

Formulating an innovation strategy

Innovation, Management and Entrepreneurship (BMAN73112)

[Click to return to previous page](#)

2. Different types of innovation strategies

Using the book from Dodgson et al. (2008) [available in the [online reading list](#)], this section defines four different innovation strategy options available to firms (although they often display different features in different business at different times): proactive, active, reactive and passive.

Proactive innovation strategy:

Under a proactive innovation strategy, the main objective of the firm is to gain technological and market leadership. They want to achieve a “fast-mover advantage” in a particular product or technological area. One of the questions to take into consideration is how long do you want to implement a first-mover innovation strategy to achieve the market position you want. What are the types of innovation products that this strategy will encourage the firm to pursue and invest in the future? It will be based on incremental but also radical innovation. This proactive

innovation strategy will give the firm the freedom to pursue radical innovation and, hence, both the innovation expenditure will be invested in applied R&D but also basic research. The knowledge sources are not only the in-house R&D, often part of the knowledge is coming from external sources, that is firms' collaborators, including technological leaders and science base providers (like universities or research centres). This type of companies could be quite demanding lead costumers, for example being very stringent in the sense of time for delivery (6-months no 9 and if not we will put penalties in place) or requireing to comply with an ISO 2002 quality assurance standards. Innovation expenditure involves both basic and applied research that are require a significant proportion of the innovation expenditure. As the firms under this strategy are perceived as market leaders, products and/or services will be new to the world and sometimes firms will need to invest in education and training. These is not only training for internal staff to keep them up to date with the latest technological discoveries, or send them to MBA management cours, but also training and education of the customers. Advertising campaigns are very expensive to try to get firms' message across and it is important to educate the customers. Intellectual Property Rights (IPR) are one of the ways firms will appropriate benefits from the investment in innovation. For some firms, they will have an explicit component of IPR as part of the innovation strategy. Is the firm going to invest in patent protection? Is it important to invest in copy-right protection, trademarks or other different types of IPR. For others, secrecy is important, fiems don't need to create patents to protect your invention if you are confident. For some companies secrecy is part of the appropriation

standards. Coca-cola is a classic example: they don't need to invest in the protection of the recipe, because they have a long standing secrecy in the recipe for many years.

Some examples of companies that, according to Dodgson et al. (2008) follow a proactive innovation strategy:



The famous company Apple, have declared that they want to have a first mover technological advantage before the market is crowded with lots of competitors offering similar products. They collaborate with external suppliers to have specific components providing Apple the best display technology on the computers, on the iPhone, or maybe suppliers of the batteries for the phones. Focus internal R&D will focus on the design and marketing. That is where they find the competitive advantage. So there is in-house R&D but also external collaboration. For Apple, there are thousands of potential collaborators that make display

technology that can be used for iPad, iPhone, etc. but they want to find the best technology leaders in the world wherever they are.



According to Dodgson et al. (2008) firms like Qantas or Singapore Airlines follow a proactive innovation strategy. They were the first companies that introduced the concept of “video on demand” in their long trips from Asia to Europe or to North America. When you sit in the seats of their airplanes you can choose among the hundreds of videos available. These companies are the pioneers also on the concept of the “flat bed” in the business class. For first class customers that are paying premium prices, they can sleep in a 10-15 hours flight.

Active innovation strategy:

The active strategy means that firms are not technology leaders, are not first innovators, they survive and compete well in the market following the leaders quickly to avoid of being left behind in terms of the technology development. In the decision-making process they should react fast to the competitors technological change. The technological focus is on incremental innovation, to build and focus on incremental innovation instead of radical. The knowledge sources are similar to those used by firms following a proactive strategy. They focus on applied R&D because it helps with incremental product innovation, incremental process innovation and introducing them to the market quickly. Some of firms invest in innovation to improve the services, services that are new to the firm. Appropriability, that is where the firms' competitive advantage is coming from, comes from the speed of response, reacting quickly to the market leaders developing some complementary assets. For example, nowadays there is a lot of emphasis on online shopping, requiring important service innovation improvements for some companies. This online shopping are part of the firm assets as it requires particular logistic routes to sell the products around the world by using

different shipping routes, different air transportation routes. In this way operation management activities and logistic management come into firms' appropriability and helps to develop its competitive advantage as part of the complementary assets.



British airways is an example of a company following an active innovation strategy. It followed Singapore airlines pioneer idea of flat beds and video on demand. They saw that if they were not offering video on demand or business class premium options like flat beds, they would have started to loose some market share to the competitors. So quickly they adapted their planes to offer these additional services.

Reactive innovation strategy:

Firms following this strategy survive in the market just waiting and seeing. And sometimes by following a long way behind. This is a very subjective strategy and for some companies might work, but for others it might not work. This is classic evolutionary theory, survival of the species. Some companies will survive using this strategy but they need to be aware that they could be out of business as well. Where is the technological innovation coming from? It is entirely incremental. They do not have any aspirations of doing any radical innovation. The knowledge sources are not only customers but also purchasing licensing and buying-in the technology needed. If you remember the advantage of purchasing licensing is that they are usually proven technologies that the firm can use for paying a fee rather than the firm itself developing that technology. They will be reactive to acquire any particular position. They also need to be very good at analysing their competitors. They should have systems in place, partially in the innovation strategy, that helps them to do a good competitor analysis. If you remember the term “reverse innovation” that is one way of analyzing your competitors trying to reverse their innovation activities to find the way to develop low cost products but still offering a particular solution to a particular problem.



Dodgson et al. provide some examples of companies following a reactive innovation strategy from budget airlines like Ryanair, Air Asia. They were the first companies providing budget services, by reducing for example costs in meals. Part of the strategies implies that you have to purchase the meal on the flight, you have to book your sit on internet in advance, you have limitations in terms of what you can carry on your luggage, etc. They are following the example of an American airline called South Eastern Airlines that was the pioneer on these issues. And nowadays we have many other companies that follow the same pattern like EasyJet for example.

Passive innovation strategy:

The last option is to develop a passive innovation strategy. Very small number of companies follow this path and do what is demanded by customers or dominant firms. They occasional can come up with some incremental innovation. But firms' knowledge for developing new innovation is mainly coming from the customers. The innovation expenditure is very little because they will not have formal R&D, no formal product development and testing. They could be third or fourth tier supplier firms in the automobile industry for example supplying for example the paint, door handles, mirrors,... These companies do not have high levels of scientific expertise. But for some, they might have aspirations to become second or first tier in the future, so they might want to change the innovation strategy option to be more active in the future.



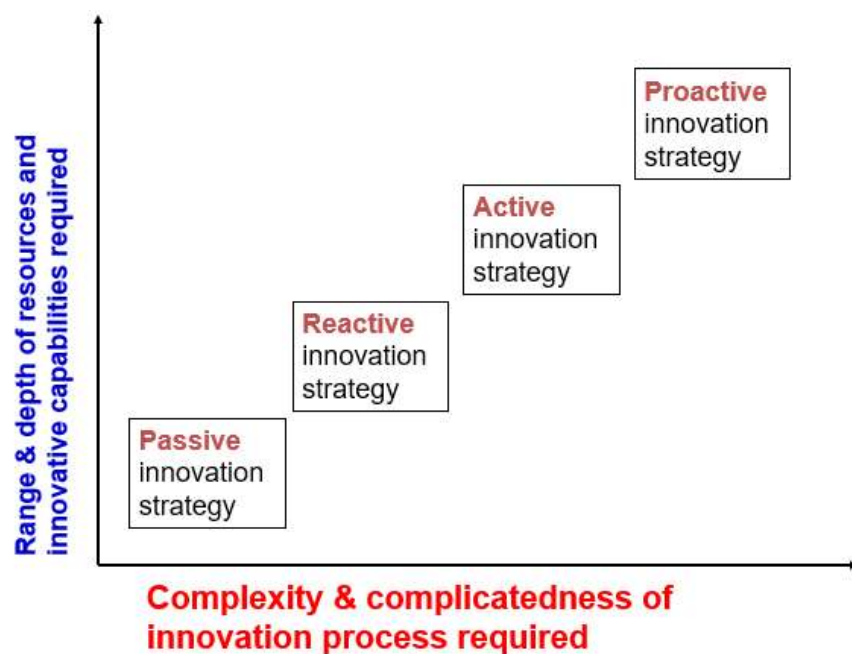
Examples of passive strategies can be found among many supplier firms in the auto industry. Whilst some major so-called first-tier auto suppliers, such as Bosch in Germany, NipponDenso in Japan and Magna International in Canada, can be highly active innovators, other firms further down the supply chain are usually entirely dependent on building to the specifications of others.

Next tables summarize the four types of innovation strategies.

PROACTIVE		ACTIVE	
<i>Objectives:</i>	<ul style="list-style-type: none"> Technological & market leadership. 	<i>Objectives:</i>	<ul style="list-style-type: none"> Not being first to innovate, but prepared to follow quickly.
<i>Degree of technological innovation:</i>	<ul style="list-style-type: none"> Radical & incremental. 	<i>Degree of technological innovation:</i>	<ul style="list-style-type: none"> Mainly incremental.
<i>Knowledge sources:</i>	<ul style="list-style-type: none"> Science base; in-house R&D; collaboration with techn. leaders; demanding lead customers. 	<i>Knowledge sources:</i>	<ul style="list-style-type: none"> In-house R&D; collaboration with tech leaders; customers and suppliers.
<i>Innovation expenditure:</i>	<ul style="list-style-type: none"> Basic & Applied R&D; products/ services new to the world; operations; education & training. 	<i>Innovation expenditure:</i>	<ul style="list-style-type: none"> Applied R&D; products/ services new firm; operations; education & training
<i>Propriability:</i>	<ul style="list-style-type: none"> IPRs; complementary assets; secrecy; speed. 	<i>Propriability:</i>	<ul style="list-style-type: none"> Complementary assets; speed.
<i>Typical Firms:</i>	<ul style="list-style-type: none"> Apple/ DuPont/ Qantas/ Singapore Airlines 	<i>Typical Firms:</i>	<ul style="list-style-type: none"> Microsoft; Dell; British Airways.
REACTIVE		PASSIVE	
<i>Objectives:</i>	<ul style="list-style-type: none"> Wait and see. Follow a long way behind. 	<i>Objectives:</i>	<ul style="list-style-type: none"> Do what is demanded by customers of dominant firms
<i>Degree of technological innovation:</i>	<ul style="list-style-type: none"> Entirely incremental. 	<i>Degree of technological innovation:</i>	<ul style="list-style-type: none"> Occasionally incremental.
<i>Knowledge sources:</i>	<ul style="list-style-type: none"> Competitors; customers; purchase of licenses. 	<i>Knowledge sources:</i>	<ul style="list-style-type: none"> Customers.
<i>Innovation expenditure:</i>	<ul style="list-style-type: none"> Focus on operations. 	<i>Innovation expenditure:</i>	<ul style="list-style-type: none"> No formal activities.
<i>Propriability:</i>	<ul style="list-style-type: none"> Complementary assets; speed. 	<i>Propriability:</i>	<ul style="list-style-type: none"> None.
<i>Typical Firms:</i>	<ul style="list-style-type: none"> European and Asian budget airlines, such as Ryanair and Air Asia. 	<i>Typical Firms:</i>	<ul style="list-style-type: none"> Third and fourth-tier automotive suppliers.

Next graph shows the relationship between these types of innovation strategy and the levels and range of resources and capabilities required and complexity and complicatedness of innovation process needed to support them. On the vertical axis, from low to high you see the range and depth of resources and innovative capabilities required to implement the passive, reactive, active and proactive innovation strategy. The higher you go, the more you need to invest in the range and depth of resources and capabilities for example if you want to have proactive

or active innovation strategy. On the horizontal axis you see how the complexity increases with the innovation process you are required to implement in your strategy. On the left they are low risk processes while on the right they are high risk processes. Think on this as both technical risks and commercial risks combined. If you are following a passive or reactive strategy your technical and your commercial risks are relatively low, compared to follow an active or proactive strategy.



Source: Dodgson et al. (2008)

Based on previous categories, we can then summarize the technology/innovation strategies in two main groups: 'leadership' or 'followership'.

“ Technology leadership: firms aim at being first to the market. Requires commitment to creativity and risk-taking, with close linkages both to major sources of new knowledge, and to the needs of customers.

“ Technology followership: firms aim to be late to market, based on imitating (learning) from leaders. Requires commitment to competitor analysis, reverse engineering, and to cost cutting and learning in manufacturing.

Design the innovation strategy is not a straightforward task and companies must possess ability to identify, access and use technologies from a wide variety of external sources. The process starts with the identification of gaps in firms' in-house capabilities. Where do these gaps exist? Could we address them internally or we need to go outside to have help on that regard?

2.1 Entrepreneurs and innovation strategies

If you think in a small firms, a start-ups for example, do entrepreneurs engage in strategies? Entrepreneurs are often opportunist, they react quickly to the circumstances they see. But there is no reason why they should not engage in strategy and strategic thinking. Some of them maybe don't have a particular innovation strategy in place but there is nothing stopping them in thinking some key elements of innovation and incorporate it as part of the regular business strategy. And are the entrepreneurial strategies differnt from those of large established firms? Broadly, yes. Entrepreneurial firms are likely to be more responsive to opportunities than "managerial firms". In other words, they are more likely to take decisions faster, more quickly because there are less checks and balances (decision-making) compared to larger managerial firms.



Activity 1

Exploring innovation strategies

Choose an organization and try to research their underlying strategy.

- What was the original 'big idea' which they were trying to exploit when they began and what is their approach today?
- What are the major directions of change which they are trying to use to move them forwards?

For example, Intel was founded by some entrepreneurs looking to exploit new markets in the emerging field of semiconductors. They began making memory chips and then invested in developing their own microprocessors – the brain at the heart of a computer. Since then their innovation strategy has been focused on continuing to design and manufacture devices and to place them firmly at the heart of every computing device (including phones and other handheld tools) in the world. That journey has taken them in some interesting directions but their core innovation strategy is still around designing and building platforms for computing (Tidd and Bessant, 2013).

Research your chosen organization and share it using the link below to BB discussion board which tells the story of its innovation strategy, past, present and looking forward to what it is trying to do next.

[Go to BB and share your example](#)

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