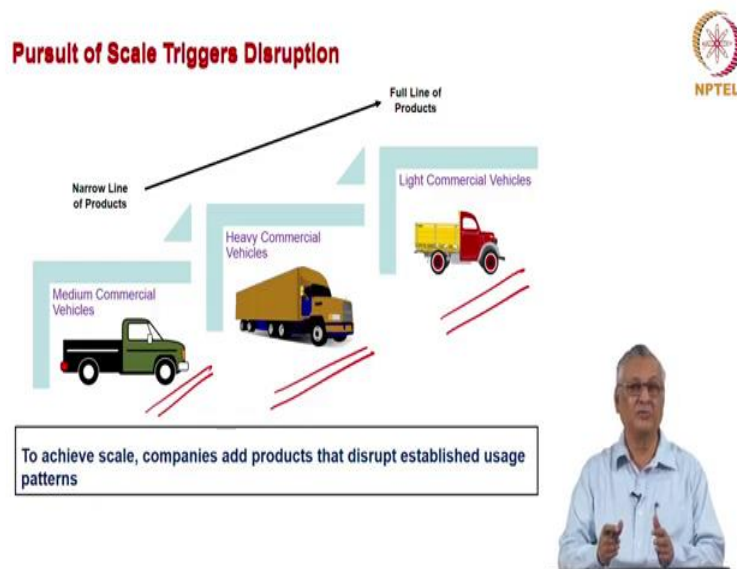


Entrepreneurship
Professor C Bhaktavatsala
Department of Management Studies
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Lecture 18

Commercialization and Disruption as Success Drivers Part 3

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Then pursuit of scale triggers disruption. Let us say you had a manufacturer who was only doing heavy commercial vehicles, we know that the heavy commercial vehicles are used only for certain types of product, markets. So, when that manufacturer decides to expand the range and make medium commercial vehicles, he is expanding the market and therefore, he is also disrupting the market. The market which is used for certain types of products at certain price levels is now enjoying the benefit of medium commercial vehicles.

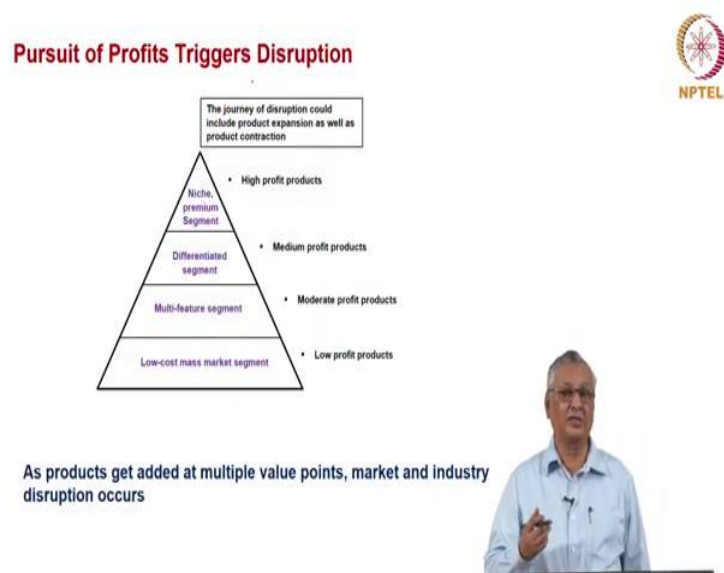
Then, as we discussed that in the technology trends, linear performance area, you find that light commercial vehicles can do a variety of tasks so they get introduced. So the market which is disrupted. In India it has happened, once upon a time, medium commercial vehicles were the only mainstay, heavy commercial vehicles were a marginal stay, light commercial vehicles were also a marginal stay, not more than 10 percent of the total commercial vehicle stay.

Today we have light commercial vehicles occupying 70 percent of the total commercial vehicle space, and within the medium commercial vehicle space we have got the characteristics of heavy commercial vehicles inputted into the medium commercial vehicle

space that is more than two axis, even 4 axis are used in a medium commercial vehicles which you see on the roads today.

So, to achieve scale, companies add products that disrupt established usage pattern. Why we are not calling this disruptive innovation but we are calling market disruption because the products are by and large similar, the characteristics are similar, the underlying technologies are similar and nothing is really removing the need for the previous product. But at the same time, the pursuit of scale by the manufacturer, in terms of product variety, in terms of market segmentation that is causing disruption.

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Then we have got another driver for companies, which is pursuit of profits. Companies exist to create wealth, unless they create wealth and also create profits, they cannot reinvest and create a new line of business. So, when we look at the market, we look at the market in three ways, we can also look at a little more broadly, one is the low cost mass market segment, which is the evolved market we talked about, then the middle portion can be divided into two segments, one is the multi-feature segment, where moderate profit products can be introduced.

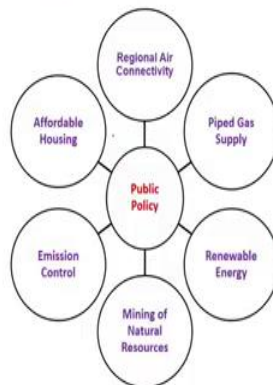
And then we have differentiated segment which is one of medium profit product. Then we have got niche premium segments, which are high profit products. Typically, these are made by innovators, whereas typically, these are made by innovators, whereas the differentiated segment products are made by differentiating companies. When we talk about innovators, let us talk about let us say the insulin itself.

For the first time when it was made as an insulin, it was made for 4 hours of action, it was made as a clear liquid, it was made from animal sources, and it was provided as a clear liquid vial. But different types of insulin started coming in. They were long acting insulin, they were mixed insulin, they had the ability to have a component which was long acting and a component which was a short acting, therefore, they were insulin definitely.

But they were differentiated insulins, so that differentiated segment. So, we have got 4 kinds of markets. Now when companies add products at different levels, so that the profitability of the company is improved, obviously, the pursuit of profit is also acting as a disrupter for the market dynamics.

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Public Policy Triggers Disruption



Public policy changes redefine product-market configurations



Then we have got the public policy, public policies are very important aspect of the entire industrial structure. Many times public policy is seen as a bureaucratic action or a dogmatic trigger based on either socialism or capitalism. No, but actually public policy has got a trigger, which is very, very significant when TRAI decides something on the call quality or when an insurance regulator decides something on the insurance schemes, the regulator is changing the structure of the industry.

So, within our own Indian system, we can see where public policy has caused disruption. It can cause disruption in piped gas supply, in terms of that is all the cylinders will no longer be transported as cylinders, the entire city will be piped like water is being supplied through piped connections, gas will be supplied through piped connections, which happens in developed countries already.

So, this will cause disruption in the way the industry works and the way the LPG cylinders are being manufactured and being offered that entire product segment could go away. Secondly, renewable energy, you always wanted a pump in the field to pump your water, but the emphasis on renewable energy could be such that you have a solar panel in the field and that itself creates enough energy to pump the water.

So, sun provides the energy and then mother earth provides the water and then it works in perfect synchrony. So public policy can make this kind of change happen. Then there could be policy on the mining of natural resources. The mining of natural resources, if it is limited, that is the rarest are limited, then obviously how to find more ingenious ways. Now everybody wants electric vehicles to be manufactured, and electric vehicles require batteries, batteries require rare metals like cobalt, nickel lithium, those kinds of materials.

And if the mining of those kinds of materials is kind of regulated, then companies have to come up with the different solutions to manufacture batteries. Then emission control, you always had mechanical fuel injection pumps, emission control particularly of the BS6 level of standard requires electronic fuel injection, so it has disrupted the market dynamics.

Similarly, when government introduces affordable housing, then the average area of living reduces but the arc of ownership increases. So that has led to a differentiation in which housing companies structured themselves. It is no longer DLF which is building villas and flats only to the high end people, they also have to come down and participate in the affordable housing area.

Similarly, when we talk about regional air connectivity, they would on scale. Then you will find that more towns are interconnected therefore, there is need for different kinds of aircrafts and different kinds of airports.

Now, why are we talking about all these things which look like macro trends, we are talking about these things which are macro because they all offer opportunities for start-up firms and also for entrepreneurial firms to get into this new businesses which are generated as a result of that and write the market disruption rather than be victim of market disruption. And the public policy when it defines product market configuration in a different way, you will find that there are many opportunities which arise for entrepreneurs.

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International Trade Triggers Disruption



Product testing and homologation for meeting the requirements of multiple markets cushions the impact of volatile trade wars



Then international trade, it triggers disruption, the boosters are new market opportunities, Make in India potential, manufacturing shifts across regions, the latest one we have experienced where the corporate tax rate is dramatically reduced in India to make it at par with several Asian economies and that is supposed to lead to manufacturing shift from let us say China to India or from other developed countries to India. These are the boosters, but the crashers are exchange rate battles which happened, the kind of destabilization of oil scenario which occurs due to geopolitical tensions, then we have commodity volatility.

So, trade wars which used to be small scale and very product specific, today have become very global. They have become country to country covering all trade, so a global trade war is underpinning how the internationalization or globalization happens. These dynamics again are so dynamic that when you do a product today, you cannot do it only for one market, you shift the product capability from one market to the other market. So, we come back to the thesis that testing and homologation of prototypes is extremely important.

So, if a start-up does a product or if an entrepreneurial firm does a product for one market, if a trade war shuts out that market, if the product is well tested and well homologated to different regulatory requirements, the company would be more agile to shift from one market to the other market. Therefore, the importance of two stages what we have discussed earlier of testing and homologation becomes extremely important, along with the validation phase to meet the market disruption that gets caused by international trade.

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Now, this is very interesting nature triggers disruption. You want to develop a market, you want to develop your own preferences, you want to develop your product, there are three ways you do it. One is observe, ideate and develop, this is what we considered in the product staircase. These are part of the design phase of a product. But how is design happening? Design is happening through nature.

When Wright Brothers observed bird, they thought about the flying aircraft. When we look at the fish, we see the similarity with the boat and what is the camera is nothing but a synthetic imitation of how a human eye operates. Then what are medicines, you want to get the benefit of curcumin, then you get it offered as a pill.

You want to treat cancer and the bark of a tree is provided as a salt to you. Then you have been pulling rickshaw, pedalling away and you have 3-wheeler which does exactly the same task. People who are welding solo two joints, we have welding Robles completely eliminating hazardous arduous work of human beings, therefore nature in itself has got many pointers for market disruption to take place.

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Social Media Triggers Disruption



Then we also spoke about social media. Social media is an extremely important trigger for market disruption. We have case I mean, we generally think, for example, that certain African countries are not so well developed, and they may not be using technology. But there has been an instance of Fintech firm, which has established itself in Kenya, and has been able to provide instant financial resources adapting technology for underdeveloped people in the country.

So that Kenyan model of Fintech has become very viral in the social media, and many people have taken to that kind of development. Similarly, Nubank in Brazil, it has used social media platforms to expand its business. So cross pollination of ideas from social media, that also constitutes positive and fertile ground for disruption of markets.

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Unicorns

- Unicorns are a core inspiration for entrepreneurial and start-up movement
- Unicorn is a term coined in 2013 by venture capitalist Aileen Lee to signify start-ups which secured valuations of USD 1 billion or more
- At that time, there were only thirty nine unicorns. Today, the unicorns number over 200 globally.
- It is the ambition of every start-up (almost!) to become a unicorn
- A study by Harvard Business Review established that start-ups founded between 2012 and 2015 grew in valuations at twice the rate of those founded between 2000 and 2013
- According to CB Insights research, as of date, there are 215 unicorns globally with total cumulative valuation of USD 741 billion
- USA and China lead the unicorn club globally. The presence of a notable number of unicorns from India is a welcome augury.



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So, we have considered the all the 10 areas of disruption happening in the marketplace. We also said that these are not necessarily completely new technologies changing the way usage takes place. These are all both evolutionary and revolutionary developments that have happened in the innovative sphere and they have created the new market dynamics and markets become disrupted and then they expanded.

Now, when we talk about market disruption, we have talked about markets providing the ground or the base for start-ups to prosper. Now, when start-ups prosper, what happens? They become valued. Over a period of time in the world of start-ups, the word unicorn has emerged as a very important descriptor of start-up efficacy. Unicorns are a core inspiration for entrepreneur and start-up moment.

Unicorn is a term which was coined in 2013 by venture capitalist Aileen Lee to signify start-ups which secured valuations of USD 1 billion or more. At that point of time crossing \$1 billion was considered a great feat. So, you can liken this thing to government of India saying that you have got “Maha ratna”, “Mini ratnas”, Mini ratnas category one depending upon the nature and stature of a public sector undertaking, Government of India classifies and this classification always an inspiration it acts as a morale booster.

So, unicorn is such a term which is used in the start-up culture and the start-up framework to describe how companies are valued. In 2013, when this term was coined, there were only 39 unicorns, today the unicorns number over 200. In fact, the latest CB insights review shows that there are at least 400 unicorns, which have crossed 1 billion dollar revenue. Now, coming

back to what we discussed under commercialization earlier, the issue is, is valuation important or revenue and profitability important.

In the conventional scheme of things, if you have high revenues, if you have high profits, you would naturally get higher valuation that is true partially but not completely true. The valuation which a start-up gets is not related necessarily to the revenue and profits, but is related to the level of disruption it could cause into the market.

So, if there is a way in which you can do distributed energy generation, in every neighbourhood through a new compact energy management system then that could be that start-up could be valued more than BHEL or ABB which may be doing giant power generating equipment so, valuation becomes very important.

We at least in India have this debate, should one be unicorn in revenue or unicorn in valuation which is more valuable for the economy. Given that we are resource scarce I discussed in the commercialization stage that we should look at more prudential revenue and profit norms so that we are valued not only for the likely footfalls, likely clicks, likely market disruption, we are also valued for the revenues and prudential way of managing our resources. So that said, it is ambition of every start-up almost to become a unicorn.









A study by Harvard Business Review has established that start-ups that have been founded between 2012 and 2015 grew in valuations at twice the rate of those founded between 2000 and 2013. So, we are looking at two time periods; one between 2000 and 2013, 2013 being the year in which the term unicorn was coined, and then unicorns which were established between 2012 and 2015, the growth in valuation has doubled during these two periods.

Therefore, what it means for us is that the entrepreneurial, both insight and foresight are focused on building the valuation of the company. Now, we have got some companies here, the cryptocurrency company coinbase, which is very famous for its crypto currency. Then we have got Canva which is a graphic design company.

We have a healthcare company which is Roivant sciences which is based in Switzerland, then we have got, Wish which is an ecommerce company. So, these are companies coming from four different areas. One is Switzerland based, one is US based, one is Australian based and another is again US based, they operate in different segments of the business, and they have powered this kind of trend.

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Some Prominent Global Unicorns

Company	Valuation (USD Bn)	Industry
Uber 	68	Ride handling
Didi 	50	Auto and transportation
Xiaomi 	46	Devices and Connectivity
Airbnb 	29	Travel
SpaceX 	21	Space exploration
Ant Financial 	150	Financial Services
Bytedance 	78	Artificial intelligence
WeWork 	45	Real Estate



So, I would like to present some prominent global unicorns and I am sure you are familiar with that. One is Uber, which is now valued at 68 billion dollars, and the industry is the ride handling or ride hailing industry. Earlier the cabs were being pre-booked, or you were at the mercy of the cab to come to you for you to take a cab.

But now the whole thing can be preformatted, preprogrammed through an app and then there is better match of demand and supply. It also provided many more people to enter the cab business without really becoming full time cab drivers so to say. It would not be unusual for you to experience in the United States a person who is like you being part of the Uber or lift ecosystem and providing you a ride when his car is available for spare time, so that is second.

Didi the China based company is another company which has become a global unicorn by operating in auto and transportation fields. Xiaomi is in devices and connectivity. Airbnb that is another company which has revolutionized travel and hospitality where traveling public or connected with available rooms of different residents and then there is a match that is made.

SpaceX is completely a different situation, where the intention is to bring space technology to the hands of individual of course high network individuals who want to explore space and it uses disposable rocket technology, disposable spacecraft technology. Ant Financial, another global leader, working in financial services and Fintech. ByteDance is an artificial intelligence, WeWork is co-working real estate space and this is also one company which is richly valued and likely to go for a public issue.

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Some Prominent Indian Unicorns

Company	Valuation (USD Bn)	Industry
Flipkart 	12	E-Commerce
Snapdeal 	7	E-Commerce
One97/Paytm 	6	Digital Payments
Ola cabs 	4	Ride Handling
ReNew Power Ventures 	2	Renewable Energy
Hike 	1.5	Apps, Messaging
ShopClues 	1	E-Commerce
Zomato 	1	Food Tech
InMobi 	1	Advertising
Quikr 	1	Advertising



In India, we have got number of unicorns as well. Definitely the number of unicorns in US and China are many more. The point is that probably more than 80 percent of the total Unicorns are made out of USA and China, and the rest of the world probably has only 20 percent amongst itself. Now in India, we have these unicorns. Flipkart, most well-known ecommerce firm, Snapdeal follows that, in fact Snapdeal has been ahead of Flipkart in terms of coming up with the concept.

Then we have Paytm which is a digital payments company, then we have Olacabs, which is one of the striking international start-up success which was originated in India. Then we have ReNew Power Ventures having renewable energy, then we have Hike, which is used in which is used very much in apps and messaging. ShopClues for ecommerce, Zomato for review of food and also food delivery, InMobi and Quikr are two specialized digital advertising firms.

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The Rationale for Rapid Growth of Unicorns



- Attributable to the recognition that start-ups can disrupt and transform industries through innovative technologies and creative business models
- There is also a growing interest amongst founders and investors to scale up and grow up fast
- The newer trend of start-ups remaining private for longer periods without the need for public declaration of detailed financials also supports valuation growth
- The real test for the sustainable success of unicorns comes when they are successful with their initial public offerings (IPOs)
- A research study by Harvard Business Review observes that becoming a unicorn and raising more private money is no guarantee of long term success
- It states that tech start-ups are in a race to define new product categories, and the pace has quickened
- Simply raising more money isn't enough to win that race—and going public too soon or too late may limit long-term success
- Even for unicorns, the path forward can be a challenge



Now, why do this rapid growth phenomena occur, especially making small start-up companies into unicorns, looking at the Harvard Business Review study? One is that fundamental recognition that start-ups can disrupt and transform industries, which established companies cannot do. Let us talk about the rationale for rapid growth of unicorn. Why do unicorns develop?

Unicorns develop mainly because the start-ups can disrupt an industry and they can create a completely new, creative, innovation led markets that is the basic foundation of unicorn as a concept. Second, there is a growing interest amongst the founders as well as investors to scale up and grow up fast. The newer trend of start-ups remaining private for longer periods without the need for public declaration of detailed financials also supports valuation growth.

What is this trend, when you remain private it is not necessary that you declare your financials on a very transparent basis as a publicly listed company does. So, it is private money being put to use for certain products and you have got certain privacy related to the way the finances are used and utilized. So public declaration of detailed financials is not required. So Private Limited activities encouraged in the start-up field and that obviously leads to better valuation growth.

The real test for sustainable success of unicorn comes when they are successful with their initial public offerings, because each time a valuation round occurs, the company is valued at higher and higher valuation. And, but the real test comes when that company goes for IPO, that is Initial Public Offering and the larger public market, larger equity market understands

that equity valuation as being rational and then participates and makes a success of the IPO then only the real valuation as unicorn works.

And there have been companies which have gone into the market and have been highly successful. Facebook, for example has been highly successful. But recently there has been a case of another co-working company, which was wanting to be successful, but it started seeing some kind of decline in the valuation as the IPO date approach. Therefore, how a valuable you are as a start-up and how great you are as a unicorn, the real test comes when you really go to public.

And you go to public because there is also probably the only way in which the larger body of employees in a start-up can be rewarded through the richness that has been generated through the entrepreneurial activity. That said, the Harvard Business Review study also said that becoming a unicorn and raising more private money is no guarantee of long term success. Money, yes, certainly makes companies strong, resilient, can make the company withstand the vicissitudes of development, it can create more perfect product, it can lead to greater innovation but it is not a guarantee of long term success.

Therefore, the ability to define new product categories and the pace of that that is more important than just money per se. And raising money is not a solution for developing new product categories, it is basic ideation, basic innovation, that is more important. So in getting to a unicorn status, you can go public too soon or too late, it may have their own long term limitations. Even for unicorns, the path forward can be a challenge.

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Characteristics of Successful Start-ups in the Consumer Internet Space



Factor	From	To
Customers & Service Providers	Dispersed Diffused and disaggregated Numerous one-on-one relationships - Regular, loyal, repetitive	Digitally connected marketplace Random selection On demand service
Channels	Multi-layered with intermediaries High costs of intermediation	De-layered and dis-intermediated with low costs
Reporting	Non-standard Provided only on demand No data-base	Standardised Data-analytics
Main Backbone	Personal relationship	Digital relationship



Now, most of the unicorns are in the consumer internet space. Why? Because there is a huge population which has been used to physical ways of doing things, and which has been distributed, dispersed, not connected adequately. So, internet provided a great platform to connect all the users amongst themselves also with the companies. So, we have got a digitally connected marketplace that has emerged.

The second thing what happened with the consumer internet movement is that selection has become from predefinition to random selection, that is, you look at a computer and you randomly decide what you want to buy, you do not have to really plan everything. Whereas, if you want to buy a particular type of white goods, say a refrigerator, in the physical space you got to plan everything.

You got to, go to a particular store and if you want to compare many other products, you have to go to 3-4 stores and then compare but that is not so in digital. So, it can be a random selection and it is a service which is on demand. So, these are the factors which has made consumer internet marketing extremely popular. Second is the channels are de-clogged and then layers are eliminated. Striking example is happening in E-pharmacy.

When you look at the pharmaceutical value chain, you have a situation where you go to a hospital and you get the prescription or you go to your doctor, you get a prescription and with the prescription you go to a chemist with your products dispersed, but for this value chain to occur, you have got pharmaceutical corporation with supplies to the C and F agent, and C and F agent stores, products in a central warehouse then distributes to a retail chain and he or she may or may not to store the products on the shelf.

So, there are so many channels, but when you look at E-pharmacy, all the channels are kind of de-layered. You come out of the doctor's chamber, you take a nap for an E-pharmacy and then have the medicines purchased through a payment system and probably by time you go home, you will find that your medicines are delivered to you so, it is all de-layered, disintermediated and low costs.

So, the travel costs by Uber taxi are cheaper than the travel cost in a conventional taxi because the whole thing has been aggregated platform providing better utilization of available resources. Then the reporting, reporting is completely non-standard in the normal physical relationship. Whereas, you have continuous data analytics which happens in a consumer internet space, and the relationship moves from personal relationship to digital relationship.

Now, when these kinds of things happen, you can have companies which are extremely specialized, like Dollar Shave Club, which talks about providing personal grooming products, is a very specialized internet service or you can have Bluesmart kind of products which provides for electric vehicle mobility that is, it provides ride hailing capability but it provides only for electric vehicles as a medium.

Then you have got Tanium, which is a cybersecurity start-up. Then you have got Doordash, which does logistics and supply chain, I talked about Nubank in Brazil, which has got Fintech as its situation and SenseTime it does artificial intelligence. So, successful start-ups in consumer internet space, as we discussed can be B2B as well as B2C. And Tanium is an example of a B2B company whereas all the other products we see here are more B2C products.