**Entrepreneurship**
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**Lecture 45**
**India as A Start-up Nation**
**Part 3**

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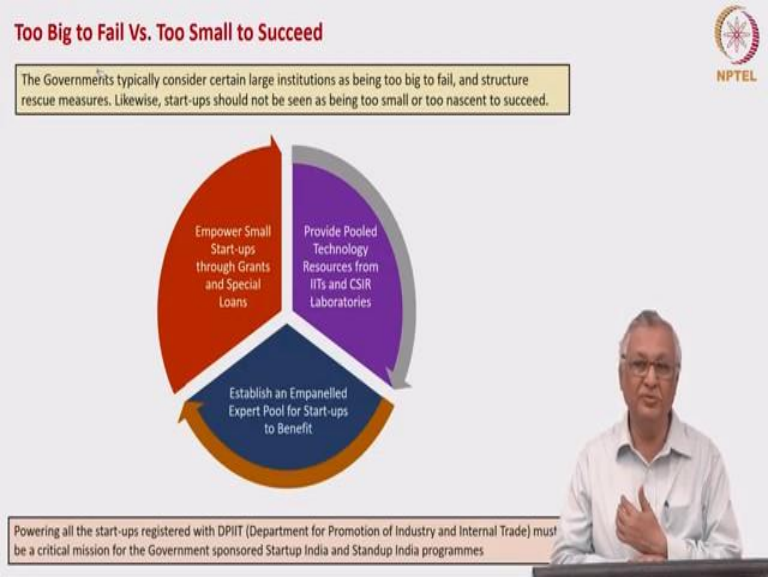


Then we have also this dilemma, too big to fail versus too small to succeed. In respect of big business and big companies, governments take the view that certain institutions are too big to fail. US considered several institutions as too big to fail and has provided great support for companies such General Motors and certain banking institutions during the aftermath of the 2008 meltdown.

Even in India, we consider that certain strong financial institutions like State Bank of India or HDFC Bank are too big to fail. Similarly, in terms of our own understanding, we think that many private sector undertakings, many strong educational institutions should never fail because they are the bulwark of India's development and growth.

But at the same time, we should also have a view that start-ups should not be seen as too small, which can be allowed to fail. Start-ups also should be seen as not being too small or too nascent to succeed. Even as being small, they should be allowed to succeed. So

how does that happen? It happens when we empower small start-ups through grants and special loans.

When we provide pooled technology resources from IITs and CSIR laboratories and other technology sources, when we establish an empanelled pool of mentors and coaches for the start-ups to find their feet at the earliest.

Powering all the start-ups which are registered with DPIIT, which is the department for promotion of industry and internal trade, that would be a critical mission for the government sponsored start-up India and stand-up India programs.

We should be able to monitor each of these start-ups individually and ensure that these start-ups move up the value chain and they are nursed very well during their small and nascent phases.

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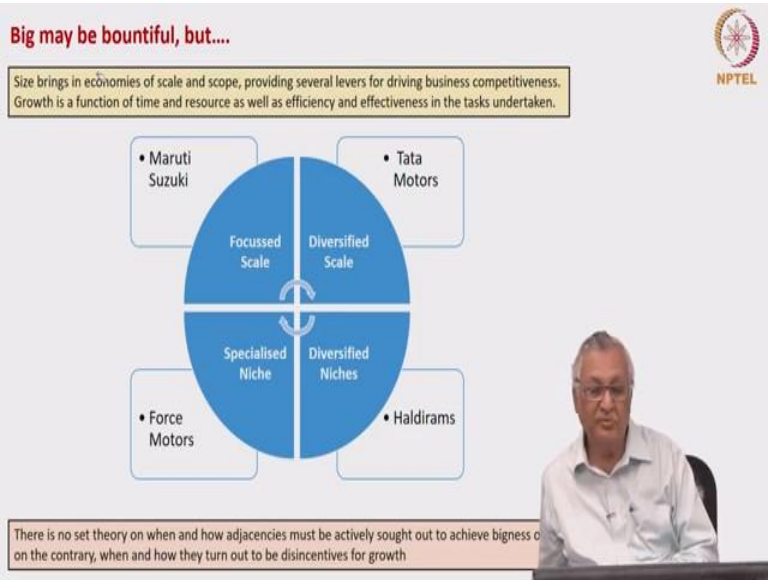


Size brings in economies of scale and scope, it maybe bountiful to be big. It provides several levers for driving business competitiveness but growth is also a function of time and resource as well as efficiency and effectiveness in the tasks undertaken.

And it is not that scale and scope or the same regardless of the industry, scale and scope are same regardless of the nature of the company. So, there are two types of scale, one is a focused scale and second is a diversified type scale.

When we talk about focused scale, we talk about the scale which is exhibited by, say, Maruti Suzuki. It is very much focused on passenger vehicles like passenger cars, sedans and also these utility vehicles. Then we have got diversified scale which is exhibited by Tata Motors covering a whole spectrum of products from passenger cars to heavy commercial vehicles and buses and equipment, earth moving equipment.

When we look at niche, we have niche such as Force Motors which is very much focused on one type of vehicle but customized for different needs which is a specialized in this. Then we have got, food process makers, who are diversified in terms of different types of food products and they have niche service in each of these products.

And there is no way we can say that one type of scale is better or worse than the other type of scale and each type of scale or each type of scope has got different functionalities. So, there is no set theory on when and how adjacencies must be actively sort out to achieve business or on the contrary when and how they turn out to be disincentives for growth.

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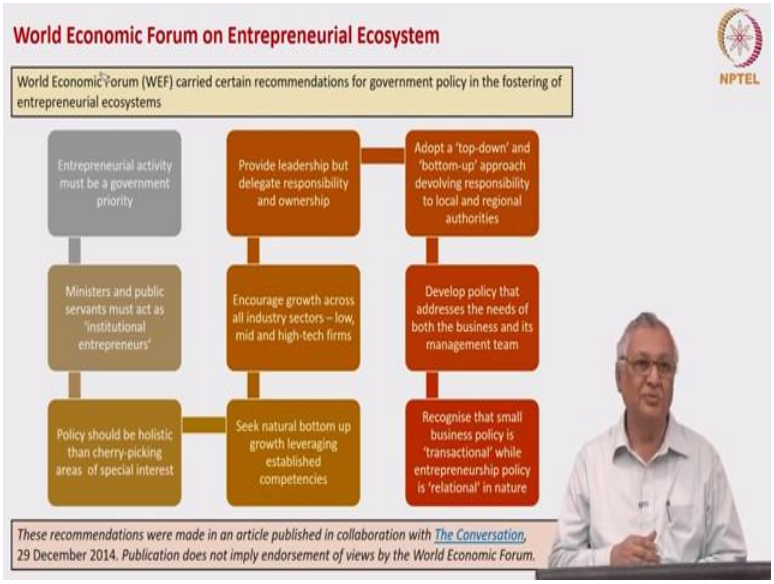


World economic forum, the third organization I am relying upon to draw some learnings on the entrepreneurial ecosystem. They have certain recommendations for the government policy in the fostering of entrepreneurial system. So, it is a kind of a flow chart of nine things which governments must do.

First, entrepreneurial activity must be a government priority which is in India's case. Second, ministers and public servants must act as institutional entrepreneurs. When we have departments, which I mentioned, like department for promotion of industry and internal trade, we are moving to a situation where certain ministers and public servants will be acting as institutional entrepreneurs.

Third, which is very important, probably where we further need to gain traction is that the policy should be holistic rather than cherry picking areas of special interest. We cannot have start-up policy only for artificial intelligence per se. We cannot have start-up policy only for digitization. Start-up policy should be much more holistic and should cover every industrial stream that we have in the making.

The fourth one, seek natural bottom up growth leveraging established competencies, that is there is a way to impose start-up development by bringing in newer ways of doing

things. On the other hand, we should let the existing industrial system, develop newer green fruits of digital technologies or artificial intelligence.

Therefore, the spread affect will be much better not only in terms of creating new start-ups but also transforming the existing industries. So, we should look at a natural bottom up growth which leverages the established competencies. Then we should also encourage a start-up growth across all industry sectors. It should be across low, mid and high-tech firms as well. It should not be that only high-tech firms areas of start-up growth.

The other point, the sixth point is that government should provide leadership but should also delegate responsibility and ownership. Seventh, adopt both a top-down and bottom-up approach revolving responsibility to local and regional authorities which means that it is not only the centrals centers responsibility, the equivalent of federal government here.

To ensure start-ups the state governments also must take enough interest and eventually regional development authorities should also take effort in ensuring the start-up movement is supported. Then develop a policy which addresses the needs of both the business and the management team, because management team in a start-up has got its own requirements and that, those needs.

Whether it be in terms of the stock options, in terms of the ownership in the technological capital, they generate the requirements for up-skilling. These also need to be addressed by the policy. Again, look at the difference between small business and the proper entrepreneurship. Small business policy tends to be transactional, that is, you have a regular ongoing day-to-day transaction, how you need to fulfill, how it provides daily resource and based on the daily supplies to the customers.

That is the transactional small business policy, whereas a proper formal entrepreneurship policy is more relational because you have to create a networked entrepreneurship ecosystem so that the formal entrepreneurship takes route as an institutional mechanism. These nine recommendations were made in an article published in collaboration with the conversation in 2014. Although 5 years have elapsed, these recommendations are still relevant and valid.

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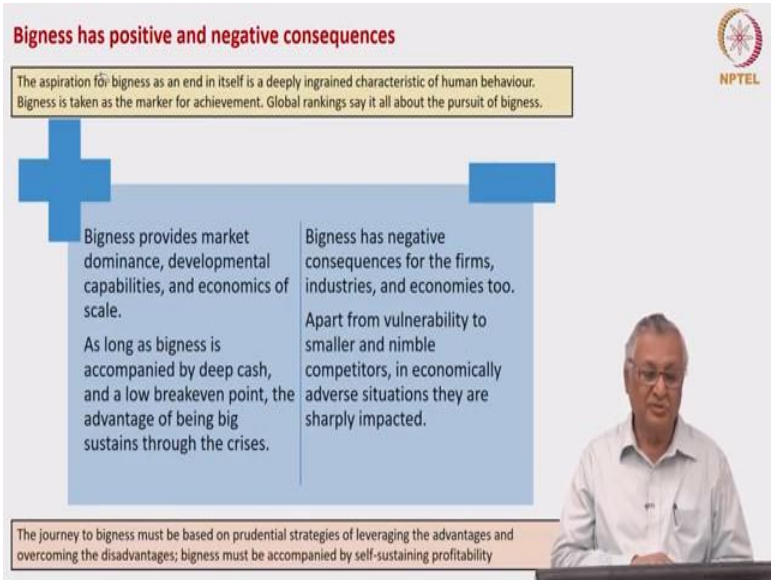


So, coming back to bigness. Bigness has got both positive and negative consequences. The positive consequence, bigness provides market dominance, provides developmental capabilities and economies of scale. As long as bigness is accompanied by deep cash and a low breakeven point, bigness will not be a hindrance.

However, if bigness does not have the cash and has low margins and the breakeven point is high, there is always the risk that in times of economic recession, big firms tend to fail. Bigness has negative consequences for the firms, industries and economy. They are vulnerable to smaller and nimble competitors in economically adverse situation. They are sharply impacted.

So, there would be a time when big companies are eroded in terms of their market capability by smaller and more nimble start-ups. Now that is one way in which start-ups would grow but that also would mean that the employment potential and the infrastructure that has been generated by big firms is put to waste over a period of time.

Again, it comes back to the main point of how we should ensure leadership and management in both big companies and start-ups so that they succeed together, they succeed collaboratively and synergistically and one is not in exclusion of the other. So, the prudential strategy must be to leverage the advantages and overcoming the

disadvantages of both bigness as well as the smallness, and how should we have self sustaining profitability covering both the units.

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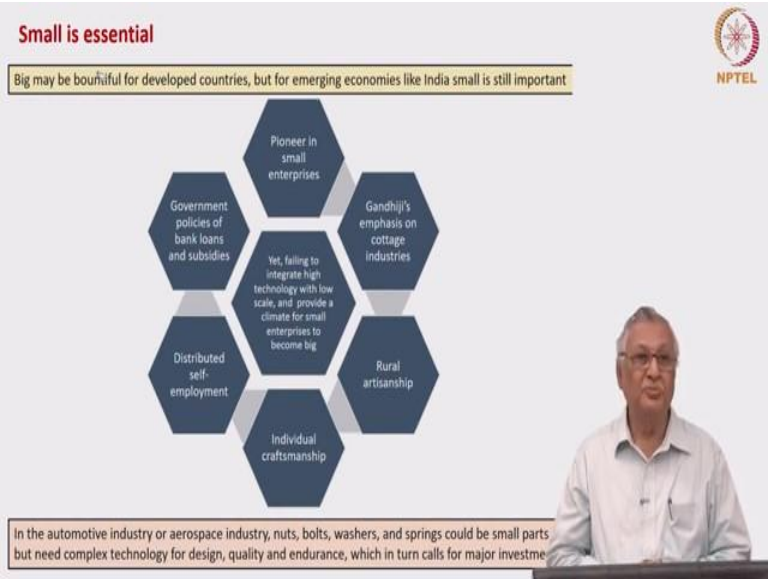


So small is essential. Therefore, start-ups are essential. So how do we ensure that? One, we have been a pioneer small enterprises. Gandhiji, father of our independence has provided emphasis on cottage industries. Rural artisanship is still a major factor in ensuring livelihood. We have individual craftsmanship which ensures that an individual can earn based on his own contribution to art and day-to-day transactions.

We have distributed self-employment and we have got governmental policies of bank loans and subsidies which supports all of these things. However, we are not able to develop a technological paradigm wherein technology inputs are provided to the small enterprises and they have been enabled to become big

In the automotive industry or aerospace industry, if you look at a nut, washer, bolt or spring. They would look like being very small components but they typically have very complex technology and to manufacture them you need high capabilities in material technology, manufacturing technology and quality assurance. So, any upgradation, even to establish those companies or to even to upgrade those companies we require significant levels of investment.

So how does that happen? So should small companies work only in low technology areas or should we bring small companies even into the high technology areas.

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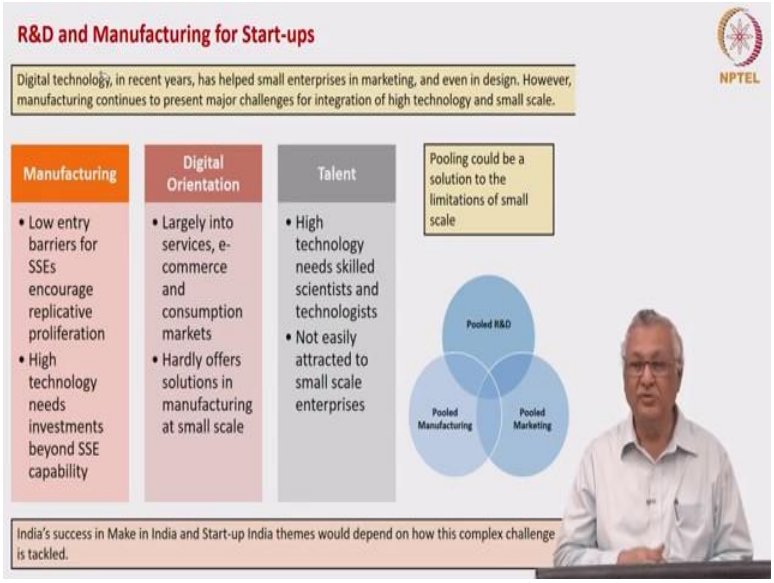


So digital technology has helped small enterprises in marketing clearly. They have been able to outwit the larger physical brothers in terms of doing things faster. Even in design, digital technologies have helped. What we see as 3D movement or additive manufacturing is the ability to convert a 3D model into a readily usable component.

So, there is lot of digital technology that is involved in a design. There is lot of digital technology in making movies. So digital technology is there across board in design. However, manufacturing continues to present major challenges for integration of high technology and small scale.

One, on one hand we have low entry barriers for small scale enterprises, therefore there is a temptation for replicative profligation. So, if somebody is successful doing washers, you will find 10 other small-scale enterprises trying to do washers. So, the ability to capture the market and grow based on the market-based revenues becomes less, everybody earns a small pie of the total cake and firms are not able to reinvest.

And high technology definitely requires investments which are beyond the small scale enterprise capability, whereas the digital orientation is confined only to ecommerce

supplications, consumption markets. It never provides a solution in the manufacturing space. You require the core machine tool before you start digitizing the machine tool operations.

High technology requires high level of skill in scientific and technological terms, talent goes there and such talent is never attracted to small scale industries. So, we have a dilemma where to enter an industry to create a start-up ecosystem we need small scale enterprises, but at the same time all the pointers are towards science and technology gravitating towards the higher end of big firms.

How do we do that? So, the pooling is only solution to the limitations of small scale. We should have an ecosystem which provides pooled R and D, pooled manufacturing and pooled marketing for start-ups.

So, our success in Make in India and start-up India themes would depend on how this complex challenge of pooling resources to support start-ups is tackled. Who will pool what and what kind of institutional structures will be there to share the investments and proceeds out of this pooling judiciously.

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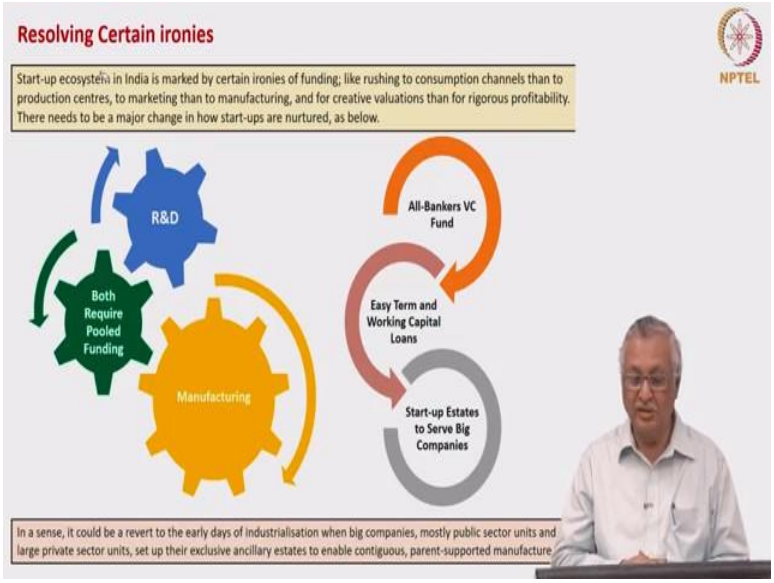


So, R and D, manufacturing both required pooled funding on one side. On the other hand, we have funding which goes into the consumption side. So how do we really ensure that

the alignment takes place between funding and the requirements. Today also the chairman of Kotak Mahindra group was saying in a TV broadcast that India should have its own venture capital system.

We are essentially dependent on western venture capital system which has got its own prescriptions and which has got its own ways of funding projects and which has its own abrupt ways of moving out of projects if the projects are not fulfilling the criteria. But we have an indigenous requirement therefore we need a venture capital funding system which is very unique to India.

So, the suggestion here is that all of the Indian bankers should combine to provide a big venture capital fund probably which is larger than the fund of fund which we have for start-ups from the government of India. So, we should have a venture capital fund from the banks which operates as a true venture capital but adaptive to Indian needs and in an autonomous basis.

Second, we should have easy term and working capital loans to the start-ups. What happens in the start-up system is that once a product is ready to be operationalized, the working capital cycle kicks in. However, no start-up founder is willing to go to the bank for getting a working capital loan.

Because A, the procedures are complex, B, the proving starts all over again to the bankers; and C, the requirements of working capital funding are so time constraint that it may be difficult, because as the start-up movement itself requires gaining consumer acceptance over a period of time.

Therefore, the start-ups typically tend to going for investor funding even for operational requirement, even for working capital requirements, which is in a way diluting the valuation of the company which is also making the start-up founders more at the requirements of typical venture capital funding.

If only the startups which have had a successful minimum viable product demonstration are able to access easy term and working capital on special basis with, let us say, more extended working capital time without any collateral, without requiring margin money.

Most start-up companies would be taking bank finance and they will be able to optimize their funding needs.

So, most of the venture capital requirements will be going into R and D and creating manufacturing facilities, whereas the operation of the product cycle will be through working capital and term loans. Then we also require start-up estates like they serve the big companies, we should also have start-up estates which serve the start-up companies.

In a way when we look at it, it is revert back to the situation in the 1940s where big companies provided support to ancillary units to establish ancillary units and become regular suppliers. Today we need companies which are willing to support start-up industrial zones, ensure that the newer technologies are put into place by the start-up companies with the support of demand that can be provided by big companies, and in some cases, even mentoring support as well as financial support.

So, three things are very important here. One, we should have a venture capital fund which is provided and funded by all banks together as an autonomous activity, easy term and working capital loans should be available for start-ups once they pull the product in the marketplace as beta tested product. And there should be start-up estates which could serve big companies in terms of modernization and transformational technologies.

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We also have certain steps to make sure that these small start-ups achieve sustainability. One, we should have a definition of start-up which is dynamic. We cannot have a frozen definition of a start-up. One of the reasons why the small scale movement has not progressed in terms of investment modernization is because the limits have been set at levels decades ago and the limits were not moved upward.

Even in respect of start-ups what qualifies as a start-up should move as the overall average size of industrial firms moves up. Therefore, we should have increasing the limits as a continuous phenomenon in terms of defining the start-ups.

The second way is to ensure that employees have their own start-ups even while at services. Typically, managements look at employees as full-time employees and nothing else. But employees could have certain skills, certain capabilities which would be very useful for the firm in the long run rather than in the short run.

So, if, let us say, theoretically, an employee in an automobile firm was able to conceptualize an electric vehicle 10 years earlier, he would not be allowed to practice that in his laboratory. He would be told that you are not meeting the day to day requirements of development of a BS3 engine or a BS4 engine.

If only the company had the ability and the foresight as well as the systemic support to make sure that the employee can move out or even work in parallel as a developmental champion for the electric vehicle 10 years earlier, probably that company would have had lot of competitive advantage.

So, the essence of this thesis is that some employees would have ideas, technologies and passion which will be ahead of the times and such employees should be allowed to have their own start-up activities started, even while they are in service. And if the thoughts mature and if ides are fructifying, such employees may also be allowed to be on their own and start their own ventures.

Then we should have exclusive start-up R and D zones, wherein within the overall start-up zones which we have talked about, there should be special R and D zones for start-ups then we should also have a separate start-up R and D funding financial institution. So today, we have got everything under one bucket from R and D to manufacturing, from marketing to service we have under one bucket.

All types of loans are sanctioned by various financial institutions for start-ups. The moment you have a dedicated funding institution for start-up R and D, the entire spectrum of R and D development in start-up space would undergo a major metamorphosis. So, what I am advocating is a more focused and a more customized effort to be undertaken in India as in Japan, a combination of nascent nurturing and inspired self-development of start-ups.

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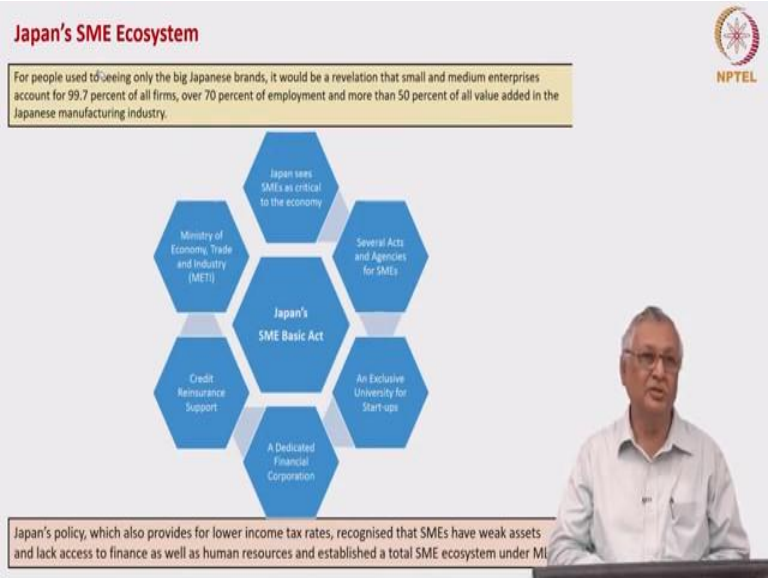


So, we have spoken so much about Japan and the start-up outcomes there. So how does the Japanese SME ecosystem work? For us who are attuned to seeing big Japanese brands, it would be a revelation that small and medium enterprises actually account for an overwhelming percentage of all forms.

Over 70percent of employment and 50 percent of all value-added in the Japanese manufacturing industry is catered to by smaller and medium enterprises. So, the pyramid is really very large at the bottom comprising an overwhelming share of small and medium enterprises in the overall enterprises.

As a result, Japan sees SMEs as very critical to the economy. There are several acts and agencies for SMEs. There is also an exclusive university for SMEs, a dedicated financial corporation exists, credit reinsurance support is available and ministry for economy, trade and industry METI, previously METI, that ministry is charged with development of small and medium enterprises.

And there is also an overarching SME basic act that has been enacted by Japanese diet. Japan's policy, which also provides for lower income tax rates, recognize that SMEs have weak assets and that they lack finances as well as human resources and established a total SME system under METI.

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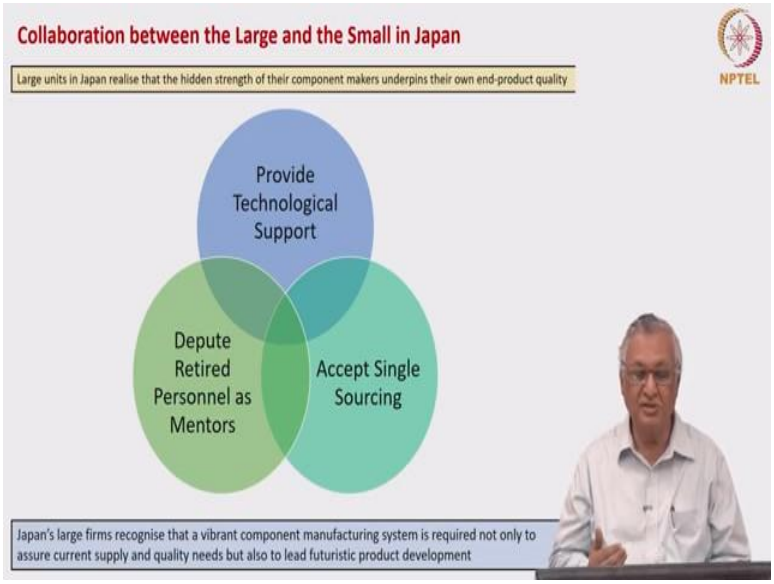


Large units also are very progressive. They realize that this hidden strength of their component makers underpins their own end product quality. So, what, they do three things. One, they provide technological support, two, they accept single sourcing, although the western model advocates that for every transaction, for every supply transaction it should have L1, L2, L3.

So, that you are fair and equitable in terms of your financial accountability to your company in terms of choosing the best. Japan says that we will accept single sourcing as long as the enterprises establish to be a critical, progressive and thoughtful vendor to the larger firm. So that helps provide scale to the start-up.

The third one is depute retired personnel from the larger company as mentors to the smaller company. So, it is not uncommon for retired executives to assume the executive positions in the start-up company or in the smaller ancillary company and help provide better linkages between the larger company and the smaller company.

They typically recognize that a vibrant component manufacturing system is required not only to assure current supply and quality needs, but also to ensure futuristic product development.

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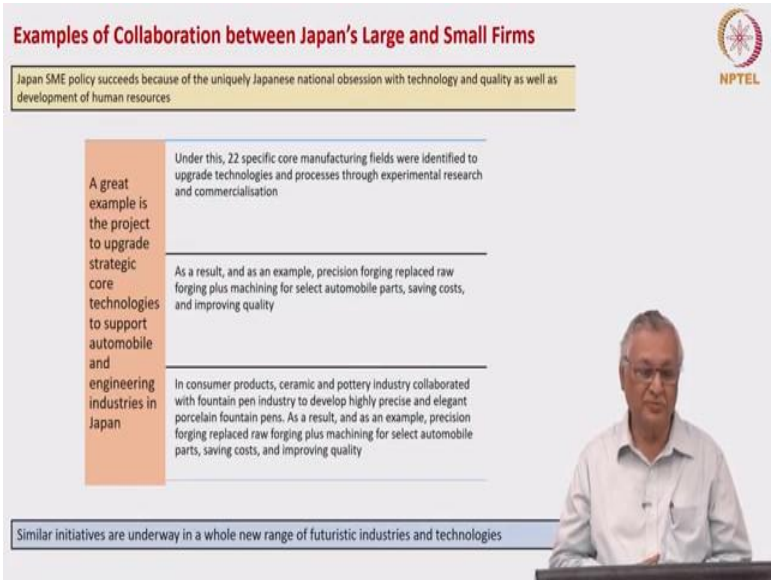


So, this theory of supporting Japanese SMEs is very much evident in practice as well. There have been several examples of collaboration between Japan's large and small firms. And I would say that the Japanese SME policy succeeds substantially because of the uniquely Japanese technological obsession, uniquely Japanese emphasis on high quality and also its commitment to development of human resources.

A great example for the success of SME policy is the project to upgrade strategic core technologies pertaining to the automobile and engineering industries. Under this, 22 specific core manufacturing fields were identified to upgrade technologies and process through experimental research and commercialization.

As a result and as an example, we can see precision forging replacing raw forging plus machining of select automobile parts. Precision forging means the forging is done as close to the final component requirements as possible. As a result, we do not take away too much of material. It saves cost and improves quality.

In consumer products, ceramic and pottery industry collaborated with fountain pen industry to develop highly precise and elegant porcelain fountain pens. As a result and as an example, fountain pen become an work of art and an accessory that is worth retaining

than a writing instrument. So similar initiatives are underway in a whole new range of futuristic industries and technologies.

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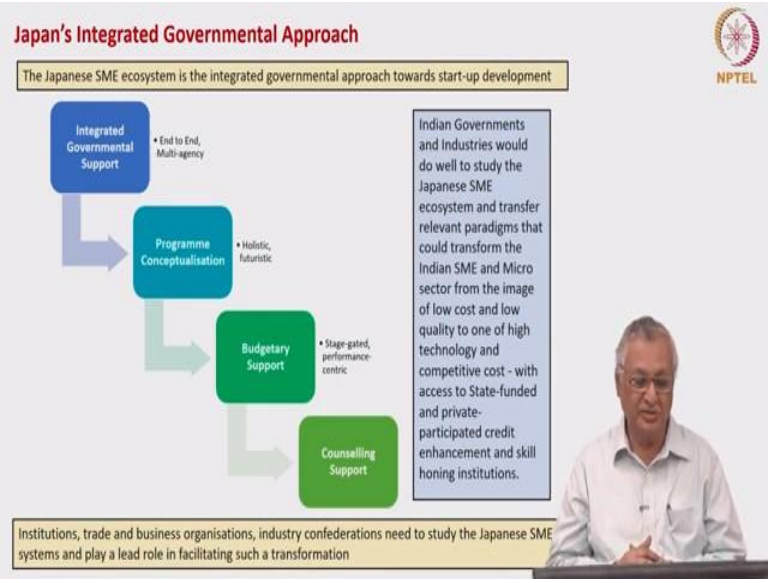


So, Japan's integrated governmental approach has got 4 steps. One, the overall approach which is end-to-end multi-agency, second, programme conceptualization which is holistic and futuristic, third, budgetary support which is stage gated and performance centric and finally, the counseling support.

So Indian governments and industries would do well to study the Japanese SME ecosystem and transfer relevant paradigms that could transform the Indian SME and micro sector from the image of low cost and low quality to one of high technology and competitive cost, with access to more state-funded programs as well as private funded programs. We should have credit enhancement and skill enhancement schemes in parallel.

For this type of integrated governmental approach to take place, institutions, trade and business organizations, industry confederations and also big industrial houses should collaborate to develop what is relevant as an Indian integrated governmental approach and facilitate such a transformation.

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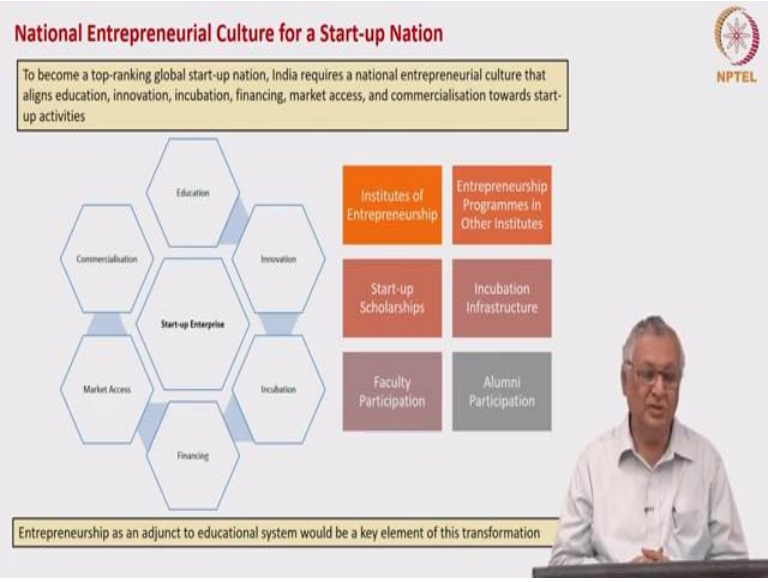


So, this brings us to the point that India needs a national entrepreneurial culture for becoming a start-up nation. So, if you want to become a top-ranking global start-up nation, we require a national entrepreneurial culture that aligns education, innovation, incubation, financing, market access and commercialization towards the tech goal.

And these are the essential start-up activities as we have seen. And this is the hydra of the start-up enterprise in terms of education, innovation, incubation, financing, market access and commercialization. And to be able to do that, we should have institutes of entrepreneurship, we should have entrepreneurship programs in other institutes.

We should have scholarships for the start-ups, and we have scholarships for research, we do not have scholarships for start-ups. We should have incubation and infrastructure, we should have faculty participation in start-up mentoring and even start-up founding, and we should also bring alumni back in to the educational and entrepreneurial system. So, entrepreneurship as an adjunct to educational system would be a key element of this transformation.

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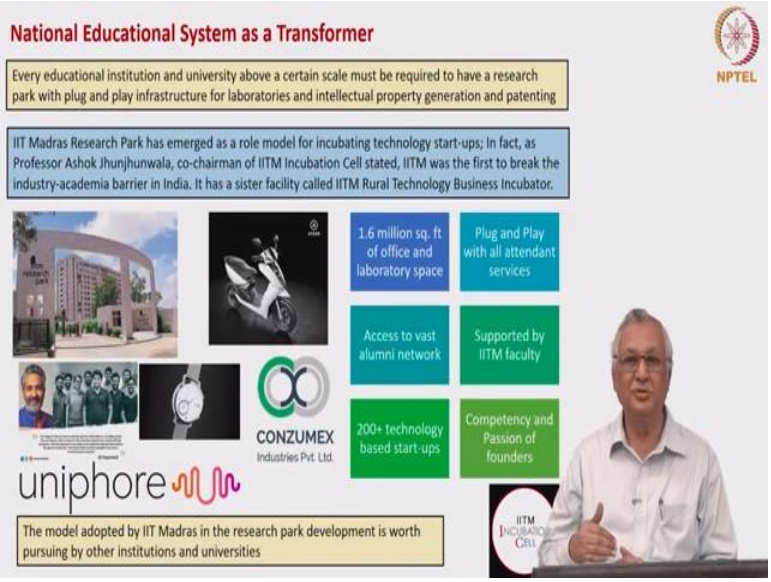


So, if national educational system has to be a transformer, we should mandate that every educational institution which has got certain scale and capability, should have a research park which is adjunct. It should, that research park should have a plug and play infrastructure for laboratories. It should have the capability to generate and patent in terms of property.

When we talk about this kind of paradigm, IIT Madras Research Park emerges as an excellent role model for incubating technology start-ups. In fact, as Professor Ashok Jhunjhunwala, co-chairman of IITM Incubation Cell stated, IITM was the first to break the industry-academia barrier in India. It also has a sister facility called IITM Rural Technology Business Incubator.

Some of the statistics related to the IIT Madras Research Park here, 1.6 million square feet of office and laboratory space, plug and play infrastructure with all attendant services, especially legal and IP services, well supported by IITM faculty. Access to vast alumni network and IIT has incubated 200 plus technology-based start-ups with appropriate competency and passion of founders driving this.

We have got here three companies which have shown to the world what technological innovation in the start-up field can do. One is Ather which is a leading electric two-

wheeler manufacturer which has been developed out of IIT Madras Research Park. Quite apart from Ather, we have got Conzumex Industries Private Limited, which has developed analog digital smart watch. This company incubated by IIT Madras graduates has earlier worked on novel battery systems and has extended itself into doing the MUSE variables.

Here we have the MUSE watch which is piece of perfection as well as elegance. It is very difficult to say whether it is an elegant watch which is smart or a smart watch which is elegant. This watch is able to perform various wellness activities. It is also able to maintain track of a person's health; it does the coaching for the person and also it is able to do payments related activities.

That a start-up has been able to do a watch of this standard which major companies such as Fossil find it difficult to do is a tribute to the entrepreneurial capability and passion that exists in the Indian educational system. What we need to do is to promote this level of enterprise generation amongst our educational system and ensure that more of the capable entrepreneurs are able to bring their products into the marketplace.

Similarly, we have Uniphore which has done great things in the digital technology space. Overall, the model adopted by IIT Madras in the research park development and the examples provided by the entrepreneurs need to be seen as sources of inspiration for similar things to happen.

And IIT Madras is just one example of what is happening in the Indian system and then there are many more institutes of technology and many more institutes of management which are undertaking this type of incubation and more products and service are bound to come into the marketplace with higher levels of technology.

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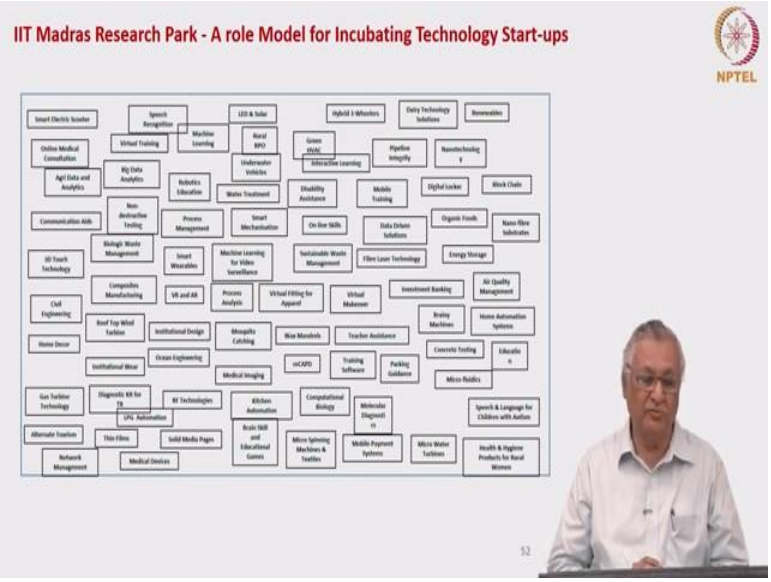


This is a chart which shows the different kinds of technologies which are being worked in. from small electric scooters to hybrid three-wheelers and from underwater vehicles to drones, water treatment plants to dairy technology solutions, sustainable waste management practices, machine learning, 3D technology, network management.

We have got scores of technologies which are finding their rightful homes as start-ups and if you are able to develop an integrated governmental support system, if you are able to develop an appropriate indigenized venture capital funding capability and if we are able to ensure a hybrid model of large work coexisting with small and creating an R and D based start-up ecosystem, I have every confidence that India will become a huge start-up nation in the years to come.