

WYBRANE CZYNNIKI ROZWOJU I KONKURENCYJNOŚCI MODELI BIZNESOWYCH

Łukasz BUDYNEK

Łukasz Budynek Business Consulting, Poland; budyneklukasz@outlook.com, ORCID: 0009-0005-4683-5251

Streszczenie: Celem artykułu jest przedstawienie i analiza głównych czynników determinujących rozwój oraz konkurencyjność współczesnych modeli biznesowych. Przedstawiony cel zostanie osiągnięty poprzez wykorzystanie metody badawczej, którą jest krytyczna analiza literatury przedmiotu. Na potrzeby tej analizy wykorzystano różnorodne źródła danych: ogólnodostępne oraz specjalistyczne (branżowe) itp. Konkurencyjność oraz rozwój współczesnych modeli biznesowych uzależnione są od wielu różnorodnych czynników. Specyfika każdego przedsiębiorstwa powoduje, że czynniki te będą mieć na każde z nich inny wpływ i intensywność oddziaływania. Dokonana analiza pozwoliła na wyróżnienie 3 najważniejszych: finansowych, prawnych oraz technologicznych. Zaprezentowanie w artykule wszystkich czynników determinujących modele biznesowe jest niemożliwe, co wynika z ich bardzo dużej liczby oraz z faktu, że systematycznie pojawiają się nowe. Przeprowadzona analiza literaturowa może być wykorzystana przez przedsiębiorstwa będące zagrożone likwidacją lub upadkiem, wskazując potencjalne źródła ich niepowodzeń, jak również najbardziej wartościowe kierunki restrukturyzacji.

Słowa kluczowe: model biznesowy, czynniki rozwoju, konkurencyjność.

SELECTED FACTORS IN THE DEVELOPMENT AND COMPETITIVENESS OF BUSINESS MODELS

Abstract: The objective of this paper is to conduct a critical analysis of the literature to identify the primary factors influencing the development and competitiveness of modern business models. A range of data sources, both publicly available and industry-specific, have been utilized to attain this objective. The competitiveness and development of modern business models rely on several factors. As each enterprise has its own particularities, the impact and intensity of these factors vary. The examination identified three crucial factors: financial, legal, and technological. It is not feasible to include all the factors defining business models in this paper due to their vast quantity and systematic emergence of new ones. Nonetheless, the analysis of literature conducted can be beneficial to companies facing the risk of liquidation or bankruptcy as it points out potential reasons for their failure and the most valuable restructuring approaches.

Keywords: business model, growth factors, competitiveness.

1. Introduction

Virtually all industries and sectors of the economy are forced into constant competition for various types of resources. This applies, for example, to human, financial or material resources. However, not all companies have the same opportunities to access these resources. The individual may be influenced by completely different variables that will be crucial to how an organisation moves through the market/economy. These factors will also impact on what business model will be used, as well as its level of competitiveness. In practice, this will often mean whether a company (by basing its operations on such and not on a different business model) will be able to succeed.

Therefore, it is so important to carefully analyse the factors and competitiveness of business models. Due to the limited size of this paper, attention will be focused on a few of these. **The aim of the analysis undertaken is to present the main factors determining the development and competitiveness of contemporary business models.**

This objective will be achieved based on the research method, which is a critical analysis of the literature on the subject. For the purpose of this analysis, such sources of knowledge will be used as reference books, scientific papers, as well as specialised reports. Both Polish language and foreign-language sources will be used.

The entire work is divided into three main parts. The first of these is the introduction. It sets out the basic methodological assumptions for the remainder of the discussion. The second part is the main body of the work. It will address issues that will allow the previously stated research objective to be realised. Out of a wide range of factors that may influence the development and competitiveness of contemporary business models, issues concerning legal conditions, financial conditions (including high-risk investment funds), technological readiness, the role of modern technologies are selected. The third part, on the other hand, is a summary. It will also include generalising conclusions concerning the work as a whole.

2. Technology readiness and new IT technologies as determinants of business model development

One of the key factors influencing the development of business models in today's economic environment is technological readiness (maturity) and new IT technologies. Nowadays, this is firmly in the vein of Economy 4.0 (Andrzejczak, 2022). It is widely acknowledged that one of the key determinants that has shaped economic and social life over the past few decades is advances of a technological nature. Together with other factors (such as globalisation, or geopolitical, social and climate change, among others), it has radically altered the possibilities

and forms of doing business, the organisation of companies, and entire sectors of the economy. Very rapid technological changes, above all at the level of information and communication technologies (ICT), have led to changes in the competitive position of specific areas of the economy, often entire countries, but also of individual business models and the behaviour of market process participants (Kotliński, Waliszewski, Marszałek, Warchlewska, 2022).

However, not all organisations are prepared to use technological advances in this way to achieve success. It is clear that the choice and development of a particular business model by today's entrepreneurs is strongly correlated with technological progress, especially in the field of information technology. Individual organisations are characterised by varying levels of willingness and preparedness to adopt or implement new technologies. This refers to the technological readiness (maturity) of these enterprises (Olechowski, Eppinger, Joglekar, Tomaschek, 2020). Technology readiness level (or TRL) can be defined as a method to estimate the maturity of a technology during a specific phase of innovation, for example a new IT programme or the implementation of automation. This factor is generally referred to modern and innovative business models (Persons, 2020).

The TRL concept of technology readiness allows for a coherent and relatively uniform analysis or discussion of technical maturity, taking into account differentiated technology categories (Rudnicka, 2021). The level of technology readiness is also determined in the course of a technology readiness assessment (in the literature also: TRA), which allows the concept of a given technological solution to be explored, the technological requirements to be analysed and the various possibilities associated with a given technology to be demonstrated. The level of technology readiness is based on a scale from 1 to 9, where level 9 indicates the most mature technology (Persons, 2020).

As a general rule, the literature adopts levels of technological maturity based on the NASA classification and according to European Union guidelines. A general overview of these is provided in Table 1.

Table 1.

Levels of technological maturity of organisations based on the NASA concept and according to European Union guidelines

TRL level	NASA	European Union
1	Basic principles are observed and reported	Observance of basic principles
2	The concept of the technology and / or its application is formulated	A technology concept has been developed
3	Analytical and experimental critical function and/or characteristic proof of concept	Experimental proof of concept
4	Validation of components and/or other contact elements in a laboratory environment	Laboratory-proven technology
5	Validation of components and/or prototype in a suitable working environment	Technology verified in a suitable operating environment (this environment is industrially relevant for key pro-development technologies)

6	Demonstration of a system/subsystem model or prototype in a suitable environment (terrestrial or space)	Technology demonstrated in an appropriate environment (industry-relevant environment for key pro-development technologies)
7	Demonstration of a prototype system in a space environment	Demonstration of a prototype system in an operational environment
8	Actual system completed and "flightworthy" through testing and demonstration (either on the ground or in space)	Complete and qualified system
9	Actual 'flight-tested' system through successful mission operations	A. real system proven in an operational environment (competitive production for key prodevelopment technologies or in space)

Source: compiled from: Persons, 2020.

The primary purpose of using an analysis of the different levels of technology readiness within an organisation is to support management in the decision-making process that concerns the development and adoption of a particular technology (Salazar, Russi-Vigoya, 2021). In fact, this solution should be seen as one of the tools that are needed to manage the progress of research and development within a particular company (Deutsch, 2010).

3. Legal conditions of business models

Another factor that influences the development and competitiveness of individual business models is legal determinants. Of key importance here is the concept of 'intellectual property', which is an important factor in building market advantage, in today's technological and highly competitive economy. These are all creations of the human mind. They can be generally divided into industrial property and copyright (Adamczak, Gędłek, 2018). The former is defined as various types of inventions, utility models, industrial designs, trademarks, geographical indications and topography of integrated circuits (Industrial Property Law, 2000, Article 1).

Copyright, in turn, can be explained as various types of works, i.e. any manifestation of creative activity having an individual character, established in any form, regardless of its value, purpose and manner of expression (Copyright and Related Rights Act, 1994, Article 1).

An important aspect of the legal conditions for developing and building the competitiveness of individual business models is know-how (Pokojski, 2021). Based on the literature, know-how is various types of information on the production method that are not covered by patents and licence agreements, as they are not of an inventive nature. Know-how also refers to the content of specific components in a given final product or in a specific phase of processing, methods of combining specific elements into a whole (for example, combining specific machines into appropriate technological lines) (Du Vall, Kasprzycki, Matczewski, Okoń-Horodyńska, Wisła, 2008).

The term also refers to methods of a technical nature that are already associated with patented processes and products, which are necessary for the practical application of patents

and their implementation in current production. The expression also refers to technical knowledge and special features discovered by the manufacturer as a consequence of its research, which in turn are not known to competitors. The interpretations of know-how presented in dictionaries include, as a rule, both specialised knowledge and ordinary manual activities (Du Vall, Kasprzycki, Matczewski, Okoń-Horodyńska, Wisła, 2008).

Intellectual property includes copyright and industrial property. Individual copyrights arise from the fact that persons or companies own a particular idea, concept, knowledge or general solution, which is the result of their inventiveness. Industrial property should be characterised by the ability to apply an idea, concept or new solution in practice (Trzmielak, Byczko, 2010).

Given that the author of a new solution very often bears the intellectual, material and financial effort, the law can protect the inventor using the following forms: patent, utility model and industrial design. Authorship protection always exists in practice, while industrial property protection results from obtaining registration or issuing a patent. Protection is only valid for a specific period of time or in specific markets. It results from legal regulations and fees which the company will pay in due time. Industrial property protection brings many benefits resulting from market blocking and competitive activities, but it is also associated with costs for individual business entities (Trzmielak, Byczko, 2010).

The procedure related to the application for industrial property protection starts with an internal (carried out by the organisation's employees themselves) or external (carried out on commission, by persons, for example, a patent attorney or institutions specialised in industrial property law) assessment:

- existing grounds for protection,
- the need for formal protection,
- necessary form of protection,
- the financial feasibility of maintaining protection in the targeted geographic markets,
- financial capacity to enforce the protection obtained,
- the effectiveness of enforcement of the protection obtained,
- maintenance costs and security enforcement in relation to the gain from implementing the new solution (Trzmielak, Byczko, 2010).

The necessity of formal protection of industrial property is indicated mainly by the possibility to copy a new solution, reproduction or import of technology and new products which are based on the new solution into the markets of a given enterprise. Interest in the new solution by competitors is not a sufficient condition for formal protection (Trzmielak, Byczko, 2010).

The prerequisite to be met when deciding on and filing for patent protection or utility models and industrial designs is based on three additional factors, namely:

- to have the necessary financial resources for protection,
- enforcement of the rights that arise from the protection obtained,

- acceptable costs of activities that protect intellectual property (Trzmielak, Byczko, 2010).

4. Financial determinants of business model development

Any development in the current economic climate cannot take place without adequate financial backing. Even the best structured/planned business model will not stand a chance of effective implementation without access to the right funding. For today's business models, especially innovative ones that can really become competitive solutions and ensure the growth of an organisation, there are many different sources of funding.

Business angels can be mentioned as an example of such a source of funding for the implementation of particular business models. Business angels are defined as private investors who decide to invest their own capital in innovative enterprises in their initial phase of creation. This capital is not in the form of a loan, but is injected into the enterprise in question through the purchase of appropriate shares within them. It therefore takes the form of capital of an internal nature. As a rule, one does not hear about their merits, as they do not want to reveal themselves and usually prefer to remain completely anonymous (Maxwell, Jeffrey, Levesque, 2011).

Business angels are usually private investors, entrepreneurs or businessmen with many years of experience of a professional nature and with large amounts of capital (Bessière, Stéphany, Wirtz, 2020). Business angels are, as a rule, local investors, meaning that the businesses they invest in are located within a convenient distance for them, in such a way that fairly frequent professional contacts can be maintained (Maxwell, Jeffrey, Levesque, 2011).

Individual investors of this kind are fully prepared to invest their own savings in a variety of small and medium-sized enterprises, very often still at the idea stage, but which at the same time have a relatively high potential for value growth or are capable of generating above-average rates of return on invested capital. As a rule, business angels invest in shares or stocks of a company in the SME sector for a period of three to five years. Through the activities of business angels, innovative ideas can be realised, for which it is relatively difficult to obtain adequate funding from a variety of sources, such as a bank or various venture capital funds (Maxwell, Jeffrey, Levesque, 2011).

Consideration of financial factors, however, cannot be limited to the sources of funding alone. The financial (economic) viability of the business model is also an important determinant in this context. Here, the literature emphasises the consideration of the minimum viable product (MVP). The minimum viable product is a concept that has become very important in the creation and management of companies (Adaszyńska, 2020).

Many business-minded models use the above tool to evaluate and validate the projects they undertake or their products before launching them on the target market. This is certainly an

extremely important aspect that basically every entrepreneur must take into account. This is because it allows for a reduction in risk, as well as a proven knowledge of the market in relation to the value proposition one intends to offer customers. An MVP can be defined as a version of a new product that has been created with a minimum of resources and is aimed at gaining maximum customer knowledge. This knowledge of the market will enable the company to have a basis for validating, improving or discarding the product (when it proves unprofitable) and building a completely new business model. The aim of Minimum Viable Product is therefore to reduce the risk of investing significant resources in the creation of a product, when one does not yet know exactly what impact and significance it may have (Adaszyńska, 2020).

The aim of implementing and applying the Minimum Viable Product is to make an assessment of whether a product will be able to solve a particular customer need, and thus make it possible to check whether it will be expected by customers, even before a major investment is made in it. Applying this approach to the selection of a business model therefore allows a kind of sample to be prepared as to whether a solution offered to the market will be viable. The primary function of the MVP is to reduce uncertainty within the market environment, where tools exist that will allow companies to measure and adjust accordingly to the expectations of the demand side. Rather than creating a speculative product and investing significant resources in it while not knowing exactly what the outcome will be, this model involves introducing a batch of a new solution to assess whether the activity will be effective at all (Lee, Geum, 2021).

In practice, it starts here with an approach taken directly from the lean approach to bring about a minimisation of waste. However, it is not just about building a product, but also about finding a way to sell it. For this to be possible, however, it is necessary to find out whether there will actually be customers for the product (Adaszyńska, 2020). The use of this solution actually allows us to examine how the conditions of a specific organisation are shaped. The use of MVPs makes it possible to actually assess the market framework in which a particular business model can operate.

5. The importance of investment funds for the development of companies and the choice of specific business models

With regard to the financial issues outlined above, it is also important to point out the large role that is attributed to the development of the company and the implementation of particular business models, which is held by various types of investment funds. An investment fund can be defined as a legal entity that decides to invest money in securities. Participants in such funds can be individuals, legal entities as well as unincorporated organisational entities (Perez, 2012).

The investment fund company, on the other hand, is the fund's organ, management and representation upon authorisation. There are many types of investment funds within the

domestic market. The entire sector of investment fund companies in Poland has been developing very dynamically in the last two decades. In addition, the funds are supervised by the Financial Supervision Commission, the depositary, the judiciary, the auditor and the Investors' Council (Perez, 2012).

Venture capital (VC) - venture funds - are of particular importance in this context. Venture capital (VC) is a form of private equity and a type of financing that investors provide to startups or small businesses that have long-term growth potential. Venture capital typically comes from wealthy investors, investment banks and any other financial institution (Ewens, Nanda, Rhodes-Kropf, 2018).

VC funds are characterised by the following elements:

- Venture capital funding is financing provided to companies and entrepreneurs. It can be provided at various stages of their development, although it often involves funding at a very early stage (seed stage) of a company's development.
- Venture capital funds manage pooled investments in high-growth opportunities in start-ups and other early-stage companies, and are usually only open to accredited investors.
- By the end of the Second World War, the venture capital sector had already evolved from a niche activity into a sophisticated industry with many players who play an important role in driving innovation across the economy (Ewens, Nanda, Rhodes-Kropf, 2018).

When analysing the concept of venture capital as a business model, it should be noted that venture capital investments are made by an external investor, as a rule to small and medium-sized organisations, as part of the initial stage of their development. The main reason for interest in this type of investment and business model is the particular growth potential of the specific entity over the next few years, as well as the high probability of significant profits in a relatively short time horizon. They take the form of ownership (in which case it takes the form of a share buy-out) for a predetermined (strictly speaking) period of time. In addition, in the context of a business model based on venture capital investments, an important issue is also the potential for market consolidation, as well as obtaining significant competitive advantages and so-called synergy effects in the above manner (Przybylska-Kapuścińska, Łukowski, 2014).

VC-based models, however, are not a uniform issue. One can encounter their various forms and stages (Schell, Endreny, Koren, 2023). Thus, the following stages in the creation and development of a VC-based business model can be distinguished:

- Pre-Seed - this is the earliest stage of business development, when founders are trying to turn an idea into a concrete business plan. They can register with a business accelerator to provide early funding and so-called mentoring.
- Seed Funding - this is the point at which a new company is trying to launch its first product/first service. As there are no revenue streams yet, the company will need VC

funding to finance all its operational activities.

- Early stage financing - once a company has developed a product/service, it will need additional capital to increase production and sales before it can become self-financing. The company will then need one or more funding cycles, usually labelled incrementally as Series A, Series B and similar (Narayanasamy, 2012).

Today's private equity market is a relatively small part of the overall financial sector, but nevertheless plays an extremely important role within it. In particular, it is about its contribution to closing the so-called *equity gap*, which can be defined as the difference between the need for capital and the supply of capital in the market (Borsa, Bejarano, Ellen, Bruch, 2023). Private equity and venture capital funds form a formal (institutionalised) venture capital market. In addition to the formal market, there is also an informal market, which is built, for example, by so-called *business angels (angel investors)* (Kopijkowski-Gożuch, 2017).

The overall structure of today's high-risk market is presented in Figure 1.

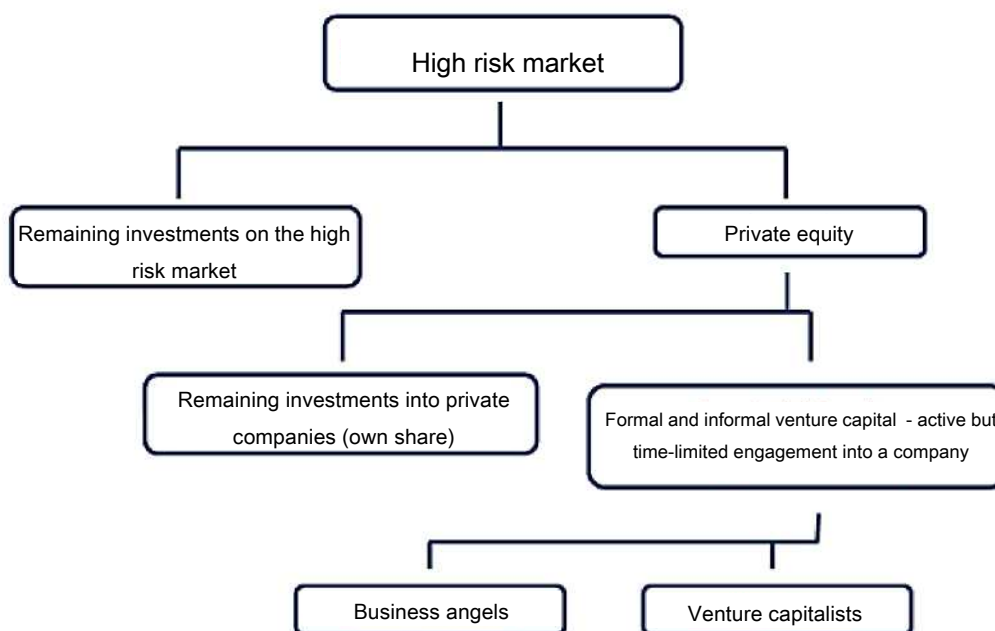


Figure 1: Structure of the high-risk market.

Source: Mikołajczyk, Krawczyk, 2006.

The formal venture fund market is made up of investors representing either typical private equity funds or venture capital funds. By far the most important difference between funds classified as venture capital and private equity funds relates to the level of risk accepted by investors (Lemer, Nanda, 2020). Venture capitalists are more willing to invest in riskier projects (business models), many times in the seed or start-up phase, with lower liquidity and scale (Kopijkowski- Gożuch, 2017).

In return, they expect higher returns, which they generally realise by selling the investment (company) after a period of significant appreciation. Typical private equity funds, on the other hand, behave more cautiously while agreeing to lower returns. A further difference in the

functioning of these two groups of investors stems from the way the business model is managed. Based on the literature, it should be noted that venture capitalists very often take an active role in the running of the individual ventures in which they invest, which, in practice, is far less the case with private equity funders. This is because the latter get involved in business models of companies that can be described as more established, i.e. at a later stage of their development (Kopijkowski-Gożuch, 2017).

However, the individual differences between the two analysed investor groups are in many cases blurred. This is due to the fact that many investment funds, both of a venture capital and private equity nature, develop their own completely separate investment philosophy and criteria regarding the acceptable level of risk in relation to a given business model. Consequently, it is difficult to draw a fully precise line between the two. At the same time, observations of existing investment funds indicate that it is now increasingly common to deal with private equity funds (which are much less risky), even though the name of many of them contains the phrase 'venture capital' (Kopijkowski-Gożuch, 2017).

6. Summary and conclusions

Based on the considerations carried out, it should be pointed out that the research objective set out in the introduction was fully met. It read as follows: **to present the main factors determining the development and competitiveness of contemporary business models.**

This realisation was based on a research method, which is a critical analysis of the literature on the subject. It should be noted that the paper presents only a selection of the factors described that affect the competitiveness and development of individual business models. It is in fact impossible to present them all. This is not only due to their very large number, but also to the fact that more and more new determinants appear systematically, which set the framework for the functioning of contemporary business organisations.

The considerations carried out in this paper allow us to conclude and demonstrate that:

- The competitiveness and development of today's business models depends on many different factors.
- Not every factor affects the performance of individual business models to the same extent, due to the diversity of companies, the specificity of their industries, and the resources available.
- Financial issues are crucial for growth and competitiveness. This is an extremely broad category, within which one can distinguish between traditional forms of business financing and more innovative financial solutions, such as venture capital funds.
- The use of particular business models is also conditioned by the applicable legislation. From the point of view of the competitiveness of these models, particular importance

should be attached to any tools for the protection of intellectual property, such as various types of patents.

- Technological developments are particularly important for the development and exploitation of contemporary business models. It is the new IT solutions that largely determine the direction of the entire industry or individual business models. However, every company is different and not always to the same extent able to absorb technology. Their so-called technological readiness (maturity) varies.

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