Evolution of Short Food Supply Chain Theory and Practice: Two-Sided Networks and Platforms

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Abstract: The shift from an industrial to a post-industrial economic system encourages an alternative to the globalized food chains—short food supply chain initiatives, which come alongside the servitization concept and are often discussed in the context of sustainability. However, short food supply chain literature is mainly focused on the aspects typical of the industrial economic system and neglects new important business drivers arising in the post-industrial era. This research aims to discuss the evolution of short food supply chain theory and practice in the context of three paradigm innovations that emerged in the post-industrial economic system and suggest new paths for sustainable agri-food system building. All three paradigm innovations are closely related to each other, but each changes a certain dimension of the mental model concerning the food production and delivery system. The article examines the organizational model of the alternative local food market in Lithuania that has been designed according to the “new rules of game” suggested by the post-industrial economic system.

Keywords: sustainability; post-industrial economic system; paradigm innovations; short food supply chain; two-sided networks

1. Introduction

The prevailing trend in the industrial agri-food system was the development of global value chains. However, the shift from an industrial to a post-industrial economic system encourages an alternative to the globalized food chains—short food supply chain initiatives. The concept of a short food supply chain emerged at the turn of the century together with the concept of servitization [1] and is discussed in different contexts. One of the most debated aspects is the sustainability of short food supply chains [2–8]. Researchers, policymakers, food producers, consumers, and suppliers are increasingly interested in various aspects of food supply chain sustainability and analyze the strengths and weaknesses of different forms of supply chains (e.g., [9–12]). However, short food supply chain literature is mainly focused on the aspects typical of the industrial economic system and neglects new important business drivers arising in the post-industrial era. The comparative analysis between characteristics of global and short food supply chains rarely addresses paradigm innovations of the post-industrial stage that emerged as changes in mental models. The further development of short food supply chain theory requires identifying the paradigm changes in dominant mental models relating to characteristics of food delivery and production. Without a clear understanding of them, the reorganization of the food supply chain is becoming inadequate for the realities of the post-industrial society and (therefore) is unable to take all benefits of the new stage of economic and social evolution.

Previous literature on short food supply chains concentrates primarily on the different organizational forms of supply chains but neglects a more abstract level of analysis based on an evolutionary approach that explains the drivers for short food supply chain...
transformations. This research examines the design of the organizational model of the alternative local food market built in Lithuania in the context of three paradigm innovations that emerged in the post-industrial economic system and suggests new paths for sustainable agri-food system building. All three paradigm innovations are closely related to each other, but each changes a certain dimension of the mental model concerning the food production and delivery system.

The first paradigm innovation deals with the growing role of customers. It gives the answers to the question: “Who takes the main role in the post-industrial food system?” For some time, the dominant logic was a supply-focused viewpoint in which production push rather than demand pull was dominant [13] (p. 29). In the post-industrial era, the supply chain becomes the demand chain. Food retailers face a major challenge to put the customer at the heart of their business. The customers became the key players in the food system, and all activities and facilities of the demand chain should be oriented to fulfill customers’ requests as consumption plays an essential role in the development of the food system towards sustainability. The transformation of food supply chains into demand chains creates the possibility that food waste, loss, and ineffective use of resources can be reduced. The sustainability of the food delivery and production system also can be increased by user-driven innovations. In the industrial era, innovation has been thought of as a producer-centered process based on the assumption that the main driver of innovation is profit-seeking [14]. However, the research of sustainable innovation ecosystems emphasizes the growing role of user-driven innovation. With user-driven innovation, the scholars refer to an activity conducted by any type of user who spends their unpaid discretionary time developing innovative solutions [15,16]. Innovating for their personal needs at various stages of the innovation process, “food users” can make a significant contribution to the sustainable development of the post-industrial food system.

The second paradigm innovation deals with the shift from linear thinking to network thinking. It gives the answers to the questions: “How can small local initiatives of short food supply chain survive and became sustainable?” Network theory has revealed that any network functions much more efficiently if it uses a so-called “platform” [17–19]. Currently, many markets are structured as platform ecosystems [20–23], and the market economy is being replaced by the platform-based network economy [24,25]. A market is considered a two- or multisided network, and the platforms represent a facilitator between two or more markets or groups of producers and users [26] (p. 203). In platform-based ecosystems, the focus of supply chain management is moving from modeling the movement of tangible materials to more general models of value creation in collaborative networks. The short food supply chain concept is based on the linear thinking mode and has nothing in common with platform-based network thinking mode. Farmers involved in alternatives to global supply chain schemes should collaborate and increasingly apply a platform-based approach for the building of regional and national local food markets as two-sided or multi-sided networks. Such an approach suggests an innovative solution as an answer for critics of the economic relevance of the short food chain related to the consideration of costs of small productions compared to intensive agriculture and large farms, considering the cost advantages of economies of scale, as well as the costs if the geographical area is unsuitable for a specific production [27]. Platform-based local food markets have an opportunity to generate economies of scale. They also encourage the collaboration of network participants. The platform-based collaboration between farmers and customers matches buyers with suppliers, who transact directly with each other using platform resources and are generally subject to two-sided network effects. Platforms stimulate the network effect directly via platform services and indirectly via value co-creation activities.

The third paradigm innovation deals with the service-dominant logic concept. It gives the answers to the question: “Why do the initiatives of the short food supply chain grow in popularity?” The traditional industrial view of the supply chain is called “good-dominant logic” as a contrast to emerging post-industrial “service-dominant logic”. It has
been argued that service-dominant logic transforms the supply chain into a value-creation network based on the “thinking in terms of service provision, in which goods are seen as service distribution or provisioning mechanisms” [28] (p. 19). The business models of farms involved in alternative food markets, however, are still examined in the frame of “good-dominant logic” and described as a “short food supply chain”. In fact, all short food supply chains seek to reorganize a part of the industrialized food supply chain into a variety of “product plus service” systems, i.e., they are designed according to the concept of servitization of farming [29]. Examination of the food system through the lens of servitization [30–32] provides a more complex picture and helps to find solutions for the more sustainable production and distribution of food. The food is a short-life cycle product, and this feature makes it difficult to predict the demand of customers for product variety and amounts. The incorporation of service-dominant logic in food supply chain management theory suggests a production strategy that typically allows consumers to purchase products that are customized to their requirements. Service infusion in farming by the shift from product-driven to the service-driven business model supports creating long-term direct relationships between farmers and their clients. Building direct farmer–client relationships creates opportunities to apply different food distribution and production scenarios towards greater sustainability. The food producers became effective in matching demand with supply, especially if the food is made-to-order. Building direct farmer–client relationships can also foster the production of foods that are not available at the stores, i.e., drive environmentally sustainable product innovation.

All the mentioned paradigm innovations are drivers for food system transformation. They give an explanation of food supply chain transformations as a step-by-step evolution process and provide the theoretical background for the current food supply chain transformations. At the same time, they have practical significance in explaining what aspects should be considered when designing, managing, or analyzing a service-based collaborative value network.

The case study of the two-sided network of Lithuanian farmers and food consumers “Village to Your Home” as a research method was selected to explore and discuss the possibilities to design alternative self-sustainable local food markets according to the “new rules of game” suggested by the post-industrial economic system. The case study method was selected for this research since it is appropriate when certain criteria are met [33]: (a) the main purpose of the study is to clarify the object under study by seeking answers to the “how” and “why” questions; (b) there is no possibility of manipulating the behavior of the actors under investigation; (c) the contextuality is relevant to the study; and (d) there are unclear links between the phenomenon under study and the context. Thus, the proposed method helps disclose the practical manner of the outlined paradigm innovations by giving answers to the questions “how” and “why” and further gives evidence on contextuality, as well as helping to clarify the links between the researched phenomena under study, paradigm innovations, as well as their context, a self-sustainable local food system organized as a short food supply chain with help of modern IT solutions.

2. Materials and Methods

Although the availability of rural policy support measures has been ensured in all European regions, some rural settlements in Europe continue to disappear, others remain unchanged, and others are gaining some momentum in development. This presupposes that the inhabitants of particular regions have been able to make effective use of some of the factors of rural vitality on a sustainability basis and thus adapt to the “new rules of the game” in the post-industrial economic system. Due to this, it is appropriate to use qualitative research methods, such as a case study, to further explain how and why determinants of resilience contribute to addressing rural viability in certain cases: first, at the micro-site and project-specific level, then at the macro-level, the development policy of rural areas. In addition, the choice of the case study method was prompted by the fact that a review of research on rural sustainability via two-sided collaboration between rural and
urban populations had not been studied in scientific literature in Lithuania or other countries.

Empirical research firstly focused on the establishment of consumer groups and overall organizational structure of the network then continued with the platform itself as a tool for building regional and national local food markets as a two-sided network, based on the experience of “Village to Your Home” case.

This study examined the sustainability of a Lithuanian short food supply chain designed as a two-sided network. According to the requirements of the selected methodology, the project has already been implemented and the results are visible, so it was not possible to influence the behavior of the research actors and the project organization process itself. To answer the main questions of the case study, i.e., how and why the project became an alternative local food market according to “new rules of the game” suggested by the post-industrial economic system and thus increases the sustainability of the farming and rural areas of Lithuania, the following supplementary case study questions were formed:

1. How is the network designed as organizational model?
2. How were the information and organization tools built, and how are they used by the network platform?
3. Why the network is considered an alternative food market which suggests a new path for sustainable agri-food systems?

The research was based on a single case study methodology and was conducted in August-October 2021. Analysis of various documents, the network’s internal data, and the two-sided network’s “Village to Your Home” internet site “Villagetoyourhome.lt” as well as in-depth interview methods were applied to reach the aim. The in-depth interviews, based on three provided open questions, were used in the final stage of the case study in October 2021 to obtain relevant information, which was found unavailable via other applied data collection methods from previous stages (analysis of various documents and the internet site). The interviewees were selected under the criteria of (1) top-responsibility and (2) top-involvement in the creation and organization of the network. Five interviews were carried out in total: three with idea initiators and initial implementers and two with the network platform’s administrative bodies (see Table 1).

**Table 1. Summary of complementary interviewees’ characteristics.**

| Responsibility level in network’s organization: | Interviewee 1 | Interviewee 2 | Interviewee 3 | Interviewee 4 | Interviewee 5 |
|-------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Top—decision making                             | x             | x             | x             | x             | x             |
| Moderate—decision implementation                |               |               |               | x             | x             |
| Responsibility field:                           |               |               |               |               |               |
| Scientific support                              | x             | x             |               |               |               |
| Administrative/organizational support           |               | x             | x             |               |               |
| Involvement in network establishment phase:     |               | x             | x             |               |               |
| idea generation and support                     |               |               |               |               |               |
| Involvement in network development phase:       | x             |               | x             |               |               |
| administrative organization                     |               |               |               | x             | x             |

Data collected via these in-depth interviews were incorporated in carrying out the case study to explain the research results.
3. Results

3.1. The Idea, Innovative Characteristics, and Organizational Model Design of the Two-Sided Network “Village to Your Home”

For more than a decade, the population of the Lithuanian rural areas has been declining, as have family farms. In the face of such an unfavorable situation, farmers began to look for various ways to maintain the continuity of economic activity in the countryside to receive more income from their farm [34] and thus become more resilient to unexpected crises: firstly economic as well as social, demographic, and others. In other words, the network “Village to Your Home” encourages the widest possible application in Lithuania of one of the new promising methods, servitization of farming, which can increase the productivity of activities, ensures the sustainability of the food supply chain and finally strengthen the resilience to unexpected crises in the food supply chain.

Over time, through monitoring and analysis of the ongoing changes and the specifics of the farmers’ activity as well as constant communication with farmers, researchers from the Institute of Economics and Rural Development of the Lithuanian Center for Social Sciences (the Lithuanian Institute of Agrarian Economics) began collaborating with farmers to purchase products directly from their farms. In the beginning, small quantities of fresh products, ordered by the employees of the Institute, were delivered from farms directly to the workplace. Thus, a decade ago, raspberries, strawberries, apples, chickens, rabbits, and other goods began to travel to Vilnius at the agreed time in consignments ordered from growers in the village. The idea soon arose to develop these connections by creating a Lithuanian-wide system of trade in farmers’ products according to pre-orders.

In 2014, the project “Two-sided Collaboration Network” was initiated, which, applying the mentioned three paradigm innovations, as highlighted by the idea initiators, aimed to help Lithuanian farmers to establish a direct and long-term collaboration with the end-users—consumers of their products and services—and get a better price for their products and services provided. Thus, during the implementation of the project, the development of the pre-order trading system “Vilagetoyourhome.lt” (orig. in Lithuanian “Kaimasinamus.lt”) [34], which operates on a national scale, was started. The project aimed to contribute to the realization of the production of small farmers not only with the help of information technologies but also by the modern organizational structure of the network.

The first innovative characteristic of the project deals with the aim to increase the role of consumers. The network’s platform did not encourage the creation of individual orders but the creation of consumer groups. Such groups were expected to come together by place of residence or workplace. The communities of food consumers can form joint orders to make it worthwhile for the farmer to transport their products over distances (most accept orders of at least EUR 20).

The second innovative characteristic of the project deals with the shift from the concept of the short food supply chain to the network concept. From the very beginning, the food delivery system was developed as a two-sided network, in which two parties directly collaborate [35]: (1) farmers and other service providers who want to find consumers of their products or services who live in cities and can pay a better price than traditional buyers of agricultural products and (2) consumers—urban dwellers looking for a convenient way to obtain high-quality and fresh food directly from farmers. This feature of the network design increases the capacity of the food delivery system to generate network effects.

The third innovative characteristic of the project deals with the incorporation of service-dominant logic in the food delivery process. Thus, the platform of the network “Village to Your Home” is considered to be a two-sided network connecting farmers and consumers and operating according to the following principles:

1. A community of urban residents interested in sourcing a variety of foods directly from the farmers is emerging. It is most convenient to bring together a group of
people who work in the same workplace or live in a close neighborhood. The community must order such a quantity of products that covers the expenses of the farmer to transport the goods to a place designated by the community.

2. The consumers’ community forms a common order for the farmer services. The farmer should apply a business model called the “product-service system”. The farmer provides the assortment information on a virtual national platform (it could link to the producer’s website) and offers to produce the desirable products (often the products are made-to-order), pack them, and deliver to the customers.

3. On the agreed day and time, the farmer brings the ordered products to the meeting point indicated by the community of consumers (a yard of the workplace or housing association, cafe, etc.).

3.2. Information and Organization Tools of the Network “Village to Your Home” Platform

The main task of the network “Village to Your Home” platform “Vilagetoyourhome.lt” in its establishment phase was to intensify direct contacts between farmers and consumers of their products and services, and the tools offered by the platform were also focused on this. The proposed tools can be classified into information and collaboration tools.

The information tools promote the purchase of food products not in supermarkets but directly from farmers through the ordering system. The tools offered by the platform help farmers find consumers and serve them by providing producing, packaging, and delivery services for ordered products. These tools help to increase sales due to the prompt provision of information on:

1) The variety of services and products offered by farmers;
2) The producer of the products, presenting the farmer’s experience and farm characteristics;
3) The existing consumer communities, providing not only contact information but also, in some cases, a detailed and illustrative account of the purpose of creating a consumer community, the culture promoted (raw food, healthy eating, etc.), membership requirements, purchasing experience from farmers, etc. If the consumers do not find the relevant community, they can create a new one.

All this detailed information on the website is related to the ordering system. The “Products” section provides detailed information on the products offered by farmers, grouped by product type. It includes product/service description, photos, price, and contact details of the farmer. In the section “Farmers” it is possible to choose the name of the farmer’s farm and thus choose the products. The “Consumer Communities” section provides a list of all registered consumer communities and information about them, with at least a name or a representer of consumer community and/or the title of it and contact information and sometimes a detailed description, with additional relevant information about the consumer community. The “Orders” section shows the current orders and, if the consumer’s and farmer’s needs are compatible, to connect to the order. The “Map” section shows the geographical distribution of farmers offering products in Lithuania. The interactive map shows the name of the farm, the name of the farmers’ market to which the farmer is going, what farm products are offered for purchase, and contact details (phone, e-mail, website, and/or social network).

The network “Village to Your Home” also uses a Facebook account, which briefly provides information that it is a website related to natural food directly from the village, where fresh food lovers meet and can order local products directly from farmers. Through the redirection from the Facebook account, the website “Vilagetoyourhome.lt” is popularized and local food consumers are attracted. The “Village to Your Home” Facebook’s yearbook of the network shares a variety of information related to farming activities and the cultivation of fresh food and healthy living: announcements about ongoing or past events, invitations to live meetings with farmers, pieces of training, seminars, popular
information about the latest food trends, food and veterinary information, prescriptions, and other information that contributes to the education of the members of the network, the increase in the number of members, and, more generally, the promotion of healthier food.

In parallel with information tools, the network has provided several organizational tools. Their task was to make the process of ordering and purchasing agricultural products as smooth as possible. To improve the quality of the products and services offered by farmers, consumers were asked to rate the farmer’s products and activities on a five-point scale, marking their assessment as “carrots”. The in-depth analysis of the situation, based on the performed interviews, elucidates that the creation of the Facebook account of “Vil lagetoyourhome.lt” also made a significant contribution to this goal, as consumers often collaborate by sharing their opinion on the quality of the products and services of a farmer. Thus, not only every member of the network but also other members of the public can make their own observations and suggestions, to which most farmers react very quickly, as stressed by site administrators during the interviews.

Other organizational tools, as stated by the authors of the network’s idea, were designed to facilitate the work of consumer communities’ coordinators in ordering through the use of IT. However, these tools have not become widely used. The empirical research shows that the majority of registered communities are those who have never fulfilled the order, using the software tools offered by the website “Vil lagetoyourhome.lt”. In 2017, only 3.9 percent of consumer communities bought products from farmers using the site’s software tools, and in 2021, only 4.1 percent of all registered consumer communities [34]. Thus, as commented during the interviews by the authors of the network’s idea, it becomes apparent that consumer communities register on the website to obtain information about farmers and the products and services they offer but execute orders without using the order-building software tools offered by the platform. The site administrators state that the major obstacle to automating the ordering is that consumers cannot make an order in one step. First, the consumers like to negotiate with a farmer. Second, the farmers do not always provide the latest information on the website. The main reasons for additional adjustments are the discussion of the place of delivery and the determination of the time of receipt of the product. Another problem, outlined by the initiators of the network, that communities constantly face is that it is difficult to collect enough orders at a time to meet the minimum amount specified by the farmer. In this case, the software tools automatically terminate the purchase. According to the survey, as many as 47 percent of the purchasers of the consumer communities interviewed indicated that this is why purchases from the farmer are canceled: “not enough money to transport goods”; “ordered quantities are too small” [36] (pp. 28–32). Moreover, the low popularity of software tools can be explained by the fact that they have been designed to meet the needs to order numerous and/or various product groups. Most of the consumer communities, however, are small groups. They have no permanent administrator, and many group members do not like to learn how to use this software tool for keeping order books.

As stated by the creators of the network’s idea, attempts should be made to address mentioned challenges to software tools in a systematic way. In particular, the consumers interviewed suggested redesigning the software tools to allow for a case-by-case adjustment of the minimum order amounts. In this case, the purchases made would be canceled much less frequently. It has also been proposed to facilitate payments using the e-shop principle, but farmers have opposed this, as most of them want to have as many direct contacts as possible with buyers of their products and avoid showing their sales volumes to the public.
3.3. The Contribution of the Network “Village to Your Home” as an Alternative Food Market to the “New Rules of the Game”

Formally, the network “Village to Your Home” was established in 2014 on a state-funded project basis, which lasted for one year. During the implementation of the project, the founding researchers together with the representatives of the project partner, the Lithuanian Rural Tourism Association, took care of the organization, publicity, and other administrative issues of the network establishment. As the network gained momentum, its further development and administrative supervision were transferred to the public institution “Rural Business and Market Development Agency”, and the copyright still belongs to the Lithuanian Institute of Agrarian Economics.

The number of members of the network “Village to Your Home” has been constantly increasing since the establishment of the network. A fragmented assessment of the number of farmers offering products on the website “Villagetoyourhome.lt” shows an increasing trend, which is related to the COVID-19 pandemic, which began in 2019. At the beginning of April 2016, more than 200 farms had registered in the network [36] (p. 9). By mid-November 2017, 479 farmers were already members of the network offering products. In October 2021, the total number of network members, compared to 2017, increased 1.4 times and already connected 669 members (internal data of the network) [34]. A general upward trend is observed among farmers offering products in different groups, except for dairy products. Figure 1 shows the distribution of farmers who offer their products and services via the network “Village to Your Home”, using the platform “Villagetoyourhome.lt”.

![Figure 1. Distribution of farmers who offered their products via the network “Village to Your Home” in Lithuania in December 2021 [34].](image)

Empirical research elucidates the following trend: As the number of farmers on the website grows, so does the supply of farmers’ products, but the trends vary by product group. In 2021, compared to 2017 [34], the range of production increased in all groups, except for the groups of meat and legumes, while the number of farmers themselves decreased only in the group of dairy products, where the range did not decrease but rather increased slightly. In terms of relative data, the fastest growth in the range of products is observed in the group of beverages, where it increased by as much as 2.5 times and was
in the second place in terms of the increase in the number of farmers. The product range in the groups of baked goods and fish and other products grew by 1.7 times, and the third place in terms of the growth rate of the range is honey and vegetable products (1.6 and 1.5 times, respectively), while the fourth place in terms of increase is seeds.

The abundance of consumers is also vital to the efficiency of the two-sided network, as the ability and activity of farmers in the network to sell their products depend on their quantity and activity. At the same time, it is an important factor to maintain the sustainability of the local agri-food system. According to the network’s internal data [34], 592 consumer communities were registered in the network in 2017 and 2246 in 2021—almost 4 times more. At the beginning of the network development, consumer communities were exclusively concentrated in the largest cities of Lithuania. In the autumn of 2017, there were as many as 318 consumer communities in Vilnius and 108 in Kaunas. There were already more registered consumer communities in other large cities: Klaipėda, (27), Alytus (21), Šiauliai (14), and elsewhere (7 or fewer, or none at all). In 2021, there was already a greater geographical spread of network consumers. New centers of concentration of consumer communities also appeared in other major cities after Vilnius (1083), Kaunas (435), and Klaipėda (163). Over 50 consumer communities are already operating in Alytus (57) and Šiauliai (51) and to a lesser extent in Panevėžys (45), Jonava (30), and Marijampolė (26).

The first side of the two-sided network is farmers receiving particular gains from the view of “new rules of the game” in the post-industrial economic system. It can be noticed that the number of farmers in the network has been increasing since the establishment of the network, and this, as stated by the authors of the network’s idea, is a factor in the success of this network, a driving force. The greater the number of farmers offering products online, the greater the choice available to the consumer and the number of collaborative contacts they can make online. As the number of network members grows, the benefits received by farmers increase. They help farmers to sustain their businesses and improve the quality of life and manifest themselves most as the following economic effects:

1. Greater stability of farm income—the collaboration network allows for long-term connections with the consumers of the products and services provided, thus maintaining a constant flow of income to the farm;
2. Increased income—communication with the final consumers of the farmer’s products and services without intermediaries provide a better price; reduction in storage costs, loss of products not sold on time due to damage or lack of customers;
3. Reduced marketing costs—the network helps to gather and keep up to date with consumer needs and changes, and participants in the network avoid costly advertising and other marketing measures required to establish regular contact with consumers;
4. More rationally used working time—pre-orders and the ability to form large quantities of products delivered to one specific location and quickly delivered to consumers save the farmer’s working time in comparison with direct sales in farmers’ markets; a farmer may carry out the weighing and packaging of the products at a time convenient to him or with the assistance of other persons.

Thus, it can be stated that the larger the number of farmers in the “Village to Your Home” network, the greater the overall economic sustainability in rural areas. It is clear that small and medium-sized farms, which want to increase the added value of their production, are particularly useful in setting up and actively participating in a two-sided network in order to have an economic effect. Small farms have a low economic capacity; for example, in Lithuania, their standard production is only from EUR 2300 to 6400 per farm per year, which is over 6 times less than larger farms [36]. In addition, using traditional sales channels, agricultural activities do not provide full employment for even one conditional worker. Therefore, such farms should seek to take advantage of the opportunities
offered by the bilateral cooperation network and introduce the most modern forms of marketing their products.

The increase in the number of consumers in the network proved the existence of another gain from the consumer side. In addition to various factors of the external environment, the benefits of collaboration with farmers experienced by consumers are as follows:

1. The supply of fresh, high-quality food produced in the consumer’s region;
2. Reduced time spent on household food and other farm products;
3. Participation in the production process and assessing the quality of the products at all stages of the production process;
4. Direct contact with agricultural producers and acquaintance with or direct involvement in the production process have an educational effect, especially for children and often also for adults.

Assessing the current number of members in the “Village to Your Home” network, based on the view of the network’s initiators, it can be stated that it achieved the critical mass and became self-sustaining. The sustainability of the network as a local agri-food system and its strengths especially became apparent in the face of the COVID-19 pandemic. In comparison with farmers’ markets where the number of market participants and sales of farmers’ products is declining due to pandemic restrictions, the two-sided network “Village to Your Home” demonstrates the growth of local food demand and supply. Thus, the presented case illustrates the paradigm innovations in the short food supply chain, according to the “new rules of the game”, and at the same time demonstrates a sustainable solution for today’s collaboration in the short food supply chain with help of modern IT solutions.

4. Discussion

The Lithuanian national two-sided network was designed according to post-industrial rules of the game and demonstrates the strengths and weaknesses of a modern approach to local food system building. The findings of the case study show that all three mentioned paradigm innovations are a big challenge to participants and organizers of the local food system. Of course, there exist reasonable limitations of this research, which are mainly linked to the applied case study methodology in this research. The explored, explained, and discussed case “Village to Your Home” in the context of three paradigm innovations might exhibit limitations due to providing little basis for generalization of results to a wider population, as it is mainly based on the Lithuanian case of the sustainable short food supply chain. The interviewee’s bias may be taken into consideration, and it was quite difficult to replicate the gathered data due to its specificity. However, despite the existing limitations, the research findings are worth developing into a deeper discussion followed by conclusions and future research avenues.

The main challenge to farmers is a business-model change from selling goods to selling an integrated combination of goods and services. The transformation from product to service provision requires not only the acquisition and development of service capabilities [32,37–39] but also organizational principles, structures, and processes new to the businesses with product orientation [20,40,41]. Baines et al. [42] suggested that the organizational culture and employee skills would differ in companies with product orientation and service orientation. A framework and methods for the shift from the product-centric to a product-service system in farming would therefore be needed. The case study findings show that the farmers lack customer service skills according to comments and discussions on the network website and Facebook page. The improvement of the farmers’ customer service skills is a very important factor of servitization success [9,11] and needs to be supported by various forms of training.

The main customers in the local food markets are households, and changing the organization of food markets means essential changes in social life. The key challenge to consumers is a collaboration challenge [4,13,22,43]. The wish of consumers to have access
to fresh, farm-produced products can be realized most effectively through collaborative networking. However, individualism in buying culture and lack of volunteerism traditions in Lithuania make collaboration rather complicated. Empirical research reveals that orders are quite individual. The consumer communities in major cities have only 4–7 members on average. According to farmers, the consumer communities are very small, but the founders of the community do not seek to increase membership as the growing number of community members means that the tasks of organizers are growing too.

The two-sided network demonstrated strong organizational resilience in the face of COVID-19. Moreover, the creation and administration of virtual national or regional food platforms is a cheaper alternative to the arrangement and maintenance of many physical farmers’ marketplaces in each city. There are arguments to initiate and support the creation of similar local food networks by national or regional governments. The main challenge to network organizers and platform designers is the creation of platform tools. Unfortunately, the theory of local food network platform building is in the early stage of development [27,32,43], and many tools, especially organizational ones, need to be developed by efforts of the network organizers and tested using an trial and error method. The findings of the case study show that professional network management is crucial to building and maintaining a resilient network that can meet current and future demands. In the long run, it has been noticed that regular network administration and technical maintenance services are needed. The functioning of the network requires at least two types of staff members. One of them should coordinate and develop the network activities, and the other should provide technical support and develop software tools. For instance, the lack of technical staff was a reason why the proposed solutions to adapt the software tools of the “Villagetoyourhome.it” platform to the needs of food customers have not been implemented so far. In the beginning, it was not possible to allocate funds for this purpose to the Lithuanian Rural Development Program 2007–2013. Rules for Vocational Training and Information Activities “Dissemination of Scientific Knowledge and Innovative Practices in Agricultural and Forestry Activities and the Processing of Agricultural Products on the Farm” provided for the allocation of all funds only to meet the needs of farmers. Later, the administrators of the website—the Lithuanian Institute of Agrarian Economics and the Public Institution “Rural Business and Market Development Agency”—also did not have the opportunity to allocate additional human and financial resources for the improvement of software tools. It is therefore natural that the majority of orders still are fulfilled through mobile phone communication. Some administrators of big consumer communities create these tools themselves. A study identifying the more flexible forms they have chosen and analyzing their strengths and weaknesses, as well as suggestions for solutions to be shared within the network, would be very useful for the further development of the theory of collaborative food networks.

The findings of the case study also show that during the development phase of the network, the need arose to create more organizational tools [23,29,36,43], which would help to contribute to improving the quality of the products and services offered by farmers. The organizers of the network were expected to gradually take more sophisticated collaborative steps, which are important for intensifying the sales process through the ordering system and better matching offering and demand. However, the collaboration of farmers is slow going. In order to speed up this process, the platform should develop and offer more organizational tools [23] to encourage farmers to use each other’s services to co-operate in transporting the products of several farmers to the same consumer community and to agree on common temporary storage of products until their delivery to a consumer, etc. In addition, a deeper analysis of the network’s activities shows that the further growth of farmers’ sales is hampered by the over-specialization of farmers. It is not convenient for consumers to order dairy products from one farmer, vegetables from another, fruit from a third, and so on. Based on the experience of shopping in supermarkets [24], many consumers would like to be able to order the full basket of products they need. In this case, however, the website should offer the members of the network the services of
creating a basket of products, which requires special human and material resources to be provided. Unfortunately, the website operators so far have represented two non-profit institutions (a research institution and a public institution) whose statutes do not provide for such functions, and their legal status makes it very difficult to actively further develop the network’s tools.

In our opinion, all mentioned challenges are common for most of the Western countries involved in local food system building and should be explored in more detail. Empirical research of the best practices in this field and conceptualization of innovative solutions of the service-based collaborative food network management and its platform design is a very promising trend. At the same time, all theoretical insights are very interesting for social food movements and individual entrepreneurs that initiate pilot projects of local food markets oriented to sustainable agri-food system building.

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