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BUILDING A RESILIENT BUSINESS MODEL: HOW TO USE DYNAMIC CAPABILITIES IN ORDER TO ADAPT TO MARKET SHOCKS

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ABSTRACT

One of the biggest challenges for companies is to adapt to new market conditions when the market crisis arrives. The fifth industrial revolution is coming even faster than expected, while many companies are still trying to get back on their feet after the pandemic crisis. So how should companies prepare for, and even mitigate, the rapid changes ahead if they want to maintain their market share and gain competitive advantage in the future? This paper provides an overview of how to build an adaptive and resilient business model that leverages dynamic capabilities and other resources to overcome these market shocks, which often have similar negative consequences for companies regardless of their source. The findings of this paper could be useful for companies (especially small and medium enterprises) to find an appropriate strategy and adapt their business models.

KEYWORDS: *business model, dynamic capability, disruptive innovation*

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1. INTRODUCTION

During the crisis, companies were able to invest in their internal resources by building up their dynamic capabilities and trying to adapt more quickly to new market conditions in the future. However, Schreyögg[1] posited the theory of the capability paradox: Organisations develop reliable patterns for selecting and linking resources to achieve superior performance and competitive advantage, while many organizations in volatile markets are trapped in the same capabilities and lose flexibility. To overcome the capability paradox, organizations need to develop dynamic capabilities (classic capabilities in a dynamic environment).

The main research question of this paper aims to explore how firms in different industries can adapt to the market conditions of the crisis by using the strategies and frameworks available in the academic literature. This paper analyses how companies can adapt to new market conditions by changing or (re)building their business models. Changing key elements and activities has led to the disruption of other competitors in some industries.

The following chapter explains why some companies decide to invest in their internal resources by building and (re)configuring their dynamic capabilities. It also focuses on one of the most commonly used theories in academic papers dealing with building dynamic capabilities - the resource-based view (RBV). The final chapter analyses the strategies that companies use in times of crisis and how some companies that view disruptive innovation as a crisis can build their strategy and adapt to new market conditions and why some companies see disruptive innovation as a threat and others as an opportunity. This paper provides a literature review of how to build an adaptive and resilient business model that leverages dynamic capabilities and other resources to overcome market shocks.

2. BUILDING A RESILIENT AND ADAPTIVE BUSINESS MODEL

Companies need faster, more frequent, and more far-reaching transformations of business models than in the past, as disruption, strategic discontinuity, convergence, and intense global competition often cause a high proportion of changes in companies' business models[2]. Creating a balance between the con-

[1] Schreyögg, G.; Kliesch-Eberl, M.: *How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization*. Strategic Management Journal, 28(9)2007, p. 913.

[2] Doz, Y. L.; Kosonen, M.: *Embedding strategic agility: A leadership agenda for accelerating business model renewal*. Long Range Planning, 43(2–3)2010, p. 370.

sistency of the business model in terms of corporate performance and the actual factual situation in which the business model changes over time under the dynamic influences of the market is called dynamic continuity. This ability to create equilibrium is also referred to as corporate continuous equilibrium and alignment[3]. Therefore, *dynamic continuity* could be a prerequisite for creating an adaptable business model to exogenous market factors.

Maintaining dynamic continuity should be a manager's decision to make incremental rather than radical changes in an organization. Efficiency in a company can be analyzed using a business model in three steps[4]:

- monitoring risks and uncertainties that may affect the business model and continuously analyzing the environment and internal changes in the company,
- anticipate the possible consequences of external and internal changes and anticipate the use of the RCOV framework (*resources and competencies (RC) to value or combine, the organization (O) and the value proposition (V)*)
- managers' involvement in these processes to maintain the company's objective and performance. The change that takes place in this last step can lead to the business model of a company being adapted or completely redesigned.

The main reason to change or adapt the business model due to the crisis or disruptive factors is that it can increase the market value of a company, improve value retention and lead to a competitive advantage in the industry[5]. Adaptability to the external environment influences the effectiveness of the company. In addition to dynamic continuity, other complementary concepts such as absorptive capacity, architectural innovation, organizational learning, and change management should be considered[6] in order to adapt to the external market.

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3 Demil, B.; Lecocq, X.: *Business model evolution: In search of dynamic consistency*. Long Range Planning, 43(2–3)2010, p. 227.

4 Demil, B.; Lecocq, X.: *Business model evolution: In search of dynamic consistency*. Long Range Planning, 43(2–3)2010, p. 227.

5 Bohnsack, R. *et al.: Business models for sustainable technologies: Exploring business model evolution in the case of electric vehicles*. Research Policy, 43(2)2014, p. 284.

6 Arend, R. J.; Bromiley, P.: *Assessing the dynamic capabilities view: Spare change, everyone?* Strategic Organization, 7(1)2009, p. 75.

To remain competitive in the market, it is necessary to set appropriate goals and select the products, services, design, and competitive strategy as part of the business strategy. In addition, the strategy is determined by the selection of the appropriate area, the design of the organizational structure, the management systems, and the company policies. All these elements can be part of the core of the business model.[7]

Reducing operating costs and maximizing the company's efficiency in the marketplace can be achieved through the process of learning within the company as well as through the management of supply networks. Continuous learning and improvement of internal processes can be achieved through the development of dynamic business models.[8]

Globalization has influenced the development of the competitive environment and increased the likelihood of certain crises. Keeping in mind that the business model can influence the entire business, it can be assumed that the complete adaptation of the company through the development of the adaptability of the business model will be able to successfully respond to the emerging market factors. In other words: After the occurrence of a certain exogenous shock, the company could achieve a greater impact through adaptability than through innovation.

Manufacturing and other traditional industries are reflected in established procedures and common business models between the responsible companies that have proven themselves in the market over the long term. These types of business models produced great results in the 20th century, but are certainly no longer sufficient for competitors in these industries today. The fact that only a small percentage of companies are using digital technologies and innovations provides an opportunity to gain a sustainable competitive advantage. There are two types of innovation that can be disruptive in manufacturing and other traditional sectors: Business model innovations and radical production innovations.

Business model innovation may not include new products or services but redefines the existing ones, as well as the way they are delivered to the customer. This form of innovation has a disruptive effect on competitors in the industry in which they operate and can be classified as strategic innovation. On the other hand, disruptive technological innovations increase and eventually

[7] Foss, N. J.; Saebi, T.: *Fifteen years of research on business model innovation: how far have we come, and where should we go?* Journal of Management, 43(1)2017, p. 200.

[8] Mason, K. J.; Leek, S.: *Learning to build a supply network: An exploration of dynamic business models*. Journal of Management Studies, 45(4)2008, p. 774.

dominate the markets in which they occur. For example, radical production innovations that involve a new product and value proposition that leads to a change in consumer habits and behavior can be a form of innovation that has a disruptive effect. The key elements of the established business models and the new business models are compared in Table 1 according to the industry in which the companies operate.[9]

Table 1: Comparing key elements in the established and new Business Models

INDUSTRY	CHARACTERISTICS OF THE ESTABLISHED BUSINESS MODELS	CHARACTERISTICS OF THE NEW BUSINESS MODELS
Banking	A wide network of branches throughout the market and personal service.	24-hour access; price; convenience.
Insurance	Personal advice; a wide network of brokers in the market.	Low commission rates; Convenience.
Airlines	Lifting systems; first-class service; meals; baggage check-in.	Low price; simplicity.
Brokerage	Research and advice.	Speed of execution and price.
Photocopying	Copy speed.	Price; size; quality.
Watches	Accuracy and functionality.	Design.
Steel	Quality.	Price.
Motorcycles	Speed and performance.	Size and price.
Bookstores	A network of shops that offer a nice ambiance and good service.	Wide assortment; speed; price; convenience.
Car rental	Location (e.g. airports) and quality cars.	Location (e.g. city center) and price.
Computer	Speed, storage capacity, performance.	Design and friendly user interface.

Source: Markides, C.: *Disruptive Innovation: In Need of Better Theory Business-Model Innovation*. Harvard Business Review, 23(1)2006, p. 19.

In almost every industry, the introduction of a new business model poses a challenge to all competitors. In the music industry, for example, the evolution of technologies has enabled the massive use of digital content. Companies may resist this change for a while, but as the technology matures and spreads and is

[9] Markides, C.: *Disruptive Innovation: In Need of Better Theory Business-Model Innovation*. Harvard Business Review, 23(1)2006, p. 19.

accepted by customers, new business models emerge that lead to a transformation of the entire industry and change the rules of the game for competitors[10].

The ability to be aware of changes in the market and embrace change through a dynamic organizational structure within the company ensures a sustainable business model. Many businesses stagnate over time due to the same strategy and key skills, which only allow businesses to succeed in the short term but can be deceptive in the long term. However, developing dynamic capabilities could be a fundamental long-term strategy for management. In other words, as many companies can fall into the trap of their success, it is advisable to develop dynamic capabilities as they can ensure a sustainable competitive advantage over a longer period[11].

3. DYNAMIC CAPABILITIES AND RESOURCE-BASED VIEW THEORY

The rapid development of global trade has led to the emergence of more and more new markets for customers. This has led to greater specialization and integration of companies in the global marketplace. Dynamic capabilities can be an important internal resource for creating markets and processes. In this context, the global system of vertical specialization is a prerequisite for the development of value for the customer and the development, harmonization, and integration of the different elements of the global value chain.[12]

Many companies use dynamic capabilities to gain a sustainable competitive advantage in markets based on knowledge and intangible assets. In such markets, competition is intense and highly uncertain[13].

The development of dynamic capabilities is necessary for survival in developing markets. The transition period and economic reforms in developing markets bring massive and complex institutional changes, changes in ownership structure, and changes in the market environment. During this period, the demands of the market become extremely uncertain and the orientation toward

10 Sabatier, V. *et al.*: *When technological discontinuities and disruptive business models challenge dominant industry logics: Insights from the drugs industry.* Technological Forecasting and Social Change, 79(5)2012, p. 949.

11 Harreld, J. B. *et al.*: *Dynamic Capabilities at IBM: Driving Strategy into Action*. California Review Management, 49(4)2007, p. 1.

12 Katkalo, V. S. *et al.*: *Introduction: On the nature and scope of dynamic capabilities.* Industrial and Corporate Change, 19(4)2010, p. 1175.

13 Katkalo, V. S. *et al.*: *Introduction: On the nature and scope of dynamic capabilities.* Industrial and Corporate Change, 19(4)2010, p. 1175.

the customer becomes weaker, while the orientation of the company toward technology becomes stronger. The development of the company's adaptability is also strengthened[14].

The Schumpeterian tradition of technological discontinuity continues today with reconfiguration mechanisms due to technological change. These reconfiguration mechanisms are divided into transformation, evolution, and substitution. Environmental factors influence the reconfiguration of the dynamic capabilities of the firm[15].

Developing internal processes in companies and building dynamic capabilities helps companies cope with an uncertain market environment. The strategic orientation of a company is about the interaction between the external environment and the company (customers, competitors, and the technology needed to conduct business activities). While dynamic capabilities focus mainly on the company's internal environment and help integrate the company's resources, strategic alignment is about helping to create the company's external environment (acquiring, allocating, and using resources) to create dynamic capabilities[16].

Companies can draw strength from dynamic capabilities to create new solutions and adapt to daily challenges in uncertain markets with high volatility. The dynamic approach is based on the dynamic capabilities that can be used to develop high adaptability[17]. Retaining organizational knowledge in the organization ensures that momentum persists throughout the learning process.

Schreyögg[18] used the logic of the three approaches from a comparative perspective and provided an analysis of the way dynamization is conceptualized in terms of the preferred direction of learning, the basic mechanism of dynamization, and the particular emphasis on organizational routines, which is shown in Table 2. The radical dynamization approach implies that organizational pro-

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[14] Zhou, K. Z.; Li, C. B.: *How strategic orientations influence the building of dynamic capability in emerging economies*. Journal of Business Research, 63(3)2010, p. 224.

[15] Lavie, D.: *Capability reconfiguration: An analysis of incumbent responses to technological change*. Academy of Management Review, 31(1)2006, p. 153.

[16] Zhou, K. Z.; Li, C. B.: *How strategic orientations influence the building of dynamic capability in emerging economies*. Journal of Business Research, 63(3)2010, p. 224.

[17] Schreyögg, G.; Kliesch-Eberl, M.: *How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization*. Strategic Management Journal, 28(9)2007, p. 913.

[18] Schreyögg, G.; Kliesch-Eberl, M.: *How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization*. Strategic Management Journal, 28(9)2007, p. 913.

blems are solved without previously built-up expertise, while the competitive advantage in the marketplace can only be achieved through rapid learning and flexible action. The integrative approach implies that dynamic capabilities are conceptualized through positions (specific resources), paths (history and current position of the organization), and processes (coordination and integration of available resources; organizational learning and reconfiguration of resources).

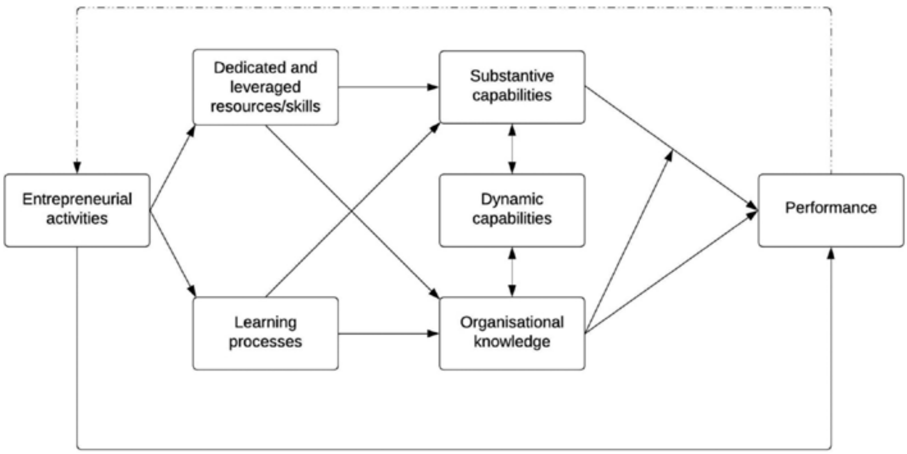
Table 2: Dynamic capabilities approaches

	Radicalized dynamization approach	**Integrated dynamization approach**	**Routinized dynamization approach**
Dominant learning direction	Experiential learning	Historical learning in the context of skills	Historical learning in the context of innovation routines
Mechanisms of dynamization	Special forms of processes aimed at solving problems	Internal processes of capability	Processes outside the capability
Importance of routines	Low level: avoid routines as long as possible	Medium level: build up routines and paths	High level: build up several routine levels
Capabilities in the context of resource-based view theory	Paradigm shift: capability is a strategic resource outdated	Paradigm change: capability is a strategic dynamic resource	Paradigm variation: capability is a strategic resource. Meta-capabilities as a medium of dynamization.

Source: Schreyögg, G.; Kliesch-Eberl, M.: *How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization*. Strategic Management Journal, 28(9)2007, p. 913.

Material capabilities and organizational knowledge determine the extent to which dynamic capabilities should be adapted to the new market conditions in the industry in which the company operates in the market. To establish the basis for material capabilities and organizational knowledge, it is necessary to create a stylized model that contains various activities related to the creation of dynamic capabilities in the company that have an impact on the company's business success. The starting point of this model is entrepreneurial activities that identify and exploit market opportunities and influence the selection of organizational resources and capabilities. This model also helps to create a process and learning culture in the company to absorb knowledge from the external environment in the future[19]. The model for the design of organizational capabilities is presented in Picture 1.

Picture 1: Model for the design of organizational capabilities



Source: Zahra, S. A. *et al.*: *Entrepreneurship and dynamic capabilities: A review, model, and research agenda*. Journal of Management Studies, 43(4)2006, p. 917.

Dynamic capabilities can enable companies to better understand opportunities and threats in their exogenous environment. Furthermore, the implementation of necessary changes to adapt to market conditions and gain a sustainable competitive advantage can be driven by a company's dynamic capabilities [20].

The continuous change of key resources in a company is a strategic perspective of dynamic capabilities[21]. It is often not easy to change key resources in a company (which are the source of competitive advantage) in the short term, but

[19] Zahra, S. A. *et al.*: *Entrepreneurship and dynamic capabilities: A review, model and research agenda*. Journal of Management Studies, 43(4)2006, p. 917.

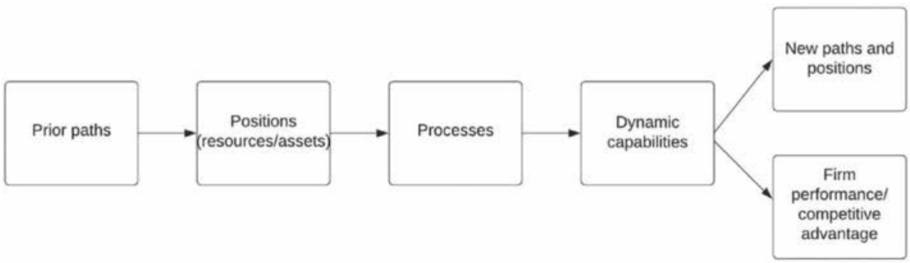
[20] Li, D.; Liu, J.: *Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China*. Journal of Business Research, 67(1)2012, p. 2793.

[21] Ambrosini, V.; Bowman, C.: *What are dynamic capabilities and are they a useful construct in strategic management?* International Journal of Management Reviews, 11(1) 2009, p. 29.

if a company tends to carry out such activities on an ongoing basis, they ensure long-term adaptation to market conditions.

To assess the key resources that drive an organization's dynamic capabilities, it is necessary to conceptualize the development of these resources. Three models of conceptualization are most commonly used and are illustrated graphically below. In the first model (created by Teece et al., 1997), the organization's past orientation, in the form of the organization's history and past investment activities, leads to the organization's current position. In this model, dynamic capabilities rely on processes in the organization that lead to better organizational performance, which ultimately leads to competitive advantage and an organization's new position and orientation.

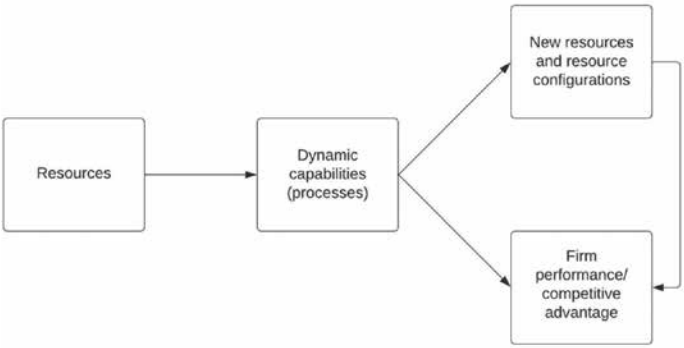
Picture 2: The first conceptualized model of dynamic capabilities



Source: Helfat, C. E.; Peteraf, M. A.: *Understanding dynamic capabilities: Progress along a developmental path*. Strategic Organization, 7(1)2009, p. 91.

In addition, the second conceptual model (created by Teece, 2007) of dynamic capabilities leads to a reconfiguration of the resource base and ultimately the competitive advantage of the firm. This model first examines specific types of dynamic capabilities and proves that identifying and seizing opportunities leads to new positions and alignments that subsequently impact the firm's performance in terms of growth, profit, and competitive advantage.

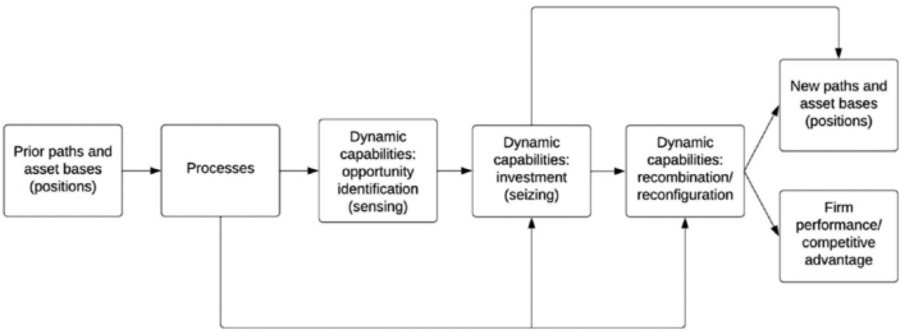
Picture 3: The second conceptualized model of dynamic capabilities



Source: Helfat, C. E.; Peteraf, M. A.: *Understanding dynamic capabilities: Progress along a developmental path*. Strategic Organization, 7(1)2009, p. 91.

In the third conceptualization model (created by Eisenhardt and Martin, 2000), dynamic capabilities have a direct impact on the organization's business performance and competitive advantage. This model first describes dynamic capabilities as processes in which organizations acquire, integrate and reconfigure new resources.

Picture 4: The third conceptualized model of dynamic capabilities



Source: Helfat, C. E.; Peteraf, M. A.: *Understanding dynamic capabilities: Progress along a developmental path*. Strategic Organization, 7(1)2009, p. 91.

Dynamic capabilities can be seen as the organization's ability to create, expand and shape the resource base. This includes tangible and intangible assets, human resources, and capabilities that the organization owns and controls[22].

The predominant framework in the strategy literature for answering the question of why companies perform differently in the same industry is the theory of the resource-based view, which states that companies differ in terms of the resources and capabilities they control.[23]

This theory supports the premise that organizational capabilities are a fundamental source for creating and developing a sustainable competitive advantage, characterized by the ability to create greater value in the business than the competitor develops and with the least efficiency in the industry in which the business operates[24].

Moreover, this theory is considered a traditional strategic view because it assumes that a company can survive and experience growth with considerable resources and under undesirable market conditions. However, many companies (such as Uber and AirBnb) mainly use digital technologies and do not own significant assets and grow because of the critical mass of users and the business model, which has complementary activities of producing, delivering, and storing value[25].

The Resource-Based View (RBV) theory, along with the VRIN (valuable, rare, inimitable, and non-substitutable) and the VRIO framework (value, rarity, inimitability, operability), is one of the most practical strategies to help formulate value in the business model and achieve a sustainable competitive advantage in the marketplace. The focus is on creating and sustaining the value proposition[26].

In the context of resource theory, companies that possess valuable, rare, inimitable, and non-substitutable resources (resources with VRIN attributes) can

[22] Helfat, C. E. *et al.*: *Dynamic capabilities: Understanding strategic change in organizations*. Oxford: Blackwell Publishing, 2007.

[23] Zott, C.: *Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study*. Strategic management journal, 24(2)2003, p. 97.

[24] Schreyögg, G.; Kliesch-Eberl, M.: *How dynamic can organizational capabilities be? Towards a dual-process model of capability dynamization*. Strategic Management Journal, 28(9)2007, p. 913.

[25] Foss, N. J.; Saebi, T.: *Fifteen years of research on business model innovation: how far have we come, and where should we go?* Journal of Management, 43(1)2017, p. 200.

[26] Foss, N. J.; Saebi, T.: *Fifteen years of research on business model innovation: how far have we come, and where should we go?* Journal of Management, 43(1)2017, p. 200.

achieve a sustainable competitive advantage by implementing a strategy that creates new value that is difficult for competitors to replicate[27].

The RBV theory proposes a way to gain a competitive advantage and explains how the firm is driven by VRIN resources. However, RBV theory does not adequately explain how a company should gain a competitive advantage in a rapidly changing environment[28]. Many managers support strategic thinking based on RBV theory and implement it in their companies. The main premise of RBV theory is that it can bundle the most important advantages for a company and create a competitive advantage[29].

The change in key resources in a company often occurs at a late stage when environmental changes are taken into account, as the company's key resources are fluid depending on a particular market environment[30]. It can be assumed that theories of dynamic capabilities are extended with the RBV theory, as it also includes changes in the environment.

The RBV theory states that the source of competitive advantage could be simultaneously valuable, rare, imperfectly imitable, and imperfectly substitutable resources in the firm[31]. Through VRIN resources, a sustainable competitive advantage can be achieved by implementing a new strategy that is difficult to replicate[32].

Dynamic capabilities need to be built to maintain the organization's competitive advantage over the long term, because they can be static if they are given or used at a particular point in time, and dynamic if they change over time. The purpose of static capabilities is to provide routine operational procedures that can create a sustainable competitive advantage in the short term[33].

[27] Wu, L.Y.: *Applicability of the resource-based and dynamic-capability views under environmental volatility*. Journal of Business Research, 63(1)2010, p. 27.

[28] (Eisenhardt and Martin, 2000; Zhou and Li, 2010).

[29] Wu, L.Y.: *Applicability of the resource-based and dynamic-capability views under environmental volatility*. Journal of Business Research, 63(1)2010, p. 27.

[30] Zhou, K. Z.; Li, C. B.: *How strategic orientations influence the building of dynamic capability in emerging economies*. Journal of Business Research, 63(3)2010, p. 224.

[31] Ambrosini, V.; Bowman, C.: *What are dynamic capabilities and are they a useful construct in strategic management?* International Journal of Management Reviews, 11(1) 2009, p. 29.

[32] Wu, L.Y.: *Applicability of the resource-based and dynamic-capability views under environmental volatility*. Journal of Business Research, 63(1)2010, p. 27.

[33] Katkalo, V. S. *et al*.: *Introduction: On the nature and scope of dynamic capabilities*. Industrial and Corporate Change, 19(4)2010, p. 1175.

On the other hand, researchers such as Eisenhardt and Martin[34] and Li and Liu[35] note that RBV theory ignores market dynamics and is static in an ever-changing and volatile environment. Dynamic capabilities can relate to the processes of product development and strategic decision-making[36].

By extending the RBV theory and adapting it to a dynamic environment, a new theory emerges that proposes companies continuously adapt, reconfigure, and restore existing organizational resources and capabilities. The adaptation of RBV theory and its harmonization with market and environmental changes can therefore constitute a new universal concept of dynamic capabilities[37]

There are two approaches in RBV theory: The first is based on innovation and the creation of value and resources, and the second is on the preservation of value. RBV theory, together with the Dynamic Capability Framework, has formed the basis of theories in strategic management since the 1980s. [38]. RBV theory could be helpful for companies to better understand their business models and the relationship with their customers when they tend to change or adapt their business model. It can be concluded that the ability of such continuous learning can be achieved through a sustainable business model.

RBV theory establishes a link between business models and dynamic capabilities, as companies need to improve their capabilities over time so that they can continuously learn how to strategically manage their resource base while remaining competitive in the marketplace[39]. Few definitions in academic research explain the relationship between resource-based view theory and business models, which are shown in Table 3.

[34] Eisenhardt, K. M.; Martin, J. A.: *Dynamic capabilities: A morphological analysis framework and agenda for future research*. Strategic Management Journal, 21(1)2000, p. 1105.

[35] Li, D.; Liu, J.: *Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China*. Journal of Business Research, 67(1)2012, p. 2793.

[36] Eisenhardt, K. M.; Martin, J. A.: *Dynamic capabilities: A morphological analysis framework and agenda for future research*. Strategic Management Journal, 21(1)2000, p. 1105.

[37] Li, D.; Liu, J.: *Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China*. Journal of Business Research, 67(1)2012, p. 2793.

[38] Katkalo, V. S. *et al*.: *Introduction: On the nature and scope of dynamic capabilities*. Industrial and Corporate Change, 19(4)2010, p. 1175.

[39] Cavalcante, S. A.: *Preparing for business model change: The „pre-stage" finding*. Journal of Management and Governance, 18(2)2014, p. 449.

Table 3: Basic definitions of the resource-based view theory and business models

Definition	Author
Resource theory links business models, resource procurement, and resource allocation.	Garnsey et al. (2008)
Companies need to acquire resources at the same time as introducing a new business model.	Hamel (1999)
The incorporation of knowledge and dynamic capabilities into resource theory has created new links between business models and resource theory.	Mangematin et al. (2003); George and Bock (2009)
The use of traditional foundations, knowledge and assets enables the virtual creation of a new business model.	Venkatraman and Henderson (1998)
Companies operating in the "new" economy have used intangible assets to create above-average value.	Boulton and Libert (2000)
The business model is a dynamic capability that links the expressed competencies of the enterprise, the aspirations of the enterprise, and the outcome of the enterprise.	Eden and Ackerman (2000)
Alternative perspectives combine business models with social networks and knowledge exchange.	Chung et al. (2004)

Source: George, G.; Bock, A. J.: *The business model in practice and its implications for entrepreneurship research*. Entrepreneurship theory and practice, 35(1)2009, p. 83.

4. DISRUPTIVE INNOVATION: THREAT OR OPPORTUNITY?

In a fast-changing environment, having certain resources is not enough to maintain a competitive advantage in the market, because these are markets with changing customer needs and uncertain technological developments. Such an environment is defined as a dynamic business environment because it includes external organizational factors such as (de)regulation, technological change, and competition. In many sectors, there is competitive pressure to apply innovative solutions to which the company must respond appropriately, otherwise, there is a high probability of making a wrong decision and causing the business model to collapse if it is not positioned appropriately[40]. The simplification of a complex process or the creation of a product aggregation from multiple markets is a result of the disruption, which has transformative power in eco-

[40] Wu, L.Y.: *Applicability of the resource-based and dynamic-capability views under environmental volatility.* Journal of Business Research, 63(1)2010, p. 27.

nomic sectors[41]. Disruptive innovations have certainly shaped almost every industry in the world market, but even companies that have adapted to these market conditions will have to reckon with new exogenous shocks in the world market in the future.

While executives in large companies can predict crisis trends in the market, executives in SMEs are more likely to face situations where they are struggling to survive in the market and will not take risks at an earlier stage of the occurrence of a crisis. SMEs show cognitive resistance in analyzing and formulating responses to such a situation, while their leaders wait and weigh the impact of the disruption to try to seize the opportunity afterward[42].

Although it is well known that many industries are gradually introducing new market rules for all competitors, disruption in traditional industries is also fundamentally changing the relationship between customers and companies, especially the importance of the value proposition for the customer. The whole process of digital transformation comprises three important elements[43]:

1. innovation
2. ecosystems
3. value proposition as a system of activities

Global integration has had a disruptive impact through technological developments, business model innovations, and regulatory changes. Disruptive impact on organizational development can be characterized as a crisis market situation. In the figure below, there is a framework that can serve as a response for a company in a crisis, divided into three processes: perception, intention, and action.[44]

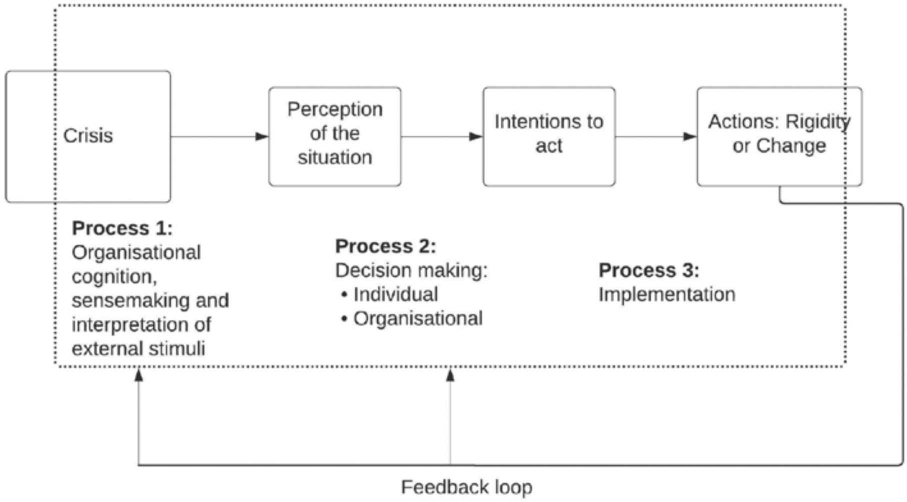
[41] Vils, L. *et al.*: *Business model innovation: A bibliometric review*. International Journal of Innovation, 5(3)2017, p. 311.

[42] Dewald, J.; Bowen, F.: *Storm clouds and silver linings: Responding to disruptive innovations through cognitive resilience*. Entrepreneurship: Theory and Practice, 34(1)2009, p. 197.

[43] Skog, D. A. *et al.*: *Digital disruption*. Business & Information Systems Engineering, 60(5)2018, p. 431.

[44] Sarkar, S.; Osiyevskyy, O.: *Organizational change and rigidity during crisis: A review of the paradox*. European Management Journal, 36(1)2017, p. 1.

Picture 5: Organisational response to the market crisis



Source: Sarkar, S.; Osiyevskyy, O.: *Organizational change and rigidity during crisis: A review of the paradox*. European Management Journal, 36(1)2017, p. 1.

A crisis is a rare phenomenon that produces an unintended result for the company and its stakeholders and requires immediate action by managers with corrective results. The term crisis is often associated with the terms disaster, threat, scandal, or debacle to describe the situation of a particular effect that has occurred[45]. Market crises are divided into endogenous factors and exogenous factors. Endogenous factors are triggered by company managers who do not take sufficient care of projects and organizational matters, while unpredictable and extreme negative influences such as natural disasters and terrorist attacks[46].

Experienced managers consider market crises as high-priority situations to find a solution, as crises can cause significant costs and emotional impacts on the company[47].

[45] Sarkar, S.; Osiyevskyy, O.: *Organizational change and rigidity during crisis: A review of the paradox*. European Management Journal, 36(1)2017, p. 1.

[46] Roux-Dufort, C.: *The devil lies in details! How crises build up within organizations*. Journal of Contingencies and Crisis Management, 17(1)2009, p. 4.

[47] Dutton, J. E.: *The processing of crisis and non-crisis strategic issues*. Journal of Management Studies, 23(5)1986, p. 501.

Despite the predictable shocks in the company's external environment, it is often difficult to predict the consequences and risks for the company[48]. Competing threats often come from outside the boundaries of the sector in which the company operates[49]. There are three main categories of strategies that companies can adopt during difficult economic conditions in the market: Retrenchment Strategy, Investment Strategy, and Ambidextrous Strategy, which are explained in Table 4.

Table 4: Main categories of strategy in recession conditions

Retrenchment strategies	Includes reducing operating costs and divesting non-core assets, such as cutting jobs, eliminating activities in the research and development, marketing, and employee training departments, etc.
Investment strategies	A strategy that sees the recession as an opportunity to implement strategic change. It involves spending on innovation and market diversification. The main risk of this strategy is that the company is preoccupied with short-term survival and cannot think about innovation and growth.
'Ambidextrous' strategies	This strategy combines investment and austerity. Most companies adapt to the recession by investing in product innovation and market development while reducing asset costs.

Source: Kitching, J. *et al.*: *Business strategies and performance during difficult economic conditions*. London, 2009.

Strategic decision-making in smaller companies could be considered less rational than in large corporations. Small and medium-sized enterprises do not have the same level of time, resources, and information to make rational strategic decisions, so they tend to rely on the intuition of their managers. They also face higher levels of uncertainty and instability[50]. Scientific research in this area could be more useful for them than for large corporations.

The basis for further technological progress is revolutionary changes in technology caused by radical innovations. The entire market and all sectors of the economy are affected by radical innovations that involve a high degree of novelty. More specifically, radical innovation affects the internal processes of

48 Pérez-Nordtvedt, L. *et al.*: *Adaptation to temporal shocks: Influences of strategic interpretation and spatial distance*. Journal of management studies, 51(6)2014, p. 869.

49 Amit, R.; Zott, C.: *Creating value through business model innovation*, MIT Sloan Management Review, 53(3)2012, p. 41.

50 Osiyevskyy, O.; Dewald, J.: *Inducements, Impediments, and Immediacy: Exploring the Cognitive Drivers of Small Business Managers' Intentions to Adopt Business Model Change*. Journal of Small Business Management, 53(4)2015, p. 1011.

the company and the value proposition to the customer. The latter can influence social factors and the habits of customers in the company's environment[51]. Business model innovation has a positive effect on radical innovation in those industries that do not use technological solutions[52] at all and which can be classified as traditional industries.

The *third industrial revolution* (also called the digital or internet revolution) suggests that technology will determine our future in a big way. In recent years, the fourth industrial revolution (Industry 4.0) has brought a focus on artificial intelligence, robotics, the Internet of Things, augmented reality, etc. into everyday business. The *fourth industrial revolution* brings us far-reaching organizational consequences and opportunities that lead to improved customer relations and create a new range of products and services. In other words, the current forms of value creation in a business model are transforming as they bring changes in technology and production development[53].

During the fourth industrial revolution, companies introduce new tools almost every year, as the rules of the game changed for all competitors in the market with each introduction of technology. With these tools, companies can not only gain a larger market share, but also adapt to new market dynamics. With higher adaptability of a business model to the market and the highest management structure dedicated to change, the company tends to become a leader in the industry by establishing a "new rule" in the industry.

The concept of the *Internet of Things* could be the cornerstone for the digitalization of business in some companies. This concept is based on the use of technology when companies, for example, use sensors in industrial machines, infrastructure, turbines, aircraft engines, and all other devices that are manufactured and sold on the global market. This concept collects data in all digitally connected devices with built-in sensors. This data is stored in the cloud and later analyzed with advanced Big Data analytics technology[54]. The process of digital transformation can overcome dysfunctional market mechanisms and help many countries accelerate economic growth and reduce unemployment[55]. In emerging economies with limited resources, this could certainly be significant.

[51] Domínguez-Escrig, E. *et al.*: *The influence of leaders' stewardship behavior on innovation success: the mediating effect of radical innovation*. Journal of Business Ethics, 159(3)2019, p. 849.

[52] Souto, J. E.: *Business model innovation and business concept innovation as the context of incremental innovation and radical innovation*. Tourism management, 51(1)2015, p. 142.

[53] Ibarra, D. *et al.*: *Business model innovation through Industry 4.0: A review*. Procedia Manufacturing, 22(1)2018, p. 4.

[54] Spremic´, M.: *Digitalna transformacija poslovanja*. Sveučilište u Zagrebu, Ekonomski fakultet, 2017.

[55] Hrvatska gospodarska komora: *Analiza hrvatske IT industrije 2008. – 2017.*, Zagreb, 2018.

Digital transformation is tearing down barriers in traditional industries and making it necessary to rethink existing business models between competitors. However, in the face of new technological innovations and developments, academic research mainly focuses on technological development and puts business model innovation in the background[56].

In the short term, profound changes in business activities can help companies create digital transformation. This can be based on a change in strategy, structure, business processes, business models, and organizational culture. However, digital business models are one of the key principles of the digital economy concept[57]. Digital business models use at least one technological element as a key process or supporting activity that can be classified as innovative and considered a business model innovation.

The result of digital transformation is a different relationship between customers and businesses in the global marketplace. Customers have more options to choose and customize their products. This relationship led to more transparent procurement and the ability to arrange alternative suppliers. Technology ensured lower production costs, which led to a centralized, customer-centric global trade policy[58].

Disruptive innovation is a process whereby innovations in business models lead to a disruption of traditional industries and create an effect that can lead to radical changes in the industry. Keeping the processes that were critical before the disruption and upgrading them with technology is called digital transformation or digitalization. Disruption digitally transforms the industry by introducing technological elements into business models.

Disruption is seen as a threat that arises as an exogenous factor for any organization. Despite all the resources an organization has at that time, it will certainly affect all of them. When a threat and an opportunity emerge in the market, some companies opt for cognitive resistance and consider it a very sensible strategic decision at that moment. While companies with disruptive business models pose a threat to other competitors across the industry, learning from their business model is an opportunity to the advantage of competitors as they seek to adapt to new market conditions[59].

[56] Ibarra, D. *et al.*: *Business model innovation through Industry 4.0: A review*. Procedia Manufacturing, 22(1)2018, p. 4.

[57] Spremic´, M.: *Digitalna transformacija poslovanja*. Sveučilište u Zagrebu, Ekonomski fakultet, 2017.

[58] Teece, D. J.: *Business models, business strategy and innovation*. Long Range Planning, 43(2–3)2010, p. 172.

[59] Dewald, J.; Bowen, F.: *Storm clouds and silver linings: Responding to disruptive innovations through cognitive resilience*. Entrepreneurship: Theory and Practice, 34(1)2009, p. 197.

Three main strategies that fully fit into the corporate strategy and help companies respond to the digital transformation process are[60]:

1. *the development of a new customer segment*
2. *the introduction of a new business model*
3. *the (re)definition of value chains*.

On the other hand, if a company is in the manufacturing industry, it should consider internal and external process optimization, customer interface improvement, new ecosystems and value networks, and new business models: smart products and services, which are explained in Table 5.

Table 5: Strategies for implementing digital transformation in manufacturing companies

Internal and external process optimization	Includes incremental innovations that optimize the actual business without bringing about major changes. It is much easier for traditional companies to accept innovations through this process, as the possibility of being exposed to external risks is reduced.
Improving the customer interface	The company focuses on improving value creation for customers. The introduction of new technologies can enable a better understanding of customer needs and a better customer experience. After optimizing internal and external processes, this could be the next investment for traditional companies.
New ecosystems and value networks	The authors propose a radical innovation of the current business model and focus on the core business (key activities). Authors are also sharing uncertainty with other companies and gaining new skills and resources from employees in Big Data, cloud computing, augmented reality and virtual reality. This will radically change relationships with customers and partners.
New business models: intelligent products and services	Entirely new business models based on new technologies such as Big Data, cloud computing, smart sensors, and embedded systems can lead to innovative and intelligent products and services. This will lead to disruptive innovation and enable the transformation of almost all elements of a business model. This strategy could be implemented in parallel with the current business model to ensure that the old model provides revenue while experimenting with the new one.

Source: Ibarra, D. *et al.*: *Business model innovation through Industry 4.0: A review*. Procedia Manufacturing, 22(1)2018, p. 4.

[60] Bughin, J.; Van Zeebroeck, N.: *The best response to digital disruption*. MIT Sloan Management Review, 58(4)2017, p. 80.

When it comes to innovation, companies should incorporate processes of experimentation and open innovation. Business model innovation is a phenomenon that is causing major upheaval and is significantly driving change in many industries. When designing the business model, the most important task is to provide a system that defines and creates value for the customer and defines the way value is maintained in the company. While innovation has helped many companies develop new products or services in the past, today the focus is on business model innovation when it comes to creating or changing a business model[61].

Very often, industry leaders begin to perform worse after radical innovation and disruption have created a new constellation of power in their industry. The scope of radical innovation becomes greater the more it affects society by changing consumer habits[62]. Therefore, the structure of competitors in the industry is not the only issue that could be considered in future research.

5. CONCLUSION

In innovative and digitally driven business models, technology replaces old processes, products, and customer habits. Moreover, the radical change and adaptation of a company's business model affects competitors and market conditions become more dynamic. This scale of industrial change explains the importance of radical innovation. For companies with traditional business models, disruptive innovation is a challenge and a struggle for survival in the market.

While on the one hand, companies that fail to maintain their market position during the onset of disruption in their industry risk losing their market share to competitors that have integrated technology into their business model, on the other hand, the implementation of the digital business model is not an obstacle for newly founded companies and start-ups, but rather a greater opportunity to exploit disruptive innovation and radical innovation.

There is still a gap in the academic literature on how dynamic capabilities influence business models and whether they can continue to create a competitive advantage in emerging industries. However, established companies operating in traditional markets should expand their internal resources to adapt to the new rules of the game in their industry in the short term. In the long term, companies should design their business model to continuously adapt their bu-

[61] Martins, L. L. *et al.*: *Unlocking the hidden value of concepts: a cognitive approach to business model innovation*. Strategic Entrepreneurship Journal, 9(1)2015, p. 99.

[62] Skog, D. A. *et al.*: *Digital disruption*. Business & Information Systems Engineering, 60(5)2018, p. 431.

siness operations to the market in which they operate. It is often not easy to change the key resources in a company (which are the source of competitive advantage) in the short term, but if a company tends to carry out such activities continuously, they ensure long-term adaptation to market conditions.

It is still not clear whether this business model can overcome market shocks in the future. The contribution of this article is not sufficient to fill this gap. Therefore, the recommendation for future research is to conduct empirical research in this area. A complete adaptation of the enterprise by developing the adaptability of the business model will be able to respond successfully to the new market factors. In other words: After the occurrence of a certain exogenous shock, the company could achieve a greater impact through adaptability than through innovation.

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