Technology forecasting for strategic decision making - An Introduction
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Technology Lifecycle - Seasons, Clockspeed - Part 2

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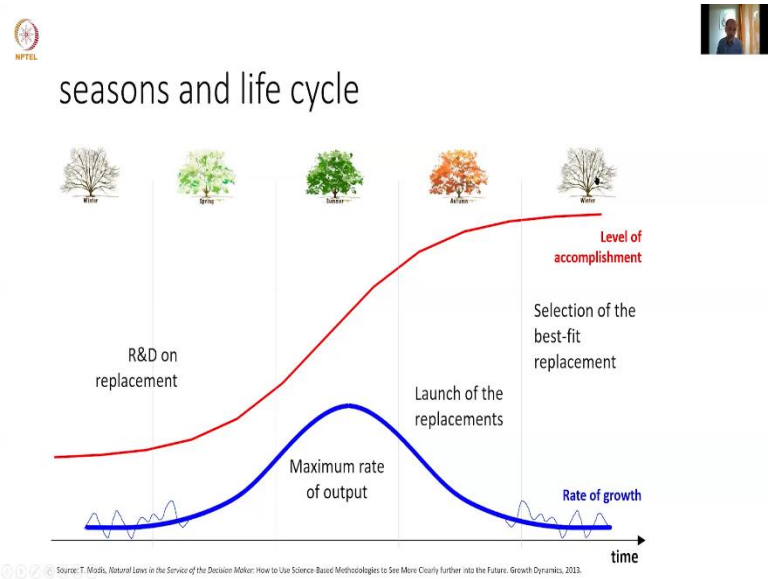

Professor Bala Ramadurai: I have heard about technology disruption, technology, particularly popularized by Professor Clayton Christensen about disruption and disruptive technologies. So, sounds to me like everything is going and at the end is where, there is unpredictability of, for that people, companies in that particular technology that they are looking at. So, where does this disruption actually figure into our scheme of things, the way we are thinking about technology forecasting itself.

Professor Dmitry Kucharavy: Yes, the disruption, disruption, this is a term which is used in order to represent the very fast replacement or very fundamental replacement of one system to another one. But any kind of disruptive technology, they follow the same line of evolution. They have a birth; they start to grow and they start to compete with other technologies.

And within a competition, we will look it, within our course, when first we will learn how to depict the logistic s-curve with data. And after that, we will learn about model of logistic substitution and through the competition, the one system replaces another one.

In fact, sometimes, the term of disruption perceived like some technology pop-up from nowhere and made a huge impact. And in reality, it never happens like that. Because in order to have impact, our technology has to grow to the certain level and usually, this is a same process. But when people are not aware about growth of certain technology, they present it like disruptive.

But, please do not confuse the term of disruptive technology with the term of disruptive innovation. Later on, we will see a different kind of innovation and when we are talking about radical disruptive innovation, we are going to see how they are different. Did I answer your question?

Professor Bala Ramadurai: Yes, you did. Thank you so much for that.

Professor Dmitry Kucharavy: Okay. So, let us...

Professor Bala Ramadurai: Another connected question, sorry, is does this model... this is another question I have received in the past when I talked about technology forecasting. So, does this model of the four seasons and the s-curve and the natural growth laws, do they apply for all domains or are there any restrictions or exceptions, maybe, that you have come across in your experience?

Professor Dmitry Kucharavy: In fact, to my limited experience, it can be applied for any technology, any domain and even non techno... okay, language is a kind of technology also. What is interesting to see, how we are learning language from the birth, or how we are learning language, for instance, new foreign language? We are learning them according to the logistic s-curve.

At the beginning, we learn slowly, after we, arrive to the certain number of modes, and our progress start to grow. It is interesting that different researchers of different time, they rediscovered this logistic s-curve in different domain. To my knowledge, at least six times, this model was rediscovered indifferent domain, in population study, human population study, in biology, one organism growing.

For instance, in technology, in different, for instance, if you ask in United State, they name this curve Pearl curve. When you ask this, about this curve in Europe, they name it as a logistic s-

curve which was discovered by Mr. Verhulst after famous essay in Economic of Mr. Malthus, somehow in the mid of 19th century.

This model is very universal. From mathematical point of view, this is a three-parameter function and we are going to learn it later. The question is that, how we use the variable that we use in order to measure the growth. And this, we also learn within our course, how to estimate the growth of the system and how to measure it.

If we choose properly, the boundaries of this system, and when we choose properly, the growing variable, whichever system we take, it grows also logistically. Number of publications from famous scientists, number of people on the planet, number of any technical system on any given market grows logistically. It is very interesting and we will discuss it.