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Accelerating digital business growth in a green economy and environmental sustainability

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Abstract. It is supposed to consider that the main focus of digital businesses in a green economy and environmental sustainability is the implementation of a relevant and capable strategy of accelerating growth that provides the management system flexibility, which obviously contributes to rapid adaptation to the external environment and guarantee effective realization of the business potential. It is created and visualized the constructive basis for determining the strategy of accelerating digital business growth in a green economy and environmental sustainability. It is conceptualized the model of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability as well as interpreted its mechanism. It is developed the matrix of the strategies of accelerating digital business growth in a green economy and environmental sustainability. The approbation of methodological tools allowed retailers to strengthen their competitive advantages due to the ability to quickly respond to any entropic phenomena and, in turn, contributed to the increase of rapid progressive development of their digital business.

1. Introduction

In today's dynamic marketing context, the divided usage of the methodological statements of the digital business strategic management in a green economy and environmental sustainability ensures the implementation of tasks in terms of the systematic reproduction of dynamic abilities for the development. At the same time, the transformation of market relations, economic instability, the uncertainty of economic conditions and the volatility of the external environment give rise to variability in key success factors and reduce the effectiveness of using the methodology of strategic development management. This actualizes search and implementation for new approaches and practical tools to contribute to digital business growth.

2. Related works

It should be acknowledged constantly growing interest among scientists worldwide on digital business growth especially in a green economy and environmental sustainability. So, among well-scientists who determined green economy aspects approaches as well as community impact on global sustainability are Gunay, Kurtishi-Kastrati and Krsteska [7], Ngare, Otieno, Omwami, Ogutu, Opiyo, Gikonyo and Otieno [11], Söderholm [16]. Besides this, green entrepreneurship and small medium enterprise sustainable performance are considered in papers by Alraja, Imran, Khashab and Shah [2], Pangarso,



Sisilia, Setyorini, Peranginangin and Awirya [14]; Vasilescu, Dimian and Gradinaru [17]. It is also noteworthy that studies by Agrawal, Wankhede, Kumar, Upadhyay and Garza-Reyes [1], Montealegre and Iyengar [8]; Yixin, Maomao, Jing and Rui [19] aim to reveal the variability of different strategies to satisfy consumers changing the business model. Extant research by Fernández-Rovira, Álvarez Valdés, Molleví and Nicolas-Sans [4], Gil-Gomez, Guerola-Navarro, Oltra-Badenes and Lozano-Quilis [6], Wielgos, Homburg and Kuehnl [18] shed light on the overall understanding of consumer interactions and customer relationship management, and accordingly, elucidate novel managerial consequences for digital businesses. However, no one among authors considers business opportunities and the influence of competitors in the context of the strategy determination. More interestingly, in research papers by Nwankpa, Roumani and Datta [12], Palmié, Miehe, Oghazi, Parida and Wincent [13], Sedera, Tan and Xu [15], Yousaf, Radulescu, Sinisi, Serbanescu and Ionescu [20] it is mentioned the significant influence of innovation for creating an exceptionally positive customer experience and consequently digital business growth. Drawing on the insights in works by scientist Belhadi, Kamble, Gunasekaran and Mani [3], Frei, Jack and Krzyzaniak [5], it is necessary to highlight that the key role for digital business growth is in right supply chain management according to which customer is able to communicate with minimal communication delay and has positive experience immediately. Although the satisfaction by the retailer's service quality affects the customers intentions and encourage them to make a purchase, there is still fragmentary studied the strategic digital business management, and, indeed, lack of papers regarding accelerating digital business growth in a green economy and environmental sustainability is defined the study topic.

The **purpose of the study** is the justification and approbation of theoretical and methodological foundations of the strategy of accelerating digital business growth in a green economy and environmental sustainability.

3. Methodology and methods

The ability to determine the strategy of accelerating digital business growth in a green economy and environmental sustainability has important scientific and practical significance in today's unstable environment. It is crucial to note that it has a significant impact on the customers satisfaction, loyalty and overall, on economic effectiveness. However, to ensure continuous growth of digital business it is necessary to rapidly adopt to the external unstable environment with intensive aggressive market competition, make timely, relevant operational decisions and be ready to solve marketing issues on the Internet.

Given this, purpose achievement methodology includes four levels: (1) justification and creation of the conceptual model of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability; (2) formation of the mechanism of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability; (3) mapping of the factors influence on strategy of accelerating digital business growth in a green economy and environmental sustainability; (4) creation of the matrix of the strategies of accelerating digital business growth in a green economy and environmental sustainability. The theoretical and methodological basis of the study are the theories of strategic management of leading scientists in the development of digital business. In the context of the study, such approaches and methods as: general scientific and special methods, abstract-logical; dialectical approach, methods of concretization, organizational and economic basis of the operational-tactical development process; system-functional approach, methods of structural-functional analysis and synthesis.

As was mentioned above, on the first level the authors created the conceptual model of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability based on the results of research and analysis of variable structural constituents, including purpose, object, subject, goals genesis, conceptual approaches, principles, and methodological toolkit (Fig. 1).

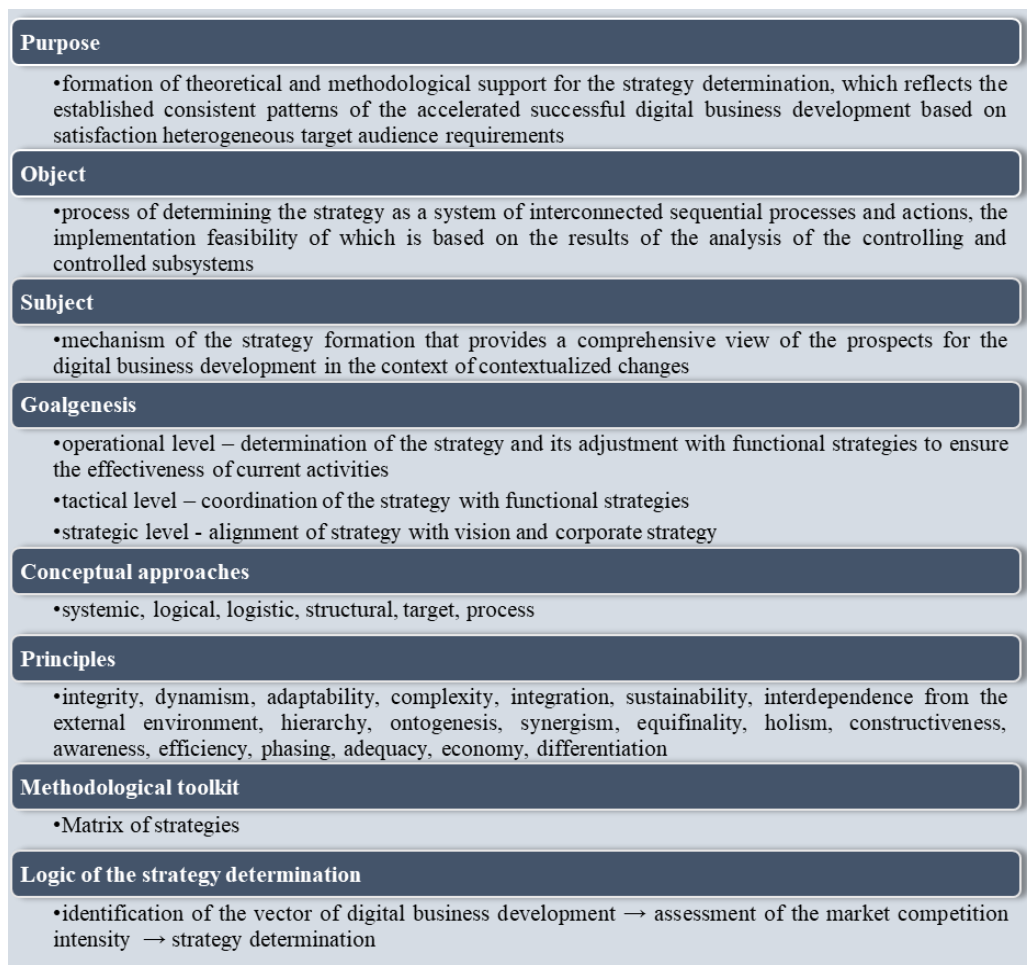


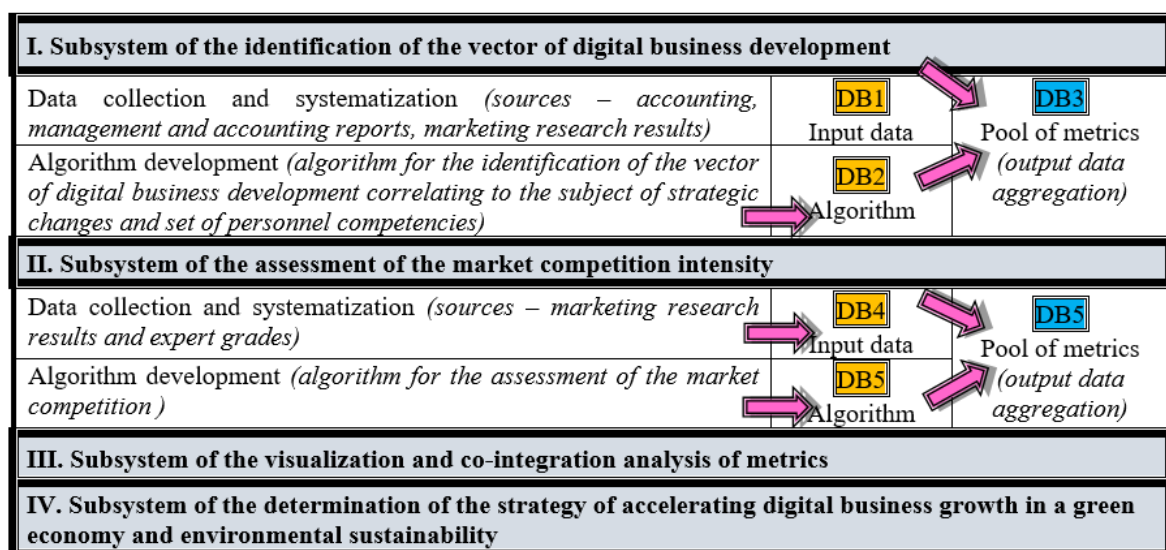
Fig. 1. The conceptual model of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability.

As can be seen in the Figure 1 the basic idea of the conceptual model consists in the combination and representation of a list of sequential actions for the determination of the strategy of accelerating digital business growth that is relevant to different hierarchical levels. The purpose of the model is formation of theoretical and methodological support for the strategy determination, which reflects the established consistent patterns of the accelerated successful digital business development based on satisfaction heterogeneous target audience requirements. The object of the conceptual model is the process of determining the strategy as a system of interconnected sequential processes and actions, the implementation feasibility of which is based on the results of the analysis of the controlling and controlled subsystems. The subject of the model is the mechanism of the strategy formation that provides a comprehensive view of the prospects for the digital business development in the context of contextualized changes.

To determine the strategy of accelerating digital business growth in a green economy and environmental sustainability it is formulated the following conceptual approaches – systemic, logical, logistic, structural, target, process. The systemic approach emphasizes the interrelationship and interdependence of the conceptual model structural constituents and involves considering them as a complex configurational management system. The logical approach is manifested in the fact that the strategy formation process takes into account the general goal of the digital business activity in the marketing environment, as well as comparing priority directions of its development with the available and required resources. The characteristic feature of the logistics approach is the consideration of consumer needs when choosing a strategy. The structural approach defines the basic elements of the

strategy. The target approach ensures the unity and coordination of the goals and objectives of all levels of the digital business administration, time periods of different durations during the strategy determination. The process approach involves distinctive actions to determine the strategy in obedience to which significant improvements in key digital business metrics are achieved.

The constructive basis of the conceptual model of strategy determination is the understanding and observance of a pool of principles: integrity, dynamism, adaptability, complexity, integration, sustainability, interdependence from the external environment, hierarchy, ontogenesis, synergism, equifinality, holism, constructiveness, awareness, efficiency, phasing, adequacy, economy, differentiation. The mechanism of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability is a core component of the proposed concept, reflects the decision-making logic regarding its definition and actualizes the formalization of its constitutive attributes. The visualization of the proposed mechanism is shown in Figure 2.



Notes. DB – database.

Fig. 2. The mechanism of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability.

The Figure 2 illustrates the interaction of four subsystems namely: I - subsystem of the identification of the vector of digital business development; II - subsystem of the assessment of the market competition intensity; III - subsystem of the visualization and co-integration analysis of metrics; IV- subsystem of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability. Importantly, the speed and adequacy of the determination of the strategy of accelerating digital business growth in sustainable economy predestine the coherence, harmony, and rational work organization of these subsystems.

The determination of strategy of accelerating digital business growth in a green economy and environmental sustainability includes two stages: 1 – determination of the vector of digital business development and assessment of the intensity of market competition; 2 – strategy identification as a composition of the results of stage 1. The mechanism is the foundation. Subsystem of the identification of the vector of digital business development and Subsystem of the assessment of the market competition intensity form databases DB1, DB4 from input data using the interface for importing data from accounting, as well as from the interface for importing data from accounting and management reports. The results of marketing research are also sources for entering data, and for evaluating the intensity of competition on the market, data also generated after experts' grade of competitors metrics. DB2, DB3 are a set of algorithms that include instructions that interprets all variations of entered data, in particular, this combination of algorithms defines the vector of strategic

development in accordance with the subject of strategic changes, marketing environment, personnel competencies and intensity of marketing competition. Thus, the algorithms entering into the corresponding subsystems are developed control structures (cycles) that are executed under certain command conditions in a clearly specified sequence. DB1, DB4 and DB2, DB3 form a certain set of metrics of DB3 and DB6, which are formed at the output of the process and serve as the basis for identifying the vector of digital business development and assessing the intensity of market competition. Thus, DB3 combines assessments of marketing and logistics subsystems, which are metrics of the form of implementation of strategic changes, personnel competencies and resource background of digital business, where prerequisites of strategic changes are indicated. DB6 finds out the intensity of marketing competition.

After determining the inert or intensive vector of digital business development taking into account the results of the assessment of the market competition intensity, it is proposed to visualize and do co-integrate analysis of metrics with the transformation to the detailed presentation of data in the form of graphs and tables and their total analysis with a horizontal, vertical comparative, multi-factor analytical research, analysis of quantitative and qualitative metrics.

For optimal determination the strategy of accelerating digital business growth in a green economy and environmental sustainability it is created the methodological toolkit – matrix of strategies with two parameters: vector of digital business development and intensity of market competition respectively. Visual design is chosen as a mapping tool to make a correct conclusion regarding the implementation of the appropriate strategy and monitoring changes.

Horizontal analysis consists in comparing the obtained metrics with the previous year, highlighting major changes, critically evaluating the obtained deviations, and interpreting the qualitative characteristics of the identified discrepancies. A comparison of current and past metrics makes it possible to determine the dynamics and nature of transformations, as well as the intensity of marketing competition. It comes down to building an analytical table.

The technology of vertical analysis consists in conducting a structural analysis of basic frames, that is, a detailed study of each metric that forms a certain parameter is carried out. The vertical analysis of DB3 and DB6 allows digital businesses to draw a conclusion about structural changes in the resource, personnel competencies, and analyze their dynamics. With the help of vertical analysis, the main structural trends and changes in the digital business activity are revealed, and a comparative characterization of direct competitors on the market is also carried out. It is advisable to use the results of the vertical analysis as an information to reduce or eliminate the negative impact of exogenous environmental factors.

The comparative analysis of digital business activities and its main competitors on the market is used to identify the causes, factors and prerequisites for the emergence of differences in their competitiveness, in particular in resource, information and communication provision, and personnel structure, for the mobilization of internal reserves in the interests of choosing an adequate strategy. The metrics of the leading competitor on the market should be chosen as a standard for comparison. The multifactorial analytical study is based on the idea of the complex nature of the process of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability, which is manifested, particularly in the interrelationships between separate subsystems. One of the goals of conducting a multifactorial analytical analysis is to verify the most significant parameters that affect the digital business. Generalized parameters should be interpreted as factors. Aggregated data from DB3 and DB6 includes a number of qualitative and quantitative metrics. The co-integration analysis of quantitative and qualitative metrics allows to comprehensively investigate the impact of each metric on the digital business, track positive and negative impacts and make a reasoned decision regarding the strategy afterwards.

Thus, in accordance with the mechanism of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability, the following factors are suggested to consider during strategy determination: the state of logistics and marketing subsystems, personnel competencies, current resources and resource potential, factors of the external and

microenvironment, factors of the immediate environment and internal digital business administration. Mapping of the factors influence on strategy of accelerating digital business growth in a green economy and environmental sustainability is shown below in the Figure 3.

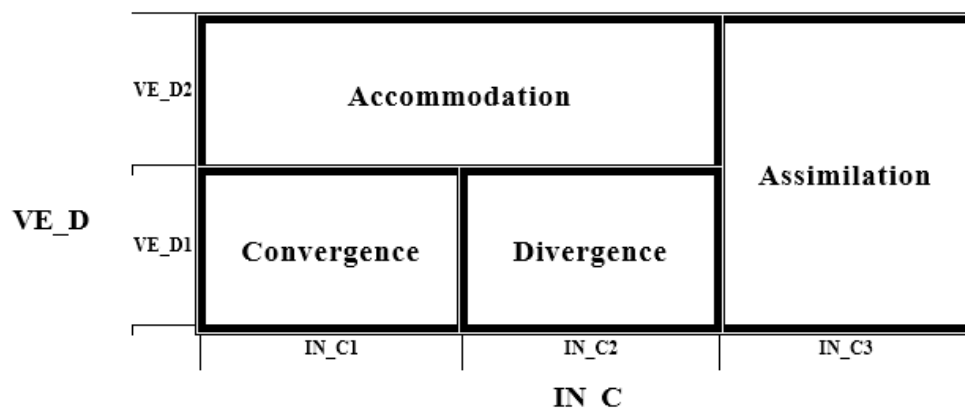


Notes. DB – database. Notes: – impact, VE_D – vector of the development, IN_C – intensity of market competition.

Fig. 3. Mapping of the factors influence on strategy of accelerating digital business growth in a green economy and environmental sustainability.

IN_C represents the market monopolization degree, that is, the HHI – Herfindahl-Hirschman index. The value of HHI is in the range from 0 to 1 and is the sum of the squares of market shares in the total volume of sales. An increase in the value of HHI indicates a decrease in the intensity of competition, and its decrease demonstrates, on the contrary, shows an increase in the intensity of competition in the market: $HHI < 0.1$ means insignificant market concentration and high intensity of competition; $0.18 \geq HHI \geq 0.1$ – average market concentration, moderate intensity of competition; $HHI > 0.18$ – high market concentration with low intensity of competition.

VE_D and IN_C provide an opportunity to determine the strategy of accelerating digital business growth in a green economy and environmental sustainability by using the matrix that authors created (Fig. 4).



Notes. VE_D2 – inert vector of digital business development, VE_D1 – intensive vector of digital business development; IN_C1 – high, IN_C2 – moderate, IN_C3 – low.

Fig. 4. The matrix of the strategies of accelerating digital business growth in a green economy and environmental sustainability.

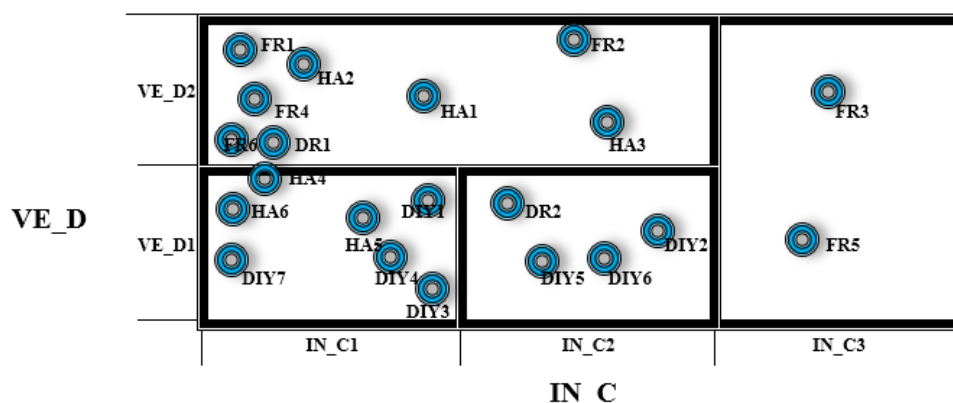
The matrix of the strategies of accelerating digital business growth in a green economy and environmental sustainability – two-factor and contains six quadrants, to which four strategies are assigned. The “Accommodation” strategy (high or moderate intensity of competition on the market

and an inert vector of digital business development) ensures effective continued existence of digital business on the market due to adaptation to the marketing environment because of the optimal use of its own potential.

The main characteristic of this digital business strategy is a high level of resource provision. The “Convergence” strategy corresponds to the high intensity of competition and the intensive vector of digital business development, which consists in the implementation of a certain list of actions and measures in order to prefer and bring one’s own digital business closer to the main competitor by copying the best digital methods and tools of conducting. The “Assimilation” strategy (intensive / inert vector of digital business development with low intensity of competition in the market) involves a partial change in certain areas of digital business and an increase in management efficiency due to the artificial creation of similarities with retail leaders. An intense vector of digital business development with a moderate intensity of market competition is a prerequisite for the implementation of the “Divergence” strategy, which consists in making radical changes in digital business, in particular, changing the direction of activity and expanding new markets.

4. Research results

The proposed methodological toolkit was tested on Ukrainian retailers in the context of the continuation of the study [9-10]. Estimated data for determining metrics of the matrix of the strategies of accelerating digital business growth of retailers in a green economy and environmental sustainability. The matrix of the strategies of accelerating digital business growth of retailers in a green economy and environmental sustainability is shown in the Figure 5.



Notes. DIY1 – BRV Kyiv, DIY2 – Nova Linia, DIY3 – Budmax, DIY4 – Epicentr K, DIY5 – Leroy Merlin Ukraine, DIY6 – Mebelna Kompaniia Ukrainy, DIY7 – JYSK Ukraine; DR1 – Yves Rocher Ukraine, DR2 – RUSH; FR1 – Auchan Ukraine, FR2 – Metro Cash and Carry Ukraine, FR3 – NASH KRAI, FR4 – NOVUS Ukraine, FR5 – Tavria V, FR6 – Fozzy Food; HA1 – ALLO, HA2 – Foxtrot, HA3 – DIESA, HA4 – Comfy-Trade, HA5 – Harazh Mobail Hrup, HA6 – Citrus Discount.

Fig. 5. The matrix of strategies of accelerating digital business growth of retailers in a green economy and environmental sustainability.

According to the Figure 5 the “Accommodation” strategy is recommended for the development of 8 digital businesses in various sectors (DR1, FR1, FR2, FR4, FR6, HA1, HA2, HA3), the prerequisites of which were a high or moderate level of competition in the market, sustainable development of digital business and high consumer loyalty to goods. The “Assimilation” strategy is recommended for FR3 and FR5 that is associated with high market concentration due to the narrow specialization of digital businesses and a limited range of competitors. 4 digital businesses (DIY2, DIY5, DIY6, DR2) correspond to the “Divergence” strategy, and 8 digital businesses (DIY1, DIY3, DIY4, DIY7, FR5,

HA4, HA5, HA6) correspond to the “Convergence” strategy due to the intensive development vector and high intensity of market competition.

5. Discussion

The strategies of accelerating digital business growth in a green economy and environmental sustainability are aimed to correct some digital business areas, levelling the negative impact of the marketing environment, improving the logistics subsystem, personnel competencies, and resource potential. This definitely will have a positive impact on the administration and development of digital business.

Thus, in the context of the “Accommodation” strategy, for the dynamic development of digital business in a green economy and environmental sustainability, it is necessary to pay attention to the process of formation and selection of personnel. In addition, it is recommended to (1) permanently monitor the factors of the exogenous environment; (2) adapt activities to modern market conditions of functioning and entropy, continuously monitor the dynamics of demand for goods and make timely relevant decisions on updating the product portfolio, ensure flexibility of the price policy, use integrated marketing communications, and optimize the network of distribution channels.

The “Convergence” strategy involves the reorganization of the logistics system of retailers in order to reduce the level of functional inconsistency between supplies and customers, as well as the use of progressive sales methods. Implementation of these changes should use of benchmarking. It is also advisable to implement measures to increase the level of staff competence, technical and technological and information security of resources by updating technologies and transforming information and communication links in the digital business administration system. Furthermore, the “Convergence” strategy consists in the implementation of the most well-known and widely used in practice methods of controlling distribution channels and managing relations with suppliers, realize adaptive measures in sales, improving the level of service and improving the quality of omnichannel sales management.

The realization of the “Assimilation” strategy for retailers primarily involves making changes in the communication policy, giving the personalization of access for buyers, the use of site search optimization tools and targeted advertising, and the use of lead generation.

For the rational implementation of the “Divergence” strategy, retailers should make radical changes in the logistics and marketing subsystems, which will contribute to increasing resource provision. Retailers need to focus on modernizing measures to attract and retain customers, increase the ability to fully meet the needs of the target audience in both the short-term and long-term perspectives, and ensure the integration of the product category management system with their development strategy.

6. Conclusion

The present study focused on digital businesses in a green economy and environmental sustainability is the implementation of a relevant and capable strategy of accelerating digital business growth that provides the flexibility of the management system, contributes to rapid adaptation to the external environment and allows the most effective realization of the business potential. It is justified and visualized the constructive basis for determining the strategy of accelerating digital business growth in a green economy and environmental sustainability. It is assumed that the basis provides business correctives, taking into account the state of the marketing and logistics subsystems, the vector of enterprise development, reflecting a comprehensive study of the functional and resource-competent blocks of the management system, the nature of the marketing and logistics subsystems, forming the background of strategic changes (kaizen, redesign, benchmarking, reengineering), the set of knowledge, abilities and skills – pool of personnel competencies, and information and technical technological resources that outlines the prior subject of strategic changes in digital business.

It is conceptualized the model of the determination of the strategy of accelerating digital business growth in a green economy and environmental sustainability provides for digital business corrections, taking into account the state of the marketing and logistics subsystems, provides rational management, which contributes to its effective permanent functioning in the case of bifurcations. It should be noted

its feasibility for its systematic implementation in practical activities in retail. More important, these strategies of accelerating digital business growth in a green economy and environmental sustainability ensure for retailers the strengthening of competitive advantages, prevention and active response to any entropic phenomena and, in turn, contribute to the increase of rapid progressive development of digital business in the turbulent unstable marketing environment.

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