

The Rise of Platform Economy in the Context of Globalization. Challenges and Opportunities

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Abstract

This paper aims to identify the challenges and opportunities offered by the transition from the concept of classic social networks to the dynamics of the online social environment. The explosive growth of online social networks generates extensive qualitative and quantitative changes in human communication, resulting from the direct and indirect online interaction between individuals, as well as between individuals and the technological objects of the social network. Within the online ecosystem, self-organized communities emerge and evolve, while behavior, norms, trends, trust, and patterns of collective activity emerge as properties at the macro level, resulting from low-level interactions between interconnected users. Through this paper we aim to review the structural approaches in sociological studies to provide a broader context, both theoretically and methodologically to the analysis of popular online socialization systems. We are interested in emphasizing those scientific paradigms that focus on researching the connections between entities (objects, individuals, events) rather than on the study of the entities themselves.

Keywords: *platform economy; globalization; Big Data.*

JEL Classification: *O31, O33*

Introduction

The concept of social network, first introduced in 1954 by J. Barnes (Barnes, 1954), referred to a field of study of modern sociology, anthropology, geography, psychology, social studies, organizational studies and computer science in the last decades. The person who created the modern paradigm of the social network was Stanley Milgram. He studied the problem of the small world that can be described through indirect relationships. Even if two people x and y do not know each other directly, they can share a relationship through another person who knows both (Milgram, 1967). The theoretical model of this small world problem was created by Pool and Kochen (Milgram, 1967) and served as the basis for Milgram's purely illustrative research. Stanley Milgram conducted two experiments - the Kansas Study and the Nebraska Study - in

which he asked many people in a city to send a letter to a chosen person from a distant city. It should have been done only by giving this letter to a person whom these people knew by name. He then analyzed the ways in which the letters were sent and concluded that the participants in his research formed a social network and that they were connected to it with "six degrees of separation". This means that a message, in such a network, would be provided by an average of five intermediaries. Kochen confirmed that this value is relatively equal if the selection criteria of the starter change (Degenne, 1999). Howard argues that six degrees of separation can be true in the offline environment, while in the online environment it is most likely to be less than three degrees. Since 1967, social networks have become one of the areas of research in which scientists from different fields seek inspiration. Thus, social networks and, in particular, the analysis of social networks, supported by computer science, offer the possibility to expand other branches of knowledge. The concepts of social networking and social network analysis have been developed for many areas, such as corporate partnership networks (partnership in the field of law), networks of scientists or other professions, family networks, networks of company directors, sexual contact networks, customer networks, the labor market, public health, psychology, etc. Recently, it has become a part of the new discipline of science called computational social science.

The Study of Classical Social Networks

From the mythologies or religious texts of various cultures around the world we can see an increased importance given to the description of the structures formed by kinship relations. From Indian to Norse mythology, from the pantheon of ancient Greece to the vast genealogies presented in the Old Testament, the description of the connections between individuals plays an essential role in defining the individual identity of actors both to serve purposes associated with the narrative and to shape the continuity of the mythological universe in real life by creating connections between historical characters and mythological characters.

The genealogical descent and the interpersonal connections documented have played an important role in defining the identity of individuals in the last two thousand years. If we think of the royal and noble families of Europe in the Middle Ages and beyond, the social status was predominantly hereditary, so intrinsically linked to the proof of a certain descent, or a series of interpersonal relationships. The interest for the structured documentation of the relations between individuals goes beyond the sphere of kinship ties, extending especially in the sphere of vassalage or property ties between individuals. Such forms of recording the structures formed by the connections between individuals sustain and perpetuate in time the feudal systems. If until the eighteenth century the study of these relations served to legitimize a status quo, starting with the industrial revolution and until the end of the nineteenth century in the Western world there are a number of major changes: the emergence of large urban and industrial centers, population migration in Europe and North America, the co-location of several ethnic groups and their imminent interaction, technological innovations, major developments in science and philosophy, the emergence of various forms of democratic government, the emergence of new forms of inequality, domination, economic, political and cultural oppression and implicitly conflicts of various types (Castellani, 2009). As industrialization moved into its late stages, the complexity of society also evolved. The expansion of the application of the principle of division of labor, the development of the middle class, the expansion of professions, the consecration of civil rights, continuous innovations in technology and medicine, countercultural movements, increasing life expectancy and social reforms have led to increasing complexity of society. In the context of these rapid developments and radical social changes, the first sociologists had their say (Castellani, 2009).

Starting from this period, under the umbrella of positivism appear the first scientific approaches to the study of society and implicitly of social relations. The major social changes that took

place in Western societies in the 19th century give rise to theories that mark the beginning of sociological thinking. The concept that captivates the attention of many prominent scientists of the time is evolutionism (in the Darwinian version, but also Hegelian). The evolutionary perspective proposes the idea that societies develop over time from simpler forms to increasingly complex forms of existence - for example the differentiation made by Tönnies between *Gemeinschaft* (community) and *Gesellschaft* (society) or the differentiation between mechanical solidarity and organic solidarity made by Durkheim which we will return to later.

This evolution can be systematized in organic terms (in Durkheim and Spencer) or in stages (in Comte and Marx). One can rely on Darwinian evolutionism (as in the case of Spencer) or Hegelian idealism (as in the case of Marx). It can be observed through a single lens (as in the case of Marx) or through several lenses (as in the case of Durkheim). In addition, it may be optimistically conceptualized in terms of progress, development, advancement, and growth (as in Spencer's case) or it may be rather pessimistically abstracted in terms of exploitation, imperialism, regression, and decline (as in Marx and Weber's cases). It can be seen as a combination of progress and regression (as in the case of Durkheim). Whatever the perspective - and whatever the political, economic, cultural or moral agenda of the theorist - the common theme in all these approaches is that, since the eighteenth century and culminating in the twentieth century, Western society has passed through a period of increasing complexity (Castellani, 2009). It is understandable that early sociologists were concerned with understanding broad social change and the increasing plurivalence of Western societies given evolutionary theories that proposed a seemingly universally applicable paradigm and sometimes even managed to mold early conceptualizations of society as a body. The first sociologists managed to make their mark in a positivist way on the different structural approaches of interpersonal relations.

Precursors of social network analysis

Linton C. Freeman (2004) makes a brief review of the elements proposed by prominent sociologists of the period. These elements are reflected, have similarities or have been taken over in the study of social networks. The study of social networks and even more so that of complex social networks undoubtedly falls first and foremost in the field of the study of complex systems.

Auguste Comte, recognized as the father of sociology for launching the term "sociology" and for his efforts to support the development of anthropology as a science, proposed the purpose of this new science to discover the laws of society through both theoretical and systematic observation. In his definition of the field, Comte distinguishes two aspects of the field, statics and dynamics, defining the first aspect as investigating the interconnections between different parts of the social system (Freeman, 2004). Most important sociologists of the nineteenth or early twentieth century embraced Comte's structural perspective.

Ferdinand Tönnies used the term *Gemeinschaft* (sometimes translated by community in the scientific literature) to refer to the traditional social form based on direct social ties between individuals with common values and, in contrast, the term *Gesellschaft* (sometimes translated by society in the scientific literature) to it refers to the social forms in which the connections between individuals are formal, impersonal and instrumental. Emile Durkheim conceptualized the distinction between mechanical solidarity in societies where cohesion and integration and implicitly the connections between individuals are generated by the similarity of individuals - common tastes, common religious beliefs, similar level of education, etc. and the organic solidarity present in the heterogeneous modern societies in which the division of labor has led to the creation of cooperative links between different individuals that complement each other.

Resumed in the context of the study of popular online social systems that allow the user to complete a profile with information related to education, beliefs and especially tastes and

interests especially in media consumption (books, magazines, music, movies, favorite series), these two concepts proposed by Durkheim can serve to analyze the structure at the level of cores formed around relatively small groups of users of these large systems. These concepts can also be useful in determining the effects of various recommendation systems (services, products or media content) used in conjunction with these online social networks.

Both Herbert Spencer and Charles H. Cooley described the differences between traditional societies in which there were intimate, primary relationships between individuals, and complex modern societies in which relationships between individuals are most often impersonal, secondary. Among the forerunners of social networking theories, Linton C. Freeman also mentions Gustave LeBon, who studied crowd behavior and suggested that when individuals become members of a crowd they tend to lose their individual identity and ideas and behaviors are passed on from a person to another. Freeman considers the contribution of Georg Simmel to be particularly important, who argues that the emphasis in sociology should be decisively and exclusively on investigating interactions between individuals because spatial aggregation or temporal succession of individuals transforms into society only when there are forms of mutual influence between individuals (Freeman, 2004).

Computer Networks and the Internet

The technology that marked the world of the twentieth century was certainly related to the collection, processing and distribution of information. The installation of telephone networks, the invention of radio and television, the use of computers, are all milestones in the technological evolution that began in the last century. As a result of technological progress, these areas converge. As the possibilities for collecting, processing and distributing information increase, so do the demands for increasingly sophisticated processing. The intertwining of computers and telecommunications was the basis for the establishment and use of computer networks. A network of computers consists of a group of autonomous, interconnected computers that can communicate with each other in order to transmit and receive data. Computers can share a variety of resources, both hard and soft (for example: hard disks, applications, data structures, or printers).

The growing popularity of the World Wide Web and the Internet has led to an increase in the number of types of services offered through a computer network. People who use these services have created a new type of virtual society, usually called online social networks. These can also be called virtual communities.

The main features that distinguish social networks from the internet from social networks extracted on the basis of interactions between people in the real world are the following:

- lack of physical contact, in person - only over distances, sometimes over very long distances;
- usually the lack of an unambiguous and trusting correlation between the member's identity in the virtual community - the online identity and their identity in the real world;
- the possibility of multimodal communication, simultaneously with several members; also the possibility of easy switching between different communication channels, especially online and offline, e.g. VoIP (Voice over Internet Protocol) online and offline text communication;
- the simplicity of a break-up and suspension of contacts or relationships;
- the relatively high ease of collecting data on communication or joint activities and their further processing;
- increasing the potential for data reliability about users available on the Internet.

Online social networks in the context of Big Data

Many topics in the field of information technology include online social networks (OSN), the concept of Big Data and cloud computing. Social networks, through internet services, generate huge real-time data flows connecting both individuals and groups who share similar interests and characteristics.

The data flows generated by online social networks lead researchers in this field to develop and build models of good practice, but at the same time, this diversity of interconnected data profoundly affected the way people perceive them.

We can define a social network as a structure formed by people or organizations (nodes) and the social relations between them (connections between nodes). For these social networks (social media) to exist we need support platforms, these platforms are applications designed to create and share user-generated content. These platforms can be divided into several categories depending on the form and distribution of content, for example blogs, forums, collaborative projects or virtual communities. Platforms designed to create social connections, such as Facebook, Twitter or LinkedIn, have seen an explosive growth in terms of popularity but also a strong influence on how to do business or speculate on market requirements.

Among the main characteristics of the use of social networks we can list the frequency of use, the frequency of requests and the number of friends (interactions) (Jung, et al., 2013). The advantages of these platforms are enormous if we consider the possibility of forming an audience in a very short time to promote certain ideas or products, regardless of geographical area. These online social networks provide us with a strong foundation both for communication and the maintenance of social relationships and for identifying users with similar concerns or interests. Another important advantage of using these networks is that we can transfer know-how in real time, using the knowledge and connections from our friends list.

Big Data intervenes when specialists from various areas of interest (computer systems, economics, marketing, management) try to understand and anticipate user behavior, a concept that becomes a representative element of the information society. If we succeed in a correct interpretation of the data collected we can increase productivity, efficiency and effectiveness for the benefit of consumers by allowing producers and organizations to reduce the consumption of resources used and increase the percentage of added value for the products and services created. Among the sectors benefiting from Big Data we can list banking financial services, information technology, the electronic products sector and the public sector.

Relevant research

One of the most important advantages of social networks is the very high speed with which users obtain new information. This helps them solve problems effectively, which can be helpful in a wide variety of situations. Also, on many social networks (eg Facebook) you can easily get usage statistics. Therefore, researchers have begun to study the main reasons why users use online social networks, how their use influences them and what they think about this topic. Recent research has shown that users use social networking sites primarily to maintain and make visible their existing social relationships (Iordache & Pribeanu, 2016). In other words, users of these sites do not try to connect with strangers, but rather to communicate with people who are already part of their direct or extended social network. This observation implies that a level of trust already exists between users of social networks and that these users share at least one aspect of their lives: career, hobbies, political opinions and so on. At the same time, there are studies (Lampe, et al., 2011) that show that social networks have the potential to promote adaptation to different contexts by supporting users in identifying new friends and obtaining useful information. At the same time, Big Data studies can face a variety of challenges.

Researchers drew attention to decisions about the type of data generated and collected, the meaning of the notion of Big Data, privacy issues, ethical considerations for the management of such data, and the lack of an integrative theory. (Manyika, et al., 2011) identify several trends that highlight the added value of Big Data:

- creating a transparent work environment - if we take the public sector as an example, important data is much more easily accessible between separate departments, thus reducing processing and search time. For the industry sector, through the integration of research data with those of manufacturing and design we can develop the concept of parallel engineering that leads to a significant reduction in the launch time of new products and an improvement in quality;
- using Big Data, we can analyze the increase of performance, the exposure of variability and the discovery of needs. In order to achieve a higher level of performance control we can use this data to study the variation of this indicator and understand the determinants;
- using automated algorithms, we can support human decision processes. With the help of these algorithms, in the banking financial sector for example, we can model risk in the process of managing client portfolios or we can monitor abnormal stock market transactions by adding markings for a thorough human analysis;
- implementation and modernization of new production, business and service models. With the help of Big Data, companies have a solid foundation for creating and improving existing services or even inventing new business models. An eloquent example would be the 2011 Gulf of Mexico oil disaster, where the US National Institute of Science and Technology used this data to run models to assess the uncertainty caused by the disaster by sorting estimates from various sources to issue warnings and coordinate disaster response actions.

The rise of a new type of economy

An economy based on digital platforms is developing very fast and is taking shape in the context of globalization. Companies such as Amazon, Etsy, Facebook, Google, Salesforce and Uber create online structures that allow a wide range of activities based on human interactions. This current paves the way for radical changes in the way we work, socialize, create value in the economy and compete for the resulting profits. Their effects are distinct and identifiable, although they are certainly not the only part of the rapidly reorganizing global economy. As the works of Michael Cusumano, Annabelle Gawer and Peter Evans show, these digital platforms are multisite digital frames that shape the terms in which participants interact with each other. The transformation of initial information technology (IT) services emerged with the Internet and was, in part, a strategic response to intense price-based competition between manufacturers of relatively similar products.

The transformation of IT services was based on the application of a series of computable algorithms for countless activities, from consumption and leisure to services and production. Transposing these algorithms to a specific cloud, where they can be easily accessed, has created the infrastructure on which and from which platforms-based markets and ecosystems operate. Platforms and clouds form an essential part of what has been called the "third globalization", reconfiguring globalization itself.

These digital platforms are diverse as they are divided into categories depending on the structure. Google and Facebook are digital platforms that provide search and social media services, but they also provide an infrastructure on which other platforms are built. Amazon is a market, as are Etsy and eBay. Amazon Web Services provides an infrastructure and tools with which others can build new platforms. Airbnb and Uber are using these new cloud tools available to force profound changes in a variety of existing businesses. Together they force the

reorganization of a wide variety of markets, working arrangements and, ultimately, the creation of values and profit.

This new economy based on digitized tools has received a variety of names derived from its attributes. How we label these transformations matters, because labels influence how we study, use, and regulate these digital platforms. The promoters called it the creative economy or the shared economy, while those least convinced of its benefit called it the Gig Economy, the Precariat or the 1099 Economy, focusing on the impact on workers and how they are compensated. There are wide variations within these labels, taking into account the common economy. Examples include Uber and Airbnb, which are a far cry from the visions of Wikipedia, which deals with the common construction of knowledge; Napster, who shared music, whether it was legal or not; or from open source software creations such as Linux and Apache. Despite attractive etiquette and entrepreneurial success, Uber, Airbnb and Facebook do not rely on "sharing"; rather, they generate money from human effort and consumer assets. Indeed, the advantages of companies deployed on platforms are often based on an arbitrage between the practices adopted by platform companies and the rules by which established companies operate, which are intended to protect customers, communities, workers and markets.

Lyft and Airbnb are entrepreneurial initiatives that facilitate the conversion of consumer goods, such as cars and apartments, into goods that are monetized. This "sharing" is similar to the outsourcing economy that existed before factories, when companies sent materials to people to make items such as shoes, clothing or firearms in their homes. In the current system, the platform operator has unprecedented control over the compensation and organization of work, while claiming to be only an intermediary. On the other hand, fast-growing mobile app stores and user-generated content platforms, such as YouTube and Instagram, are structured as digital shipping industries, borrowed from the way artists sell their work through galleries.

We prefer the term "platform economy" or "digital platform economy", a more neutral term that encompasses an increasing number of digital activities in business, politics and social interaction. If the industrial revolution was organized around factories, today's changes are organized around these freely defined digital platforms. Indeed, we are in the midst of a reorganization of our economy, in which platform owners are apparently developing a power that can be even more formidable than that of factory owners in the early industrial revolution. The proliferation of labels is simply a reflection of the recognition that platforms already have strong consequences for society, markets and companies and that for the time being we are unclear about their dynamics and directions. No matter what we call this transformation, the consequences are dramatic.

Conclusions

The debate over the impact of the platform economy is an extension of a discussion that began in the early days of the IT revolution, when figures such as Robert Noyce, Bill Gates and Steve Jobs claimed to have created a future in which the world has access to new possibilities and perspectives. Optimists are still plentiful, and San Francisco is now facing the biggest gold rush, with investors, entrepreneurs and scientists working hard to create new "disruptive" businesses. For investors, inherently optimistic, the question is how to build platforms, attract users and then capture the value generated by the developing ecosystem. Regardless of the platform, they are all based on mobilizing human beings to contribute to this ecosystem. The optimistic version of the developing technical and economic system suggests that society can be rebuilt with the help of producers who become proto-entrepreneurs capable of working on flexible programs and benefiting from these platforms. Similarly, utopians argue that platforms, such as Uber and Lyft car-sharing services, can unlock commercial value in insufficient staff assets; other

platforms, such as Airbnb, promote the idea that vacant rooms in the house or apartment can become sources of income. Proponents of this trend believe that all these aspects can contribute in a positive way from a social point of view without negative consequences.

But can we really anticipate all the repercussions of these new economic arrangements? For example, platform companies that match workers very well with the required tasks can make labor markets more efficient, but if they become ubiquitous and organize a significant part of the work, they can at the same time generate fragmented work programs. For the time being, it is not clear whether these digital platforms are simply introducing digital intermediaries or, in fact, increasing the scope of contract work.

Even when the digital age was in its utopian phase in the 1970s, skeptics feared that new technologies would have unintended consequences. Perhaps the most prestigious was Kurt Vonnegut's 1952 novel, *Player Piano*, in which he imagined a digital future of material abundance although a digital future of tube-built machines, not semiconductors - with a radical social division between an extremely faithful and creatively engaged elite and a subclass. His dystopian vision is now fully in the fear that digital machines, artificial intelligence or robots will replace work for a large part of the population. Bill Davidow, a former Intel employee and then at his own venture capital firm in Silicon Valley, said in his Harvard Business Review article, "What happens to society when the robot replaces workers?" MIT economists Erik Brynjolfsson and Andrew McAfee explore this trend in more detail in their book *The Second Machine Age*. The impact on employment and the nature of the work is certainly an element in assessing the situation of having a utopia or a dystopia. The result is not yet determined. As a society, we will have to make choices about how to implement new technologies, choices that will be essential in shaping the final impact

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