COLLABORATIVE ECONOMY IN THE CONTEXT OF CURRENT GLOBAL CHALLENGES

Otilia MANTA

Romanian Academy, "Victor Slăvescu" Centre for Financial and Monetary Research, Romania

Abstract. The current multi-crises generated by the current challenges existing at global level, determine us to think of new economic models at the level of society that should be adapted to the needs of the individual and of the society as a whole. The collaborative economy due to the underlying factors (economic, cultural, social, technological and environmental) can be considered both an economic model and, especially, a current of influence of the new societal development, and in this paper we aim to we argue scientifically why such an economic model can be optimal for the sustainable development of economies at the level of each state. Moreover, as a result of technological evolution, new business models have emerged, orienting the concept of collaborative economy towards the type of innovative economy. At the same time, in the context of the EU's new growth strategy to promote the transition to a climate-neutral economy by 2050, both the launch of the European Investment Plan for Green Transactions (Sustainable Europe Investment Plan) and new models are emerging economic development at Member State level.

Keywords: financial instruments, sustainable development, collaborative economy.

Introduction

The current global financial crisis and the recent rise in unemployment have led to the need to adapt the way activities are delivered (online, telework, etc.), greater flexibility, and monetization of dormant resources, all leading to resource efficiency and optimization. The conventional form of the economic model will be replaced by the collaborative economy model, mainly through the tool of collaborative platforms, the possibilities of sharing through them are endless because the good that is no longer used by an individual can be to the satisfaction of another person. [8] Moreover, collaboration platforms can use someone's time. "Gig platforms" offer the opportunity for millions of unemployed or underemployed workers to change the paid workforce, and time banks are becoming more and more present in our lives, especially in our future. Since 2010, globally, the concept of "collaborative economy" has become common again to all those involved in the economy. Moreover, as defined in the current terms by the European Parliament's rapporteurs, the collaborative economy "includes a wide range of activities, related to a multitude of collaborative business models, including non-profit ones; business models provide a wide range, from collaborative platforms that allow the exchange of goods or services around the world to small collaborative SMEs that provide services to local communities"⁴.

Literature review

The collaborative economy due to the factors underlying it (economic, cultural, social, technological, and environmental) can be considered both an economic model, but especially the current influence of the new societal development. Technological evolution has led to the emergence of new business models, and especially of this type of innovative economy. [1] The technological boom that characterizes the 21st century is why sharing on such a scale has become possible in the first place. Indeed, the digital revolution is underway and evolving with extraordinary rapidity, so that all hypotheses lead us to the statement that future generations are and will be in a permanent connection with technology. We are currently witnessing the development of online platforms (in almost all areas) from application, service, and goods distribution platforms to social platforms and even online learning, communication, and meeting platforms, all these services and goods are accessed with a click.

⁴ REPORT on a European Agenda for the Collaborative Economy (2017/2003(INI))

In a digital society and a stage of rapid expansion, the collaborative economy (peer-to-peer economy) becomes the economic model of the present and especially of the future both nationally and globally, through platforms facilitating trade/exchange of information, goods, and services. Robotic technology, the Internet of Things (IoT), cloud computing, 5G network, are examples of technological advances that support collaborative platforms. Moreover, the use of mobile smart devices with real-time GPS applications and individual identification makes it possible for the offer of goods and services to be transmitted according to the needs of the individual (efficiently and quickly). At the same time, the emergence and multiplication of social networks (information, images, etc.) have created a framework for dissemination and collaboration at the level of individuals and society. These technological developments introduced us to the era of "Industry 4.0" [2] and thus through active participation in digital platforms and using technological progress we became both co-producers and consumers. Another aspect that supports our hypothesis regarding the model of the collaborative economy, a model for Romania at the horizon of 2040 is supported by the existing societal parameters at the national level. The concentration of the population in the big cities, as well as the urbanization of the areas adjacent to the big cities, determine the emergence of communities where demand and supply are harmonized, and the platforms act as "economic providers of technological coordination".[3] Moreover, as a social reaction to the purchase of goods, excessive consumption, and an increasingly "traded" society, [4] the collaborative economy - based on sharing access and recycling - is characterized by environmental awareness and awareness of the need for sustainability. The collaborative economy is a connection between individuals, between individuals and companies, between companies, and between other types of actors, a connection based on communication and interactivity, with the orientation towards the direct satisfaction of a personal need at a given time [5]. The economic schemes are to facilitate the connection between foreigners. An example of strengthening communities through sharing is the collaborative platform Share Some Sugar, a website where "you can find someone in your neighborhood or social network who is willing to lend you something you need." [6] Finally, the phenomenon of the collaborative economy can be seen as a strong component of the more general trend of modern economies, which adds value by combining services and products and marking them as "new" or "advanced" services, or indeed "experiences". [7] Therefore, the collaborative economy is not just about buying, for example, accommodation, but rather the experience of staying in a local's apartment based on direct contracting (rent).

Definitions and evolutions regarding the collaborative economy

From ancient times the collaborative economy has known various forms, from "barter" exchanges, until recent years when it has grown exponentially in terms of actors involved (users of transactions and revenues), ultimately reshaping in many areas how products and services are provided, this is primarily due to the evolution of technology globally and the emergence of new business models. However, from the point of view of the specialized literature, the model of the collaborative economy is confirmed in 1999, with the appearance of Couchsurfing, which inspired the creation of Airbnb and led to the spread of the phenomenon of "sharing" globally. To reach with our proposals what the collaborative economy will look like in the horizon of 2040, we will highlight some of the historical data of the last years that determine us that we outline the working hypotheses for the future. In 2012, the UN Declaration defined the 5 (five) P respectively: people, planet, peace, prosperity, and last but not least partnership. All 5Ps are basic pillars of both the economic environment, but especially ours of all. Regarding the fields of activity in which the concept of the collaborative economy is found, it is worth mentioning that at the beginning of 2014 six fields of activity (exchange of goods/retail, services, use of space/accommodation, food, transport, and money) were defined at European level as relevant areas. By 2016 the number of areas had almost tripled: expanding into new sectors (e.g. health, logistics, local communities, landscaping, utilities such as energy, etc.) or creating new types of activities (e.g. the movement of manufacturers in the manufacturing sector) according to existing data at European level. Social networking technologies have radically disrupted communications, marketing, and customer support. With the same technologies, customers now buy products once and share them. Beyond business functions, the collaborative economy has an impact on basic business models, which now and in the future will be increasingly oriented towards the trades of the future. "The need for interdisciplinarity was strongly asserted in the second half of the last century and the disciplines weakened the rigid separatism that dominated for a long time. Their partnership has also been called multidisciplinarity, research / work teams have become multidisciplinary, while transdisciplinarity approaches a free movement area" (Romania after the crisis. Reprofessionalization, IPID, 2010) of the collaborative economy. To date, there are already several definitions for the collaborative economy. The Oxford Dictionary defines "collaborative economy" as "an economic system in which assets or services are shared between individuals, either free of charge or for a fee, generally via the Internet". [9] For this paper, the term "collaborative economy" is preferred for three main reasons. First, the term "collaborative economy" is broader in scope than the term "common economy". "The collaborative economy refers to an economic model that focuses on providing access to products and services through renting, trading or sharing instead of traditional ownership. The shared economy is a subset of the collaborative economy that focuses exclusively on the direct division of assets". [10] Thus, the narrower term "shared economy" would exclude current platforms, such as Uber, which facilitate transportation services. Second, the 'sharing' business model has progressed so much in recent years and gained so much economic value through some 'sharing' platforms, [11] that the term 'sharing' has been characterized as a 'sharing' the incorrect concept, used to minimize the essentially commercial nature of the activity on these platforms and as a term that "frames transactions with active technology as if they were altruistic or undertaken by the community" [12]. In other words, [i] became the term used by the 'sharing economy'. [13] To take these developments into account, the term "sharing" is replaced by the term "collaborative", which is more ideologically neutral. Thirdly, the term "collaborative economy" is in line with the European Commission's approach and relevant documentation. Blockchain technology, innovative financial instruments, and digital technology have led to the emergence of "business models in which activities are facilitated by online platforms that create an open market for the temporary use of goods or services often offered by individuals", specifying, at the same time, that in general the transactions related to the collaborative economy do not involve a transfer of ownership and can be carried out for-profit or non-profit.

Methodology

Scenarios for social, economic, and environmental developments up to 2100 were presented in Limits to Growth in 1972 [14]. Growth Limits (LTG) is a 1972 report on exponential economic growth and population with a finite supply of resources, studied by computer simulation.

The model was based on the work of Jay Forrester of MIT, [15]: 21, as described in his book World Dynamics, respectively by determining the exponential reserve index. In the model, there is the explanation that "the rate of resource use increases, the number of reserves cannot be calculated by simply making current known reserves and dividing the current annual use, as is usually done to get a static index. In calculating the 1972 model, the following economic data were used: the number of chromium reserves was 775 million metric tons, of which 1.85 million metric tons were exploited annually.

Calculation model in 1972, were used the following economic data: the number of chromium reserves was 775 million metric tons, of which 1.85 million metric tons were mined annually. The static index is 775 / 1.85 = 418 years, but the rate of chromium consumption has increased to 2.6 percent annually or exponentially, annual growth of 2.6 percent, the resource

will last in return.

$$\frac{\ln(1+0.026\times418)}{0.026}\approx95 \text{ years}$$

In general, the formula for calculating the time remaining for a resource with a steady increase in consumption is⁵:

$$y = \frac{\ln((rs)+1)}{r}$$

Where:

y = years left;

r = 0.026, continuous compound growth rate (2.6%).

s = R / C or static reserve.

R = reserve:

C = consumption (annual).

The 1972 book Limits to Growth, which estimated that our civilization would probably collapse at some point in this century, was criticized by economists of the time as a fantasy. After 40 years, research by the University of Melbourne has shown that the book's predictions are predictable. Moreover, following the book's scenario, the current crises and the emergence of service-oriented economic models as well as the collaborative economy model, are a predictable solution for societal development at the national and global levels.

The Limits to Growth team tracked industrialization, population, food, resource use, and pollution. Experts modeled data until 1970, then developed a series of scenarios until 2100, depending on whether humanity has taken serious action on environmental and resource issues. However, it should be noted that technology and digitization were not part of the scenarios of the moment, which is why we appreciate that by continuing research and adapting them to current resources, we could make new economic predictions and new sustainability models, and model predictions from 1972, respectively "overtaking and collapse" - in the economy, environment, and population - before 2070, could be corrected.

Results and discussions

The current results show that the "business-as-usual" scenario from Limits to Growth is constantly followed by economists of the moment, and the graphs in the paper show real-world data (both MIT experts and authors of the paper), drawn in a solid line. The dotted line presents the "business-as-usual" scenario Limits to Growth until 2100. If we overlap the current data over the graphs predicted in the paper, they are at least until 2010, similar to the book's forecasts. Moreover, the forecasted data lead us to the hypothesis of the collaborative economy model, a model on the horizon of the 2040s.

 $R=\int_0^y Ce^{
ho t}\ dt=rac{C}{
ho}\left(e^{
ho y}-1
ight)$, returns to $y=rac{\ln\left(1+
horac{R}{C}
ight)}{
ho}$.

⁵ Growth limits, page 60, derivation:

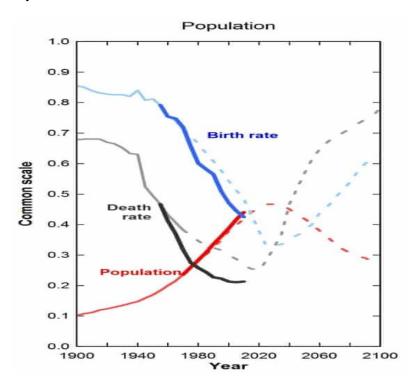


Figure 1. Evolutions of the population, mortality rate and birth rate during 1900-2100.

Source: Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III, William W (1972). The Limits to Growth

Where:

- -solid line: MIT experts forecast from, with new updated research.
- -dotted line: limits for the "business-as-usual" growth scenario (The Limits to Growth, 1972)

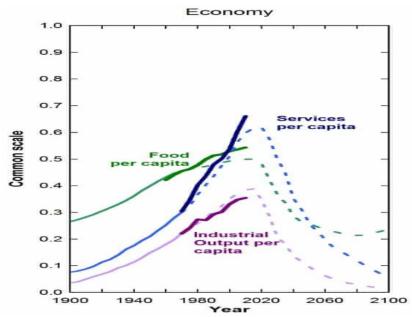


Figure 2: Developments in the food / per capita economy, industrial production / per capita and services / per capita

Source: Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III, William W (1972). The Limits to Growth

Where:

- solid line: forecasts of MIT experts from, with new updated research.
- dotted line: limits for the "business-as-usual" growth scenario (The Limits to Growth, 1972).

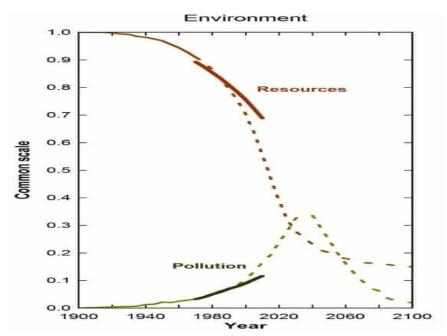


Figure 3: Evolution of pollution and resources

Source: Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III, William W (1972). The Limits to Growth

Where:

- solid line: forecasts of MIT experts from, with new updated research.
- dotted line: limits for the "business-as-usual" growth scenario (The Limits to Growth, 1972).

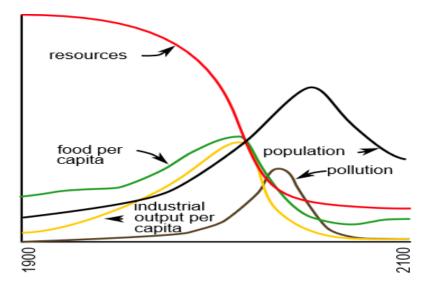


Figure 4. The world standard model described in The Limits to Growth, 1972

Source: Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III,
William W (1972). The Limits to Growth

MIT researchers in 1972 presented scenarios for the evolution of population growth and thus the increase in demand for material goods and which would lead to an increase in industrial production and an increase in pollution. The graphs above show developments that are currently being confirmed, i.e. resources are being consumed at a rapid pace, pollution is increasing, industrial production and food per capita are increasing, and the population is also growing rapidly.

By 2020, the data presented in this paper are confirmed. All the more so as resources become more and more expensive to obtain as they are depleted (as estimated in the paper, industrial production per capita begins to decline to start with 2015). At the same time, as pollution increases and industrial input into agriculture decreases, per capita, food production decreases. Health and education services are shrinking and this is combining to drive up the mortality rate from 2020.

The global population is starting to decline according to estimated data around 2030, with around half a billion people per decade. Living conditions are declining to levels similar to the early 1900s. The experts involved in writing this paper have warned that carbon dioxide emissions will have a "climatological effect" by "warming the atmosphere". The conclusions reached by MIT experts in 1972 and the authors of The Limits to Growth were: "global industrial production per capita peaked around 2008, followed by a rapid decline; per capita food peaks around 2020, followed by a rapid decline; global per capita services peak around 2020, followed by a rapid decline; the global population will reach a peak in 2030, followed by a rapid decline". In the context of these evolutions and predictions, we appreciate that man will be responsible for present and future events, and the model of collaborative economy can be a viable solution especially because it has the individual at its center. We appreciate that business models in the horizon 2040 will be based on the tools and channels of the collaborative economy and will generally operate three main types of actors (service providers - individuals who provide services, goods, skills, time, for a fee or free, occasionally (occasional providers) or professionally; users of these services and collaborative platforms that connect demand with real-time supply and facilitate transactions), using three main market pillars, as detailed in the figure below.

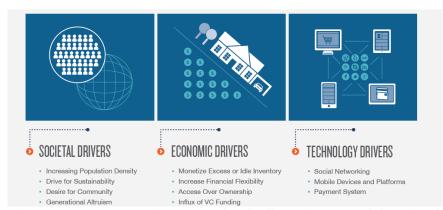


Figure 5. THREE MARKET FORCES LEAD THE COLLABORATIVE ECONOMY Source: "The Collaborative Economy," Altimeter Group, June 4, 2013

The European agenda for the "collaborative" economy published in 2016 by the European Commission had as main objective the regulation at the European level due to the uncertainty regarding the rights and obligations of the different actors participating in the collaborative economy, respectively the examination of the main key aspects market and public authorities, grouped into five key areas:

- 1.) Market access requirements;
- 2.) Liability regimes;

- *3.) User protection;*
- 4.) Self-employed persons and those involved in the collaborative economy
- 5.) Taxation.

The collaborative economy as defined conceptually, principally, and functionally, can directly contribute to sustainable economic development at local, regional, national, European, and global levels, the impact is not only based on business opportunities but especially through the social impact on which can generate it, namely the creation of new jobs, sustainable economic growth and stable sources of income. This is because "the potential of the collaborative economy is to be taken into account, with an annual growth of over 25% and, theoretically, the estimated economic gain due to better capacity utilization due to the collaborative economy could reach 572 billion. EUR" according to European sources. However, from an academic point of view, we can have reservations in measuring the value of the collaborative economy, given the fact that the literature has not vet agreed on a methodology for measuring "the impact of the collaborative economy on the economy, society, and environment." According to the Eurobarometer, 42% of consumers consider the services of the collaborative economy more convenient and 33% appreciate that they are cheaper or even free. In 2020, collaborative business models emerged on the one hand as a result of the COVID 19 pandemic context, and firstly as a result of the digital revolution, which we can say will directly influence the trades of the future, economic sectors and which will have a profound impact on the labor market. Moreover, the impact will be direct on labor relations between "collaborative platforms and workers, with the concrete risk of undermining decent working conditions, minimum legal standards, and adequate social protection". Education and knowledge will play a key role in limiting these future risks. To shape the future, we consider that to know how the collaborative economy has been defined (there is no unanimously accepted definition) and from the point of view of the literature, and if it is confirmed by 2040 by the characteristics and particularities of this economic model, respectively: Olson and Kemp, 2015 defined "the collaborative economy as a market that meets the following conditions: there is an excess of supply (in terms of a certain type of good / qualification), and the sharing of these goods/services generates benefits for both the bidder and for customers, and the internet provides means of communication and coordination of the process of sharing these goods/services"; Stephen Miller, defined in 2016 "the collaborative economy is an economic model in which people generate and share goods, services, space and money"; Michael Cusumano, 2015, "the collaborative economy is the result of a new era, in which underused resources become services made available for rent/employment, on a peerto-peer basis, through the contribution of the Internet and smartphones"; Botsman, in 2013 defined "the collaborative economy is an economic model developed through the Internet, based on sharing, exchanging, marketing or renting products/services, allowing access to property"; in 2015 H.A. Posen, defined "the collaborative economy facilitates common ownership, localized production, cooperation, the operation of small enterprises and the regeneration of economic and natural abundance. Also, the collaborative economy encourages innovative ways to share underutilized facilities", "the collaborative economy is the expanding ecosystem, based on temporary customer access to shared products and services" was defined by Santana and Paris in 2015; Choi et. in 2014 defined the collaborative economy as "representing collaborative consumption, achieved through sharing, exchange, and rental of resources, without transfer of ownership".



Figure 6. Thriving Futures: The need for new narratives & measures of "progress" Source: Stewardship for Thriving Futures, Dr. Julia Kim, 2021

Beyond GDP: Measuring what matters

"Because mentalities and paradigms guide behaviors, changing them can have a profound impact - D. Meadows, 1999

- ✓ VISION: What is the purpose of the Economy? "Happiness and the well-being of a lifetime"
- ✓ MEASURES: GNH Index 9 domains, 33 indicators, national survey every 3 years (Center for Bhutan Studies and GNH Research)
- ✓ POLICY: A screening tool to guide policies (GNH Commission)
- ✓ ACTION: Applying GNH in everyday life leadership development, business, education (The GNH Center Bhutan)

Taken together: creating favorable conditions for human flowering, in balance with nature.

The functioning mechanism of the present and future collaborative economy- along with the knowledge and validation of the collaborative economy model that can be defined for Romania by 2040, starting from the definition of the concept of the collaborative economy, we appreciate the need to define the mechanisms of the collaborative economy, which can evaluate both the bidder and the buyer, mechanisms, and models specific to each economy using digitized distribution channels or digitized platforms. These mechanisms use tools specific to the digital age, namely the Internet and software technologies, which through market tools encourage consumption, respectively the behavior of participants on the trading/trading platform / etc.

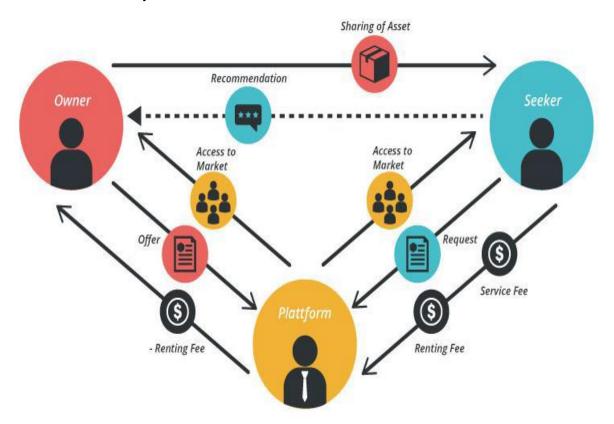


Figure 7. The mechanism of the collaborative economy

Source: https://bmtoolbox.net

Collaborative business models are more complex and varied, based on determining factors, grouped according to three relevant criteria, namely:

- \square societal (increasing population density, motivated for sustainability; desire for the community; generational altruism);
- □ economic (generate excess money or idle inventory, increase financial flexibility, access to the property, Lisa Gansky, author of The Mesh: Why the Future of Business is Sharing, told us: "We are moving from a world where property it was something we aspired to, in a world where access to goods, services, and talent triumphs over property" (the influence of VC financing: investors are the key to growing the collaborative economy);
- \Box technology (social networks, mobile devices, and platforms, payment systems: e-commerce and payment platforms are needed to mediate transactions between buyers and sellers).

Through the collaborative economy, more precisely through the tools and mechanisms of its functioning, the middle class will become a forced class, representing the majority of the global population, and which is estimated to reach 5.2 billion people by 2030. At the basis of the functioning mechanism of the collaborative economy is the digital platform as a tool for trading, learning, etc. Moreover, platforms are vectors for collecting information about products and consumer preferences, and based on algorithms can provide the most appropriate solutions for your application and thus permanently improve user requests. Through search algorithms, both search and trading costs for users are optimized.

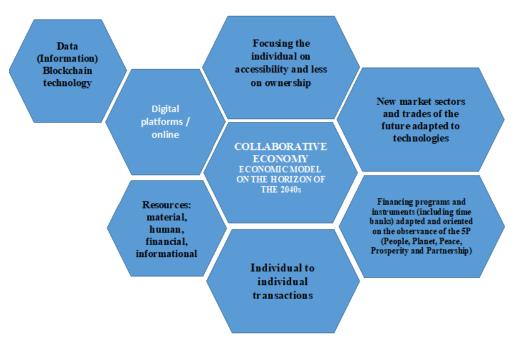


Figure 8. The model of collaborative economy on the horizon of the 2040s Source: own concept, September 2020

The huge amounts of information (data) lead us to say that in 2020 we are witnessing "big data revolutions", and the way of receiving, processing, and using them depends on the one hand on the platforms where this information is found, on how of presentation and last but not least by the way of perception depending on the knowledge of each individual and his need. Online platforms observe and collect personal data, relating to age, residence, employment, professional abilities and qualifications, dietary or other preferences, health conditions, medicines, economic details, and much more of both users and service provider's collaboration also centralized data about the commercial and other behavior of users or even obtaining data from data brokers. Indeed, their function is to suit the needs of the former with the goods/services offered by the latter. The more complete and complex the information, the better the demand and supply harmonize. The issues raised by data collection and processing following EU legislation on data protection and competition have been regulated since May 2018, but even now and we believe that in the future regulation will be one of the priorities of the future.

Individual-to-individual collaboration on peer-to-peer transactions/operations is becoming increasingly present through digital platforms. This means three things: firstly, the fact that individuals have the opportunity to bypass traditional average people and take control to meet their own needs; secondly, the social network is endlessly expanded, as collaboration platforms allow foreigners to share walks, meals, rooms, etc. .; and third, that the roles of consumers and suppliers are completely revised. The commercial relationship between the bidder and the buyer acquires new values. Small firms and traditional professionals with more limited market access are becoming increasingly active through the collaborative economy, respectively by providing products and services through digital trading platforms (e.g. OLX), being a growing trend and in which the collaborative economy should be properly regulated.

A feature of the collaborative economy is that in which individuals move from ownership to accessibility, respectively through the process of sharing goods and services between individuals and more efficient use of resources. Moreover, the transition from an economy based on production to an economy based on use/services is confirmed, respectively

what is no longer needed for one individual is needed for another (example: online platforms for the sale of various goods).

Conclusion

The collaborative economy has grown rapidly in recent years, and some innovative areas have already matured. Among the most representative areas of activity reported in the 17 branches of the national real economy, we mention transport (e.g. urban and intra-county transport through collaborative enterprises, platforms such as Uber, Lyftallow, Turo, and Getaround), accommodation services (The most representative example globally is Airbnbis, which operates in 191 countries with over 160 million users (another example is the HomeExchange platform); the financial sector, respectively the collaboration platforms in financial services, such as crowdfunding, fundraising, money loans, investments, virtual currencies, etc. Among the globally representative crowdfunding platforms we exemplify them on Kickstarter and Indiegogo. Financial technological innovations (FinTech) can be found on digital financing platforms. The health sector, which in recent years has undergone new transformations, and telemedicine has experienced rapid growth (collaborative platforms that link physicians to patients).

Another peculiarity of the collaborative economy is the development of self-employment, the collaborative economy also called a "giant economy", and which offers those looking for a job "crowd workers" the opportunity to change the paid workforce. As I mentioned in the paper, the concept of time bank is getting closer to the time of use in our country in the real economy, in addition to working for a fee, some collaboration platforms such as Skillharbour, functions as "banks of time", facilitating the exchange of services between colleagues in a non-monetary relationship. Individuals can collect and exchange time and skills, time being a measure of value. Everyone's time and work are equally valued, and almost any skill is an asset and could be replaced with another skill in this time-based model. However, one aspect to be clarified is the regulatory framework and the reflection of these activities in the potential GDP (in which the individual work performed in one's own household/home should be included).

One element that we need to think about carefully is the regulatory framework applicable to the collaborative economy at both EU and global level, clearly defining the legal obligations of actors involved in collaborative activities, consumer rights and protection, the framework regulatory and liability regime, detailing the status of workers, as well as the applicable tax regime, these are just some of the main issues that I think we should reflect on.

It is noteworthy that at the level of local authorities in cities appeared the first positive reactions to the collaborative economy, generated on the one hand by population density and physical proximity, which led to the adoption of collaborative practices, especially in some sectors where digitalization through platforms it was present, respectively sectors such as accommodation and transport.

These positive aspects of collaboration between local authorities and collaborative platforms have generated positive experiences of good practice, such as the provision of training for citizens of the community, access to insurance services, or information campaigns among citizens about possible obligations fiscal and legal.

The year 2020 is a year of reflection on the last decade of the common economy, and the COVID 19 pandemic further accentuated the transition to the collaborative economy through digital trading platforms, respectively new business models, and new behavior of the consumer and the citizen to goods and services, to the workplace, and the environment as a whole. The growth of the collaborative economy has surpassed even the assumptions of the most optimistic economists on the global market, and this growth is also given by the strength of the markets that are currently converging.

The collaborative economy or the economy governed by the 5 Ps (People, Planet,

Prosperity, Peace, and Partnership) we appreciate will be the type of economy specific to Romania in the 2040s and will include working models based on activities specific to the professions of the future with technologies advanced to the moment and with the societal role of the individual very clearly defined, and the trading and income measurement mechanism will be governed by innovative financial instruments, such as the timebank.

REFERENCES:

- [1] A Sundararajan, "Peer-to-Peer Businesses and the Sharing (Collaborative) Economy: Overview, Economic Effects and Regulatory Issues" (2014), www.smallbusiness.house.gov/uploadedfiles/1-15-2014_revised_sundararajan_testimony.pdf;
- [2] D Helbing, "Economy 4.0 and Digital Society: The Participatory Market Society is Born" (December 2014) 10, http://ssrn.com/abstract=2539330.
- [3] Hamari, M Sjöklint și A Ukkonen, "The shared economy": Why people participate in collaborative consumption" (2015) 67 Journal of the Association for Information Science and Technology 2047
- [4] T Teubner, " *Thoughts on the Sharing Economy*" (2014), Proceedings of the International Conference on e-Commerce 322.
- [5] Böckmann, "Shared economy" (2013).
- [6]K Schwartz, founder Share SomeSugar,
- www.collaborativeconsumption.com/2010/09/01/keara_schwartz_founder_of_share_some_su_gar.
- [7] J Hojnik, "Servitization of production": implications and challenges of EU law" (2016) 53 CMLR 1575
- [8] DE Rauchand D Schleicher, ',, LikeUber, But for Local Governmental Policy": The Future of Local Regulation of the "Sharing Economy" (2015) GeorgeMason University Law & Economics, Research no. 15-01, 14.
- [9] R Botsman, "Defining the shared economy: what is collaborative consumption and what is not?" Fast Company (27 May 2015), www.fastcoexist.com/3046119/defining-the-sharing-economy-what
- [10] W Chang, "Growing Pains": *The Role of Regulation in the Collaborative Economy*" (2015) 9 (1) Intersect: The Stanford Journal of Science, Technology, and Society 3.
- [11] US Federal Trade Commission (FTC) Staff Report, 'The Sharing Economy: Issues Facing Platforms, Participants and Regulators' (2016) at www.ftc.gov/reports/sharing-economy-issues-facing-platforms-participants-regulators-federal-trade-commission.
- [12] J Hojnik, "The servitization of manufacturing": EU law implications and challenges" (2016) 53 CMLR 1575.
- [13] J Infranca, "Intermediary Institutions and the Sharing Economy" (2016) 90 Tulane Law Review Online 29, 30.
- [14] Meadows, Donella H; Meadows, Dennis L; Randers, Jørgen; Behrens III, William W (1972). The Limits to Growth; a Report for the Club of Rome's Project on the Predicament of Mankind. New York: Universe Books. ISBN 0876631650. Retrieved 26 November 2017
- [15] Forrester, Jay Wright (1971). World Dynamics. Wright-Allen Press. ISBN 0262560186.