

Technology Forecasting for Strategic Decision Making - An Introduction
Professor. Bala Ramadurai
Professor. Dmitry Kucharavy
Alternatives to forecasting in scope of technology management - Q&A

Professor. Bala Ramadurai: Decisions have to be made for investments or withdrawal. So, the question is, could there be other reasons why decision-makers may be interested in technology forecasting, apart from just investing from an investment perspective alone. Are there, from your experience, are there other reasons why they may be interested?

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Professor. Dmitry Kucharavy: Yes, let us understand a bit more the need of the term 'investing'. When we are talking about to invest, we are not talking about financial investment, we are talking about human resource investment, we are talking about time investment, we are talking about an investment of energy, investment of materials, investment of knowledge. Let me give you an example. When we take the decision about educational program for the business school, or for the technological university, we need to align the program for our students with what will happen in the future, this is investment also. This is investment into the education.

So, investment in this very slide that I try to discuss, this is investment not only financial investment. Shall we go in this direction or another direction or shall we stop to put a lot of efforts to something which is going to be substituted in the coming future. This is, this was the meaning of this kind of a sentence, yes please.

Professor. Bala Ramadurai: Thank you so much, that makes it much clearer for me. The next question I had was you have said that some companies sort of neglect strategy and so my question is, is this a specific geography? Is it limited to a certain geography, in your experience, is it limited to a certain geography, certain type of companies, certain type of organizations or is this a general phenomena where there are...

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why not to forecast ?

*Forecasting is not practiced by decision makers when
things are going well...
decision makers accomplish without it.*

*Forecasting is not practiced by decision makers when
things are going badly...
it is too late to predict (fast action is required)*

- Michel Godet



Or completely different is that they are under the wrong impression of what is strategy itself; they think strategy is A but it is actually B, so what is your, I mean it is a two-part question.

Professor. Dmitry Kucharavy: In fact, the first part of the question, as far as I understood, in fact this is an international phenomenon, it does depend on the company. It is does not depend on the company, it depends mostly on the stage of evolution of the company. The young companies, or today we use 'start-up' for this for describing the companies which were just established and so they always established for certain mission, they always establish for certain idea which will be demand in the future that they are going to satisfy all demand in the present.

And they are going to satisfy, those companies, they are growing and they have a two choice, either they grow and continue to grow after they pass the phase of start-up or either they just collapse and we already know that more than 90 percent of start-ups, they collapse after the short period of time. This is not just a sign that their strategy was not chosen properly, okay, strategy was not aligned what is really happened.

There are another part of answering this questions but there are other companies who are living bit longer. We cannot consider them as a start-up because they are already 10 years on the market. But we already wrote about clock speed of different technologies and we know that it is normal that in some industries, we do not change product or we do not change process within the 10 years.

So, those companies, if they do not review their strategies, they are going to collapse also. But there are companies who are seen hundreds of years like, let me use as an example Idea. This, those are the company which exist more than 100 years. This is example of the company who reviewed their strategy several times. They already did it. It does not depend form the geography, it depends on the product that we are using, it depends on the process of operating company. If I answer your question? Did I forget something?

Professor. Bala Ramadurai: No, this is fine. I mean both parts of the question are answered. This came from the, a quote, not quote but I have overheard a few decision makers saying that - oh, these technology forecasting, we in India do not do it. So, I assumed he was referring to a particular geography alone. But that is only, like you are saying that is a bias that that gentleman probably had about a certain geography. So, thank you for addressing that question. I now understand.

The next question I have is, this is another commonly asked question when I talk about technology forecasting to an audience, they say - technology, my company is a non-technology company, I am a non-governmental organization, what is your advice to them? Do they need to technology, to do, perform technology forecast as well? In their own words, they are non-technological.

Professor. Dmitry Kucharavy: Yes, thank you for this part of question.

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complementary study of future

- **technology monitoring**
analyzing relevant information and data, e.g. [patent analysis](#)
- **technology intelligence**
using collected data and information for decision-making and to be aware of [technology threats and opportunities](#)
- **technology roadmapping**
connect predicted technological changes and products into strategic plans;
matching short-term and long-term goals with specific technology solutions
- **technology assessment**
the study and evaluation of new technologies;
contribute to the formation of public and political opinion on societal aspects of science and technology
- **"la prospective"**
focuses more on pro-activity and building the future (Godet, 2012)
- **technology readiness level**
for estimating the maturity of technologies during the acquisition phase of a program (NASA, 1970)
- **foresight (futures studies)**
to identify future technology developments and their interactions with society; it includes future, planning, and networking

In fact, it depends how do we define technology. Because whatever solution we use, this is a certain way, certain way that this is a technology. This is a way to satisfy certain needs. Even non-governmental organization, when they operate, they transform some input into some output in order to satisfy certain needs. So, they use some solution. Probably they had a lot of hardware, by the way they spent energy. They spent not only electricity but they spend human knowledge, energy in order to organize.

So, the way how do we organize the things, the way how do we organize for instance educational process, this is a technology also, because this is an artificially made system in order to accomplish certain task, to satisfy certain needs. So, this is why, for if we define the technology like we defined in border of our course, this is a hardware, skill to know how to use it, and the policies and regulation which regulate this application, we can see that the forecasting, technological forecasting, this is something which is useful for any kind of organization.

Because the hardware for instance, in a, it is not on the computer, this is a method. If you look to the forecasting activity, the hardware, this is a method and knowledge how to use this method, this is what we try to share with you. But in this course, we share the knowledge how to use certain method, how to use certain hardware. And if you are involved into the process of decision making, so you have a technology for forecasting. Can it be the answer for your question?

Professor. Bala Ramadurai: Oh yes, absolutely. I agree with you that just because it does not have a hardware or something that we often call technology, it does not mean that non-governmental organizations or service organization do not have any technology to deal with. So, I agree with the point of view that it is an input, there is an output and there is something in between, it has to be a system and that is technology itself in purest definition, thank you so much for that.

Professor. Dmitry Kucharavy: The marketing strategy, this is...

Professor. Bala Ramadurai: One more, yes absolutely, I agree. One question I have is regarding the followers. I really appreciate that entire slide itself, particularly my concentration was on the fact that there are followers who are, to use your words, seduced by success.

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No, I am so sorry, followers who say why do we need to look at what is coming up, we do not need to predict, yes that is the one, we do not need to predict. Are there any specific examples you may give so that it stays in my mind? I agree with this concept but can you give us some examples of one company at least?

Professor. Dmitry Kucharavy: Yes, in fact, there are, most of the companies, I mean the number of the companies, they start as a followers. They start to produce something which others producing, but they try to change the way how to do, how do they try to find their part of the

market. But sooner or later, if company survive, if they took their market share and they run the process which is profitable, they arrive to the very fruitful idea that it is not enough just to follow others, we need to be pioneers in certain domain.

And, myself personally, in the end of 90s, I was invited to the to work with LG group of companies because those time, those group of companies, they put as a strategy to be pioneers in what they produce and those group of companies, they produce not only electronics, not only home appliance, they made chemical products, machinery and many other things.

So, at those time, they already took the market share of the international market as a very good producers, with very high-quality products. But even they can follow others very fast and very efficiently, they say that if they do not change their strategy, if they do not appear in certain area, be pioneers, the company cannot continue the same, continue to the trajectory because there are always other competitors who can do, for instance, coping faster.

From this point of view, yes, so most of the companies, they start as a follower but if they do not shift to their mood to be pioneers, they will collapse. This is a law of business, law of competition, law of nature if you like.

Professor. Bala Ramadurai: Thank you so much Dmitry, I certainly learnt a lot of things in this session of ours. I hope the learners also pick up some of the, equally things that are useful and they can post their questions.

Professor. Dmitry Kucharavy: Thank you for your questions, they help me to be more clear in ideas that I have sometimes not...

Professor. Bala Ramadurai: Okay, thank you.