Entrepreneurship
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Entrepreneurship and Employment - Part 4

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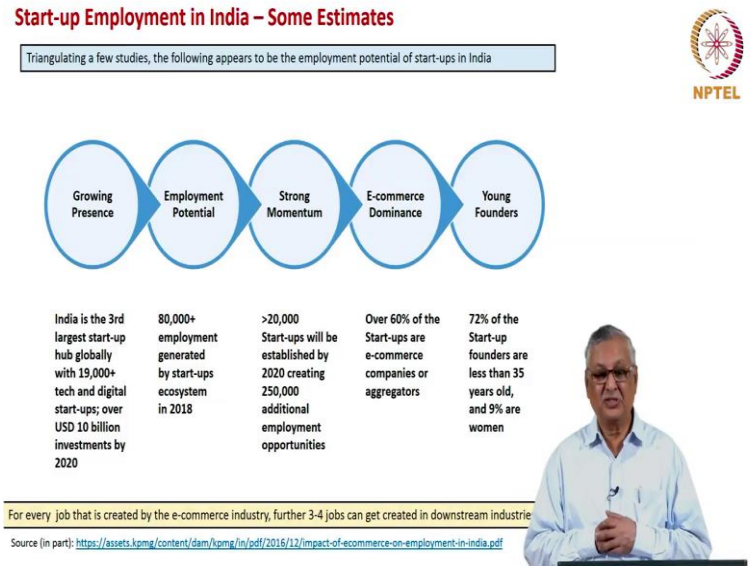

Some estimates of the start-up scene in India is a growing presence, we are the third largest start-up hub globally. We have nineteen thousand plus tech and digital start-ups and over USD 10 billion investments likely to accrue by 2020. And we also believe that the unregistered start-ups which are equally relevant could be even more. The employment potential is eighty thousand plus employment potential strong momentum.

There would be additional employment generation and additional start-ups that would be created over the years. However, sixty percent of the start-ups are in the e-commerce companies or aggregator space. The good thing is that it is a youthful population that is founding and establishing these kinds of start-ups. Seventy-two percent of the start-up founders are less than thirty-five years old, but alarmingly only nine percent are women. We need higher gender diversity in start-up revolution.

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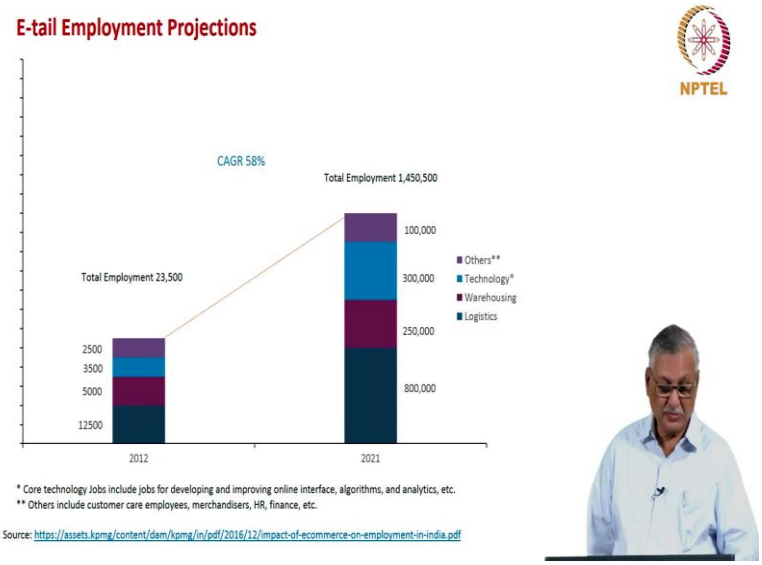

So, this is the employment potential that has been projected by KPMG study. 2012, we had just twenty-three thousand five hundred employees in the e-commerce space which comprised a 4 principle sectors are logistics, warehousing, technology and others and today's expectation is that logistics would have the highest employment, eight hundred thousand, followed by warehousing two-fifty thousand, technology three hundred thousand and others at have hundred thousand, therefore, the overall 1.45 million additional employment target looks feasible.

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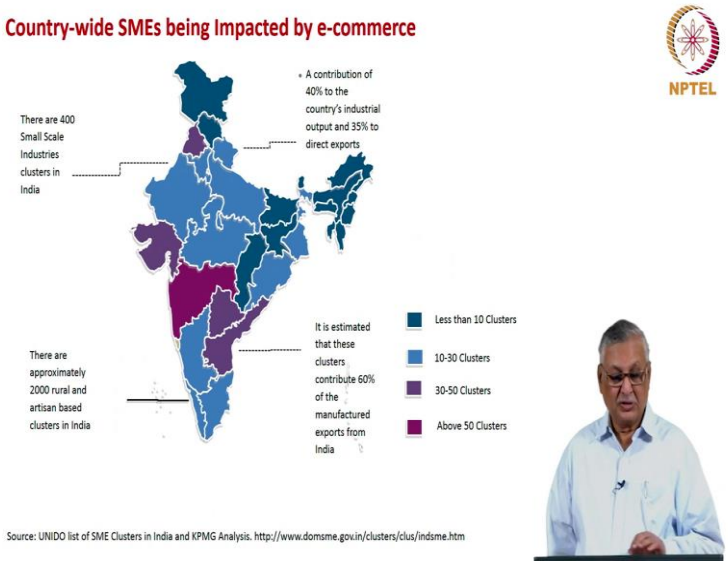

These are the clusters which are there in India, relating to e-commerce. We have got several clusters which have populated across India. There are four colour schemes. One colour scheme describes clusters which are ten or low, 10 to 30 clusters are shown in blue colour, 30 to 50 in violet and above 50 in maroon. These clusters are 400 in number across India, they contribute 40 percent to industrial output and 35 percent direct exports.

There are approximately two thousand rural artisan-based clusters in India and these clusters contribute 60 percent of manufactured exports from India. Now, if we super impose on this, the entrepreneurship driven start-up model and if the new age start-ups acquire the same level of scale and dispersion as the traditional MSME sectors firms have achieved over the last four decades of industrial development, we can conclude that the employment potential due to entrepreneurship would be really huge and immense.

Therefore, the need to ensure that the start-up clusters which are now localised over at best 10 centres in India, primarily the capital cities is further diffused into Tier 2 cities. For example, Vishakhapatnam and Vijayawada in Andhra Pradesh, Trivandrum and Kochi in Kerala, then Mysore and Bengaluru, then Nagpur, Baroda, Bhopal, Indore and such other, Chandigarh and other place in all over India. So, the more clusters you will get for start-up activity in future mimicking the growth of MSMEs the greater would be the impact due to the entrepreneurship development in the employment arena.

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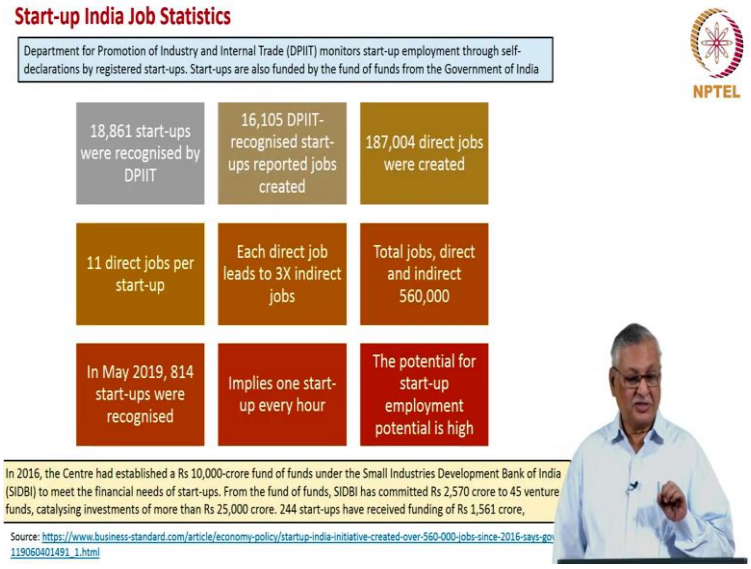

So, to sum up we have these statistics. 18,861 start-ups were recognised by DPIIT. As of 31st March 2019 and out of these 16,105 start-ups have reported the number of jobs they have

created and they say that 187 thousand direct jobs were created by them. So, the implied rate is that each start-up creates 11 direct jobs and each direct job leads to 3X indirect jobs as per an estimate prepared by DPIIT.

Therefore, the total jobs both direct and indirect out of start-ups is 560 thousand. We have MSMEs which has jobs 100 lakhs in terms of the overall-number. We have start-ups here which has 16,100 reporting five sixty thousand. Now, if the 16,105 start-ups scale up to lakh levels and million levels, the employment potential that would accrue would be phenomenal.

And that is what the goal of economic development and start-up development should be in Indian situation. Every month about 800 start-ups get recognised that means one start-up is getting established every hour in the country and if this increases to say one start-up per every half an hour and later on per level of one start-up even every 1 minute, the potential for start-up employment potential in the country is very high.

In 2016, the centre has established the rupees 10,000 crore fund of funds which is administered through certain nodal financial institutions, SIDBI being one of them. Out of these 2750 crores have been committed on 45 venture funds, catalysing investments of over more than 25 thousand crores. What this fund of funds does is to act as the seed investment to trigger additional capital inflows to fund start-ups.

Again, only two-four, 244 start-ups received the funding, if all the 18 thousand start-ups and hopefully the 180 thousand start-ups and 1 million start-ups that would be established in years to come, they also have funding support. The impact on wealth generation and employment potential could be huge. We would also go from the macro statistics to micro statistics.

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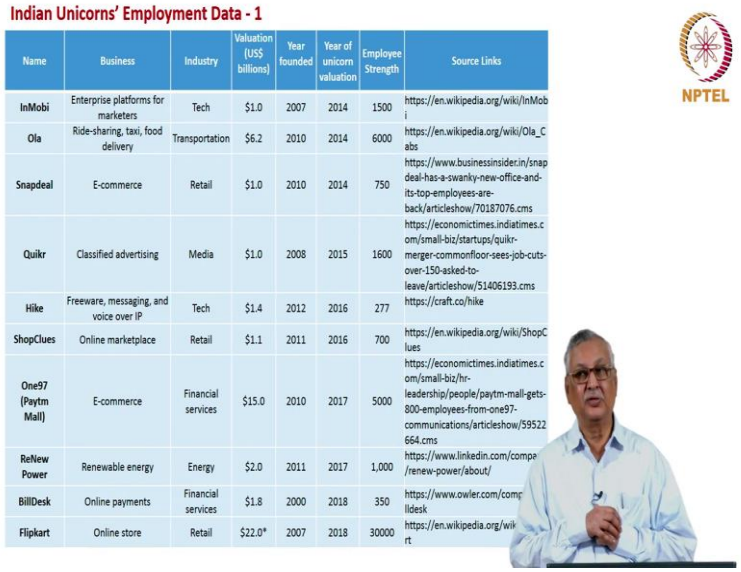

We will see the Indian Unicorns in the start-up space and their employment potential. So, this table which is in three pages, in three slides traces the Indian unicorns, the businesses they are in, the industry they serve, the valuation they have received, the year founded and the year they have become unicorns in terms of valuation and the employed strength. InMobi is a B2B enterprise platform for marketers.

It is the first B2B company probably in India which has reached the unicorn status. It was founded in 2007 and got unicorn valuation in 2014, it employees fifteen hundred people as per the source link which we have. Ola which is a ride sharing taxi, food delivery service, it serves the transportation industry, received a valuation of 6.2 dollars in billion and has reached an employ strength of 6000.

But when we compare that to Flipkart, which is an online store, which was established around the same period 2007 it received a valuation of 22 billion dollars and employee strength of 30,000. So, the employment potential of e-commerce B2C operation versus a B2B operation is very evident that it is not for, so the movement of funds to B2C has certain logic, the logic being the coverage of market.

A large 1.3 billion population market in the quickest possible way with the new business model supported by new technological platform that is the one which attracts funding and the scale up also produces huge number of jobs, much more than what a B2B company provides.

However, the objective must be to have more B2B companies because B2B companies and B2C companies are not in competition with each other.

They serve different objectives and they create different kinds of jobs and this spill over as well as cascading effects are quite different in respect of both B2B companies and B2C companies. So, what we need to have is to have more service companies, more digitally enabled service companies for greater employment generation.

But also, more B2B technology based hardware and strong software companies which also create new jobs of different kind and help probably higher export orientation of the entrepreneurial space. And when that happens, we will find that the indirect job potential of B2B would be even higher in terms of modernising, digitising the established industry structures. And therefore, the overall employment potential could be higher than the model which we see today.

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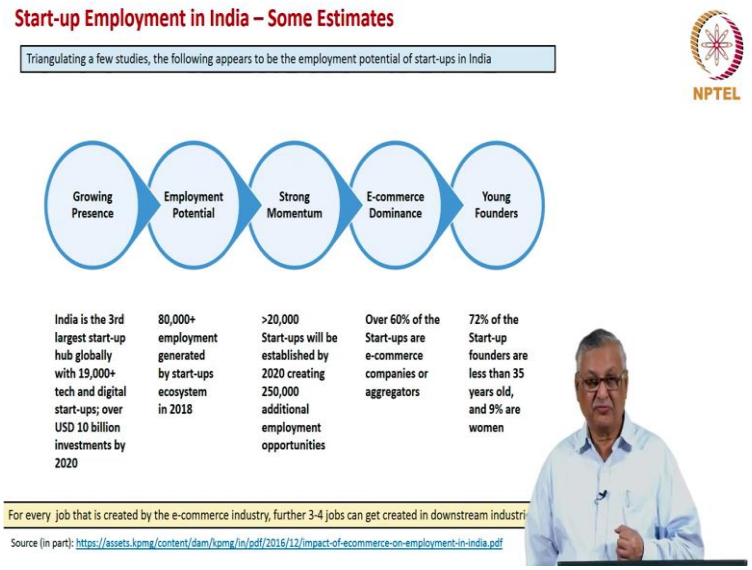

Some more examples here, Freshworks enterprise software, it has an employee strength of 2000, then we have Pine Labs, which is a merchant payment platform, with the valuation of one billion dollars, has an employee strength of 2000. Policy Bazaar which is insurance plan aggregator operates in the financial service industry has an employee strength of 10,000.

But the ones which strike our eye are Swiggy and Zomato, which are food delivery companies as I alluded to earlier they have the maximum employment potential. Swiggy has

218000 people connected to its employment potential engine and Zomato has 237867 employees as per the statistics provided.

So, the potential and sustainability of consumption linked operations in the entrepreneur space are immense and huge. And they need to be sustained, they need to be grown but there would be more such opportunities, there would be more such technology-oriented ventures that could happen in B2B space as well.

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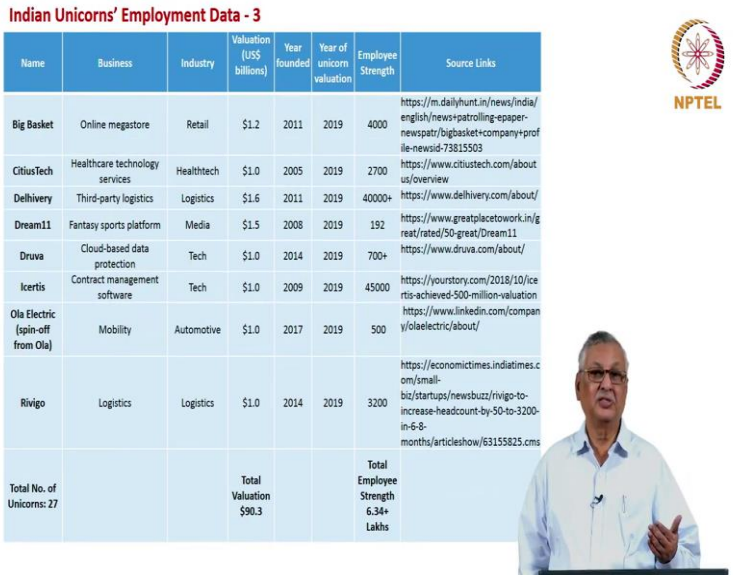

Logistics is getting the impact, positive impact of digitisation, we have Delhivery, Rivigo, they are getting into the logistics space, digital logistics space. And they have high employment potential of 40,000 in respect of Delhivery and 3200 in respect of Rivigo. So, we have overall, 27 unicorns which are in India with a total valuation of 90 billion dollars and the total employee strength of 6.34 plus lakhs.

The companies are being evaluated to significantly high based on the market potential the companies have, independent or the profit potential but the employment potential that has been generated of the Indian Unicorn story is substantial. What we need to see is not only the expansion of unicorn club but also the expansion of the unicorn club into B2B as well.

We also need to see the unicorn club moving into the other technology driven areas, not merely into e-commerce or delivery and transportation operations but into healthcare, education, social infrastructure, cloud and various other product specific developments

including let us say robotics and other areas. So, these individual specific company centric examples find to the employment potential that accrues to the nation out of start-up activity.

Therefore, there can be no two opinions that start-up movement, start-up India, stand up India and the start-up revolution are essential to kick start the employment capability of the nation to a completely different higher trajectory. But the goal should be to have the kind of dispersion and diffusion and entrenchment that the MSME sector has as well.

And when the Indian start-up, new age start-up system acquires that level of national spread and also the entrenchment in terms of sustainability along with scalability, the employment potential also would be high. And the vicissitudes of employment of n firms having high employment potential and then dropping off the employment mapped after few years based on failure rate and then again picking up, those things will be moved away from the employment situation. That should be the goal.

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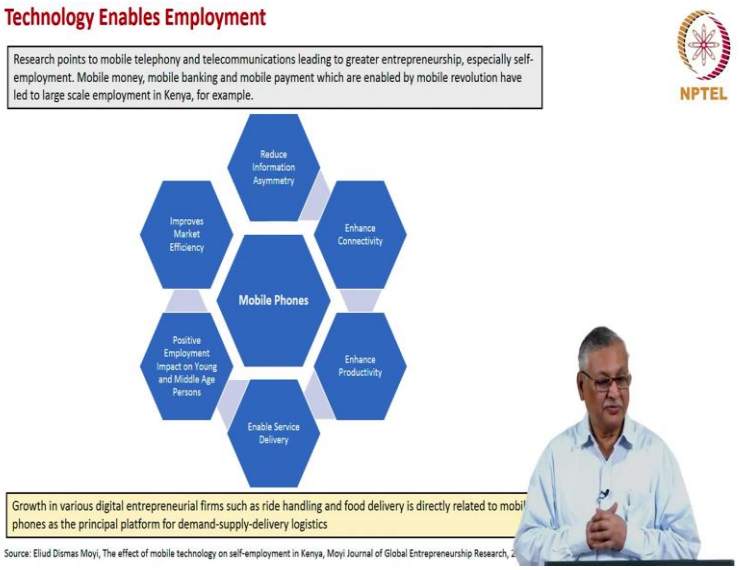

And probably one last thought we should have, is that technology is commonly seen to be destructive of established employment on the other hand, research points out to be fact that technology has enabled always greater employment. Mobile telephony and telecommunication, for example, have led to greater entrepreneurship, they brought people into the main stream of technology and consumption and supply generation.

If the e-commerce platforms are able to and are willing to connect thousands and lakhs of role artisans into their selling network, then there will be inclusive development of larger

numbers of people. Similarly, when Fintech operations get extended all across the nation and more importantly across rural areas and when mobile money, mobile banking, mobile payment and even mobile, mobile loans are enabled by the mobile evolution.

The impact on large scale employment is very real and that has been proved to be real and true in respect of Kenya for example. So, if you take mobile phones as an, as a technological wonder that has happened in the industrial space over the last 15 years or so. They have fundamentally reduced information asymmetry; they made information a perfectly available input across all levels of society and across all sections of society.

So, mobile phones have helped reduce information asymmetry. It has enhanced connectivity, it has enhanced productivity, it improved service delivery beyond imagination, it has had positive impact on young and middle age persons on their ability to get into main stream technological activities and in the overall mobile phones have improved market efficiency and probably this is not the end of the road for mobile phones.

New chapters are likely to be opened how mobile phones will be helping and diagnosing the health and wellbeing of the person. How mobile phones would be acting as personal companions, analysing data, analysing information and helping people achieve higher levels of productivity and intellectual activity. So, these developments are bound to take place. So, if mobile phone alone is one technological wonder, which has created a huge level of transformation in the market space.

Various other devices that are likely to come aboard in various industry verticals and many of them, we have discussed in the earlier modules from human body, imaging to robotics and to drones and various other capable technological ventures. The impact in terms of enhancing productivity and employment potential of the society is indeed huge.

Growth of different firms is likely to be made more synergistic and more sharp based on the fundamental new developments that take place. As an example, without mobile phones, the ride handling and the food delivery industries would not have grown, the way they have grown. Similarly, when we have better diagnostics systems, the healthcare system will be able to better allocate it funds to prognosis rather than diagnosis.

Today's emphasis is on diagnosis. But when we have more genetic devices, which are come, going to occur in the market place, then you have more prognoses of what is going to happen

rather than post facto diagnosis of what has happened. So, that is the fundamental change and when that fundamental change happens, billions of dollars of healthcare expenditure will be saved and re-optimized in terms of more urgent and pressing needs of development.

The same would occur for agriculture, we talked about in the earlier module how the moisture requirement of individual plants could be measured by sensors and the drawl of water from the ground tables and the dispensing of water to the agriculture fields could be optimised.

We also discussed how a circular economy could be provided based on the technological improvements in various usage patterns of different kinds of products. Therefore, there is a great potential for enhancing the economic development as also employment generation by adoption of newer technologies. The linkage between entrepreneurship and employment is real but it is layered.

The layering occurs in terms of formal employment, in terms of informal employment, the layering occurs in terms of formal entrepreneurship and self-employed entrepreneurship. It occurs in terms highly independent risk taking entrepreneurship which we see as entrepreneurship versus soft supported employee entrepreneurship. Layering occurs based on the regions where the entrepreneurship takes place.

The layering also occurs because of the business cycles and their impact on large companies as also on the small companies. The layering occurs also because of the nexus between the large firms and the small firms. The mutual relationship a completely different type of layering occurs when the new-age entrepreneurship enters the MSME field, instead of just threatening or disrupting the large-scale companies.

How does the MSME sector cope with the digital technologies that are likely to be introduced by new age entrepreneurial firms and finally, the orientation of the technology in the generation of employment in terms of B2B versus B2C. All of these layers together contribute to the employment situation that arrives out of entrepreneurship.

So, there is no single policy that is likely to help, it has to be industry specific, it has to be technology specific, it has to also take into account mutual inter-relationships between different industries and between different types of technologies. See the convergence impact

as well as the divergence impact and plan a policy framework that optimises the technological and scientific strenghths and the passion for growth that India has got.

So, that we have a completely optimised employment plan arising out of entrepreneurship. We have many data points on entrepreneurship in terms of growth evaluation and other exciting parameters but we need deeper research data points related to the relationships between entrepreneurship and employment and making sure that we have a comprehensive policy that targets entrepreneurship and employment in a synergistic fashion.

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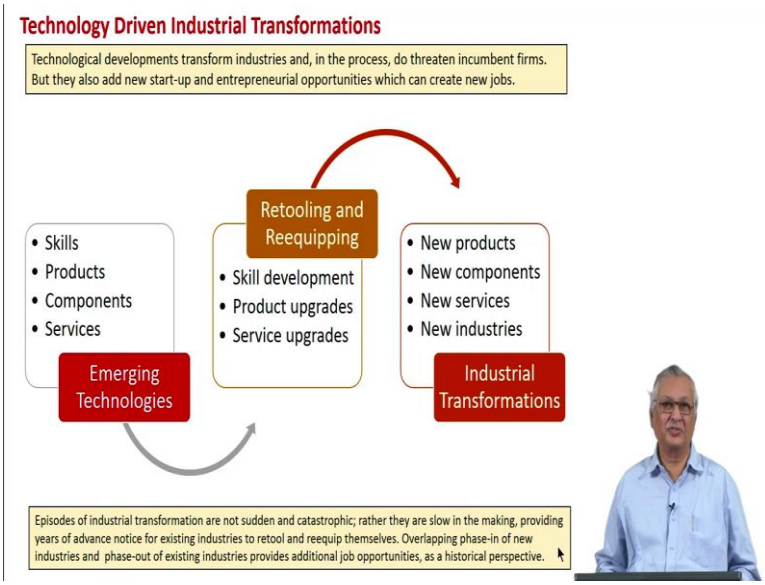

We have considered that technology provides more employment opportunities but let us dwell on that subject a little more. Truly technological developments transform industries and, in that process, do threaten incumbent firms. But they also add new start-up firms provide new entrepreneurial opportunities which can create new jobs.

So, the way I see the whole paradigm panning out is that there are emerging technologies coming up always, which require basic skills, products, components and services. But that leads to the second phase of this paradigm which is retooling and reequipping. Skill development, product upgrades, service upgrades happen because the existing industry is too vast and too deep to be written off immediately.

So, the industry tries to reinvent itself. But at the same time, the disruptive nature or the power of emerging technologies is so impressive and so overwhelming that eventually new

products, new components, new services and new industries come up. That is when the industrial transformations take place.

The key point to note is that these industrial transformations are not all too sudden and there are unlikely to be to catastrophic just over a point of time rather they are slow in the making, they give us five to ten years of lead time to do some advance planning and for industries to reequip themselves which could be either by retooling, reequipping or by going in for the newer technologies.

Therefore, there is an overlapping phase of bringing in the new technologies and also phasing out the available technologies. So, this gives us in enormous opportunity, enormous flexibility to plan our employment scenario.

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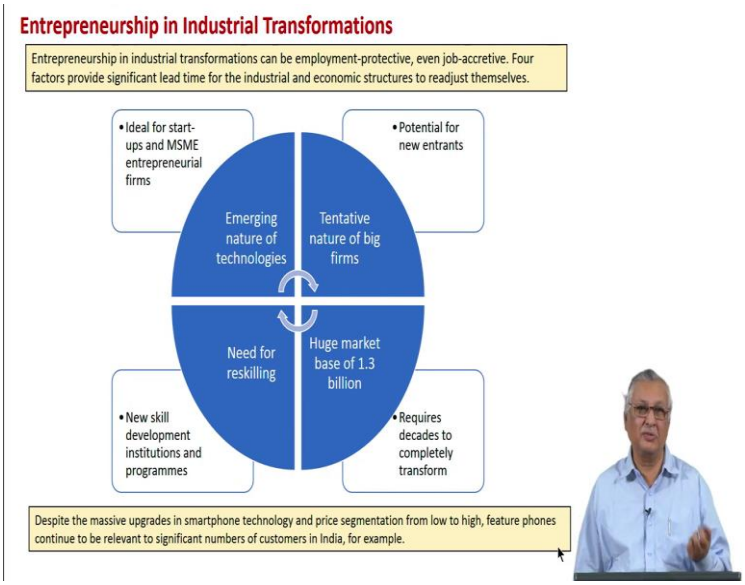

So, when you look at entrepreneurship in industrial transformations, I can think of four ways this would happen. One, as I said the emerging nature of technologies. And, second, the tentative nature of big firms. The big firms tend to be little cautious and little conservative as also prospective in trying to understand how these new technologies will impact.

So, that provides the nature of entry for the new entrants. Then there is this need for reskilling and then finally, whatever said and done, when you look at a country such as India, you have a huge population base of 1.3 billion. So, how do we serve this entire population in one go with newer technologies.

Therefore, when you look at industrial transformation, yes, its ideal for start-ups medium scale, small scale, micro enterprises, it also provides lot of potential for new entrants. It also requires the existing industry to reskill, reequip itself but at the same time how does this industrial transformation can cover overnight the entire population spectrum.

Here lies this opportunity to actually optimise the employment paradigm with industrial transformations. For example, when we look at the smart-phone's situation, despite the massive upgrades in technology that has occurred over the last fifteen years or so. The basic feature phone continues to be in existence and continues to be relevant for significant members of our population. Therefore, there is this coexistence of established incumbent technology as also the emerging new technology.

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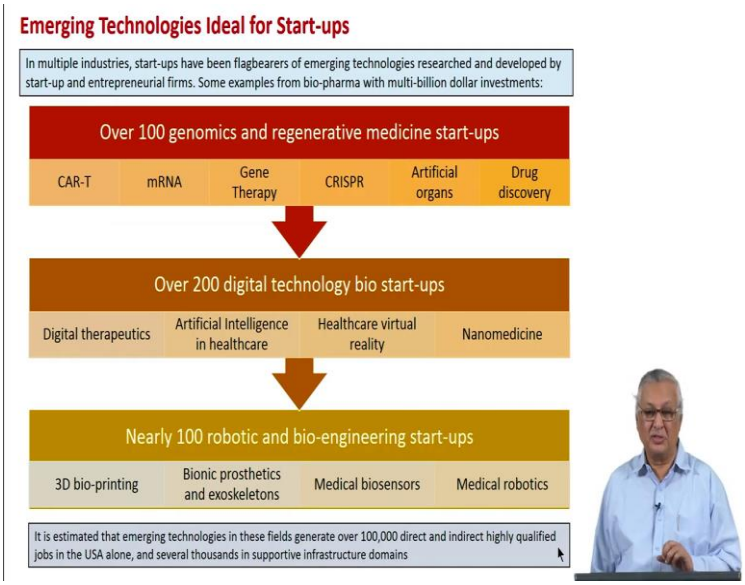

But all said and done, these emerging technologies are way useful and very appropriate for a start-up movement and entrepreneurial movement. I have taken here an example of the pharmaceutical; more relevant probably bio pharmaceutical is the appropriate way to look at it. So, when you look at that, we have got at least hundred firms which are operating in the genomics and the regenerative medicine area that includes Cart-T, mRNA, Gene Therapy, CRISPR, Artificial organs and Drug discovery.

And Drug discovery is increasingly more biological in nature rather than synthesis-based drug discovery research. Then we also have to over 200 digital technology bio start-ups and that includes digital therapeutics, artificial intelligence in healthcare, virtual reality in healthcare and nanomedicine. Then we also have 100 robotic and bio-engineering start-ups

which include companies which are looking at 3D bio-printing, bionic prosthetics and exoskeletons, medical biosensors and medical robotics.

These ventures, about 400 of them which I have summarised, have garnered multi-billion-dollar investments and there are several other which have received the smaller amounts of investment. They have generated let us say hundred thousand direct and indirect jobs apart from the supportive laboratory infrastructure and research infrastructure. So, emerging technologies are ideal for start-ups, they create newer opportunities.

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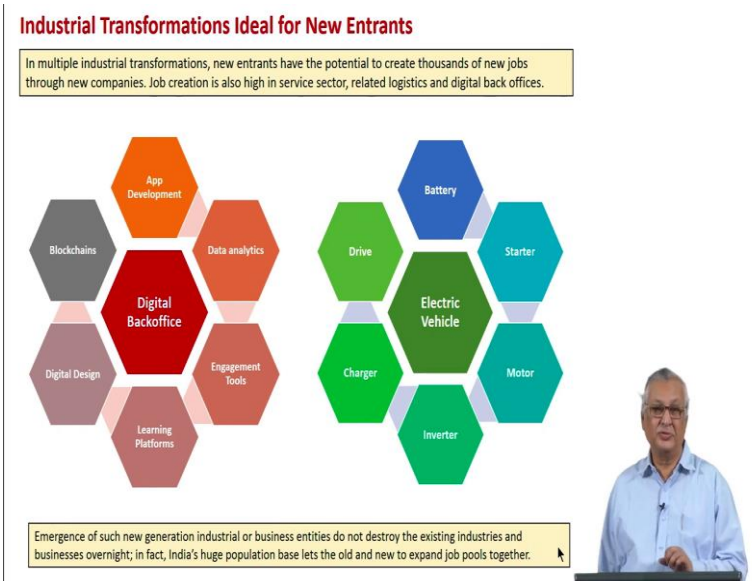

But at the same time, these industrial transformations provide lot of opportunity for new entrants in areas which are not hitherto understood. So, when you look at digitization, you have two aspects one is the front end where the industry is getting directly changed but the other is the back end which has been very silent, which is not seen. So, when you look at automobile design today, we have got thousands of jobs being done in the back end.

And they are quietly amalgamating themselves with either the information technology, corridors or other industrial clusters. So, when you look at digital back office, we have app development, data analytics, engagement tools for human resources and for people, learning platforms, digital design, blockchains, these are all the digital back office activities that are happening with the digitalisation.

Similarly, when you look at the frontend the product, you have very specific components which are never been there but are required, a battery, a starter, motor, inverter, charger,

drive. So, when you have these kinds of things happening, you will require employment and that employment is not something which is taken out of the existing employment, the existing employment continues but the new employment happens in these newer areas.

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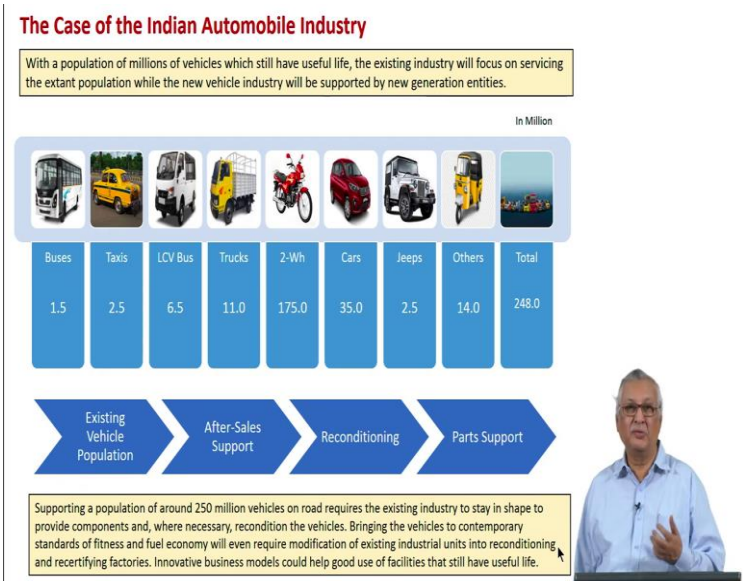

So, when I said that we have a population of 1.3 billion dollars, sorry, when we have a population of 1.3 billion people and we cannot overnight transform this entire industrial service for this kind of population, you look at this case of automobile industry. We have got nearly 250 million vehicles of all types on the road and even if we have electric vehicle transformation occurring, this part of the vehicles on road would continue to exist, they cannot be overnight changed to electric vehicles.

Therefore, there is need for an industrial eco-system that continues to service these vehicles to contemporary standards. Better fuel economy, better fitness for purpose, and better overall look and feel of the vehicles, which means that the existing factories which are probably depreciated could even be reconditioning or recertifying factories, therefore, you have the existing infrastructure which would continue for a while.

And that for a while could be five years, could be ten years, even as the newer industrial transformations occur. So, this is the essence of the industrial transformation leading to higher employment rather than lower employment.

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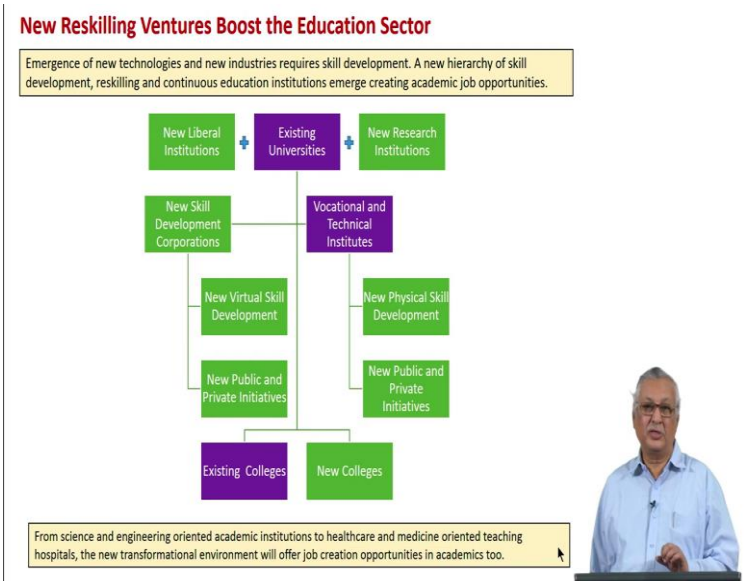

Similarly, reskilling and the need for newer technologies and newer capabilities, reequips education sector itself. We need newer educational institutions, not only the existing universities expanding but also the new research institutions which look at emerging technologies and also new liberal institutions because future can all, not be all science and technology. And they have going to lead to, two types of vocational and skills stream.

Already have vocational and technical institutions, they are expected to be even more upgraded as we go forward where as a completely newer brand of skill development corporations are likely to come into play. Therefore, the existing colleges, the existing vocational and technical institutions and the existing universities which are shown here in the violet colour are likely to be supplemented by whole new paradigm of skill oriented and newer science technology-oriented institutions.

And that provides additional employment opportunities within the educational sector so that this educational sector can reequip the entire workforce to newer capabilities. And from science and engineering oriented academic institutions to healthcare and medicine-oriented teaching hospitals. I foresee that these industrial transformations will require establishment of more employment platforms.

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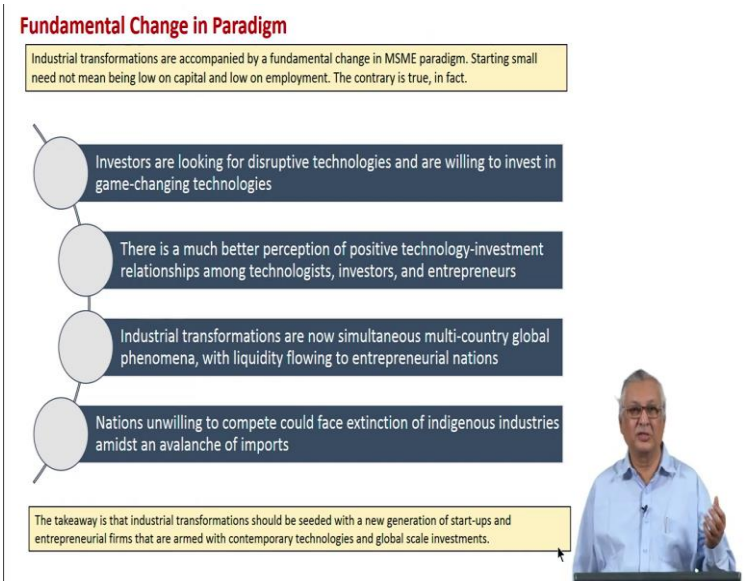

And also, there is a fundamental change in paradigm, when we have the industrial revolution seen retrospectively, everything started small. There was a tentative phase of original equipment manufacturers coming in, the volumes were low, the component makers were not financially sound, they started in a tentative way and the government incentives supported medium and small-scale enterprises and the flow of funds was essentially through a conservative and careful banking system.

But today, people understand that the size of the entity and the scale of investment, there may not be corelated linearly, in fact the entity could be small but the investment requirements could be much higher depending upon the nature of technology. Therefore, the investment community is willing to look at small-scale enterprises which are capable of taking big strikes in science and technology as capable of being funded as deserving of higher funding.

So, that will take the paradigm of start-ups and entrepreneurial firms in this industrial transformation to an entirely new level. And industrial transformations which are, which have so far been of developed nations and now becoming truly global which means that liquidity will flow to wherever they start-ups are there in newer scientific and technological fields.

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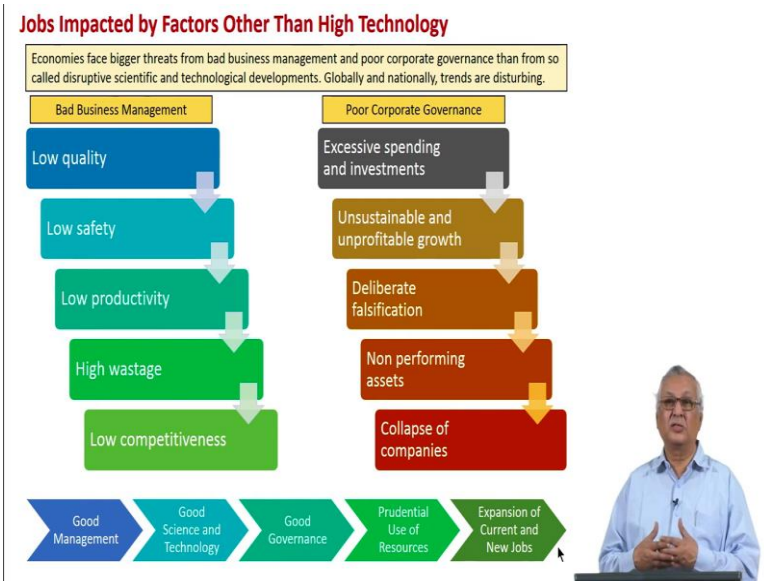

I would also say that it is not the technology or the science which is emerging that's going to threaten the job. The jobs are likely to be threaten far more by bad management and far more by poor corporate governance. When you have bad management, you would have low quality in output, low safety in operating conditions, you would have low productivity, high wastage and therefore low competitiveness.

So, the capital input-output ratio is going to be adverse which means the one dollar of investment you make is likely produce instead of 1.5 billion dollars of value-added output, you are likely to have point five. So that is not a good thing for industrial job creation. Similarly, poor corporate governance which will talk about in future, is about excessive spending and investments unsustainable and unprofitable growth, deliberate falsification of operations and accounts which leads to non-performing assets and finally collapse of companies.

Jobs are going to get folded up, if the companies have poor governance practices. So, more jobs are under threat with bad management and bad corporate governance than with newer and positive technological developments.

These are very important point which we would need to look at and that is where the start-ups which are in the forefront of bringing science and technology, take the lead in making sure that the practices are upgraded alongside technological and other developments. So, to repeat

again, good management, good science and technology, good governance and prudential use of resources. This would lead to expansion of current and new jobs as we go forward.

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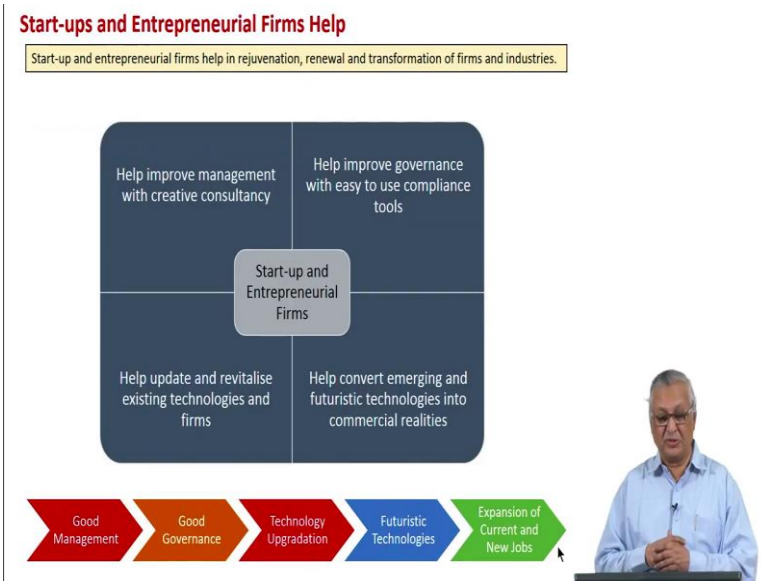

So, how would start-ups and entrepreneurial firms help? We do not, we do not need to look at only McKinsey, BCG or Bain and Company to improve our management habits and also governance practices. We can have boutique start-up firms which can help managements with creative consultancy. Similarly, we can have compliance tools which are applicable for a number of companies small, medium, large.

We can also have start-ups update and revitalise existing technologies and firms in the area of human resources. We have got digital start-ups which are helping companies focus on specific areas of work and engagement and also certain other work streams. And finally, start-ups help us covert emerging and futuristic technologies into commercial realities.

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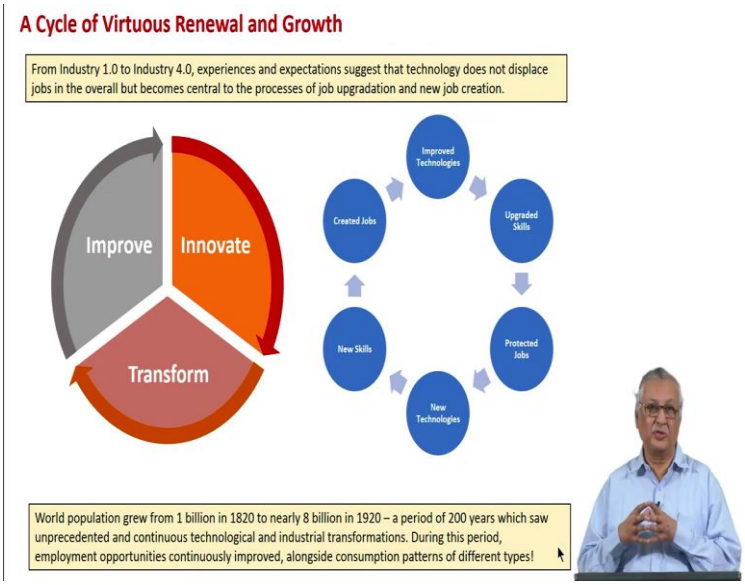

So, given that, we have a cycle of virtuous, renewal and growth taking place all the time. Improve innovate transform. That is the cycle which keeps happening. Today it looks very dramatic, we are because we are in this phase but when you look at the previous industrial regulations, 1.0, 2.0, 3.0, from mechanical to electro-mechanical to software, computer driven changes.

These cycles have occurred probably less discussed and less pedagogically presented compared to what it is being done now but definitely this is the cycle that happens, when you have improved technologies upgrading skills. Jobs are actually protected rather than destroyed, then you have new technologies requiring new skills and creating new jobs. So, the way we plan our employment paradigm is very important to ensure that the newer technologies are very gainfully employed.

And to talk about these in a very-very macro and historical perspective, between 1820 and 2020, the population of the world have grown eight times, from 1 billion to 8 billion and you can also think of employment growing up more in tandem rather than getting static. Huge number of employment opportunities that too formal employment opportunities with better working conditions progressively have been created.

And therefore, this gives us hope and confidence that as you have higher levels of technological upgradation, technological invention, the employment situation will only go up. Therefore, the start-up firms, the entrepreneurial firms which are engaged in the technological

revolution must pride themselves as harbingers of not only change but also greater employment opportunities. Thank you. We come to the end of this session.