

The influence of the post-industrial economy on economic cooperation needs and forms

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This article discusses the differences between economic cooperation incentives and forms in industrial and post-industrial societies and introduces a cooperative model based on the concept of a two-sided network as an essentially new phenomenon appropriate to the post-industrial era. During the last decade the concept of a two-sided network (market) is exploited mostly by ICT business however, in the opinion of authors, it has potential to become the general theoretical background for revision of cooperative movement goals and means relevant to the post-industrial economy.

1. Cooperation in industrial and post-industrial societies

Since ancient times people have learned to work together to ensure success in their endeavours. Common work, to meet the basic needs for food, housing and other daily necessities, to better overcome diseases, or to defend against an enemy helped communities to survive the most difficult periods. Assessing cooperation processes from the management perspective, it is apparent that the methods of economic cooperation can (and must) be different. Research on business relationships suggests that the evolution of partnerships is a time-consuming process (Dwyer, 1987; Johnson, Selnes, 2004). The content, quality and intensity of collaboration all change as a result of common experiences and outcomes of the collaboration (Ploetner, Ehret, 2006). However, the greatest impact is a transition to a new stage of social development where the predominant sector in the economy is changing. Economic history demonstrates that together with new stages of economic system evolution, the objectives and forms of cooperation have also been changing as societies have faced new challenges and discovered new instruments to overcome these challenges by acting jointly.

The Industrial Revolution gave birth to cooperative enterprises that have remained to the recent day as a special form of business enterprise. In the industrial era, society capital was the most important resource for economic development. At the beginning of industrialization, a lack of capital encouraged the establishment of cooperatives as it was a most convenient way of including a large number of economic agents with small savings into the capital accumulation process. By consolidating their small physical and financial capital and establishing a formal united organization, members of the cooperative conceived a scale effect as market players and producers.

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The cooperative movement has been particularly active in rural areas, as new incentives for the establishment or enlargement of farmers' cooperatives have emerged since a certain degree of agricultural industrialization was reached. In particular, small farmers were encouraged to cooperate with each other as a response to changes that occurred in the market. Oligopoly or monopsony, with a large number of small farmers but only a few or one agricultural product collector and processor, more frequently appeared in the market of agricultural products as a result of expanded food processing companies. Oligopoly or monopsony also appeared more frequently in the labour market in some rural regions since the mechanization of agricultural production processes resulted in less employers being willing to employ agricultural workers. Oligopoly or monopsony also resulted in distortions of competition. Studies confirm that these processes and other market distortions, along with increasing transactional costs, were a considerable incentive for farmers to cooperate and take collective action (Milford, 2004; Novkovic, 2006 and 2008).

More recently, agricultural cooperatives have been facing challenges dealing with the globalization of the food supply system. In response to globalisation at the end of the 20th century, agricultural cooperatives in the United States and Western Europe countries were restructured, merged, or started to apply new organizational models. Particular attention was paid to operational changes, specifically the extension of agricultural products' processing and the marketing process using cooperative efforts, and thus obtaining greater value-added for the same production (Cook, 1995; Ortmann, King, 2007). However, the changes were also focused on capital accumulation and ownership rights, e.g. 'alternative organizational models mainly differ in how ownership rights are defined and assigned to economic agents tied contractually to the firm – members, patrons, and investors' (Chadad, Cook, 2004).

The rise of the post-industrial economy has created new needs and possibilities for joint economic activities. In the post-industrial economy the most essential economic resource is knowledge (this stage of the economic system evolution is often called 'the knowledge economy'). Therefore, cooperation should be implemented in ways that leads to the creation and accumulation of knowledge. Thus, alongside traditional cooperatives, new forms of cooperation, such as clusters, strategic alliances, networks of innovators, etc., have been established. New forms of cooperation do not require the establishment of a formal organization; their management models are more flexible and more focused on the maximum use of knowledge accumulated by all partners. Unfortunately, cooperative studies pay little attention to the influence of the post-industrial economy on economic cooperation needs and forms.

2. A two-sided network as an innovative post-industrial cooperative model

In the opinion of the authors, the transition of the economic system to the post-industrial stage requires the conceptual bases of the cooperative movement to be reconsidered. The post-industrial society is often called a 'network society'. According to Castells (2011), in the 21st century humanity has entered the era of networking, where many functions and processes are implemented through networks. Networks become the main tool for management and public administration, which contributes to the achievement of new knowledge, exchange of information, and experience. Networking theories ensure the smooth progress of these

processes and results. Therefore we ask the question “What kind of changes should be made in the management of cooperatives in this context?”

A key innovation in the post-industrial era is collaboration based on the concept of a two-sided network (Vidickiene, Melnikiene, 2014) as ‘collaboration between buyers and sellers becomes more intensive and contains new elements and processes that are subject to cooperation’ (Ploetner, Ehret, 2006, p. 5). The development of the network theory, especially the concept of the two-sided network, presents new opportunities for organizational forms and management of cooperative organizations. The two-sided network (market) concept is rather novel: the first publications analysing two-sided network effects in business management appeared in the first decade of the 21st century. A network with homogenous members is called a one-sided network, as opposed to a two-sided network which has two distinct groups – the so-called ‘parties’ – whose respective members have different and sometimes contrary goals. In fact, a one-sided network can be described as part of a two-sided network because two-sided networking also generates same-side network effects, although it concentrates on cross-side network effects (cross-side network effects mean that the strengths or weaknesses of one side have an impact on the growth of the other).

A two-sided network must have a platform that creates a certain infrastructure and sets rules for cooperation to facilitate execution of transaction (Eisenmann, 2009). As in a one-sided network, an important function of a two-sided network is to reduce transactional costs. According to Hagi (2006), this can be implemented in two ways using a two-sided platform: firstly by reducing the costs of an information search prior to the transaction, and secondly by reducing total indirect costs of transaction participants in the process of transaction.

Cooperative societies of the 20th century were organized as one-sided networks. A cooperative was usually defined as a group of homogenous members acting together to meet the common needs and aspirations of its members. It means that during the industrial stage of the economic system, the cooperative organization traditionally joined homogenous members who were aiming at the same goals. Evolution does not deny the achievements of the previous period; similarly one-sided networks do not lose their importance in certain functions and remain an important part of the economic system today. However, the objectives and methods of cooperatives are changing in the post-industrial stage of development and critical to their success is the flexibility of the organizational form.

3. Lithuania as a laboratory for understanding the peculiarities of the post-industrial cooperation movement

The scale and importance of new possibilities for cooperation in the post-industrial era is most apparent in the cooperative movement trends in countries where natural development of the economic system was interrupted by the implementation of the planned economy model. Unfortunately, cooperative studies still do not use the best laboratory for understanding the peculiarities of the post-industrial stage – which is post socialist countries. Here economic agents have more freedom to choose the cooperative form. They do not need to fight with inertia or determine how, step by step, to reform traditional cooperative enterprise management and institutional regulation patterns that have been used for many decades. In countries where the historical path of the cooperative movement has been interrupted, new economic

partnerships must be established within the framework of the post-industrial society, with preference given to innovative cooperation forms.

For example, at the beginning of the 20th century, the cooperative movement in Lithuania was an important tool for the industrialization of the agrarian sector. The Lithuanian Cooperative Bank was established to finance cooperatives. Later the activities of a large number of cooperatives were coordinated by cooperative unions who joined cooperatives according to their specialization, e.g. the purchasing and processing of meat, dairy products, and retailing. The successful experience in Lithuania of developing cooperation in the interwar period determined that after the restoration of independence in 1990, the Government has implemented various measures to support cooperatives, in the hope of progressing the agricultural sector and establishment of cooperatives by encouraging the involvement of a large number of farmers in the movement. However, even a couple of decades after the restoration of Lithuanian independence, cooperatives are not as active economic actors as they were before the Soviet occupation. In the opinion of the authors, the inactive cooperation of farmers is a cause of not only the negative experiences of forced cooperation in soviet agricultural enterprises called *kolkhozes* but also because regulation and supporting policy of cooperatives has not considered that the recent economic environment is fundamentally different from the industrial economy.

Analysis of the cooperative movement in Lithuania during the last decade identifies the increasing phenomenon of new forms of cooperation based on the concept of the two-sided network. The cooperative movement in the pre-war period clearly separated farmer cooperatives and consumer cooperatives when Lithuania experienced its agricultural industrialization phase. There were one-sided cooperatives with farmers producing the same kind of products (milk, meat, etc.) or consumers aiming to buy necessary goods for a more favourable price. However, in the 21st century, rural areas of Lithuania have entered the post-industrial stage, featuring particular changes in the rural employment structure. By 2006, the predominantly rural population worked in agriculture, hunting, forestry and fishing, but since that year the traditional rural population activity – i.e. the agrarian sector – dropped to second place behind the service sector, where nearly half of the rural employed population was engaged, and from 2008 it ranked last (Official Statistics Portal, 2016). A new employment structure and other changes related to the post-industrial economy stimulated the establishment of a new type of cooperatives in Lithuania which aimed to connect the interests of farmers and consumers by using a two-sided network model. The next chapter presents a short case study with the aim of explaining the incentives, which provide the basis for innovative cooperation. Main components of the two-sided network organizational model are used for cooperation between the farmers of one Lithuanian village and food consumers.

4. Case study of the two-sided network ‘Vivasol’

The majority of Lithuanian milk producers sell their product to milk-processing companies. The price of raw milk is very low, so small farmers hardly survive such activity. Some farmers have started to look for solutions to increase revenues and create dairy cooperatives with the aim of purchasing and processing milk. These cooperatives act as one-sided networks having members undertaking the same activity. In this case, according to the “Blue Waters Strategy”, authors W. Ch. Kim and R. Mauborgne (2014), cooperatives go into the tra-

ditional environment called the 'red ocean' and compete with large farmers and milk processing companies using a cost-based strategy to produce industrial food. In Lithuania there is a large number of companies producing high-quality dairy products, thus dairy cooperatives face difficulties and cannot compete with them neither for product price nor the assortment or possibilities of distribution. Also, large milk producers often obtain a better price than dairy cooperatives.

The two-sided network 'Vivasol' was created with the aim of jumping out of the red ocean to the new innovative environment called the 'blue ocean' using an innovation strategy. The initiator of this two-sided network, Valdas Kavaliauskas, decided to escape the 'rat race' lifestyle. He moved from the capital city to Darguziai village, situated 60 km from Vilnius, and became a farmer. However, he did not want to be an ordinary small farmer and decided to raise goats to produce goat milk cheeses based on French recipes.

Fresh and matured goat milk cheese was an innovative product for the Lithuanian market, with consumers being prepared to pay a higher price as compared to cheeses produced in the industrial way or imported from other countries. The biggest problem for Kavaliauskas was to find a market for these products. A small farm could not take advantage of traditional food supply channels, as in Lithuania about 90 percent of the food market is concentrated in large shopping centres which require large quantities of product. This form of trade requires high costs of advertising a product with the aim of making your product recognizable among many similar products. Kavaliauskas offered his innovative product to the market but traditional advertising methods were not sufficient to promote it. In order for consumers to purchase the new product, it was necessary to offer tastings to have the opportunity of talking about the method of production, the uniqueness of the product, and its nutritional characteristics.

Kavaliauskas did not want to rely solely on random sales in the farmers market and started to bring together consumers of his products and established a group of 'goat cheese lovers'. Food gourmets who supported the concept of local food and slow food became members of this group. This group agreed to organise weekly meetings at a particular meeting place so that it was possible to plan production quantities and assortment in advance. The group members have two meeting points: Cheese Farm Market in one of the cafés of the capital city, and a Cheese House in Darguziai village. The Cheese farm market every Saturday invites consumers to participate not only in purchasing cheese. The cooperative 'Vivasol' has more general objectives. Each week in the Cheese Farm Market and during organised events, the members discuss possible ways of improving quality of living in rural areas. With this aim, the network assists the survival and establishment of small farms by inviting urban citizens to come to the village and join activities organised in rural areas, festivals, and farm work. Consumers have the opportunity to express their opinion on the cheese flavour, recipes, or make suggestions for new products they would like to purchase. Therefore, the continuation of the cheese making process has started to achieve producer and consumer co-production.

Regular communication with consumers increases the understanding of their needs and helps the business thrive in offering a wider range of products. A wider assortment of products has been proposed not by expanding their own production capacity, but by offering other farmers of Darguziai village and nearby areas the opportunity of producing different kinds of cheese and cooperating in the sales stage. The farmers cooperate in providing their production to the permanent consumer group with the principle that a new farmer can become a member of this network under the condition that he/she produces a different product than the

existing members. Thus ‘Vivasol’ can offer consumers not only several types of goat cheese, but also a wide range of cows’ milk cheese produced on farms that have important features for customers: a fresh, natural and unique taste. In addition to dairy products, consumers can purchase honey, vegetable and fruit products. The network members – farmers put forward another important factor – the desire to be closer to nature and enjoy a feeling of freedom. Most of them are former city residents, and these needs are effectively met by the pattern of their life in the countryside where they practise small farming.

This project of innovative cooperation, developed in 2008, became a two-sided network in 2016. It consists of a network platform with basic tools and two types of members: farmers of Darguziai village and 12 farmers from neighbouring areas, and Vilnius cheese lovers (about 400 persons) (see Figure 1). The members of the consumer group are open-minded and active in various innovative ways of cooperation, quality of food, and environment. A number of consumers actively participate in events organized by ‘Vivasol’ such as celebrations of public holidays, community volunteering, open door days and discussions. Consumers who are willing to learn about the farming and cheese-making process also have an opportunity to be invited as volunteers in the cooperative’s activities.

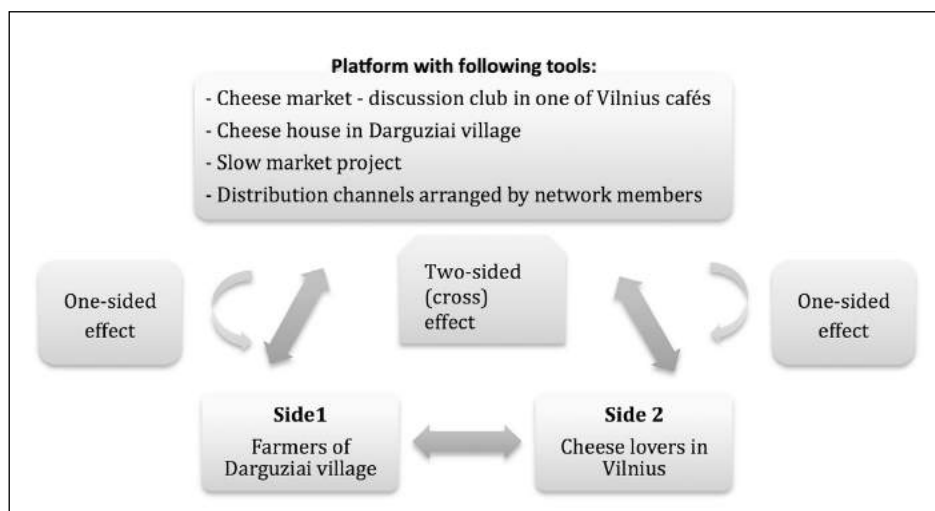


Figure 1: Structure of two-sided network ‘Vivasol’.

The network was successful in creating one-sided and two-sided effects among the members of ‘Vivasol’. At the outset, network members were successful in creating a strong one-sided effect among the farmers focusing on production of cheese. When the market for these new products was created and the large two-sided network was functioning very effectively, two-sided effects increased as well.

The farmers participating in the ‘Vivasol’ activities receive a one-sided effect in the stage of production and logistics. As network members they achieve a scale effect because products produced on individual farms are transported and sold together. When formulating an assortment of products, the farmers also specialise by producing only particular types of products, which reduces production costs and can also achieve better use of their time and equipment.

The one-sided effect for consumers of cheese is a result of the opportunity to purchase exclusive products without preservatives and which are responsibly produced by farmers with similar values and worldview. Consumers can purchase cheese every week at network meetings, and can also make arrangements with the farmers for an alternative delivery place or discuss product purchase issues with other consumers. An important aspect of the process is meaningful leisure time spent in making a contribution to rural development, understanding that the food purchase process can contribute to the creation of better economic conditions for rural people and the preservation of natural resources, and purchasing food produced in environmentally friendly ways.

The two-sided effect occurs as a result of the pre-order system that exists within the network. Transactional costs are significantly reduced for both farmers and consumers. Farmers who have stable buyers can collect and continually update their knowledge about the needs of users. Farmers communicating with end users without intermediaries achieve a better price for their cheese, resulting in higher revenues. On the other hand, consumers can negotiate price with the farmer and optimize their benefits. The pre-order system reduces storage costs and avoids losses of unrealized production due to spoilage. Pre-orders, and the opportunity to cooperate with other farmers to deliver cheese to one specific place and quickly distribute it to consumers, save farmers time compared to trade at market only. In addition, farmers can attend to product weighing and packing operations at a time convenient for them, or employ others; thus making efficient use of working hours. The network allows long-term relationships to be established with consumers and to derive stable income flows, ensuring farming stability and sustainability.

By developing activities of the network, a 'cheese school' was established for farmers of other regions who want to start a business of cheese production. Here also various ferments for cheese production and equipment for small processors are sold. Both consumers and farmers are actively engaged in Slow Market project events, when educational events and various festivals organized by farmers provide an opportunity for consumers to learn about not only what they eat, but also how it became a product on their table, and why they should care about it.

Furthermore, two main platform tools – the Cheese Farm Market-Discussion Club in a café in Vilnius, and the Cheese House in Darguziai village, establish a close link between rural and urban areas. Many urban people are visiting the village as customers of the Cheese House or participants of festivals, lectures, discussions, and farmers' meetings with urban consumers, where tasting of new products and knowledge of how to improve recipes is provided. Rural people are also encouraged to visit the city, to learn about city life, the activities of urban people, and to understand what people distanced from the natural environment think.

5. Conclusions

1. Theoretical development of the structure and design of the two-sided network, based on the analysis of individual successful projects, opens new possibilities for cooperative movement and promotes organizational and product innovations in all modern economic sectors.
2. In the opinion of the authors, the creation of a new type of cooperative organization is particularly important to small farmers who want to sell their products to local consumers

and thus obtain a higher added value. Farmers in the industrial stage of development could become active creators and implementers of organizational innovations in the cooperative movement, reforming the existing large-scale 'global' food system on the basis of 'consumer activism'.

3. Farmers of post-socialist countries have more incentives to introduce innovative forms of cooperation, because there is no strong traditional cooperative base and small farmers are intensively searching for better forms of cooperation that more closely match the needs of consumers. In addition, the cooperative organization can leverage elements of the dominant business model in the modern economy and integrate service elements to all possible business processes.

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Index

C

cooperative movement 1ff, 7f

P

post-industrial economy 1f, 4

T

two-sided network 1ff