

SMALL AND MEDIUM-SIZED BUSINESSES: TACKLING COVID-19 CHALLENGES BY CHANGING BUSINESS-MODELS

*Poliarus O.V., doctor of tech. sciences, professor
(Kharkiv National Automobile and Highway University),
Nazarenko I.L., PhD econ., associate professor
(Ukrainian State University of Railway Transport)*

In this paper the surveys conducted on small- and medium-sized enterprises around the world (including Ukraine) have been analyzed. SMEs face a bigger risk than larger firms affected by COVID-19 pandemic. Although governments support them to a certain extent, SMEs are trying to survive the pandemic by themselves. It is true especially for Ukraine, where SMEs are an important element of economy (as they account for 77,9 percent of employment, generate 64,4% of share value added and 20 percent of GDP), but they do not have much hope for government help and do almost without it. Therefore they cut their costs, make employees redundant, seek other ways to approach their customers despite severe COVID restrictions, and so on. They also adjust their business models to the new harsh environment, but they need guidance in this realm, how to make it correctly and efficiently.

Having analyzed 4 types of solutions offered by R. Ackoff, we arrived at the conclusion of using one of them for SMEs - Solution, to comply with the principles of applied systems analysis. Absolution appeared ineffective, Resolution – not effective enough, and Dissolution – inapplicable for dissolving problems caused by COVID-19.

For adjusting business-models we suggest owners of SMEs use Business Model Canvas by A. Osterwalder as a simple and comprehensive one. To the Canvas we added influence lines to show that some blocks influence mainly Cost structure, some others – mainly Revenue streams, and Value proposition, both of them. It could be said that Cost Structure is mainly affected from the supply side, and Revenue streams – from the demand side.

The Template of Business Model Change for SMEs has been worked in this study. It encompasses 2 levels: the first level – Analysis (the main points which SMEs owners should analyse first) and the second level – some main solutions which could be developed according to the analysis carried out. We have united 2 blocks devoted to customers into the one (Customers&Relationships) so that prospective users could better understand these interconnected blocks and making decisions within them. The Template is practically applicable for changing the business models of small and medium-sized enterprises in Ukraine and any other country as well.

The results obtained in the study can be used in further research in this realm.

Key words: *Small Business, SMEs, COVID-19, Survival, Business Models, Template of Business Model Change for SMEs*

МАЛИЙ ТА СЕРЕДНІЙ БІЗНЕС: ПОДОЛАННЯ ВИКЛИКІВ COVID-19 ШЛЯХОМ ЗМІНИ БІЗНЕС-МОДЕЛЕЙ

*Полярус О.В., д.т.н., проф. (ХНАДУ),
Назаренко І.Л., к.е.н., доц. (УкрДУЗТ)*

У цій роботі ми проаналізували опитування, проведені серед власників малих та середніх підприємств у всьому світі (включаючи Україну), і дійшли висновку, вони

стикаються з більшим ризиком, ніж великі фірми, які постраждали від пандемії COVID-19.

Проаналізувавши 4 типи рішень, запропонованих Р. Акоффом, ми дійшли висновку про використання одного з них для суб'єктів МСП - *Solution* для дотримання принципів прикладного системного аналізу. *Absolution* виявилось неефективним, *Resolution* - недостатньо ефективним, *Dissolution* - непридатним для вирішення проблем, спричинених COVID-19.

Для коригування бізнес-моделей пропонуємо власникам суб'єктів МСП використовувати канву бізнес-моделі від О. Остервальдера як просту та достатньо повну. В даній статті розроблено шаблон зміни бізнес-моделі для малих та середніх підприємств, який охоплює два рівні: аналіз (основні моменти, які власники МСП повинні проаналізувати в першу чергу) і другий рівень - деякі основні рішення, які можуть бути розроблені відповідно до проведеного аналізу.

Розроблений шаблон практично застосовний для зміни бізнес-моделей малих та середніх підприємств в Україні та будь-якій іншій країні.

Ключові слова: малий бізнес, МСП, COVID-19, виживання, бізнес-моделі, шаблон зміни бізнес-моделі для МСП

Introduction. COVID-19 pandemic severely affected businesses all around the world. It has hit primarily touristic firms, airline companies, restaurant and hotel businesses, and many others, but if the big and middle-sized ones had some financial pillow, the small businesses appeared to be the most vulnerable and unprotected. As small and micro-enterprises produce a great part of GDP in European countries (for instance, 20% in Ukraine, ensuring the survival and further thriving of small businesses should be the priority of all the governments. We must admit that many countries have developed and implemented support programmes for small and medium-size enterprises (SMEs) [1 - 5], including tax reduction, low-interest loans, etc. Nevertheless, according to surveys conducted in 85 countries, both performance and prospectives of further development of SMEs have worsened. Therefore, the problem of finding alternative ways of survival by business owners themselves remains relevant. Definitely, small enterprises try to do their best to overcome at least the most challenging obstacles from both the demand and supply sides. The majority of them had to cut their costs, fire a part of their staff, implement distance working or delivery where possible. But despite the fact that researchers have paid special attention to

solving this problem, it still lacks multi-sided scientific study.

Analysis of recent studies. The issue of developing small business in Ukraine is discussed in the works of V. Dykan, O.Schramenko, H. Obruch, A. Tolstova, O. Poliakova, and other scientists [6 – 9].

The impact of COVID-19 on the economic development of small and medium-sized businesses in Ukraine is analyzed in the article by I.M. Vahner and I.I. Demko [10], strategies of small family businesses survival during and after quarantine are worked out in our paper [11], the impact of the pandemic on Ukrainian businesses is analyzed in the survey [12], in which 121 enterprises took part. Besides, a lot of business publication appeared all over the world, devoted to the survival of some small businesses, which, although not being scientific, share their experience in this realm.

The number of publications devoted to business models has grown exponentially in recent years, which indicates great interest not only from scientists, but also from business people. Business models are known to be created by entrepreneurs and analyzed and classified by scientists. Among the variety of publications we must highlight the books by A. Osterwalder and co-authors named «Business Model Generation» (2010) and

«Value Proposition Design» (2014) [13, 14], designed for businessmen to use, which have become bestsellers. Some researches are devoted to classifying a variety of business models: 23 types of existing business models are described in [15], 50 types – in [16], 54 types – in [17], and 55 types are described well in the book by O. Gassmann, K. Frankenberger, M. Csik [18]. Besides, there are several classifications of business models made by scientists, firstly, of Massachusetts Institute of Technology [19], where 16 Detailed Business Model Archetypes are offered, and by other scientists, for instance, by Dr. E. Fiel in [20], by G. Remane, A. Hanelt, J. F. Tesch, and L. M. Kolbe in [21], where the patterns of business models are structured along several dimensions by applying a rigorous taxonomy-building approach, and in many other studies.

A significant and deep study on Business Models including their origin, development and future research perspectives, and overview of selected business model components is done by B. W. Wirtz, A. Pistoia, S. Ullrich, and V. Göttel in [22]. Themes and questions for business model innovation are worked out by Swedish scientists J. Björkdahl and M. Holmén in [23].

New business models in the digital age are classified by M.J. Rojas, E. Yuste, J. A. Vázquez and J. Celaya in the book with the same name [24]. Digital transformation of business models is deeply studied in the paper by M. Kotarba [25].

The practice of creating and transforming business models is analyzed by P. Ahokangas, J. Myllykoski in [26], by A. Osterwalder and Y. Pigneur in [13], and some new practical papers on this issue written by businessmen and journalists have appeared since COVID-19 affected the world: for instance, [27 – 29] and others.

Unexplored aspects of the issue. Although some publications dedicated to the survival of small and medium-sized businesses affected by COVID-19 pandemic

have appeared recently, the aspect of adjusting business models of small businesses remains insufficiently studied.

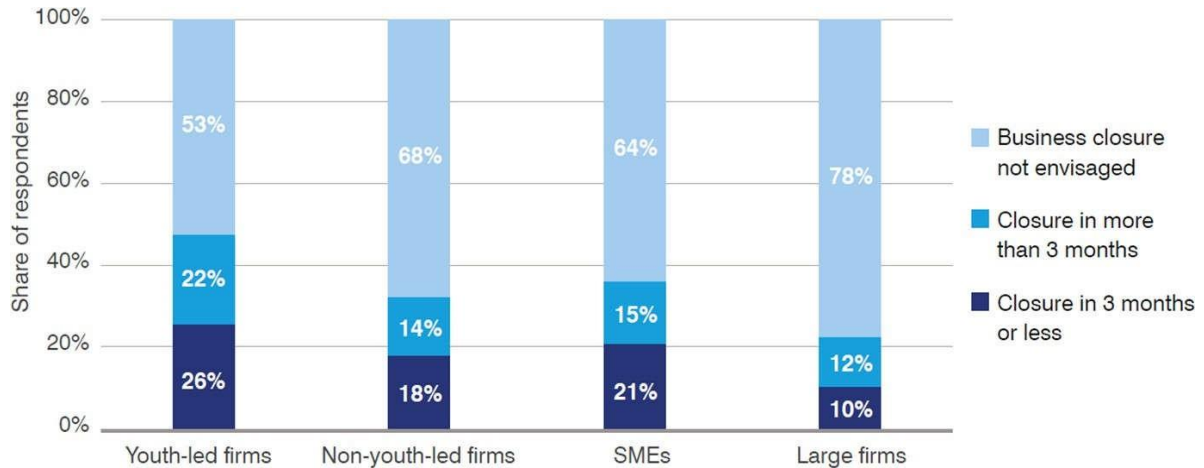
The purpose of the study is exploring the possibilities of changing business models for SMEs to overcome the challenges of COVID-19 and creating a Template of Business Model Change for SMEs .

Main body of the study. As it is mentioned in the survey «COVID-19: The Great Lockdown and its Impact on Small Business» [1], conducted by International Trade Centre in 85 countries (except for Ukraine), SMEs are likely to face more severe resource constraints than larger firms and thus find it harder to survive when negatively affected by the COVID-19 crisis. Not surprisingly, one-fifth (21%) of SMEs reported that they were at risk of shutting down permanently within three months, highlighting the need for rapid government action to assist some companies (Fig. 1). Youth-led firms were also at higher risk of permanently closing their business. About 26% of youth-led firms reported that they risked shutting down permanently within three months, compared with 18% for non-youth-led firms (Fig. 1).

It is emphasized in the survey, that SMEs face a bigger risk than larger firms of collapsing or being unable to compete. Yet because they employ so many people, the associated job loss would aggravate the economic downturn created by the pandemic.

Governments around the world realize that small businesses act as a lynchpin connecting the pandemic to broader economic recession.

In addition to addressing the health crisis, they have scrambled to alleviate the impact of COVID-19 on small firms, introducing policies to help them cope with the short-term financial risks and long-term business implications. If these measures succeed, they will reduce layoffs, prevent bankruptcy, encourage investment and help economies recover as soon as possible in the aftermath of the crisis.



Respondents were asked «Do you think there is a risk that your business will permanently shut down because of this crisis, and if so, when could this closure occur?» and «How many full-time employees does the business have?» and «What is the age of the top-manager of the business?» (data on 2547 businesses in 127 countries).

Fig.1. SMEs and youth-led firms are at higher risk of permanently shutting down in coming months [1, p.33]

Most governments have taken steps to tackle the consequences of COVID-19 on both human health and the economy. The magnitude of responses – including health measures and economic stimulus packages – has varied considerably, however, from almost nothing to about half of gross domestic product.

The level of support offered to firms depends on various factors, with GDP per capita being a key determinant. The higher the GDP per person, the higher the level of measures as a percentage of GDP. Simply put, small businesses in wealthier countries get more support from the government than small businesses in poorer countries [1].

As for Ukraine, SMEs are an important element of Ukraine's economy as they account for 77,9 percent of employment, generate 64,4% of share value added and 20 percent of GDP [5].

In 2019, the State Statistics Service of Ukraine listed 518 large enterprises, 18129 medium ones and 1922978 small ones, which constituted more than 99 percent of all operating enterprises, the vast majority of which are micro-enterprises (96 percent) that

operate in the wholesale and retail trade (51 percent) and thus remain concentrated in low-value-added sectors [5]. The majority of micro-enterprises operate as self-employed individuals.

Unfortunately, the annual statistical report on activity of SMEs in 2020 will have been completed and made public only by the end of 2021. Since we could not use statistical data in this paper, we consulted foreign surveys on the subject.

The United Nations system conducted a survey in Ukraine in October 2020 (974 respondents surveyed) [3]. A large majority of respondents were between the ages of 25 and 55 (87,1 percent). Overall, 77 percent identified as an entrepreneur and 19,6 percent of respondents identified as a business owner; and while entrepreneurs were more common in urban areas, in rural areas a third of respondents identified as business owners.

The majority of businesses are well-established, with about one-third initiated 10 to 19 years ago (32,1 percent), 23,6 percent had been founded 5 to 9 years ago, 22,7 percent two to four years ago, and 14,6 percent

20 or more years ago, while a minority of business were initiated quite recently (7 percent within 0 to 1 years). Prior to the pandemic, approximately half of all businesses had one to four employees, and approximately half of all businesses had from one to four women employees.

The vast majority of businesses are operating in the domestic market (91,5 percent). Approximately half of all respondents indicated that their annual turnover was under 1 million Hryvnia (USD 37,024).

As it is shown in the fig.2, most of SMEs surveyed belong to wholesale trade (almost 36 percent), 8,1% - to industrial production (except food), 7,1 percent - to information and communication sector, 6,5 percent - to professional business services, 6,1% - to agriculture, 5,1% - to construction. Almost two-thirds of respondents in the survey of SMEs owners indicated that the

pandemic ‘significantly’ impacted their way of doing business (57,4 percent), over a third of businesses had to ‘partly’ suspend their operations (39,6 percent), and less than a third (29,7 percent) had to ‘fully’ suspend business activities. The largest share of ‘significant’ transformations in doing business under the impact of the pandemic took place in small enterprises with under 50 employees (60,9 percent).

Businesses reported facing a range of challenges caused by the pandemic, the most common of which were lower market demand (83,9 percent of urban and 74,2 percent of rural businesses), cancellation of orders by customers (71,2 percent urban, 51,6 percent rural), and difficulties due to costs during the pandemic (procurement, taxes, utilities). The most prominent problems experienced by businesses/entrepreneurs were procurement costs (55,2 percent), cost of utilities, rent and utilities (50,5 percent).

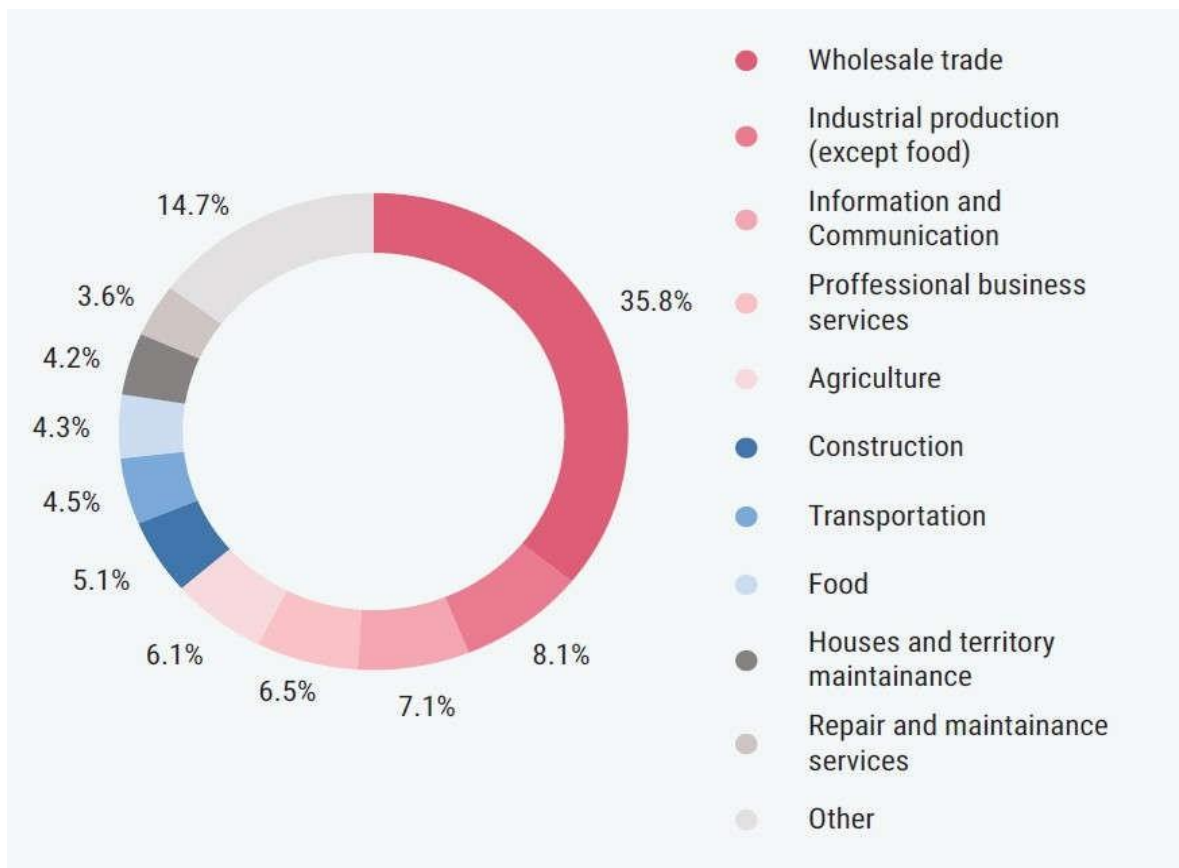


Fig.2 Business sectors of SMEs surveyed in Ukraine [3 , p.26]

A quarter of the businesses had a decrease in their number of employees (24,7 percent). And most businesses that had a decrease in their number of employees lost

between 1 and 4 employees [3, p. 27-29].

The structure of answers to the question «How has the market environment changed for you?» is given in the fig.3.

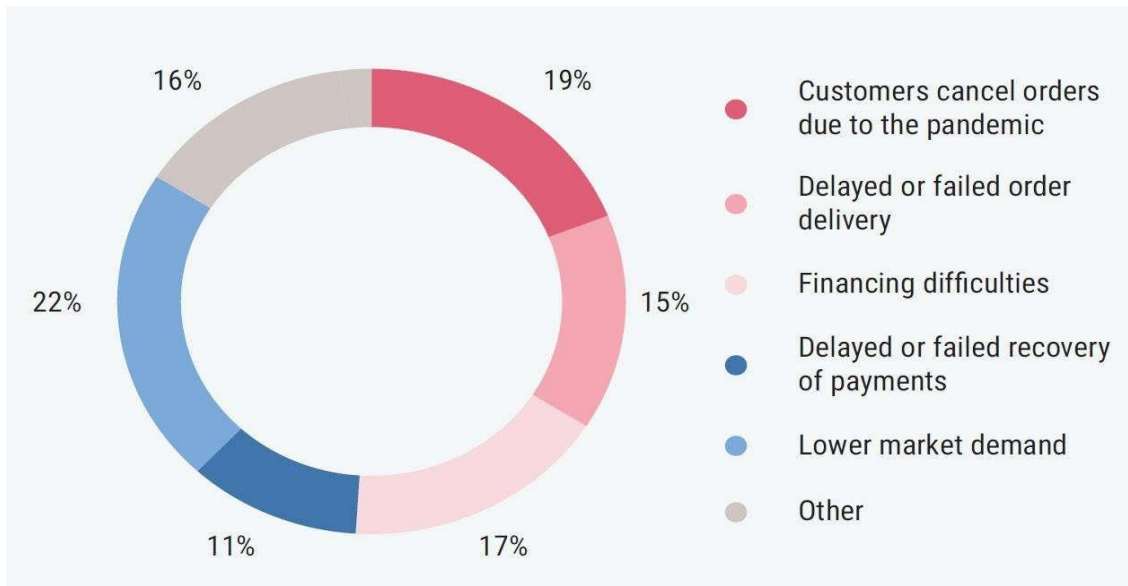


Fig.3. How has the market environment changed for you? [3, p. 27]

The next survey complements the previous study (although it was conducted for small businesses only), because it contains not only reaction of small businesses' owners to COVID-19 pandemic challenges, but their anticipations.

According to 2020 year's Small Business Attitudes Index, there is a significant deterioration in the sentiment of small businesses (fig.4).

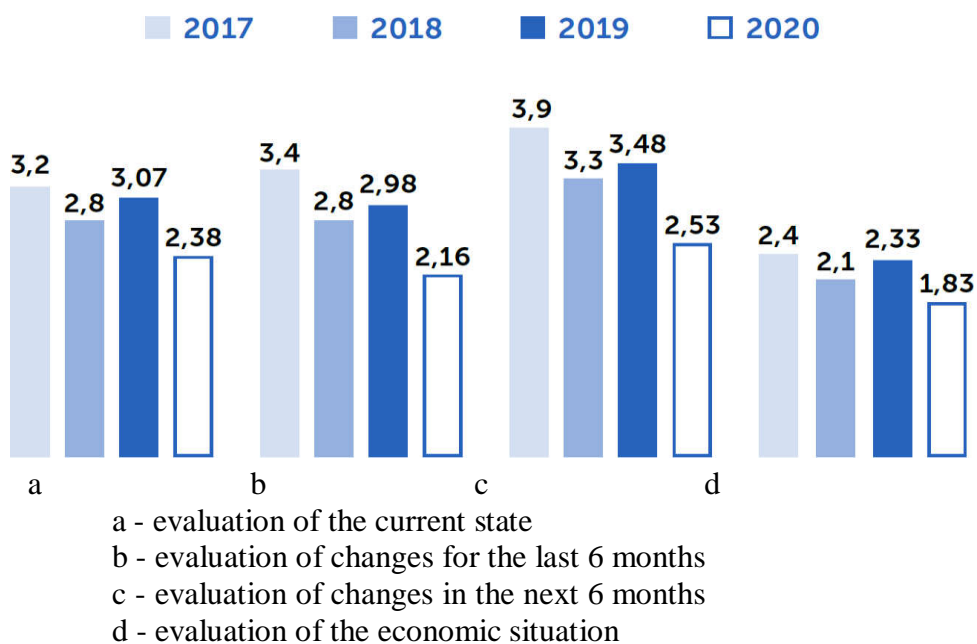


Fig.4. Small Business Attitudes Index in Ukraine (2017 – 2020) [4]

This study was conducted within the Unlimit Ukraine by the European Business Association in partnership with Mind.ua. Altogether, 426 small business owners and directors of all fields of activity joined the survey. In 2020 the Index fell to 2,38 points out of 5 possible, compared to 3,07 points previous year, and returned to the negative plane. These results are the lowest in the history of the study of the Small Business Attitudes Index since 2017 [4]. Compared to previous years, the number of entrepreneurs satisfied with the current state of affairs in their business has almost halved (24% against 42% last year). Accordingly, the number of dissatisfied has increased - from last year's 29% to the current 58%.

However, in 2020, not only the sentiments but also the expectations for the better deteriorated. For the first time in four years, expectations are only 10% higher than the current state of affairs. Only 27% of respondents expect the business situation to improve in the next 6 months, compared to 59% last year. On the contrary, 52% of entrepreneurs expect deterioration.

Survey participants gave the worst points to the economic situation in the country compared to other components of the Index. Thus, 80% consider the current economic situation unfavorable for doing business. The main reasons for this are low purchasing power of the population, the impact of quarantine restrictions, the tax burden, and fiscal pressure. It is worth noting that the tax burden which traditionally tops this anti-rating, is now in third place.

Entrepreneurs were also asked about the main pandemic-induced consequences for their business. The majority, namely 58%, noted a decrease in the number of orders, another 18% were forced to revise the business model and look for new directions, 10% optimized activities and reduced staff, and 3% were able to increase sales or access new markets. Only 14% did not notice the effect of coronavirus on their activities [4].

Thus, we can conclude that small business in the world is supported by the

states (if they have some funds). On the other hand, small businesses in Ukraine, (even being supported a bit by the government), it do not hope for significant help and therefore must take care of themselves. The same is true about medium-sized businesses. Consequently, their owners should do their best to solve the problems appeared by themselves.

As Albert Einstein said, -We cannot solve our problems with the same thinking we used when we created them [30]. Therefore to tackle any problem managers should think out of the box, use efficient ways of problem solving and of course, applied systems analysis.

R. Ackoff described 4 different ways people can treat problems: absolution, resolution, solution, and dissolution [31].

1. **Absolution.** This term in colloquial English denotes the actions of a priest who forgives sins to parishioners: he listens to confession and *does nothing*. In the professional language of systems analysis, this term denotes noninterference. However, preference should be given to noninterference only if any proposed interventions lead to worse results.

2. **Resolution.** In such a type of intervention, the problem is solved partially, not fully, but in an acceptable manner. There are several possibilities to do this.

The first is to use insufficient resources for completely solving the problem to mitigate discontent in having solved the problem partially. A good example of this is some increase in wages, pensions, and scholarships to public-sector employees against the background of galloping inflation or allocation of limited resources by draw, by turns, or equally. This (alas common) solution is incomplete, partial, and outdated: any event in the world is the result of many factors, and the elimination of one is certainly not adequate.

Another example of such an approach is to repeat the action that was previously successful in a similar case. But this involves the risk of insufficient similarity of

circumstances, which can lead to unexpected results.

3. **Solution.** In the professional language of systems analysis, this is the term denoting the best intervention under given conditions. The relevant scientific term –optimal has already entered the spoken language and public consciousness, so it is important to understand and apply it correctly. *Optimal means the best under the given constraints.*

4. **Dissolution.** Dissolution denotes an intervention that ends in complete extinction of the problem and nonappearance of new problems. The essential difference between the third and fourth methods is that –optimal" is the best under given conditions, and "dissolution" considers the restrictions and conditions not as firmly fixed, but as subject to change or cancellation to find new and previously unacceptable options, among which may be options that are much more effective than previously optimal.

An important option to "dissolve" the problem is to prevent it by taking measures to ensure that it does not appear. Here, the change of the system is made not *after* the appearance of the problem to solve it but *before* that to prevent it [32].

As for SMEs (and businesses as a whole), in a crisis situation Absolution should not be used, as doing nothing will not alleviate, but aggravate all the problems.

As an example of Resolution SMEs can cut costs, fire employees, slightly raise prices for their goods, etc. These are better than nothing, but not effective enough.

Dissolution seems very attractive, but it is hardly possible in the situation with the COVID-19 pandemic, when markets, purchasing power, and restrictions in different countries are changing very swiftly. And moreover, being unusual (not caused by natural course of economic development), these problems cannot be dissolved once and forever.

Which is why, taking into account the aforementioned, we believe that Resolution is exactly that type of problem solving that

deserves to be applied by SMEs (as well as big companies) during the pandemic with its severe challenges.

To our mind, the main way of self-survival of SMEs is adjusting their business models to the altered external business environment (taking decisions of the Resolution type, of course). And it requires not only the intuition and experience of the business owners, but some scientific base.

To start with, let's clarify the definition of a business model. The thing is that although the number of publications devoted to business models since 1990s has grown exponentially, there is still no common definition of it. Actually, it is not surprising, because business models are known to be created by entrepreneurs and only analyzed and classified by scientists. So, we stick to the next simple and understandable for all businessmen definition: Business model describes the rationale of how an organization creates, delivers, and captures value [13, p.14].

Not all the owners of small and medium-sized businesses have either the necessary knowledge in the field of strategy, business models, crisis management or means for paying consultant companies for advice, therefore they need sound and applicable instructions.

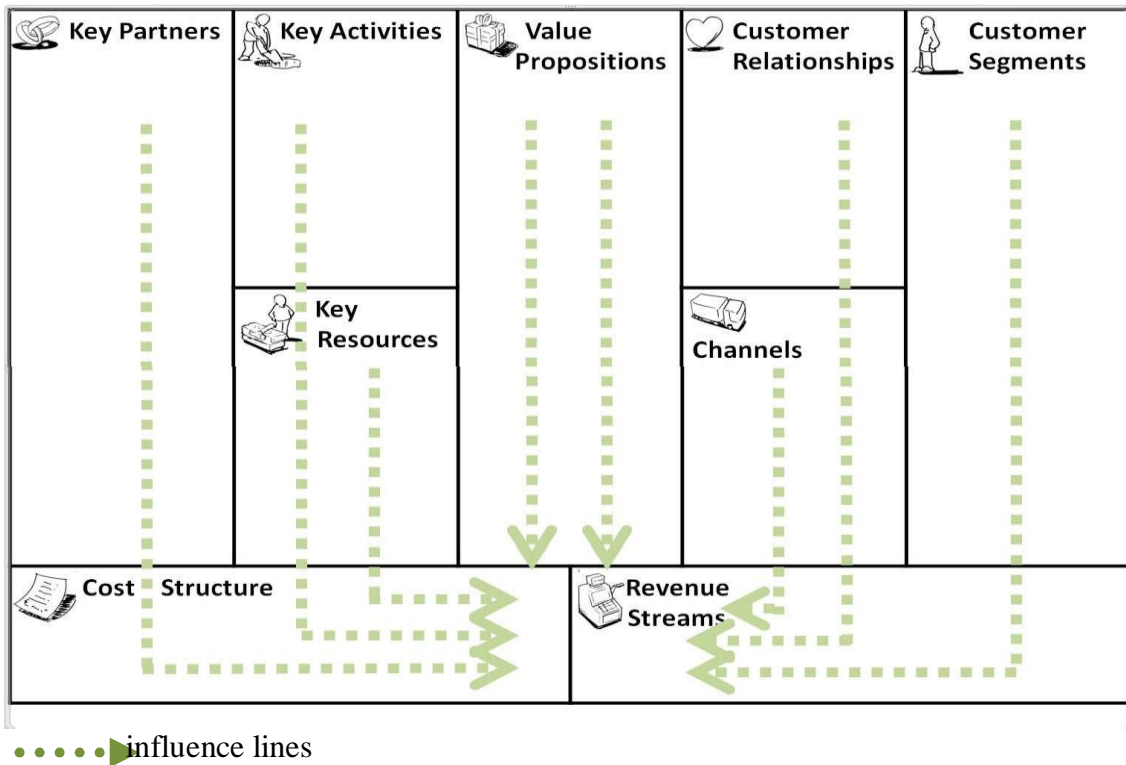
Which is why, to our mind, the Business Model Canvas developed by A. Osterwalder [13] is worth using. In fig.5 there is the Business Model Canvas which consists of 9 building blocks.

We added influence lines to emphasize the blocks which mainly influence Cost structure and those ones which mainly influence Revenue streams. Undoubtedly, Value Proposition influences both costs and revenues. It could be said that Cost Structure is mainly affected from the supply side, and Revenue streams – from the demand side.

As stated in the survey conducted by Organisation for Economic Co-operation and Development (OECD) [2, p. 3], there are several ways the coronavirus pandemic affects the economy, especially SMEs, on

both the supply and demand sides. On the *supply side*, companies experience a reduction in the supply of labour, as workers are unwell or need to look after children or other dependents while schools are closed and movements of people are restricted.

Measures to contain the disease by lockdowns and quarantines lead to further and more severe drops in capacity utilisation. Furthermore, supply chains are interrupted leading to shortages of parts and intermediate goods.



Customer Segments. An organization serves one or several Customer Segments.

Value Propositions. It seeks to solve customer problems and satisfy customer needs with value propositions.

Channels. Value propositions are delivered to customers through communication, distribution, and sales Channels.

Customer Relationships. Customer relationships are established and maintained with each Customer Segment.

Revenue Streams. Revenue streams result from value propositions successfully offered to customers.

Key Resources and Key Activities. Key resources are the assets required to offer and deliver the previously described elements by performing a number of Key Activities.

Key Partnerships. Some activities are outsourced and some resources are acquired outside the enterprise.

Cost Structure. The business model elements result in the cost structure.

Fig.5 The business Model Canvas by A. Osterwalder [13] with influence lines added by the authors

On the *demand side*, a dramatic and sudden loss of demand and revenue for SMEs severely affects their ability to function, and/or

causes severe liquidity shortages. Furthermore, consumers experience loss of income, fear of contagion and heightened uncertainty, which in

turn reduces spending and consumption. These effects are compounded because workers are laid off and firms are not able to pay salaries. Some sectors, such as tourism and transportation, are particularly affected, also contributing to reduced business and consumer confidence. More generally, SMEs are likely to be more vulnerable to 'social distancing' than other companies.

Of course, many enterprises influenced by quarantine restrictions were forced to switch to remote work, catering - to food delivery, educational enterprises - to work online, etc., but a lot of SMEs lost their customers because of purchasing power decreasing (salaries, etc.) and consequently reduction of effective demand. Also, as it is mentioned in [2], from the supply side SMEs are affected by reduction in the supply of labour. Additionally, SMEs may well face with problems with supply of raw materials and bought-in components. So, switching to work online is not a panacea for all the problems occurred.

We consider it impractical to pay attention to changing the Value Proposition block, since a whole book by A. Osterwalder and co-authors [14] is devoted to this issue.

As for the blocks of a Business Model named Cost structure and Revenue Streams, they should not be adjusted or altered on their own, because they are the results of functioning other business model elements.

Taking into account the aforementioned, we have worked out the Template of Business Model Change for SMEs which encompasses 2 levels: the first level – Analysis (the main points which SMEs owners should analyse first) and the second level – some main solutions which could be developed according to the analysis carried out. We have united 2 blocks devoted to customers into the one (Customers&Relationships) so that prospective users could better understand these interconnected blocks and making decisions within them.

Admittedly, this Template does not contain all the solutions possible and for every SMEs of any branch of economy, but what it

gives is 2 levels of tackling problems and the main directions to be worked out within the 6 blocks of Business Model Canvas. Thus, the Template is practically applicable for changing the business models of small and medium-sized enterprises in Ukraine and any other country as well.

Conclusions and prospects for further research. We analyzed the surveys conducted on small- and medium-sized enterprises around the world (including Ukraine) and concluded that SMEs face a bigger risk than larger firms affected by COVID-19 pandemic. Although governments support them to a certain extent (more in economically developed countries, less in poor ones), SMEs are trying to survive the pandemic by themselves. It is true especially for Ukraine, where SMEs are an important element of economy (as they account for 77,9 percent of employment, generate 64,4% of share value added and 20 percent of GDP), but they do not have much hope for government help and do almost without it. Therefore they cut their costs, make employees redundant, seek other ways to approach their customers despite severe COVID restrictions, and so on. They also adjust their business models to the new harsh environment, but they need guidance in this realm, how to make it correctly and efficiently.

Having analyzed 4 types of solutions offered by R. Ackoff, we arrived at the conclusion of using one of them for SMEs - Solution (not Absolution, Resolution, or Dissolution), to comply with the principles of applied systems analysis. Absolution appeared ineffective, Resolution – not effective enough, and Dissolution – inapplicable for dissolving problems caused by COVID-19.

For adjusting business-models we suggest owners of SMEs use Business Model Canvas by A. Osterwalder as a simple and comprehensive one. We stick to the definition by the same author: Business model describes the rationale of how an organization creates, delivers, and captures value. To the Canvas we added influence lines to show that some blocks influence mainly Cost structure, some

others – mainly Revenue streams, and Value proposition, both of them. It could be said that Cost Structure is mainly affected from the

supply side, and Revenue streams – from the demand side.

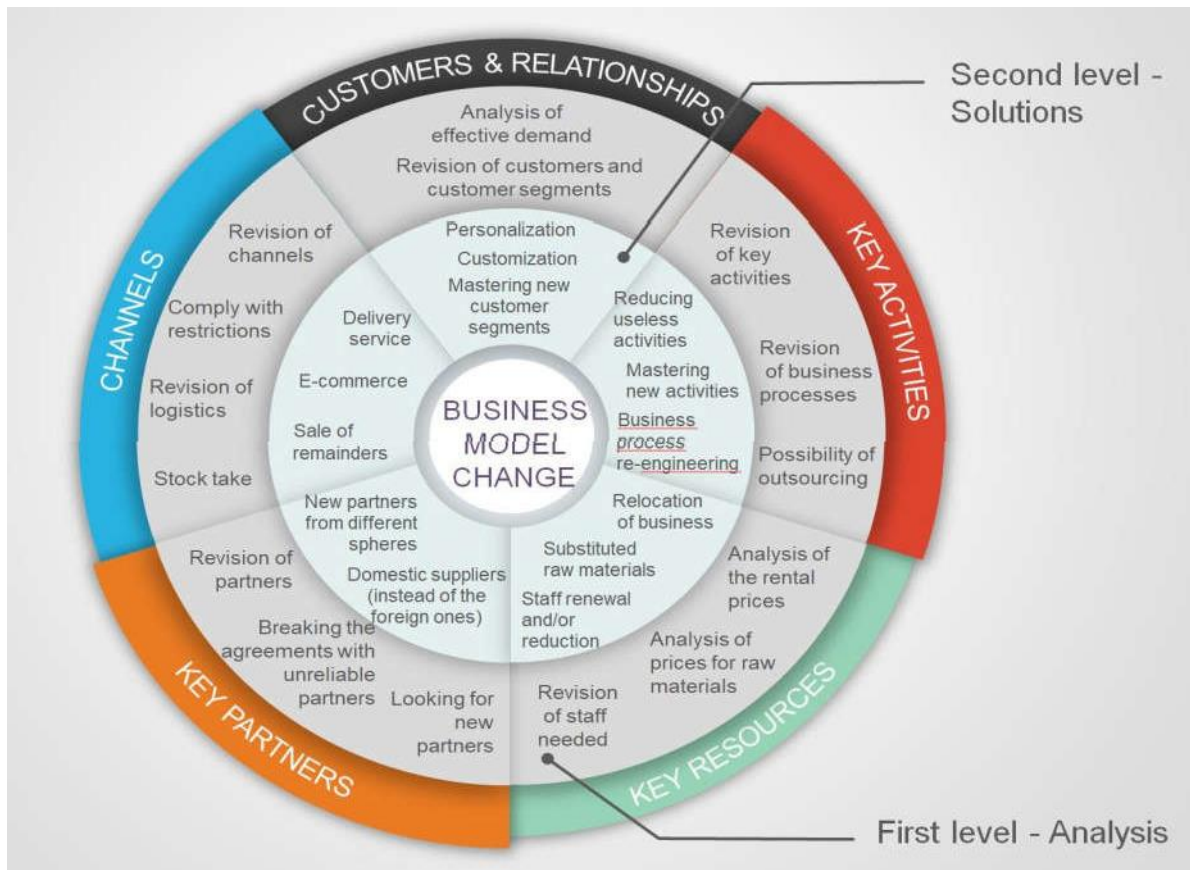


Fig.6. Template of Business Model Change for SMEs (developed by the authors)

We considered it impractical to pay attention to changing the Value Proposition block, since a whole book by A. Osterwalder and co-authors is devoted to this issue.

Taking into account the aforementioned, we have worked out the Template of Business Model Change for SMEs which encompasses 2 levels: the first level – Analysis (the main points which SMEs owners should analyse first) and the second level – some main solutions which could be developed according to the analysis carried out. We have united 2 blocks devoted to customers into the one (Customers&Relationships) so that prospective users could better understand these interconnected blocks and making decisions within them. The Template is practically applicable for changing the business models of

small and medium-sized enterprises in Ukraine and any other country as well.

The results obtained in the study can be used in further research in this realm.

REFERENCES

- 1 COVID-19: The Great Lockdown and its Impact on Small Business (2020). International Trade Centre (ITC), Geneva. Available at: <https://www.intracen.org/publicacion/SME-Competitiveness-Outlook-2020---COVID-19-the-Great-Lockdown-and-its-Effects-of-Small-Business-en/?langtype=2057> (accessed 02.03.21)
- 2 Coronavirus (COVID-19): SME policy responses (2020). OECD 2020.

Available at: https://read.oecd-ilibrary.org/view/?ref=119_119680-di6h3qgi4x&title=Covid-19_SME_Policy_Responses (accessed 01.03.21)

3 COVID-19 in Ukraine: Impact on Households and Businesses. Analytical report (2020). Available at: https://www.ua.undp.org/content/ukraine/uk/home/library/democratic_governance/covid-19-in-ukraine--impact-on-households-and-businesses.html (accessed 02.03.21)

4 Nastroi maloho biznesu suttievo pohirshylysia [Small business sentiment has deteriorated significantly] (2021). Available at: <https://eba.com.ua/nastroyi-malogo-biznesu-suttievo-pogirshylysia/> (accessed 03.03.21)

5 Statystychnyi zbirnyk "Dialnist subiektiv velykoho, serednoho, maloho ta mikropidpriemnytstva", 2019. (2020). Derzhavna sluzhba statystyky Ukrainy. / Za redaktsiieiu Kuznietsovoi M.S. – Kyiv. 363 p.[Statistical bulletin "Activities of large, medium, small and micro enterprises", 2019]. State Statistics Service of Ukraine. / Edited by Kuznetsova MS - Kyiv. Available at: http://www.ukrstat.gov.ua/druk/publicat/kat_u/publ9_u.htm (accessed 24.02.21).

6 Dykan V.L., Schramenko O.V. (2019). Stratehichni oriientyry derzhavnogo rehuliuвання subiektiv maloho ta serednoho biznesu [Strategic guidelines for state regulation of small and medium-sized business entities]. In: Strategic Aspects of Managing Enterprise Competitiveness in the Digital Economic Space: A Collective Monograph. Kyiv. Pp. 47 – 55. (490 p.).

7 Obruch Gh.V., Ivanjuta B.L., Zhuravljov K.V. (2018). Problemy i perspektyvy rozvytku malogho ta serednjogho pidpriemnytstva v Ukraini [Problems and prospects of development of small and medium-sized enterprises in Ukraine]. *Bulletin of Economics of Transport and Industry*, vol.61, pp. 53–62.

8 Poljakova O.M., Khoroshajeva Je.V. (2017). Socialjna vidpovidalnistj malogho biznesu jak jogho konkurentna perevaha [Small business social responsibility as its

competitive advantage]. *Bulletin of Economics of Transport and Industry*, vol.60, pp. 33-39.

9 Tolstova A.V., Kybaljchych S. (2017). Problemy rozvytku malogho biznesu v Ukraini [Problems of development of small business in Ukraine]. *Bulletin of Economics of Transport and Industry*, vol.60, pp. 55-62.

10 Vahner I. M., Demko I.I. (2020). Vplyv COVID-19 na ekonomichni rozvytok maloho i serednoho biznesu v Ukraini. [The impact of COVID-19 on the economic development of small and medium-sized businesses in Ukraine]. *Bulletin of the University of Banking*, vol.1. p. 59–66. Available at: http://nbuv.gov.ua/UJRN/VUbsNbU_2020_1_10 (accessed 05.03.21)

11 Nazarenko I.L. (2020). Strategies of small family businesses survival during and after quarantine. *Bulletin of Economics of Transport and Industry*, vol.69, pp. 92–100.

12 Biznes ta COVID-19: Vyzhyty ne mozhna pomerty (2020) [Business and COVID-19: Survive Can't Die]. Federation of Employers of Ukraine. Analytical Center for Economic and Legal Research and Forecasting. Available at: https://fru.ua/images/doc/analytics/BUSINESS_AND_COVID-19.pdf (accessed 01.03.21)

13 Osterwalder A., Pigneur Y. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. Available at: <https://www.strategyzer.com/> (accessed 02.03.21)

14 Osterwalder A., Pigneur Y., Bernarda G., and Smith A. (2014). Value Proposition Design: How to create products and services customers want. Published by John Wiley & Sons, New Jersey. 423 p. Available at: <https://www.strategyzer.com/> (accessed 02.03.21)

15 Bhasin H. 23 Types of Business Models Examples (2020). Available at: <https://www.marketing91.com/23-types-of-business-models/> (accessed 02.03.21)

16 50 Types of Business Models – The Best Examples of Companies Using It (2021). Available at:

<https://bstrategyhub.com/50-types-of-business-models-the-best-examples-of-companies-using-it/> (accessed 02.03.21)

17 What Is a Business Model? 54 Successful Types of Business Models You Need to Know. Available at: https://fourweekmba.com/what-is-a-business-model/#Freeterprise_model (accessed 02.03.21)

18 Gassmann O., Frankenberger K., Csik M. (2014). The Business Model Navigator: 55 Models That Will Revolutionise Your Business. 2014. –388 p.

19 Categorisation of Business Model (2012). Available at: <https://mstwits.wordpress.com/2012/06/14/categorisation-of-business-model-4/> (accessed 04.03.21)

20 Fiel E. (2013). Conceptualising Business Models: Definitions, Frameworks and Classifications. *Journal of Business Models*, vol. 1, No. 1 pp. 85-105. Available at: https://www.academia.edu/24520206/Conceptualising_Business_Models_Definitions_Frameworks_and_Classifications (accessed 04.03.21)

21 Remane G., Hanelt A., Tesch, and Kolbe L.M. (2017). The Business Model Pattern Database —a tool for systematic business model innovation. - *International Journal of Innovation Management*, vol. 21, No. 1 . 61 pp. Available at: <https://www.worldscientific.com/doi/epdf/10.1142/S1363919617500049> (accessed 04.03.21)

22 Wirtz B. W., Pistoia A., Ullrich S., and Göttel V. (2016). Business Models: Origin, Development and Future Research Perspectives. *Long Range Planning* 49, pp. 36-54.

23 Björkdahl J., Holmén M. (2013). Editorial: Business model innovation – the challenges ahead. *Int. J. Product Development*, vol. 18, Nos. 3/4, pp. 213 – 225.

24 Rojas M.J, Yuste E., Vázquez J.A.and Celaya J. (2020). New business models in the digital age: A dosdoce.com study sponsored by CEDRO. Available at: https://www.dosdoce.com/upload/ficheros/noticias/201504/new_business_models_in_the_digital_age_bookmachine_special_edition.pdf (accessed 01.03.21)

25 Kotarba M. (2018). Digital transformation of business models. *Foundations of Management*, vol. 10, pp. 123–142. Available at: https://www.researchgate.net/publication/326808621_Digital_Transformation_of_Business_Models (accessed 04.03.21)

26 Ahokangas P., Myllykoski J. (2014). The Practice of Creating and Transforming a Business Model. *Journal of Business Models*, vol. 2, No. 1, pp. 6-18. Available at: <https://core.ac.uk/download/pdf/229011752.pdf> (accessed 04.03.21)

27 The Chain: COVID-19 Accelerates Disruptive Business Models, Adoption of Innovative Solutions (2020). Available at: <https://chainreactionresearch.com/the-chain-covid-19-accelerates-disruptive-business-models-adoption-of-innovative-solutions/> (accessed 04.03.21)

28 Wagner M. (2020). The post-COVID-19 business model requires proactive planning. Available at: <https://www.accountingtoday.com/opinion/the-post-covid-19-business-model-requires-proactive-planning> (accessed 04.03.21)

29 Ianora A., Thiele S., C.SingletonSlade, and Payne A. (2020). COVID-19 Accelerates New Business Models. Available at: <https://www.egonzehnder.com/industries/industry/insights/covid-19-accelerates-new-business-models> (accessed 04.03.21)

30 Campbell H. (2016). Dr. Russell Ackoff, Design is the answer. Available at: <http://www.human-current.com/blog/2016/1/22/dr-russell-ackoff-design-is-the-answer> (accessed 02.03.21)

31 Ackoff R. (1978). The art of problem solving (accompanied by Ackoff's fables). John Wiley & Sons, Inc. New York-Chichester-Brisbane-Toronto-Singapore. 233 p.

32 Tarasenko F. P. (2021). Applied Systems Analysis: Science and Art of Solving Real-Life Problems. Boca Raton, CRC Press. 243 p.