanisms virus like particles or other protein based approaches and nucleic based approaches DNA based or RNA based.

When Oxford University's Jenner institute; the core researcher combined with Astra Zeneca; the leading global pharmaceutical corporation to co-develop this vaccine and then tie up with Serum Institute of India; India's largest vaccine producer for producing the vaccine in millions and billions ahead of the final conclusion of the phase three trials.

It is a new business model that has been developed by a research institution, a big global pharmaceutical corporation and a big vaccine manufacturing company; that is how this development a COVID 19 vaccine; one of the three examples of a successful COVID 19 vaccine as of date happen and it is reflective of innovation in R&D and manufacturing

with cross border collaboration bringing together research depth, manufacturing sweep and distribution reach.

Astra Zeneca brought the distribution reach, Serum Institute brought the manufacturing sweep and the research depth was brought by Oxford University's Jenner institute that is another physical triad example; established business models leading to pioneering leadership of the product envisaged.

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Another aspect of physical triad is that the industries themselves could be redefined.

Conventional domains such as transportation are undergoing major transformation. These radical developments are supported by strides in sensor, battery and materials technologies besides radar, lidar, computing, navigation and connectivity technologies; all of these six aspects are defining the mobility industry.

Bullet trains, hyperloop trains, autonomous automobiles, delivery drones, flying cars, interstellar travel; even sea taxis as we see today; these are all the pioneering developments that are happening to transform the transportation sector. And it is an ecosystem of pioneering product, pioneering manufacturing and pioneering customer development approaches.
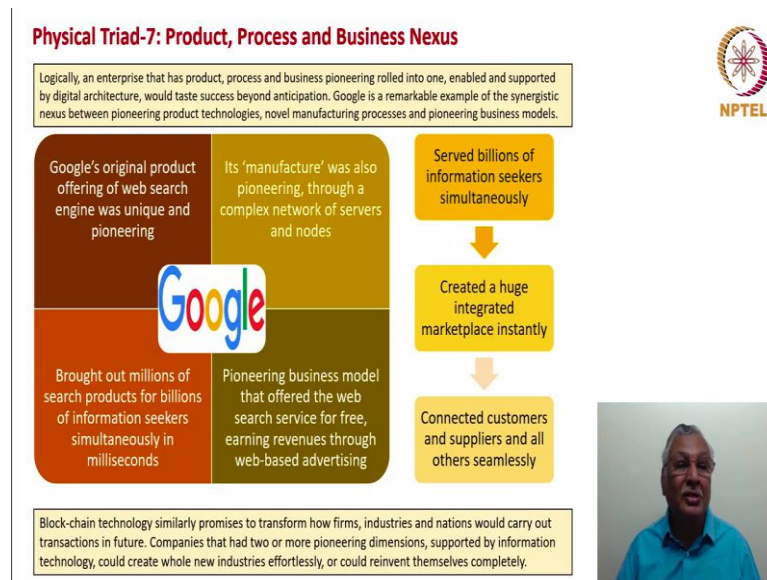
Another example of physical triad; product, process and business nexus; logically an enterprise that has product, process and business pioneering rolled into one; enabled and supported by digital architecture would taste success beyond anticipation. Google is a remarkable example of the synergistic nexus between pioneering product technologies, novel manufacturing process and pioneering business models.

Let us see what happened with Google; the original product offering was of web search engine. It was unique and pioneering; the way it was manufactured within quotes was also pioneering, through a complex network of servers and nodes. It brought out millions of search products for billions of information seekers, simultaneously in milli seconds.

It was a pioneering business model that offered the web search service for free, earning revenues through web based advertising; as a result of the search itself became an industry because of Google's pioneering product, process and business combination. It served billions of information seeker simultaneously; normally any role out of any product, including a pioneering product tends to be step wise growth.
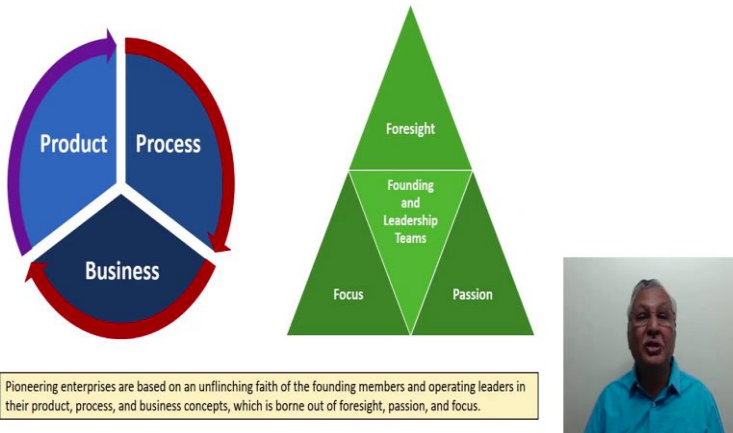
However, in respect of Google it served billions of information seekers simultaneously. It created a huge integrated market place instantly and connected customers and suppliers and all other seamlessly. Block chain technology similarly promises to transform how firms, industries and nations would carry out transactions in future.

Companies that had two or more pioneering dimensions; it could be product, process or business in any combination supported by information technology could create whole new industries effortlessly or could reinvent themselves completely; this is the physical triad.

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Let us look at the emotional triad; foresight, passion and focus; these are the constituents of one example of emotional triad.

The founding and leadership teams should have foresight, focus, passion on the three aspects of the physical triad which we discussed that is product, process and business; this enables a physical triad happen in reality. Pioneering enterprises are based on an unflinching faith of the founding members and operating leaders in their product, process and business concepts which is borne out of foresight passion and focus.
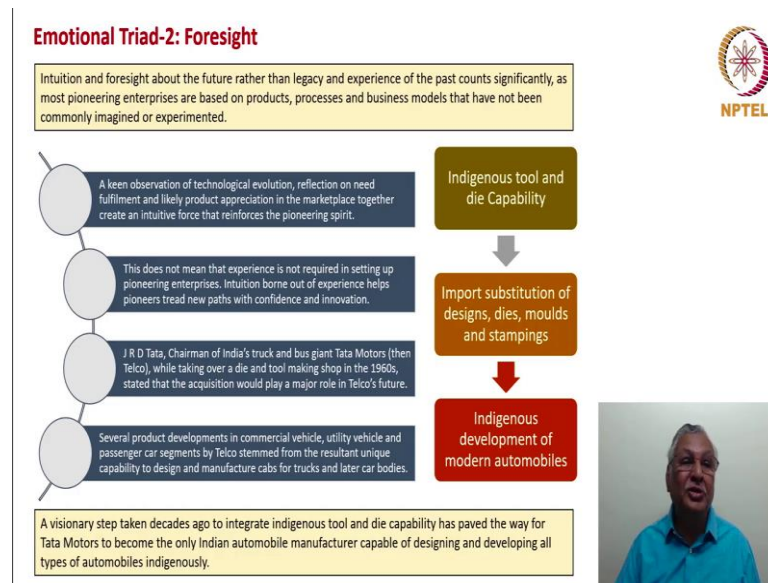
These are the fundamental emotional drivers of a pioneering leadership model.

How does foresight work? Intuition is ally to foresight; it is about the future rather than about the legacy. It is about the potential experience rather than the current and the past experience.

This intuitional judgment is very important as to how pioneering enterprises conjecture and then visualize and then actually realize the products, process and business models. And such models, processes and products would not have been commonly imagined or experimented. A keen observation of technological evolution, reflection on need fulfillment and likely product appreciation the market place together create an intuitive force that reinforces the pioneering spirit.

It is like continuously reading newspapers since your childhood and whether you are focused on the topic or not whether it is in your domain or not; as you keep reading millions and millions of English sentences and the vocabulary related to that and how the vocabulary is placed contextually in sentences with reference to certain descriptions.

This entire word bank is fed to your memory; intuition is also similar to that, as you keep observing whatever is happening in the real life, as you keep observing how the new sunrise products are coming up; how the customers demand is shaping up, you will have an intuitive approach in your own mind which gets accumulated and assume its own characteristic in your mental and thoughtful approach.

This does not mean that experience is not required in setting up pioneering enterprises. Intuition borne out of experience further helps pioneers tread new paths with confidence and innovation. JRD Tata, as I recalled earlier in an example was the chairman of India's truck and bus segment giant; Tata Motors then Telco.

He took over the die and tool making shop in 1960s and stated that this acquisition would play a major role in Telco's future, that was the foresight and several product developments that Tata could do later on in commercial vehicle, utility vehicle and passenger car segments stemmed from the resultant unique capability to design and manufacture cabs for trucks and later car bodies and which required again dies and moulds to be made in that facility.

Therefore, you can see the technological foresight and a visionary step taken decades ago, to integrate indigenous tool and die capability with the automobile manufacturing infrastructure of Telco paved the way for Tata Motors to become the only Indian automobile manufacturer capable of designing and developing all types of automobiles indigenously.

So, the indigenous tool die capability led to import substitution of designs, dies, moulds and stampings; provided greater flexibility to develop indigenously modern automobiles, that is the foresight aspect of the emotional triad.

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Then you have the passion that is the second leg of the enabling triad. Passion literally has no limits, it is verily the fuel that provides the energy to the founding team, to conquer the challenges and vicissitudes of a first-to-lead journey. We are talking about passion and energy being two sides of the same coin, in the previous lecture. You can look at Abraham Bell who founded ATT in 1885, Masaru Ibukasan and Akio Moritasan who were the co-founders were Sony in 1946.

Jamshetji Tata founded Tata Steel and Tata Group in 1904, Ghanshyam Das Birla, G. D. Birla as is popularly called founder Birla Group; 1918. Konosuke Matsushita founder of Panasonic; 1918, Steve Jobs and Steve Wozniak co-founders Apple, 1976, Ardeshir Godrej founder Godrej Group; 1897.

Paramanand Hinduja founder Hinduja Group; 1914, Paul Allen and Bill Gates co-founders Microsoft; 1975. Charles Erhat and Charles Pfizer co-founders Pfizer, 1849, Jamanlal Bajaj; founder Bajaj Group, 1926, Dhirubhai Ambani; founder Reliance Group; 1973.

All these industrialists, entrepreneurs, startup founders by whichever name you would like to label them at the start of their leadership journey they were fired by passion and energy. Their initiatives were sustained by their passion and energy; boundless passion enabled all these pioneers, whatever be there ilk or vintage to keep pushing their innovative ideas, towards commercial fruition in India and globally.

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You can look at this start up passion in a greater focus; post liberalization of India that is post 1992, we have seen a new generation of entrepreneurs. Established diverse types of enterprises many of them successful and even global in their scale and scope; some of them of course, have had issues with the debt levels.

Jitu Virwani, founder Embassy Group; 1993, Ekta Kapoor founder Balaji Tele films; 1994, Deep Kalra founder Make My Trip.com 2000, Kishore Biyani; founder Big Basket, 2001, A Velumani founder; Thyrocare 1996. Doctor Devi Shetty founder Narayana Hrudayalaya; 2000, Radhakishan Damani, founder DMart; 2002.

Deepinder Goyal and Pankaj Chaddah founder Zomato; 2008, Sunil Mittal founder Bharti Airtel; 1995, Sridhar Vembu; founder Zoho Corporation, 1996, Bhavish Aggarwal, founder Ola Cabs; 2010 and Sahil Barua and four others founder Delhivery; 2011.

All of the above entrepreneurs pursued completely different product, process and manufacturing approaches but had only passion in common. This passion enabled all the pioneers whatever be their ilk or vintage and whatever be their industry to keep pushing their innovative ideas towards commercial fruition; as it was in the case of this stall wart pioneers we saw earlier.

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Then the third part of the emotional triad which is focus; focus typically characterizes all successful pioneering leaders and is the third leg of the enabling triad.

Exploration of the unexplored requires an ability to identify the precise directions that could lead to maximal discovery of new product opportunities and commercialization path ways. Ford's model T car, Sony's Walkman, Microsoft's Windows, Intel's chip, Google's search engine, Apple's iPhone all are a result of the focus; the founders and the startup companies had on such products.

They all came with the right product niche and user functionality, despite availability of alternatives in each case. Pioneering minds are passionate about their intuition, but commercially pioneering minds are also focused. The focus typically also comes with intuition that such leaders possess and the passion that drives a single minded pursuit of their goal.

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Engaging with all the concepts which we have developed and illustrated and also integrating all of these things. We can say that these two to triads which we discussed namely the physical triad of product, process and business and the emotional triad of intuition, passion and commitment often merge in different shades to result in three distinct models of pioneering leadership.

One innovation leadership, two differentiation leadership and three cost leadership; all are shades of the pioneering leadership model about which this lecture is concerned; many of these aspects in completely different light with greater nexus with technology where discussed in my book technology and competitive strategy.

Pioneering means doing in a manner that is ahead of others; it could be through pure innovation, differentiation or a highly cost competitive position.

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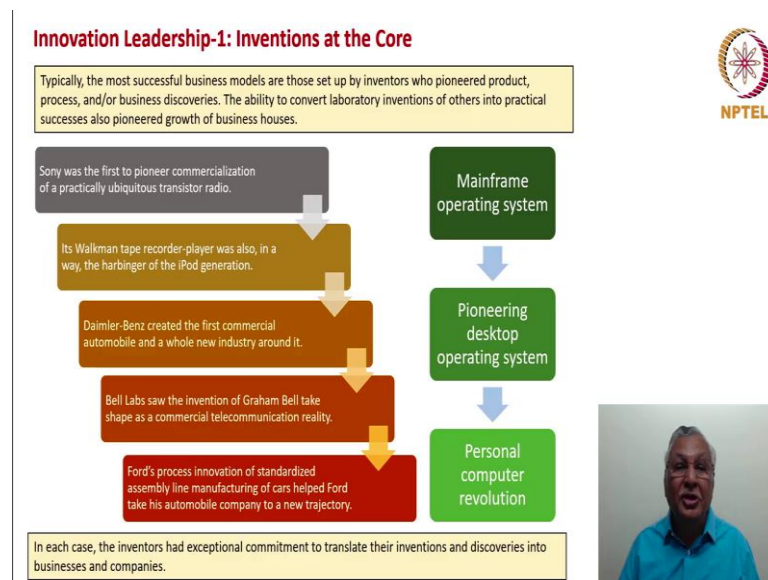
For innovation leadership, you need to have inventions at the core. The most successful business models under this leadership are those set up by inventors who pioneered product, process and or business discoveries. The ability to convert laboratory inventions of others into practical successes also pioneered growth of business houses.

Sony was the first to pioneer commercialization of a practically ubiquitous transistor radio. Its Walkman tape recorder-player was also, in a way, the harbinger of the iPod generation. Daimler-Benz created the first commercial automobile and a whole new industry around it. Bell Labs saw the invention of Graham Bell take shape as a commercial telecommunication reality.

Ford's process innovation of standardized assembly line manufacturing of cars helped Ford take his automobile company to a new trajectory. Similarly, from mainframe operating system which existed in the 1960s and 1970s as the sole operating system.

Microsoft pioneered desktop operating system; now we have the personal computer revolution.

Then, somebody else would pioneer the mobile operating system and a whole breed of smart devises are now available. In each case, the inventors had exceptional commitment to translate their inventions and discoveries into businesses and companies.

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Another aspect, the intellectual property, many pioneering leaders seek to make pioneering, the strategic DNA of their companies.

I talked about pioneering leadership being an institutional phenomenon rather than just an individual leadership phenomenon. And many pioneering leaders try to make pioneering the strategic DNA of their companies. They create an ecosystem by which inventions either from internal laboratories or external licenses are constantly utilized to create new product lines and businesses.
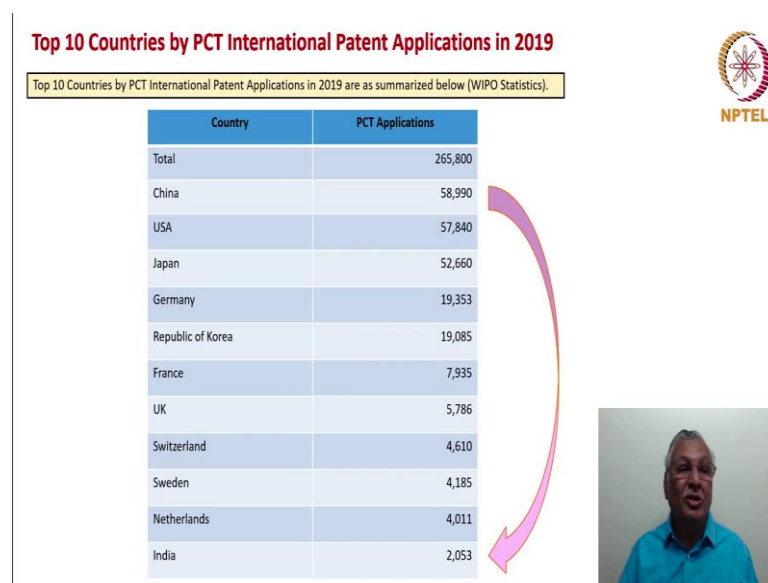
Innovative companies such as DuPont, 3M, Google, Sony and their leaders constantly look for pioneering ideas and generation of intellectual capital to drive new commercial successes; that is why Google's founder set up alphabet as an overarching parent corporation to dabble in different innovative technologies and hopefully bring such technologies into commercial fruition.

In fact, if you see the ranking of top patent applicants by the world intellectual patent organization; you can see the correlation with industrial leadership by companies. The largest and best known companies from Japan, South Korea, Europe and Canada, as well as US rank high in patent filings. We have the examples of Panasonic, Sony, NEC, Sharp and a whole lot of companies from Japan.

Samsung and LG from Korea, Bosch; BASF, Philips, Siemens etcetera from Europe and Qualcomm from Canada. And in from US, you have Microsoft, HP, Google, Apple and several other companies from the US. Such patents usually cover product, component, process and usage innovations.

If India needs to assume innovation leadership; India needs to strive for intellectual property leadership. Patent filings in fact, constitute national comparative advantage.

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Top 10 Countries by PCT International Patent Applications in 2019

Top 10 Countries by PCT International Patent Applications in 2019 are as summarized below (WIPO Statistics).

Country	PCT Applications
Total	265,800
China	58,990
USA	57,840
Japan	52,660
Germany	19,353
Republic of Korea	19,085
France	7,935
UK	5,786
Switzerland	4,610
Sweden	4,185
Netherlands	4,011
India	2,053

These are illustration how top 10 countries by PCT International Patent Applications in 2019. We have china at 58,990, patent cooperation treaty applications count and we have India at 2053; let us see the gap that needs to be bridged.

And China is amongst the top five, six countries with 5-digit patent application numbers. So, this is a marker of the technological innovation that is happening in product, process, utility and various other facets of intellectual property.

The third demonstration of innovation leadership that is the keeping the spirit up; loss of innovative edge leads to decline in business for companies and even structural atrophy of whole industries.

Companies in the innovative pharmaceutical industries survive and grow entirely on product patents. Many mergers and acquisitions in the industry are driven by the sheer need to buttress the product pipeline. Decline of pioneering spirit in in big pharma is reflected in lower ranking of pharmaceutical firms in global PCT ranking, declines in R&D productivity and new drug approvals.

Reverse entry by innovator pharmaceutical companies into the generics. When big pharms slows down in innovation, startups and university step up; many startups provide new drug candidates. Growth of biopharmaceuticals get sparked by startups and as an example COVID 19 vaccines are innovated not by the big pharma on a 100 percent basis; but by Oxford, Moderna and BioNTech which are smaller scale startup firms or research institutions.

Leaders need to revive pioneering spirit in innovation strapped organizations. GSK has decided to spin off its R&D organization to multiple discovery oriented venture teams, so that the spirit of pioneering gets into the R&D system. Leaders believe that creativity is better fostered in smaller organizations.

Larger firms certainly benefit by outsourcing research, in licensing proven developments from the smaller firms or acquiring assets and companies that have proved themselves. Fostering innovation is a prime responsibility of leaders especially in industries where sustainability is closely dependent on product innovation.

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Now, let us look at differentiation leadership; we talked about innovation leadership as one part of the pioneering leadership model.

Let us look at differentiation leadership; here you could look at convergence taking individual technological developments, to a higher degree based on the convergence. Not all pioneering leaders are those who construct and grow their businesses based on fundamental discoveries and inventions.

Thoughtful leaders who observe the current products, innovative or pioneering, would still come up with differentiated products. Apple is a perfect example of converging multiple technologies innovatively. The touch screen methodology was available in several machine tool examples and various other electronic examples; however, Apple brought that technology and that user interface and the types of touch screens into smart devices marking a wonderful revolution in these smart devices.

So, leaders must observe the innovative developments in different products or regions around the world and must adaptively view such observations into pioneering ventures in other products and other regions; lead into differentiated products and businesses.

They need to think of differentiated features by which even pioneering products can be improved upon. Examples are iPod and iPhone which brought touch screen technology from industrial sectors to a handheld product platform in a revolutionary way. Japanese automobile manufactures were the pioneers in light, mini and micro automobiles.

Indian automobile manufactures had been in active exposure with Japan from the 1980's but only one observant truck manufacturer Tata motors rather than any other Indo Japanese automobile manufacturer or Indian manufacturer replicated that aspect of bringing lighter forms of trucks into the market. It is a perfect case of adaptive pioneering through differentiation, in a product starved light commercial vehicle market and later a small commercial vehicle market in India.

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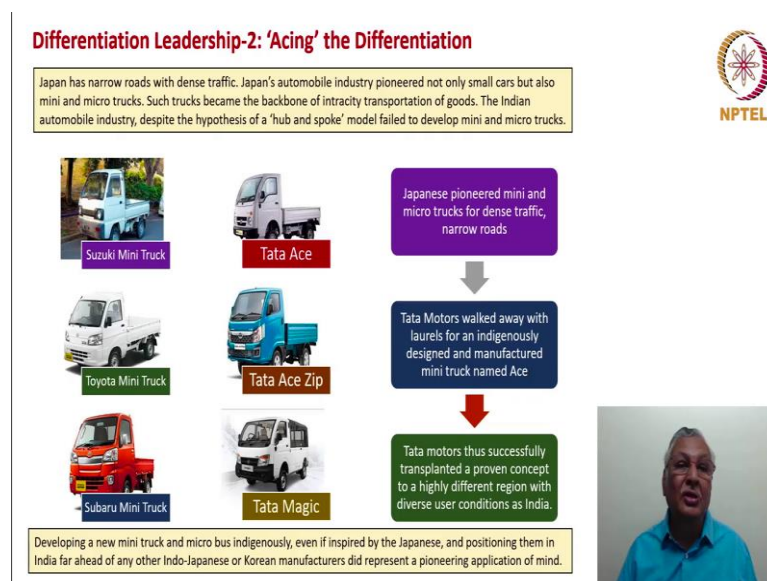
 Acing the differentiation is illustrated here; Japan has narrow roads with dense traffic. Japan's automobiles industry therefore, pioneered not only small cars, but also mini and micro trucks; such trucks became the backbone of intracity transportation of goods. The Indian automobile industry despite the hypothesis of a hub and spoke model, failed to develop mini and micro trucks for several years even decades.

You have Suzuki mini truck that was available in Japan for several decades, but Tata Ace brought it at least for the first time. It pioneered the bringing of the mini truck into India. Toyota mini truck was available, Tata Ace Zip came on, Subaru mini truck came, then Tata Magic came on. So, while the Japanese pioneered in their markets; mini and micro trucks for dense traffic narrow roads.

It was waiting to be pioneered in a distant market such as India which has not been used to those kinds of trucks. Tata motors walked away with laurels for an indigenously designed and manufactured mini truck named ace. Thus Tata motors transplanted a proven concept to a highly different region with diverse user conditions such as India.

So, developing a new mini truck and micro bus indigenously even if it was inspired by the Japanese, the very thought of developing such product indigenously and positioning such a product in India far ahead of any other Indo Japanese or Korean manufacturers did represent a pioneering application of mind on the part of the leader at the point of time Ravikant and Tata motors.

That is differentiation leadership which could be a factor of acing the competition.

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Another example of adaptive product development; designs and process that deliver new products with localized features and pricing also have enabled many companies to pioneer new products for established and emerging markets.

Some corporations have acted locally to pioneer revolutionary new products that are not necessarily first time discoveries, but are differentiated products. In Brazil, Macro Polo pioneered bus trains that is a whole series of busses acting as trains on the road, that was the pioneering concept which macro polo brought to Brazil. Haier compact fridge with computer table was a pioneering innovation in China.

Tata Motors, Nano car; a five door automobile with a hatch back style with that type of compact configuration and fuel economy and lower cost was certainly a pioneering introduction. Hindustan Unilever Pureit water purifier was an example of pioneering for the bottom of the pyramid consumer class.

It provided the high class capability of a water purifier, at a much lower cost in a very simple usable manner and without the need for very sophisticated service mechanism or for very costly replacement parts. GE India's VScan portable ultrasound machine; another emerging market discovery or another emerging market innovation made by GE, based on its presence in India.

Again GE India's MACI, a portable ECG device which was very useful for rural population, Nokia's ultra low cost mobile phone; first pioneered way back in the 1980's and it was completely transformational for starting the mobile revolution in India. Colgate Vedshakti ayurvedic toothpaste, again a model of ayurvedic medicine coming into Indian personal care products through adaptation of the local practices.

Pioneering strategies of this ilk have a sharp sense of local user needs and market ecosystems, besides a grasp of technological adaptation that could deliver new cost effective and utilitarian products. And such product will have universal acceptance because of the way in which they address the local needs very effectively with convergence of available product concepts put into a newer usage system.

Another example of differentiated customer experience; differentiation leaders are as focused as innovation leaders on science and technology, but leverage them for better enhancement of and enablement of consumer behavior; they enhance the fulfillment of the needs. We had a question answer search model of Google, then it expanded to Gmail, then it expanded to video calls, now AV conferences.

Facebook utilized the technology to build business with social communication, network and behavior as its bedrock. Then, twitter came on in an environment of information overload focused on concise messages of not exceeding 140 letters to create interconnected community.

Then WhatsApp came up; it started providing free text and photo messaging service over the internet and follow it up with video calls, as well as end to end encryption. It has seen the mobile device; the cellular phone being the main stay of the millennials and came up with an operating system which would be highly helpful for the millennials using only the mobile phone, as their prime medium of communication and connectivity.

Instagram came up as a social network platform that is focused heavily on storytelling with live photos and narrations, as well as location tagging. Then of course, we have this story of Tik Tok, a Chinese social networking platform; that became popular for creating and sharing short dance, lip sync, comedy and talent videos; until US and India took a view that they were kind of impacting the national ethos, somewhat adversely.

As can be seen, each of the social networking sites has succeeded in differentiating itself with sustainability based on specific anchor features.

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Then the third aspect; cost leadership, against there are some different types of examples in this. To be a cost leader in the pioneering model, you need to have pioneering of operational excellence.

Mirroring more of business pioneering; cost leaders combine firm level competitive advantage with national comparative advantage. Firm level competitive advantage is combined with national comparative advantage to pioneer effective business models in a globally competitive manner; Infosys, the pioneer in global delivery model.

Apollo hospital; pioneer in medical tourism, a cost efficient and curatively efficient medical tourism industry was pioneered by India's corporate hospitals. Byju's the learning app pioneer in online education; the model of online tuition through digital means pioneered by startups and individual accomplished teaches from India has set up a whole global community of students.

Then, we have Dr. Reddy's which was a pioneer in global generics; fast track and low cost development of bulk drugs and generic formulations for global markets by the Indian pharmaceutical industry. Dr. Reddy's pioneering in generic opened up a whole new market for generics, for the Indian pharmaceutical industry.

MTR was a pioneer in home foods; the family serving retail chains established by the Indian business houses followed thereafter. Hyundai pioneered India based exports, manufactured out of India, but exported for Hyundai network all over the world.

The model of importing technologies; setting up facilities and exporting automobiles developed by the Indian auto mobile industry was taken to the next higher level of indigenization and export production. High caliber execution models lead to global operational excellence and cost leadership. Execution pioneering is the mantra here and that mantra is not dependent on scale neither is it the preserve of only large corporations.

Small agile companies can also perform excellently with operational efficiency and effectiveness.

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Another example of execution pioneering, it creates centers of excellence in specific industrial and business sectors; India and China have executed successful models of global back office and global workshop respectively.

Under make in India and Atma Nirbhar; self reliance initiatives, India desires to be a global manufacturing hub as well. With broad industrial country segments, some firms excel more than others by pioneering execution; an example from the pharmaceutical industry; we make sterile products, we make complex generics, we make niche therapies and we develop them end to end from API development to final formulation provision.

The once completely import dependent industry can rediscover itself through execution pioneering; joint ventures Maruti Suzuki; wholly owned subsidiaries Renault Nissan and wholly indigenous corporation Tata Motors. All of these dart the Indian automobile industry, but those industries which have rediscovered themselves through execution pioneering have become huge.

And within that companies subscribe into that execution filing philosophy became dominant firms; in this case Maruti Suzuki and Tata motors and Hyundai India. You can enter a sunrise industry with confidence and conviction; a renewable energy example; wind energy, solar energy, geothermal energy. Adhani has become the pioneer in solar energy with the world's largest single location energy park under its belt.

Execution pioneering relies more on the enabling triad of intuition, passion and focus. These act as synergetic winning combination, motivating higher levels of performance with productivity, efficiency, effectiveness and cost advantages.

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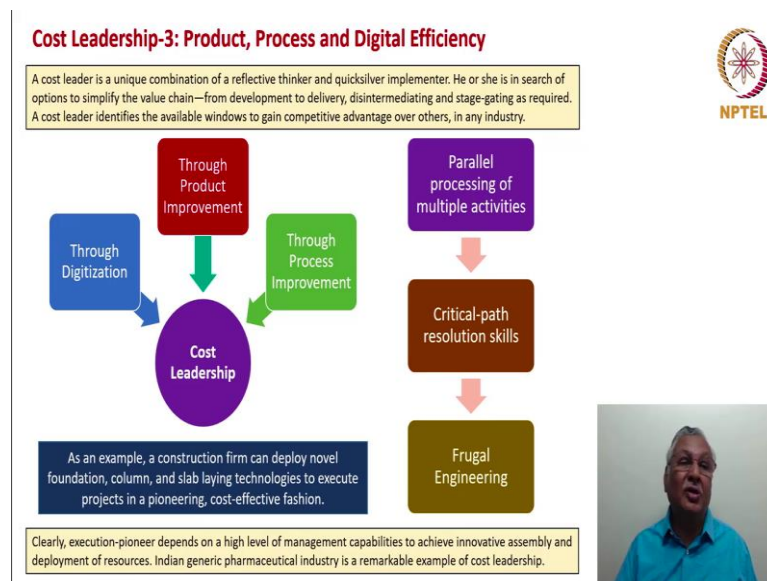
Another example of cost leadership; it can come through digitization, it come can come through product improvement, it can come through process improvement.

However, to be able to do that you need to be a reflective thinker and quicksilver implementer. You need to have options that would simplify the value chain which would increase the momentum from development to delivery. You should be able to dis

intermediate unnecessary steps, you should also be able to stage gate, but measure the movement across the stage gates very efficiently.

A cost leader therefore, identifies all the available windows to gain competitive advantage over others in any industry. So, such a pioneering leader does parallel processing of multiple activities. He would have critical path resolution skills and he would be a master in frugal engineering.

As an example, a construction firm can deploy novel foundation, column and slab laying technologies to execute projects in a pioneering, cost effective fashion. Clearly, execution pioneer depends on a high level of management capabilities to achieve innovative assembly and deployment of resources. Indian generic pharmaceutical industry is a remarkable example of cost leadership.

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Let us look at how the digital strength adds an extra edge to this whole process of pioneering. Both the physical triad of product, process or business and the emotional triad of intuition, passion and focus require a digital culture to be successful. Digital technology is making continuous strides with occasional step function enhancements to substitute and supplement human faculties.

Examples digital ordering and delivery which we are now completely aware of and that has gone to the next level with contactless deliveries. Next, we have Amazon go which is

a no cashier stores; you can physically go into your store, but have none of the physical human interfaces that you have in the normal retails store, it is a hybrid of physical digital for the best of both.

Then, you can work or study from home or anywhere else as the new normal which would provide increased productivity and flexibility, but it also comes with loss of human touch, lack of holistic developments. India's drive towards less cash economy requires physical digital process on one hand and emotional digital mindsets on the other.

Leaders who recognize the importance of digital transformation as their new core within their existing core would be in the forefront of pioneering leadership.

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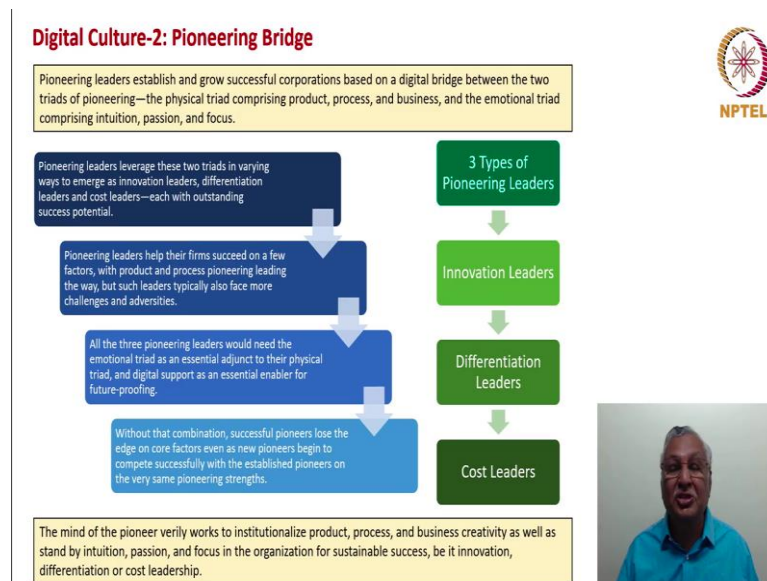
I will demonstrate another aspect of digital culture which is the pioneering bridge. Pioneering leaders establish and grow successful corporations based on a digital bridge between the two triads of pioneering.

The physical triad comprising product, process and business and the emotional triad comprising intuition, passion and focus; these two triads are combined in varying ways by the pioneering leaders. To have what they wish to have which is innovation, differentiation or cost in terms of leadership and each will have outstanding success potential.

Pioneering leaders also help their firms succeed on a few factors; it could be product and process pioneering or it could be business process pioneering that could be leading the way. All the three pioneering leaders would require this emotional support of intuition, passion and focus so that the future is sustained as they develop through the difficulties and challenges of product pioneering or process pioneering or business pioneering.

And in this domain and in this activity; digital support is essential to future proof whatever developments that are taken place in these three areas. And without this combination of physical, emotional and digital newer pioneers could actually challenge the established early pioneers.

Therefore, the mind of pioneer must work to institutionalize the product, process and business creativity; as also reinforce intuition, passion and focus in the organization for sustainable success; it could be in the space of innovation, differentiation or cost leadership. So, with this we come to the end of the lecture.

Thank you.