

**Strategic Management – The Competitive Edge**  
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**Technology Road Map**

Welcome to this session, environmental scanning, this scanning should be both of the internal and external environments and this scanning help you in coming out with a marketing intelligence system and in building a technology road map in thia globalised era.

Firms should always avoid getting into technolgy discontinuity trap- it can be very disastrous for a company; it should always try how long this technology can be sustained without really getting absolete in the market place; this happened for a well-known PSU like the ITI when its strowger and crossbar technology became absolete.

To get this technology from outside the country the company had paid a huge royalty, now all of a sudden in the 80s they find that this technology is becoming absolete and in comes chip technology, that is the electronic technology so the mechanical telephones had to be phased out because the market was unfortunately for ITI,thrown open to competition in 1984 by the then government; to its chagrin ITI found that it was the electronic products which were becoming the more in thing.

So instead of the nearly 5 to 10 kgs of mechanical telephone, market was looking at slimline telephones, less in weight, having all types of push button functions instead of mechanical dialing, and more attributes than the usual mechanical dialing telephones- all these made a huge difference.

So the company had to come out of its core competence that is the strowger and crossbar into this new field and prove itself in the marketplace ; company has to get out of this type of technological traps, which can come in.

All this requires the company to have a strategy formulation; so when you are looking at this strategy formulation it should decide whether it will go in for product or process R and D then the source technology and whether it has the technological competence to make use of the sourced technology and product portfolio.

So, if you look at ITI itself it was sourcing its technology from a well-known supplier Alcatel;to

its chagrin in the 90s it found that Alcatel was providing ITI with the technologies which had or which were becoming obsolete in the West very fast; it was being palmed off to ITI and it was costing the nation a huge royalty money which was going out to Alcatel.

So if you recall, one of the organizations which came into being in the 80s was C- DOT; it was formed on the mission mode to come out with a telephone exchange operable in Indian conditions in 36 months at a cost of 36 crores, 18 crores from the department of electronics, 18 crores from the department of telecommunications and C-DOT achieved this before this 36 months. It constructed this telephone exchange in a very hot place like Kittur in Karnataka where the temperature ranges at 42 degrees and this telephone exchange operated/continues to operate well. When they were taking quotes from Alcatel, if it is to be outsourced to Alcatel or taken from Alcatel, it quoted at that point of time 400 crores.

The important point is many times you outsource technology but many times do not know how to make use of this technology; instead if you generate your own, all these types of problems will be not come, you can operate it much better, if it has the capability. That is whether it has the technological competence to make use of source technology and product portfolio, if you are able to do it yourself, that is the reason why the present day government always trying to impress make in India.

Today if you are looking at corporate entrepreneurship also known as corporate intrapreneurship, some definitions are there- it is available to you in my the book also, in chapter number 16. So the management of technology and then this environmental scanning and then with respect to this strategy formulation, the one thing which you should look at there is a figure which is given on page number 234 of the book with respect to strategy formulation.

And this figure comes out in a nutshell, the product and process R and D with reference to the innovation life cycle. I am reading from the book as shown in the figure, the proportion of the process and product R and D varies as the product moves along its life cycle, kindly note that as there is a product life cycle, there is a process life cycle coming into the picture, product innovations are most important in the introductory stages but later on process innovations such as product quality manufacturing facilities become important.

So in the initial stages product innovation that is come out with the new product but the later stages the process innovations. Indian firms have to draw meaningful lessons from this, now on this corporate entrepreneurship some definitions are given by Guth and Ginsburg that is the birth of new business within existing organizations that is internal innovation or venturing and the transformation of organizations through renewal of the key ideas on which they are built that is strategic renewal.

So these people are talking not just of the current organizations going through a different market resistance, that is resistance with the changes which the market is asking them to come out with, so all this it will be called according to them strategic renewal to be current in the marketplace; three measures of R and D success are improving technology transfer from research to business units, accelerating time to market for new products or processes then institutionalizing cross functional participation in R and D.

So these are quite important that is three measures of R and D success, improving technology transfer from research to business units, accelerating time to market for new products or processes then institutionalizing cross functional participation in R and D, so in other words new product development; in most of the manufacturing organizations and even software development organizations, they develop what is called the house of quality matrix, HOQ 1,2,3 and 4; use it as measure of success.

Now they do so many beta testing on this and then they say yes it is working properly, so earlier we did not have personal computers, desktop computers had not yet come into the foray, most of the times we used to make use what you call big machines at that point of time whether it is the IBM or the ICL.

So now if you look at it almost everything you are able to do from your desktop PCs and from your laptops also, in the present today context; in which corporate entrepreneurship is working and it brings you to this exhibit on best practices for R and D improvement given on page number 235 in the book.

It says that what are the type, lists down what the best practices that an organization can follow; I will just read a few of them one, corporate and business unit strategies are well defined and clearly communicated, kindly note this term communicated, so this is many times the problem, this lack of communication or distorted communication or interpreted in a different way, all this causes severe problems in the market.

So in the political warfare that goes on also the parties want to stay relevant; so in the present day context in the Indian scenario this is becoming quite crucial, many of the political parties there feeling that they may become irrelevant soon.

So, this is even in the companies also; unless and until your strategies are clearly defined and correctly communicated then you will have a problem with respect to your business units; if you are communicating it properly and defining it properly there will be no problem with respect to business units or your strategic business units; it is the one which is going to help stay in the

market place; that is point number 1; and a few more points are also mentioned.

Point number 8: Analytical tools are used for selecting projects and for evaluating ongoing projects, so there is no point in what you call giving subjective performance measures, these subjective performance measures can always be a drag on the company; so the measures of performance should always be objective you should be able to assess the performance of an individual or a portfolio or a business unit or a strategic business unit objectively.

Point number 9: transfer of technology in business unit is the most important measure on R and D performance.

So if you look at a few of the other things which are mentioned here in the book it talks about small businesses and entrepreneurial ventures on page number 236; SMEs in India have to develop entrepreneurial characteristics in order to survive in the changing market scenario, four such important characteristics which are key to the success of the firm are: ability to identify potential markets better, a sense of urgency making them action oriented, knowledge of key to success in the industry, supplementing through outside help, skills, knowledge and ability.

I have also given some guidelines for new venture success by Hofer and Sandsberg on pages 236 & 237; many in the present day setup many organizations say they are non-profit organizations; what are these non-profit organizations- they represent the not for profit sector firms of the economy so they are working not for making profit but for public or collective good, so examples are given like police, philanthropic organizations, community service organizations, etc. so many times these NPOs are created in India; there are so many not only NPOs now there are so many NGOs which are created in this not for profit organization.

So some of them are under the government scanner also for activities not in consonance with their stated objectives, so some of these activities were according to what press reports, some of these NGOs were indulging in conversions also, which were not their stated objectives; hidden objectives which they were adopting which brought them into the governmental scanner.

The important factors for this NPO choice are given on page number 237 that is responsiveness, credibility, capability, confidence, communication, channel references, tangibility and top management so all this brings you to looking at an organization like an NPO from the lens of philanthropy, that is corporate philanthropy.

So one of the what you call conceptual models of this Corporate Philanthropy is presented here; see this slide it is agency specific one block, donor specific next block then the corporate philanthropy outcomes in the third block, so agency specific can be awareness, efficiency,

specialization, credibility, message info, message persuasion and the staff, donor specific can be with respect to CEO, resource perception- monetary, resource perception- non-monetary, financial benefits, other benefits and willingness.

So the CP outcomes could be with respect to policy, programs, amount, in kind then the CRM, etc. the external factors could be with respect to cause, social comparison, so the CP outcomes can be with respect to leading you to beneficiary and NPO and the choice parameters which I listed down are given here that is the credibility, CEO, capability, experience, channel, tangibility, reliability, responsiveness, sensitivity and communication, so this is actually when you look at it a conceptual model; can be developed as a theoretical model.

This is a theoretical model given in the book-we are looking at agency, awareness, organizational, CP, external then the parameters of NPO choice so numbers are given there going from 1 to 11, these numbers denote factor rankings, so 1 is image of the organization; so one of the organizations in Bangalore, they call it an NGO and by name Bridge school.

What is this Bridge school doing, picks up children who are from disadvantaged sections say they maybe laborers or workers, say from the construction field they are not exposed to what you call study in that sense; so this Bridge school helps them to give some insight into formal education, say bring them, teach them, make them go up from one to eight standard, educate them about skills and become better citizens.

So if you are told to love your country right from the young age you will do that, that is a child will develop that mentality and if you are given instructions on how to be a useful citizen from an young age that is advantageous for the child though he may be from the so called disadvantaged sections of the economy like the laborers.

So, construction workers especially they are moving from place to place so many times in Bangalore itself you take so many flats are being constructed, so many houses are being constructed; when they are being constructed there will be some workers, families which are stationed there till the construction is completed.

So this bridge schools they say that they are in the process of educating these children from this sections of the society, so taking all these factors into account what has been created is a theoretical model for corporate philanthropy, so this theoretical model for corporate philanthropy in the present day context can be a good viable choice, so many sections of the economy are progressing very fast, some sections of the economy are not progressing that fast, so this disadvantaged sectors of this economy also to be addressed.

Page number 239 of the book lists at 16.9 what is the scenario for the country, that is how you can visualize the scenario for the country, it says that the ongoing process of liberalization makes it essential for Indian companies to innovate and become market leaders.

Many IT professionals are used to sitting in one place for long number of hours, so when they get up they are a mentally tired a lot. In addition to that mental tiredness suppose they find that they are getting cramps, they are getting back pain, all those types of things that makes it even more difficult; So, the company should look at the safety aspects and hygienic aspects in addition to creating an environment of innovation for the professionals in the company.

Suppose you create some what you call activities which can bring out this employee or the manager from his desktop to some other: may be playing a game these are common in IT companies- indoor/outdoor games, then they get back to their working, that makes them become fresh so when the ideas are fresh; only you are giving impetus to innovation in an organization and that is required in the present day setup.

SMEs in the Indian context will have to become entrepreneurial this can be the key for successful functioning in a free market economy. SMEs are playing a crucial role in the economy; so what are these SMEs? the definition given I am told has undergone some changes also. SMEs employ less than 200 people with annual turnover of 5 crores; now I am told gone up beyond this figure, they have to develop entrepreneurial characteristics in order to survive in the changing market scenario.

Some four important characteristics are given here, ability to identify potential opportunities better, a sense of urgency making them action oriented, knowledge of key to success in the industry, supplementing through outside help skills, knowledge and ability. So these four factors are key to the success of the firm.

In the Indian context if the SMEs have to do this, Indian companies should strive to draw technology road maps which help them to predict the future rather than to react to it, so instead of being adopting a reactive strategy you become a proactive strategy company or an organization or even an NGO.

NPOs in the Indian context should look at meaningful options for strategic planning, so what it advocates is just because you are an NPO it does not mean that you should not look at strategic planning, do look at strategic planning and it may be worth it.

This is what we wanted to look at with respect to technology, how technology can be a good enabler, how these SMEs can be crucial to the economy and how these NPOs can also help in

some sectors of the economy.

We will stop here, we look at a few more issues in the next session, thank you.