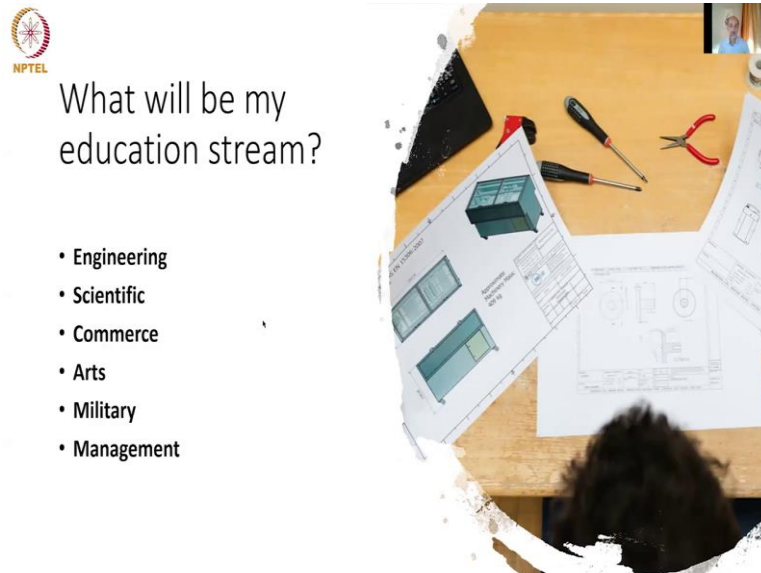


Technology forecasting for strategic decision making
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Strategic, Tactical and Operational Decision Making

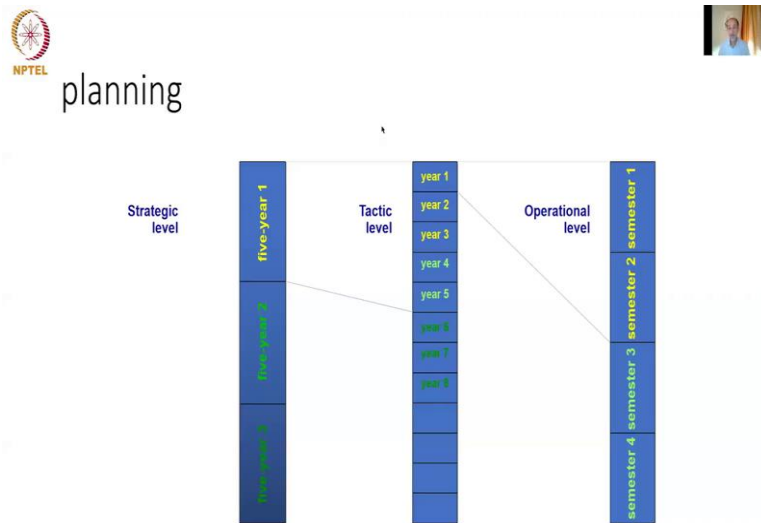
In order to understand, in order to understand the strategic decision making and connection of strategic decision-making with technology forecasting, we need first of all to understand what is strategy, what is decision and how we can reinforce these activities with the help of technology forecasting. Let us start with a simple, simple question for instance most of most of you already deal with such a question.

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What kind of education stream to follow in order to have successful career and in order to succeed in your life in your long life. And for instance, if you need to decide about engineering career or scientific stream or to follow probably commerce stream or arts or military even or management, in fact, one day you decide, you, one day you take this decision and after that all your education will follow this track and at the end this decision that you made which stream you are going to follow, will have impact in your, on your entire life. And this is exactly what we named strategic decision.

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Usually, if we look from point of view of planning, the strategic decision for instance for your education is kind of 5, can be divided by 5, 5 years in order to cover all the educations that you decided to follow when the tactic level usually can be splitted by year, each year you can decide for instance in which business school to continue your education or in which technical university to continue your education.

You can decide about courses to follow in order to succeed and you can decide but this is not strategic level, this level depends usually, this level of planning depends on what you decided on the strategic level. And of course, you have operational level how to complete different semester how many semesters you are going to complete in which duration, in which time this is exactly how our strategic decision impact to our planning.

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What is STRATEGY?

Strategy – is a general plan or set of plans intended to achieve something, especially over a long period. [CollinsCobuild]

Strategy - is management's plan for strengthening the performance and competitive advantages of a company.

But what is the strategy if we try to make it in short? Strategy can be defined as a general plan, as a general plan or set of plans intended to achieve something and it can be for the long period but it can be dramatic changes. In border of our course, we are going to define strategy as a management plan for strengthening the performance and competitive advantages of the company.

Because, in fact, if you look to the term strategy, it can be defined as a plan or direction directed cause of action to achieve an intended set of goals or it can be also defined as a pattern or consistent pattern of behavior with a strategy realized for instance, or strategy can be defined also as a position and so, but just to keep in mind that in both of our course we define a strategy as a management plan for strengthening the performance of company.

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how do we make decisions?

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For us strategy, term usually this is plan. But before doing plan, we need to take decision. We need to decide about our strategy. And, how do we, how do we make those decisions? How those decisions usually are prepared and what are some peculiarity.

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Objective

Factor 1



Factor 2



Factor 3



Alternative 1



Alternative 2



Alternative 3



Let us see an example, which was probably this kind of decision you already faced and you already tried to call. Usually, whatever decision we are taking it start with the objective, first we have to fix the objective. And according to the objective, we choose the criteria of factors, which we are going to take into account to take decision. For instance, if your objective is personal mobility, from places where you're living to place where you are going to follow your courses, or to the library, personal mobility, you have several factors.

You can have another set of factors, in my case, this is the social factors, how much does it cost and the ecological factors, the number of factors can be more, but it is very often in your mind, they even unconscious, you like something and you do not like something, even resolved thinking about why it happens like that. And based on those factors of those weights, you can choose one solution or another one.

For instance, depending on the distance, that you need to cover, depending of how much place your personal mobility device will occupy. And so, so usually, when we take decision, we have several alternatives, and we need to choose one of them that is out of several, based on our factors, this is how it works. I tried just to make more detail.

Look at this situation of decision. And very often we make decision even without thinking about these factors, because those factors are embedded into our culture or embedded to our mindset, embedded into our life. But if you just look, look back, how did you decide for instance, this morning, to travel from one place to another place, you can see how you took those decision.

To take decision, it is not always as easy as it can look like. And one of the pitfalls that we have not to forget about that most of our decisions, they are not rational. We strongly believe that all decisions that we are taking, they are rational but the scientific research in this domain shows clearly that it is not at all like that. In most of the cases, the decision that we take 50 percent rational 50 irrational, but the high impact of decision expected the less formal approach is applied.

So that is why in order to take strategic decision to reach the long term changes depend, we very rarely use the formal approach, we will look about difference of strategic decision, tactical operational decision later on. But here I would like just to emphasize that we need to revise our strong belief that we take decision rational.

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What is DECISION?

When you make a decision, you choose what should be done or which is the best of various possible actions [CollinsCobuild].

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What is DECISION?

When you make a decision, you choose what should be done or which is the best of various possible actions [CollinsCobuild].

Decision - choice between two or more options.

What kind of working definition, we are going to use in order to define decision? When you make a decision, you choose what should be done or which is best of various possible action. This is a very basic very classical decision. In our case, we are going to use some shorter version, we will define in border of our course, decision as a choice between two or more options. Let us keep in mind that decision, usually this is a choice between two or more options using some criteria.

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strategic decision vs. operational & tactical

	strategic	tactical	operational
The area of the decision	plan for change and risk, define design objectives, external processes, process design and choice of types of technology, economic justification	resource management: functional and technical specifications, degree of automation, human resources, process organization, regulations	use of resources in the production process
Effect/impact of decision	durable & strong, changes are large in scope	strong in the short term, in scope of decided strategy	can be considered independently
Level of decision-making	top management, senior management	functional directions, middle management	head of services, operational management
Frequency and evidence of decisions	unique, casual	infrequent, less predictable	frequent, predictable
examples of decisions	decide entrance or exit from market, introducing a new manufacturing process	design a marketing plan, develop a departmental budget	restock inventory, determine special offers

Strategic, tactical and operational decisions. Sources: (Rouwenhorst et al. 2000), (Andersson and Wiermer 2008), (De Koster, Johnson, and Ray 2017)

If you just try to compare the different level of decisions, how strategic tactical and operational decisions are different. We can see that strategic decision in the area of strategic decision they are mostly done in order to plan, to change and in order to plan risk, to define for instance, design objective, to look to the external processes, to incorporate the pivotal changes, to decide not only about technologies but also organization and which kind of knowledge have to be acquired.

When the area of tactical decision, this is mostly about resource management, like what kind of business school you are going to use in order to complete your education, what kind of other educational institution you are going to use. This is more about resource management when operational area of decision, this is how you are going to use these resources are you going to stay two semesters in the same school or are you going to change within the first semester, you're going to change to different educational institution. This is operational level, which courses you are going to follow.

If you look to the impact of decision, the strategic decision usually they provide long term impact, changes which follow the strategic decision there in the large in school. If you look to the level of decision making usually is a strategic decision making and those are done by top management and senior management when the tactical decision they are done by functional direction or middle management.



If you look to the frequency strategic decision, why it is not so easy to be to be done, because again, they are unique, if you compare just with the operational decision, which are more or

less predictable and frequent and tactical decision which are not frequent, but they are repeatable, and they are still predictable, the strategic decision they are very difficult to predict the consequences and they are usually unique.

We will see in the next slide one of the examples of strategic decision and in order to illustrate this. And the strategic decision for instance, if you look to some examples, we can, we decide to enter or to exit from the market, we decide introducing new manufacturing process or not introducing new manufacturing process, when the tactical decision.

This is for instance, like this design in a marketing plan in order to support entrance to the market or to develop a departmental budget, when we decide to change the direction of this department. When operational decision can be like this documentary or determined special offers, those are the operational decision. In border of our course we are mostly focusing about forecasting to support strategic decision.


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Strategic Decision-making


IBM – Lenovo

In 2005, Chinese technology company Lenovo purchased the IBM personal computer business and the ThinkPad as a flagship brand along with it.



Strategic management

strategic management involves the formulation and implementation of the major goals and initiatives taken by an organization's top managers on behalf of owners, based on consideration of resources and an assessment of the internal and external environments in which the organization operates.



Let me give you an example of our strategic decision which was taken in 2005. IBM decided to sell the business and Lenovo decided to buy the business of personal computers in particularly the ThinkPad laptop, those time was one of the very-well recognized brands with very interesting market share, by the way we look to the strategic decision, why it was taken like that.

The very often, it happens that we do not know exactly in a time of strategic decision, why the company decided to do this, but in this particular case, we can see that IBM they had

very well and very reliable forecast about market changes. And they decided to do so, because if you look at what happens later on probably, we will see this case study together.

This was very right decision which allow company to change their strategic product and in 2011 they introduced, they showed to the potential investors, the IBM Watson platform for cognitive computation. If I try to summarize about strategic decision making, of course, we need to see the strategic decision making it is a part of what, in fact, strategic decision making, this is a part of strategic management.

When strategic management involves the formulation and implementation of the main goals, and the main initiatives taken by company, top managers, on behalf of owners, based on consideration of resources and assessment of internal and external environment in which the organization operates. The strategic decision making, this is a part of the process of strategic management.

So, that is why when we make such decision more educated way, when we make it less intuitive way, this helps us to reinforce the quality and to decrease the risks. If I just go back to the example of a deal between IBM and Lenovo in 2005, in fact, in a time of agreement, Lenovo, they recognized result very positively, when later on, it was reported that due to the changes of the market, they did not benefit from this deal as it was planned at the beginning. Well, let us make a stop here.