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PREDICTING FUTURE IN BUSINESS

Introduction

The emerging new technologies and organizational opportunities are the inspiration for innovative business. It is an infrequent case that the new role and functionalities of a modified company are predicted in a right way. Most frequently only more or less abstracted analogies are applied with regard to the element that is subject to innovative modification:

- new organizational structures,
- new techniques of operation,
- new products or services,
- new business models.

Analogies are sought after in the past of the sector in question or some other branches in order to find adaptation opportunities of the existing solutions. The analogies are usually taken literally, with infrequent changes and the assumption that after some period of operation and with the experience gained corrections will be introduced on the obvious condition that the innovation turns out to be acceptable.

Practically, there is no other possibility to determine a priori the correctness of the accepted solution. There are too many factors that may lead to a failure and usually there is a lack of the necessary information to assess the probability of a particular scenario. The next chapter will present two cases that were experienced by the author himself - one was a failure while the other a complete success.

1. Examples

Case study 1- Public access to the Internet

In 1994, the author was the head of an experimental research project of the Krakow branch of Telekomunikacja Polska that aimed at the assessment of the profitability of investing in the Internet and the access to e-mail services. The objective of the experiment

was to assess the current and estimate the future interest of Krakow inhabitants in the access to the Internet. It should be emphasized here that the Internet and its fairly poor services were present in Poland already in the 1990s; however, they were restricted only to the academic centers. The initially accepted business model assumed that sending e-mails would be charged analogously to telegrams that had been a well-known system of communication for decades. Moreover, it was not expected that any competitor to the TPSA, the then monopolist on the market, should appear and the working business model assumed substantial profits resulting from the monopoly position on the information market. Nevertheless, investing in the Internet in those days was a difficult decision to make; the telecommunication industry lacked practically everything and consequently the research on the actual demand seemed the right idea.

As it is usually the case with innovations, the company did not allocate practically any funds. Fortunately, there was a significant interest in the Internet and the public access to the web among IT companies. As a result it was possible to install a workstation with a hired computer, router and monitor in the building of the Poczta Główna (the Central Post Office) in return for advertising the Solidex company from Kraków, while the Internet connection was provided by the freshly founded POLPAK company. A round-the-clock advertising campaign was arranged in the RMF FM radio and competitions were organized to encourage the use of the computer workstation. The workstation was intended to operate from May to July 1994; every use of an e-mail was registered and charged 50% of the standard telegraph service.

The result of the experiment was surprisingly negative and the author decided to stop it after two months as only 5 people used the public access to the Internet. Such poor interest of the Kraków inhabitants was inexplicable, especially in the light of what happened one year later, in 1995, when the interest exceeded any expectations after launching the TPSA service offer of the modem access to the Internet.

It is interesting to note that another telecommunication experiment was conducted in the same place a few days later. It was a stand for video conferences which offered for an insignificant payment the opportunity to talk to and see at the same time the family living abroad. And again this novelty was not accepted as expected.

It is probable that the timing (May-June) was wrong for the experiment. It is students who are usually the first users of new technologies and in these months they are busy with the coming examination session. However, such explanation is not convincing especially in the light of the booming interest in the Internet that occurred only one year later. The main reason

is that an inappropriate business model was applied. The adequate one basically already existed and could have been used for testing.

Case study 2 Modem-based access to the Internet

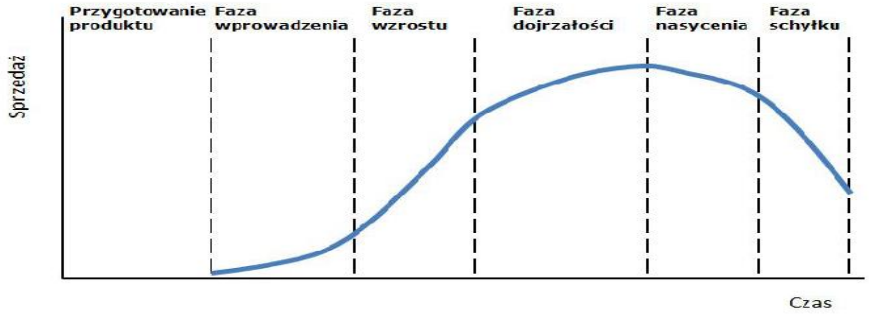
A few months following the unsuccessful experiment with the public access to the Internet, new technological possibilities emerged. All telephone exchanges in Krakow were connected with an optical fiber cable which enabled an easy development of the data transfer network. The business model that seemed to be suitable had been known for years. A completely amateur initiative referred to as FIDO NET made it possible to send data through telecommunication networks (the FIDO NET still exists marginally). The transfer of data was conducted actively; the user would sent it (with the application of a modem) to a private server with his account, and anybody could share the data that was stored there. The characteristic feature of this model was that the storage of data was free of charge[1]. The idea for this service converged with the plans of the TPSA Exchange, which several months later offered the access to the Internet by dialing 20-21-22 without the necessity to sign an agreement with the operator and pay special charges. The connection to the Internet was charged according to the telecommunication tariff. The business model that was based on agreement-free use of the Internet and charges depending on the duration of the connection did not last long and was replaced by a classic model that consisted in signing an agreement with a particular operator and varied charges.

2. What should prediction be based on?

The graph showing product life cycle (Fig.1) is an interesting management support tool.

1 P. Bartuzi, praca mgr, FidoNet *Komputerowa sieć wymiany informacji. Studium socjologiczne*, Warszawa 1995 , http://mrc.tychy.pl/fidonet/pracamgr.html.

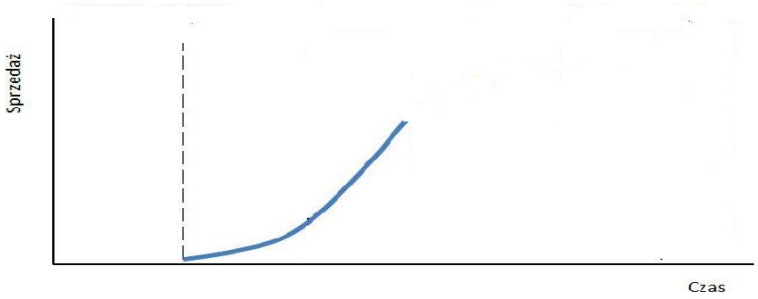
Figure 1. Product life cycle



Source: http://www.producthero.pl/cykle-ycia-produktu-dla-product-managera/

It is easy to draw this graph after the completion of a cycle. However, in reality we are always in a given point of time and we cannot be sure of anything as the situation is significantly less clear (Fig.2)

Figure 2. Product life cycle in the course of product life



Source: Author's research

What is going to happen now, i.e. at the end of the graph? Is there going to be a further growth or perhaps a decline? Several examples of companies can be presented where spectacular mistakes were made due to a misinterpretation of the data. Finland's Nokia is the latest example of a company that did not predict the changes on the mobile phone market, the decline in classic phones and the emerging growth trend in smartphones. Today, the life cycle graphs show this tendency very clearly but it was not so obvious (at least for Nokia) a few years ago. Another example is the Polaroid company, a monopolist in instant photography, which did not predict the development of digital photography despite having an adequate laboratory and patents in this new technology.

A few more examples:

a)Thomas Watson, IBM CEO, the prediction in 1943: "I think there is a world market for maybe five computers",
b)Ken Olson, the President and founder of Digital Equipment Corp. , 1977: "There is no reason anyone would want a computer in their home",
c) Bill Gates, Microsoft CEO and founder, 1982: 640kB of memory ought to be enough for anybody,

The above errors resulted from the lack of prediction of how a new product could be applied. Thus, there was no possibility to recognize correctly the trend. Even more significant mistakes occur when a trend does not appear. This explains such business mistakes as: we will never rise into the air, objects heavier than air will never fly, electricity is just a curiosity, nuclear energy is not going to be applied in practice, etc.

3. Accurate predictions

However, there have also been accurate predictions. A prediction of 1872 that concerned the development of Paris anticipated a transport disaster. According to the forecast, in 1972 a million of horse cabs were to go round the city with a speed of few kilometers per hour, there would be problems with parking space for them and the city would be drowned in horse manure. And indeed, when 1972 came, the forecast proved to be almost 100% true. Although the horses were replaced by cars, the transport problems were as expected and the problem of waste remained unsolved.

4. Wrong assessment of the market

One could say that certain situations were caused by a market mistake. Thus, how can one evaluate the case that occurred after the invention of steam engine. In 1840s a dramatic boom started concerning railway companies; banks granted credits, the shares of railway companies sold perfectly but eventually bankruptcies occurred. It is now assessed that such course of events resulted from the inadequacy of the railway offer to the potentials of the business and industry environment[2]. Consequently, it was difficult to find customers who would properly take advantage of the railway, which led to unprofitability. However, business

2 W. Byrski, *About the inadequacy of computer systems* [in:] *Selected contemporary problems of information systems* ed. Kapczyński Adrian, Bruckner Adrian, wyd. PTI, Warszawa 2010

circles were convinced that there was future for the railway and, as a result, new railway companies were founded which also had problems. 30 years were necessary for the situation to become stable and, finally, the army realized that it could use the railway, which gave momentum to the development of this sector. At this time, the industrial and commercial infrastructure was adapted to the potentials of the railway and that resulted in 150 years of a significant development of this means of transport.

A similar story happened 160 years later and concerned another breakthrough technology. In 1995, there was a sudden expansion of e- business which ended similarly to the development of railway over one and a half centuries ago. However, this time the process was much quicker than in the 19th century. Already within 5 years the dot-com bubble burst and 80% of companies that invested in the Internet went bankrupt. A few years later the situation on the market returned to the initial point and the explanation of that turbulence was analogous to the one concerning the railway sector in its early stage of development.

Some companies survived, one of them Amazon – the pioneer of e-commerce. However, as it turned out some years later, the survival of Amazon was purely coincidental as the company, which had extremely limited earning, applied a very risky strategy of investing all of its resources in one area. Eventually, it succeeded but the outcome could have been quite the opposite.

Market is incapable of predicting such developments. When a particular technology starts developing too quickly, the surrounding and the market rules cannot adjust promptly enough. Some players on the market make efforts to take advantage of the new situation and accelerate the process of adjustment which attracts new followers. Consequently, such group operations that aim at quicker profits result in the creation of a typical speculative bubble.

4. The nearest future

Currently, 3-D printers represent a new promising technology. They have been known for over 30 years but now, as they have been significantly improved, they start playing an important role in economy. One could fantasize and predict significant changes in the organization of manufacturing after a subsequent increase in functionality, e.g. after mastering 3-D mixed material printing, and particularly the capability to print electronics. Some researchers (the author of this article including) expect that in the nearest future, 3-D printers are going to become a kind of 3-D copiers, which in SF literature is referred to as the hypothetic function of materia duplication. It would inevitably be a crucial change to the economy paradigm. An incredible possibility of an instant dissemination of a freshly designed

product (and the integration with the Internet would not be a problem) and the capability to "print" spare parts would result in revolutionary changes. However, it is impossible at present to assess the probability of the realization of such promising scenario.

Conclusion

The increment character of the majority of changes, historical determinants, the stability of the environment and the permanence of some rules should facilitate the accomplishment of the main task of company leaders in developing a strategy – i.e. to make sense to phenomena that occur in a complex and dynamically changing business environment[3]. This is a troublesome process and successes frequently come by coincidence or even against the expectations. It seems that numerous authors of various strategy schools are wrong to be convinced that adequate efforts may result in finding a hidden order in the surrounding reality. The ones who seemed to have found the order often get lost after the change of the surrounding. In the last 50 years, the average company life cycle of companies from the US top 500 companies decreased from 67 years, as it was in 1920, to as little as 15 years now[4]. It is estimated that in 2020, 75% of the US top 500 companies operating in 2012 are going to disappear from the market. This amazing result may be the measure of the quality of contemporary management, the ability to apply computer science and the present state of theoretical knowledge in management. It seems that the availability of the significantly greater volume of information about business and its environment is not beneficial to business people[5]. Has computer science hurt business instead of offering it the assistance?

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3 K. Obłój, *Pasja i dyscyplina strategii*, Wyd. II zmienione, Warszawa 2016, wyd. Poltext.
4 http://www.bbc.com/news/business-16611040 (accessed: 19 January 2012
5 W. Byrski, *Ograniczenia komputerowego wspomagania zarządzania*, Oficyna Wydawnicza Text, Kraków 2009.

Abstract

All theories of strategic management assume reaching targets. Thus they assume the possibility to predict the future. The article presents contemporary approach to the possibilities to predict the future in the narrow areas that in the interest of business. The author suggest that a substantial deterioration of the possibilities to predict the future accurately may be the side-effect of the significant growth in the inflow of information to companies.