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NETWORK RETAIL OPERATIONAL MODELS WITH FLEXIBILITY FUNCTIONS: ANALYSIS OF CONTEMPORARY CASES

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МОДЕЛІ РОБОТИ МЕРЕЖЕВОГО РИТЕЙЛУ ІЗ ФУНКЦІЯМИ ЗМІННОСТІ (ГНУЧКОСТІ): АНАЛІЗ СУЧАСНИХ КЕЙСІВ

У поточний момент почали формуватися якісно нові моделі роботи мережевого ритейлу з функціями змінності або гнучкості торгівлі, як такі, що орієнтовані на безперервне реагування на зміни у споживчому попиті, конкурентному середовищі та інших факторах. Отже, метою статті є визначення сучасних моделей роботи мережевого ритейлу із функціями змінності (гнучкості). За результатами дослідження звернено увагу на той факт, що наразі вже сформувалося кілька типових моделей роботи, які забезпечують пристосування до змін зовнішнього середовища мережевого ритейлу, зокрема: мультиканального мережевого ритейлу; персоналізованої торгівлі; динамічного ціноутворення; агільного управління запасами; гнучкої логістики. При цьому зроблено висновок, що кожна із наявних моделей роботи, які забезпечують процес пристосування до змін, є специфічною за дією функції змінності (гнучкості) щодо процесу обміну товарами, послугами, цінностями та грошима. Якщо мова йде про модель мультиканального мережевого ритейлу, то формат дій (щодо реакції на зміни зовнішнього середовища) сфокусований на поточних потребах клієнтів. Якщо мова йде про модель персоналізованої торгівлі, то формат дій, щодо реакції на зміни зовнішнього середовища, має бути сфокусований на тому, щоб активно адаптувати стратегії та пропозиції, що є в системи масового обслуговування для

різних сегментів клієнтської бази. Для моделі динамічного ціноутворення основним є формат дій щодо реакції на зміни зовнішнього середовища, який спрямований на адаптацію ціни в реальному часі відповідно до різноманітних факторів, таких як попит, конкуренція, час доби чи інші зовнішні обставини. Для моделі агільного управління запасами формат дій щодо реакції на зміни зовнішнього середовища має бути сфокусований на спрощенні процесів та підвищенні гнучкості оперування запасами. Якщо мова йде про модель оптимізації логістики (або гнучкої логістики), формат дій щодо реакції на зміни зовнішнього середовища має бути сфокусований на постійному коригуванні складових логістичного ланцюга. Фактично, у контексті уваги до характеру застосування кожної з моделей роботи мережевого ритейлу із функціями змінності (гнучкості), мова йде про конкретний формат реакції на зміни в характері підприємницької діяльності та пов'язаного з процесом купівлею-продажем товарів.

New models of network retail operation are currently emerging with features of variability or flexibility in trade, designed to continuously respond to changes in consumer demand, competitive environment, and other factors. Therefore, the purpose of the article is to identify contemporary models of network retail operation with features of variability (flexibility). The research results have highlighted the fact that several typical operational models have already emerged, ensuring adaptation to changes in the external environment of network retail, including multi-channel network retail; personalized trading; dynamic pricing; agile inventory management; and logistics optimization (or flexible logistics). It is concluded that each of the existing operational models, which facilitate the adaptation process to changes through specific functions of variability (flexibility), pertains to the exchange of goods, services, values, and money. If we are talking about the model of multi-channel network retail, the action format for responding to changes in the external environment is focused on current customer needs. If we are discussing the personalized trading model, the action format for responding to changes in the external environment should be focused on actively adapting strategies and offerings that are in the mass service system for different segments of the customer base. For the dynamic pricing model, the key action format in responding to changes in the external environment is focused on adapting prices in real-time based on various factors such as demand, competition, time of day, or other external circumstances. For the agile inventory management model, the action format in responding to changes in the external environment should be focused on simplifying processes and increasing flexibility in inventory operations. If we are talking about the logistics optimization (or flexible logistics) model, the action format for responding to changes in the external environment should be focused on continuously adjusting the components of the logistics chain. Indeed, when considering the application of each of the models of network retail operation with features of variability (flexibility), we are referring to a specific format of response to changes in entrepreneurial activities, particularly related to the process of buying and selling goods.

Ключові слова: торгівля; персоналізована торгівля; системи масового обслуговування; підприємництво; мережевий ритейлер; модель; управління запасами.

Key words: trade; personalized trading; mass service systems; entrepreneurship; network retailer; model; inventory management.

TARGET SETTING

In Ukraine, network retail is becoming increasingly prevalent, which until recently was classically oriented towards developing a system of retail trade where relatively standardized products or services are sold through network points of sale, such as uniform-format stores, supermarkets, online stores, and so on It should be noted that currently, qualitatively new models of network retail operation with features of variability or flexibility in trade are emerging. These models are oriented towards continuous adaptation to changes in consumer demand, the competitive environment, and other factors. This is driven by a few trends and innovations influencing retail, including digital transformation, growth in data volumes, the development of analytical tools, multichannel strategies, agile inventory management, real-time pricing, personalized services, and more. The outlined trends indicate that modern network retailers in Ukraine have acquired the ability to actively adapt to a changing environment. They leverage advanced technologies and strategies to provide flexibility in their product assortments and adjust the efficiency of their business.

According to Price Waterhouse Coopers research as of the end of 2023, over 65% of network retailers have demonstrated these capabilities and opportunities, compared to only 27% in the 2020s [6].

ANALYSIS OF RESEARCH AND PUBLICATIONS

Among the scientific sources that characterize the general principles of network retail operation, notable works include those by A.A. Mazaraki, V.D. Lagutin, A.G. Gerasimenko, N.M. Hulyayev, S.I. Kaminsky, O.K. Kushnir, V.R. Chaplynsky, and D.V. Maksymenko. Within the mentioned studies, attention has been repeatedly drawn to the fact that the principles of network retail operation with features of variability (flexibility) dynamically evolve by modern market trends and requirements.

Moreover, Kushnir O.K., Chaplinsky V.R., and Maksymenko D.V. also indicate that the overall development of such work is aimed at delineating and deepening its specificity regarding key aspects.

These aspects are identified as distinguishing the content of models in such work and transforming the function of variability (flexibility). The insufficient experience in operating a network retail with features of variability (flexibility) has highlighted the relevance, significance, and timeliness of the research.

THE WORDING OF THE PURPOSES OF ARTICLE (PROBLEM)

The goal of the article is to identify contemporary models of network retail operation with features of variability (flexibility).

THE PAPER MAIN BODY WITH FULL REASONING OF ACADEMIC RESULTS

Within the outlined research, it is noted that the operation of network retail with features of variability or flexibility indicates the ability of network retailers to effectively adapt to changes in market conditions, consumer demand, competition, and other factors. The ability to adapt in this context refers to the capability to withstand and successfully respond to unpredictable or changing circumstances.

Moreover, based on the analysis of the practical experience of network retail in Ukraine, we have identified several key aspects that vividly confirm their ability to adapt to changes. This includes the use of advanced technologies and strategies to ensure business flexibility. Among these aspects (Table 1):

— Digital presence and electronic commerce (including online platforms, internet stores, and mobile applications [5-6]) enable the expansion of product assortments, attracting new customers, and effectively responding to changes in consumer demand.

— A developed analytics system (including integration with artificial intelligence tools for understanding customer habits, demand forecasting, and improving pricing strategies [3—4; 6]).

— Practical application of agile methodologies (especially those enabling quick responses to change in the internal and external environment, implementing innovations, and optimizing operational processes [4—6]).

— Flexible inventory management (including the use of advanced inventory management systems that automate the ordering and distribution processes, reducing the time between order and delivery).

— Personalized marketing (utilizing personalized marketing strategies adapted to individual customer needs, ensuring more effective audience engagement and retention [4]).

— Innovations in customer service (including the implementation of cutting-edge technologies in customer service, such as chatbots, virtual assistants, and other interactive solutions [2; 6]).

— Development of the trading ecosystem (especially the development of integrated business ecosystems where various services and products come together to create a comprehensive shopping experience for customers [1; 4; 6]).

Table 1. Definition of key aspects that vividly confirm the ability of network retail in Ukraine to adapt to changes as of 2023

Network retail	Key aspects that vividly confirm retailers' ability to adapt to changes.						
	1	2	3	4	5	6	7
LLC "ATB-Market"	+	+	+	+	+	-	-
LLC "Fozzi-Food"	-	+	+	-	+	+	+
LLC "Epicenter K"	+	-	+	+	+	+	+
LLC "VOG Retail"	+	+	+	+	+	-	+
LLC "Metro Cash and Carry Ukraine"	+	-	+	+	-	+	+
LLC "COMFY Trade"	+	+	+	+	+	+	-
LPP and "Voronin"	-	+	+	-	+	+	-

Note/ *(1) digital presence and electronic commerce; (2) advanced analytics integrated with artificial intelligence tools; (3) agile methodologies; (4) flexible inventory management; (5) personalized marketing; (6) innovations in customer service; (7) development of the trading ecosystem.

Source: formed based on data from economic entities.

The outlined aspects can be characterized by complex or local manifestations; however, in any case, they indicate the activity of domestic network retailers in implementing innovative approaches and technologies to adapt to changes and enhance business efficiency.

In times of war, this process has gained even greater significance and importance, as it has become a crucial element in ensuring the stability of network retail operations. Under such conditions, changes are occurring towards the creation of more adaptive and innovation-friendly models of network retail operation [4].

Several typical models have already emerged to facilitate the adaptation to changes in network retail, including:

— Multi-channel network retail.

— Personalized trading.

— Dynamic pricing.

— Agile inventory management.

— Logistics optimization (or flexible logistics).

Each of the existing operational models that facilitate adaptation to changes in network retail is specific in the function of variability (flexibility) regarding the process of exchanging goods, services, values, and money.

Table 2. Characterization of key elements of the multi-channel network retail model

Key elements	Characterization of key elements	Direction of action
Integrated information systems	Formation of systems that provide a unified view of inventory, orders, and customer information, regardless of the channel through which they are conducted.	Enables flexibility in adapting to diverse customer needs.
Omnichannel experience	Omnichannel experience involves creating a space where customers can easily move between different channels without losing information and maintaining the continuity of their interaction with the brand.	
Flexible logistics and delivery	Ensuring efficient logistics and fast delivery for the convenience of shoppers who can choose the method of receiving goods.	
Use of data analytics	Use of data analytics to study customer behavior and real-time personalization of offers based on their individual needs.	

Source: formed based on data from LLC "Epicenter K" and LLC "Fozzi-Food."

Table 3. Characteristics of key elements of a personalized commerce model based on personalized offers and personalized service

Key elements	Characterization of key elements	Direction of action
Customer segmentation	The customer database is segmented based on various characteristics such as purchases, age, interests, and more.	Allows for creating personalized offers for each segment.
Personalized offers	Individualized offers are created for each customer through data analysis. This may include discounts, personalized promotions, product recommendations, and more.	
Personalized marketing	Utilizing personalized advertising campaigns and messages that align with specific interests and needs of customers.	
Individualized service	Providing individualized service in stores or online, where customers receive a personalized approach from sales representatives or through the e-commerce interface.	
Dynamic adaptation	A system that dynamically adapts to changes in customer behavior and market conditions, offering timely and relevant suggestions.	

Source: formulated based on data from the LPP network and the "Voronin" store network.

Table 4. Characteristics of key elements of the dynamic pricing model

Key elements	Characterization of key elements	Direction of action
Real-time automation system	Algorithms and automation systems for real-time market monitoring*	Allows retailers to react promptly to changes in competitiveness and demand. Enables retailers to create optimal pricing strategies.
System for considering various factors	Pricing algorithms consider not only competitor prices but also various factors such as demand levels, inventory levels, seasonality, margins, and others.	
Competitiveness enhancement system	The model ensures price positioning in comparison to competitors. Automated market analytics helps determine optimal pricing points to attract customers.	
Personalized approaches	A personalization element, where prices can adapt based on the purchase history and behavior of specific customers.	

Note

* Dynamic pricing algorithms, which consider competitive prices, demand, inventory levels, and other factors, can be complex and diverse.

Source: formulated based on data from LLC "ATB-Market," LLC "KOMFI Trade," and LLC "Metro Cash and Carry Ukraine."

So, the multi-channel network retail model encompasses various sales channels, such as uniform physical stores, online stores, mobile applications, and others.

This model provides consumers with the option to choose their method of purchase while offering retailers flexibility in adapting to diverse customer needs and preferences.

According to current practices, the multi-channel network retail model is currently employed by LLC "Epicenter K" and LLC "Fozzi-Food." [6].

Based on their experience, the following key elements of this model are highlighted (Table 2):

— Integrated information systems.

— Omnichannel experience.

— Flexible logistics and delivery.

— The data analytics are used to study customer behavior and personalize offers in real-time based on their individual needs.

Therefore, when it comes to the multi-channel network retail model, the format of actions in response to changes in the external environment should be focused on the current needs of customers.

The personalized trade model is based on personalized offers and services. This model utilizes customer purchase and behavior data to create individualized proposals, enhancing the overall shopping experience. Consequently, it contributes to improving the relationship between the retailer and the customer, leading to increased business efficiency [3; 5].

According to contemporary practices, the personalized trade model is currently being implemented by the "Voronin" store network and the LPP network (a subsidiary of "LPP Ukraine"). Based on their experience, the following key elements of this model have been identified (Table 3):

— Customer segmentation

— Personalized offers.

— Personalized marketing.

— Individualized service.

— Dynamic adaptation to changes in customer behavior and market conditions, providing relevant and timely proposals.

Therefore, when it comes to a personalized commerce model, the action plan in response to changes in the external environment should be focused on actively adapting strategies and offers that exist in mass service systems for different segments of the customer base.

The dynamic pricing model is based on the use of pricing algorithms that consider competitive prices, demand, inventory levels, and other factors, allowing for real-time price optimization. According to current experience, this model is currently employed by LLC "ATB-Market," LLC "KOMFI Trade," and LLC "Metro Cash and Carry Ukraine," from which the following key elements are highlighted (Table 4):

— Real-time automation system.

— Consideration of various factors system.

— Competitiveness enhancement system.

— Personalized approaches.

According to the presented characteristics, it is evident that for the dynamic pricing model, the key focus is on the action plan in response to changes in the external environment. This plan is directed towards real-time price adaptation based on various factors such as demand, competition, time of day, or other external circumstances.

Model of agile inventory management utilizes concepts and methodologies for inventory optimization. Agile methodologies, initially developed for work in

information technology and software development, are now employed in various business domains to enhance flexibility and responsiveness to changes [1—2]. The fundamental principles of agile management, such as the iterative approach, active customer involvement, flexibility in changing requirements, and a focus on effective team communication, can be applied to inventory management as well. According to contemporary experience, LLC "VOG Retail" currently employs such a model, from which the following key elements are highlighted (Table 5):

— Flexible response system.
— Cross-functional teams.
— Active interactions with consumers.
— Technology integration.
— Collaborative communication.

According to the presented characteristics, it is evident that for the agile inventory management model, the action plan in response to changes in the external environment should be focused on simplifying processes and increasing flexibility in inventory operations.

Logistics optimization (or flexible logistics) model focuses on optimizing logistical processes, utilizing advanced technologies for fast and efficient delivery of goods, as well as managing returns. Currently, there is insufficient information about the experience of using such a model in network retail. However, according to Price Waterhouse Coopers [6], the following key elements are highlighted (Table 6):

— Tracking and monitoring systems.
— Automated warehouse management systems.
— Route and delivery schedule optimization.
— An electronic trading platform for suppliers.
— Dynamic inventory management.

If we are talking about the logistics optimization (or flexible logistics) model, the action plan in response to changes in the external environment should be focused on continuously adjusting the components of the logistics chain.

Based on the organized data, it is evident that each of the mentioned models in network retail with flexibility functions is aimed at helping them adapt effectively to changing market conditions, providing flexibility, and a high level of customer service. The processes of adapting to change are consolidated in the fact that, by implementing a specific retail model, retailers adjust the flexibility function of exchanging goods, services, values, and money. This particularly refers to the specific format of responding to changes in business activities, especially concerning the buying and selling of goods.

CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER EXPLORATION IN THIS AREA

The research results highlight the fact that several typical operational models have already been established, ensuring adaptation to changes in the external environment of network retail. These include multi-channel network retail, personalized commerce, dynamic pricing, agile inventory management, and logistics optimization (or flexible logistics). At the same time, the following conclusions have been drawn:

Table 5. Characterization of key elements of the dynamic pricing model

Key elements	Characterization of key elements	Direction of action
Flexible response system	A system that ensures flexibility in correcting errors or changing inventory management strategies in real-time, considering changes in the external environment and demand.	Enables greater adaptability and effective response to rapidly changing market conditions, as this methodology emphasizes simplifying processes and increasing flexibility in inventory operations.
Cross-functional teams	Establishment of cross-functional teams, bringing together experts from various fields such as logistics, marketing, information technology, for a rapid response to changes and effective inventory management.	
Active interactions with consumers	Involvement of customers and partners in the planning and inventory management process to obtain real-time demand data and respond promptly to changes.	
Technology integration	Utilization of modern technologies for inventory automation and monitoring to ensure swift responses to changes and process optimization.	
Collaborative communication	Active communication and information exchange among team members and stakeholders for rapid collaboration and issue resolution.	

Source: formulated based on data from LLC "VOG Retail."

Table 6. Characterization of key elements of the logistics optimization (or flexible logistics) mode

Key elements	Characterization of key elements	Direction of action
Tracking and monitoring systems	Utilizing tracking technologies such as RFID, barcodes, and GPS for continuous monitoring of the movement of goods from the supplier to the end consumer.	Allows the retailer to determine the location of goods at each stage of the logistics chain. Helps avoid excess or insufficient inventory of goods
Automated warehouse management systems	Implementing subsystems and algorithms for efficient placement and retrieval of goods, as well as inventory optimization.	
Route and delivery schedule optimization	Applying algorithms to reduce delivery time and costs, enhancing the efficiency of logistics operations.	
Electronic trading platform for suppliers	Ensuring effective communication with suppliers through electronic trading platforms, automating ordering processes, and streamlining communication.	
Dynamic inventory management	Utilizing analytics and algorithms for dynamic inventory management, responding to changes in demand and other market factors in real-time.	

Source: formulated based on [6].

1. Each of the existing operational models that facilitate the process of adaptation to changes, specific to the function of flexibility, pertains to the exchange process of goods, services, values, and money.

2. In the case of the multi-channel network retail model, the action plan in response to changes in the external environment is focused on the current needs of customers. In the case of the personalized commerce model, the action plan in response to changes in the external environment should be focused on actively adapting strategies and offers within the mass servicing system for different segments of the customer base. For the dynamic pricing model, the primary action plan in response to changes in the external environment is focused on adapting prices in real-time according to various factors such as demand, competition, time of day, or other external circumstances. For the agile inventory management model, the action plan

in response to changes in the external environment should be focused on simplifying processes and increasing flexibility in inventory operations. In the case of the logistics optimization (or flexible logistics) model, the action plan in response to changes in the external environment should be focused on continuously adjusting the components of the logistics chain.

3. When considering the nature of the application of each of the operational models in network retail with flexibility functions, it refers to a specific format of responding to changes in business activities, particularly associated with the process of buying and selling goods.

The prospects for further research in this direction involve conducting in-depth studies and analyses of individual customer needs and preferences to further develop personalized strategies and product offerings.

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