Open Journal of Economics and Commerce
Volume 1, Issue 2, 2018, PP 8-19
ISSN:2638-549X

E-Commerce Platforms as Service Ecosystems

Antonio Botti, Ph.D[1], Gennaro Maione[2]

[1]*Associate Professor of Management, Department of Business Science – Management & Innovation Systems, University of Salerno, Fisciano, Italy*
[2] *Ph.D student, Department of Business Science – Management & Innovation Systems, University of Salerno, Fisciano, Italy*

***Corresponding Author:** Antonio Botti (Ph.D), Associate Professor of Management, Department of Business Science – Management & Innovation Systems, University of Salerno, Fisciano, Italy. abotti@unisa.it*

ABSTRACT

For several years, the attention that management scholars have been dedicating to the concept of service ecosystem is characterized by a growing trend. However, many contributions dedicated to the theme are purely theoretical, absolutely important but, perhaps, not sufficient to allow a more adequate "metabolization" of the logic underlying service ecosystems. To this aim, this work represents the logic of service ecosystems in a real context, providing a concrete example of how the service ecosystem view can be declined within e-commerce. In the observational perspective offered by S-DL, it is possible to imagine e-commerce as a service ecosystem in which the engagement of the numerous players who exchange all kinds of resources favors the activation of value co-creation processes. In each e-commerce platform, in fact, transactions involve different categories of players (such as website owners, managers, developers, other competing platforms, linked platforms, warehouse owners, transporters, end users and so on). Furthermore, the work offers a conceptualization of e-commerce as a service ecosystem consisting of three nested observational levels, Micro-, Meso-, and Macro-, each one with its own specificities. The rereading of e-commerce in the service ecosystems perspective provides important insights from a dual viewpoint, both theoretical and practical: regarding the first aspect, the work is configured as an absolute novelty in the literature, as it provides an original reinterpretation of e-commerce according to the observational perspective of service ecosystems; with regard to managerial hints, the paper takes shape as a conceptual basis for the definition and implementation of strategies aimed at optimizing the engagement of the plurality of actors that crowds e-commerce platforms.

Keywords: *Service ecosystem; Service-Dominant Logic (S-DL); E-commerce; E-commerce platform; Business to Consumer (B2C); Business to Business (B2B); Business to Government (B2G); Consumer to Consumer (C2C); Consumer to Business (C2B); Consumer to Administration (C2G).*

INTRODUCTION

For several years, the attention that management scholars have been dedicating to the concept of service ecosystem is characterized by a growing trend (Kaartemo et al., 2017). Not by chance, any database that can be consulted online is full of articles dedicated to this topic. The perception that derives from the reading of the majority of these articles is linked to the authors' attempt to add a further "piece" to the puzzle of the service ecosystem view, in order to enrich literature with information able to further stimulate the scientific debate in this regard. However, with a few exceptions, the possibility of tracing papers that use the observational lens provided by the service ecosystem view to analyze phenomena of emerging reality is rather low (Botti, 2017). In fact, very often the arguments addressed in the context of many contributions dedicated to the theme are purely theoretical, absolutely important but, perhaps, not sufficient to allow a more adequate "metabolization" of the logic underlying service ecosystems. In other words, if on the one hand the continuous and further conceptualizations of the elements characterizing service ecosystems favor an enlargement of the theoretical perspective (Vargo et al., 2015; 2011), on the other, they do not provide any hints that allow suggesting managerial implications. This aspect, although apparently irrelevant, actually risks negatively impacting the result produced by the debate that could derive by reading an article focused on service ecosystems.

Based on these premises, this work aims to represent the logic of service ecosystems by

lowering the interpretation of its characterizing elements into a real context. More specifically, the paper provides a concrete example of how the service ecosystem view can be declined within e-commerce. To achieve this goal, the work opens with a broad examination of the theoretical background related to the concept of ecosystem and, more particularly, of service ecosystem. Subsequently, the theme of e-commerce is dealt with in depth, highlighting the different segments that make it up: Business to Consumer (B2C); Business to Business (B2B); Business to Government (B2G); Consumer to Consumer (C2C); Consumer to Business (C2B); Consumer to Administration (C2G). Subsequently, e-commerce is reread according to the service ecosystem view, with reference to its three observational levels: micro, meso and macro. Finally, the theoretical and practical implications of the work are discussed, its limits are specified and the insights for future research are debated.

THEORETICAL BACKGROUND

From Ecosystems to Service Ecosystems

In a very broad and inclusive sense (Odum, 1969), an ecosystem is definable as an open systemic complex, consisting of living (vegetables and animals) and non-living organisms, all in constant and mutual interaction. In this perspective, it is possible to associate the term "ecosystem" to an ecological unit, within which the various organisms are classifiable in several populations depending on their species membership (Assessment, 2005). All ecosystems, in order to survive and develop, tend to the achievement and maintenance of a state of dynamic balance between their two main components, biotic and abiotic (Simon et al., 2016): the former is a set of biological factors - living organisms - (Wohlfahrt et al., 2008); the latter, instead, is residually identified and corresponds to everything not associable to people, animals or plants (McBride, 2002). The presence of numerous species of organisms is a fundamental feature of ecosystems, whose resilience, in fact, proportionally varies depending on the level of internal biodiversity (Ponce-Campos, 2013; Assessment, 2005; Huston and McBride, 2002).

Each ecosystem has its own characteristics, which enable it to be distinguished from the others. However, Boley and Chang (2007) identify four typical properties of every ecosystem: integration and full involvement of the organizations belonging to it; constant balance between all parties; resource sharing among its organisms, necessary to facilitate the achievement of the dynamic balance; self-organization of the subjects operating in it to ensure its survival.

As it is guessable from the above-described considerations, according to the ecosystem view, a crucial role is played by every actor (Costanza et al., 2016; Jones et al., 1994). In this sense, it is not difficult to operate a parallelism with the current business scenarios, increasingly influenced by Service-Dominant Logic (Karpen et al., 2012; Vargo and Lusch, 2012; Tommasetti et al., 2015 Barrel and Polese, 2009): while in the past companies wore the robe of sole protagonists of every exchange and sales processes, to date, no longer actor is considerable as a mere passive recipient of service received (Vargo and Lusch, 2008; Spohrer et al., 2008; Troisi et al., 2016). They, rather, should be imagined as operant resources and, therefore, indispensable source of strategic benefit (4th Foundational Premise - Vargo et al. 2008). Thus, the significance originally attributed solely to companies is redistributed among all the involved actors (Troisi et al., 2016), which can create value by contributing to value proposition through the input of tangible and intangible resources (7th Foundational Premise - Vargo et al., 2008). This statement paves the way to further consideration, based on the interpretation of all socio-economic actors as resource integrators (3th Axiom and 9th Foundational Premise - Vargo and Lusch, 2016).

Such a perspective also implies a shift of the scholars' focus from all possible links among companies and their consumers (B2C) to the network of relationships that could arise among all the actors involved in service delivery and use processes (A2A) (Vargo and Lusch, 2016). In addition, it is worth specifying that, according to this logic, besides companies and consumers, among the different categories of involved actors, institutions are also very significant (Vargo and Lusch, 2016; Akaka et al., 2013; Araujo and Spring 2006), since they actively participate in the common and shared benefits spreading, in a holistic (Veciana and Urban, 2008; Arndt, 1981) and systemic (Ugnich et al., 2015; GarcíaHolgado and García-Peñalvo, 2014; Cortner et al., 1998; Corbera and Brown, 2008; Yaffee, 1996) view. In this regard, Vargo and Lusch (2016) point out that value co-

creation is favored by the full sharing of material resources and intangible assets and is coordinated through actor-generated institutions and institutional arrangements (5th Axiom and 11th Foundational Premise).

This awareness about the opportunities arising from an adequate resource management by means of integration of ecological, economic, social and political elements in a strongly multidisciplinary context (Pels et al., 2013; Tianhong et al., 2010; Zhao et al., 2004) has fostered the birth of a new concept, expressible as "service ecosystem" (Riedl et al., 2009). In literature, the debate about the concept of service ecosystem is more and more exciting and vivid (Kaartemo et al., 2017; Flint et al., 2014; Breidbach et al., 2014; Brander et al.,2012; Yang et al., 2008; Li et al., 2008; Tscharntke et al., 2005; Seppelt et al., 2001).

Like service systems, discussed within Service Science (Maglio et al., 2009; Maglio and Spohrer, 2008), also service ecosystems involve heterogeneous categories of actors, which interact to reach common goals (Kaartemo et al., 2017; Flint et al., 2014; Seppelt et al., 2011; Li et al., 2008). However, there are some differences between them, mainly attributable to the fact that, while the concept of service system revolves around the benefits that can be derived from an appropriate use of technology, the idea of service ecosystem provides a stronger focus on the function performed by institutions, which play an even more central role in promoting value co-creation, appearing as important to provide benefits to people (Egoh et al. 2007) or, as stated by Schröter et al. (2005), vital to human well-being.This statement is endorsed also by Vargo et al. (2011), who define service ecosystem as a relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional logics and mutual value co-creation through service exchange. Likewise, Maglio et al. (2009) define service ecosystems as configurations of people, material and immaterial resources and, especially, institutions aimed at creating a mutual value.

E-Commerce

Generally, with the expression "e-commerce" people tend to frame a form of commerce based on the use of electronic devices for the sale of goods and services. However, this definition appears to be rather reductive since it includes only a small part of the e-commerce chain, which, in a broader sense, represents the set of processes based on transactions and procedures that have changed the way of doing business for some years (Delone and Mclean, 2004). In fact, e-commerce, in addition to the trade of goods and services electronically, also involves the online distribution of digital content, the carrying out of financial operations, the auctions, the procurement and other procedures involving both private and public actors.

Among the main factors that have triggered a sort of revolution in the markets around the world is the technological evolution (Klopping and McKinney, 2004), which, due to the spread of mobile digital devices, has redefined the way of shopping, shifting the attention of consumers and companies from a one-way perspective to a many to many logic and, recently, to an actor to actor view (Wieland et al., 2012). Many authors (Li and Karahanna, 2015; Laudon and Traver, 2013; Prisha et al., 2017; Gefen, 2000; Rayport et al., 2001) believe that the extensive dissemination of e-commerce in the world is destined to grow in coming years, moving from an alternative trading instrument to an almost exclusive buying and selling process. More and more frequently, in fact, companies offer their products by using only digital channels and people make their purchases online.

The strong success of e-commerce on a global scale has been demonstrated by a continuous growth over the last 10 years. In this regard, the Statistical Office of the European Union has recorded agrowth of more than 7% over the last decade, with a turnover rising from 917,647 billions of dollars in 2008 to 1411,765 billions of dollars at the end of 2017.

The Main Macro-Segments of E-Commerce

Although e-commerce presents some peculiar characteristics that make possible to distinguish it from traditional forms of commerce, it can in turn be divided into different dimensions, corresponding to six macro-segments. Each macro-segment, although presenting typical features of e-commerce, has a series of characteristics of heterogeneity in terms of services offered, service providers, service recipients, service delivery methods and so on.

The main macro-segments of e-commerce are hereinafter outlined:

- Business to Consumer (B2C): it represents the "traditional" form of e-commerce (Chiu

et al., 2014), which includes commercial transactions between companies and people (final consumers), who use this channel to choose and compare, through multimedia and interactive sites, catalogs and price lists accompanied by increasingly detailed and updated information, benefiting from frequent discounts and home delivery, sometimes in less than 24 hours (Gefen and Straub, 2004). In reality, with regard to the use of products, it is possible to make a further distinction between "direct electronic commerce" (Devaraj et al.,), based on the physical delivery of goods to the final consumer, and "indirect electronic 2002commerce, based on digital delivery (think of e-books).

- Business to Business (B2B): this macro-segment implies the involvement of only companies, with different roles: one company operates as a seller and the other one operates as a customer. Precisely, B2B indicates the relationships that a company has with its suppliers for supplying, planning and monitoring of production, and/or subsidy in product development activities, or the relationships that the company holds with professional clients, that is, other companies located at different points in the production chain (Raisch, 2002). The volume of B2B transactions is much higher than that of B2C transactions and one of the reasons is that companies have adopted e-commerce technologies much more than consumers (Chandrasekar Subramaniam, 2002). Moreover, in a typical supply chain, there are many B2B transactions, but only a B2C transaction, given that the complete product is retail sold to the final customer (Cunningham, 2001). Companies tend to use B2B to improve their production processes, benefit from particular services, exchange updated information on price lists in real time, order goods and services, make online payments, etc.

- Business to Government (B2G): also known as Business to Administration (B2A), it is a type of e-commerce dedicated to commercial relationships among companies supplying goods and services and public bodies (Gangeshwer, 2013). The procurement and acquisition of goods and services through the Internet is made possible by e-procurement (electronic procurement), which is a process based on the definition and compliance of a set of rules, organizational procedures and other procedures that generally include employment of software and computer technologies (Scholl et al., 2009; Zheng, 2009). The technologies used for this purpose include Electronic Data Interchange (EDI), eXtensible Markup Language (XML) and Enterprise Resource Planning (ERP) software. The identity of suppliers and buyers is generally certified by the use of digital signature tools, i.e. qualified electronic signatures.

- Consumer to Consumer (C2C): it includes all the commercial transactions that are carried out among individual end users via internet through specific websites (which act as intermediaries). These sites manage the environment in which users interact, leaving a wide autonomy to buyers and sellers in the negotiation and management of the sale (Leonard, 2012). Although it is one of the most recent macro-segments of e-commerce, C2C is characterized by a high rate of diffusion mainly thanks to the increasingly frequent use of websites dedicated to online auctions among individuals. The main benefit for consumers is the possibility of having a digital platform available to search, find, interact and conclude commercial transactions (Lu et al., 2010; Pu et al., 2007). Web sites, on the other hand, get a profit represented by the application of percentage rates on the amount of transactions executed.

- Consumer to Business (C2B): in this macro-segment of e-commerce, commercial transactions are initiated by consumers, who declare their willingness to provide a service in exchange of the payment of a certain price by the company (Chou et al., 2014; Simpson and Docherty, 2004). Therefore, contrary to what happens in the B2C, the transaction ends only in the case that a company accepts the consumer's proposal. All this is always achieved through digital platforms that have the task of sorting out offers from potential customers to the various potentially interested companies. C2B, therefore, is configured as a macro-segment of e-commerce due to an "inverted" business model, the consumer of which determines the selling price (Aljifri et al., 2003). The rapid success of C2B is due to the spread of popular media and content generated by consumers through different types of platforms, such as blogs, podcasts, websites, videos and, above all, social networks.

- Consumer to Administration (C2G): C2G is also known as Consumer to Administration (C2A). Like C2B, it is based on an inverted business model, as people sell their goods and services to public bodies (Coppel, 2000). Commercial transactions in C2G can concern the education sector (for example through distance training courses), security (for example, through the distribution or encryption of sensitive data), tax (with the payment of fees, contributions, declaration of income, etc.). Compared to the others, this macro-segment of e-commerce is still in its embryonic phase (Kabanda and Brown, 2017; Agwu and Murray, 2015), as it requires further developments to be able to facilitate the achievement of a high level of effectiveness and efficiency in the management of commercial transactions by consumers to the public administration.

In any case, beyond the specific macro-segment, e-commerce continues to be more and more successful (Ramanathan, 2010). This is mainly due to the various benefits that both companies and consumers can obtain by selling and purchasing products online. Job demand and supply, in fact, are able to meet more easily, for example through the effect of dynamic pricing, which allows companies to adjust the price of their products over time based on buyers' feedback. Moreover, the lack of physical intermediaries, made possible by profiling every user, allows, on the one hand, knowing the consumers' purchasing habits and, on the other, reducing the selling price of goods and services. In this way, companies are able to obtain valuable information about the behavioral characteristics of their customers and the latter are able to get savings.

With regard to this last aspect, what is fundamental for every form of e-commerce is the use of CRM (Customer Relationship Management) tools, which help in the collection and analysis of quantitative and qualitative data, allowing declining the users' profile and understand their consumption choices, purchase preferences and behaviors (Romano and Fjermestad, 2003). Moreover, in line with the new trends dictated by globalization, e-commerce helps eliminating the barriers typical of physical trade, allowing companies to penetrate and operate in markets on the other side of the world with considerable savings due to lower costs compared to traditional stores, and to consumers to search and find easily any desired good or service (Rajgopal et al., 2003). Other strengths of e-commerce are the unlimited time availability linked to the possibility to access the dedicated platforms 24 hours a day and the wide range of products (including specialized or niche) traceable using the search engines.

E-Commerce In a Service Ecosystem Perspective

In the observational perspective offered by S-DL, it is possible to imagine e-commerce as a service ecosystem in which the engagement of the numerous players who exchange all kinds of resources favors the activation of value co-creation processes. In each e-commerce platform, in fact, transactions involve different categories of players, such as website owners, managers, developers, other competing platforms, linked platforms, warehouse owners, transporters, end users and so on.

In the same way, the operations that take place within each e-commerce platform make easier to understand the idea according to which they can be considered as service ecosystems. In fact, rather than goods as such, the operations performed therein are aimed at allowing the various directly or indirectly involved players to benefit from a common experience, represented by the enjoyment of the service offered by the use of the product.

In light of these premises, it does not seem meaningless to propose a conceptualization of e-commerce as a service ecosystem consisting of three nested observational levels (Micro-, Meso-, and Macro-), each one with its own specificities that make it different and distinct from the others.

Micro-Level

The main feature of the Micro-Level is the interaction among single couples of actors, which exchange resources to generate a mutual and common benefit (Vargo et al., 2008). Although it is the smallest observational level, the micro-level has all the peculiarities of the entire service ecosystem. In particular, the actors do not operate in a passive way, acting, on the contrary, actively as operand resources. With regard to e-commerce, it is possible to imagine that at the Micro-Level dyadic relations are established among single couples of actors (such as user-user, user-seller, user-supplier, seller-storekeeper, seller-provider and so on). The success of dyadic interactions depends on

the respect of the rules (institutions) by the individual actors involved in the processes of co-creation. Since these rules are established on the basis of interactions among actors, they are defined as "actor-generated institutions".

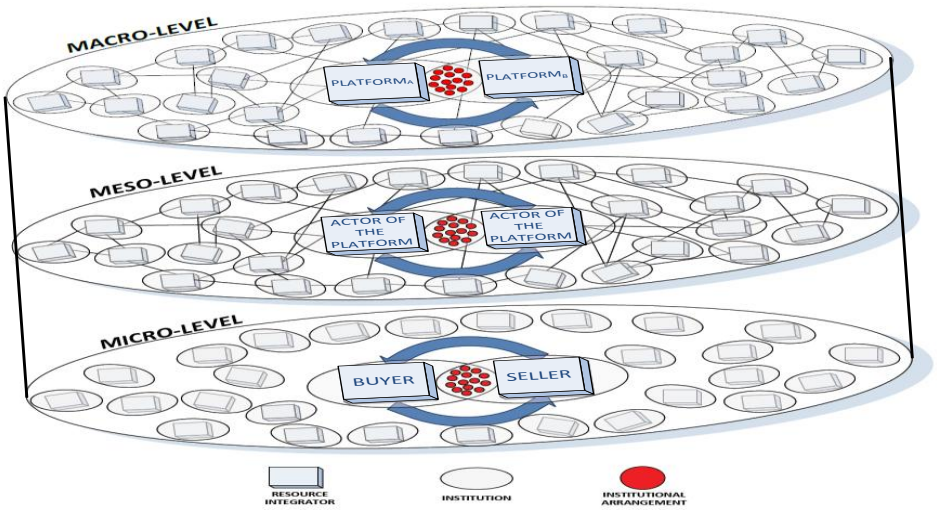

Fig.1. *E-commerce in service ecosystem perspective*

Source: *Adapted from Akaka et al., 2013*

Actor-generated institutions can be seen as coordination mechanisms that enable interactions among actors (Frow et al., 2014): in addition to the strict rules defined by the actors managing the platform, the institutions include guidelines, social norms, symbolic meanings and routines that facilitate the establishment of fruitful relationships for the subjects variously involved in the generation of a value capable of satisfying everyone's interest. Thus, the similarity of actor-generated institutions appears to be fundamental to the success of dyadic interactions between each pair of actors. To be clearer, consider, by way of example, a classic relationship that can be created between buyer and seller on eBay, one of the most widespread e-commerce platforms with over 170 million active users, which produces a turnover that exceeds 25 billions of dollars, generating a net profit of over 5 billion dollars employing over 30 thousand employees (https://www.statista.com/statistics/507881/eBays-annual-net-revenue/).Imagine, at this point, that buyer and seller behave in compliance with different institutions and, specifically, that the buyer is only interested in obtaining savings neglecting the quality of the product, while the seller is driven by the desire to get rid of his/her own good by lying on its characteristics. In such circumstances, even if the transaction took place, in reality, it would not bring any benefit in terms of co-created value, since the buyer would receive a product not compliant with its description, while the seller would expose himself/herself to any negative feedback from the buyer with possible harmful consequences for his reputation. This simple example demonstrates how, in e-commerce as a service ecosystem, the alignment of the actors' mutual aims is fundamental to the success of the dyadic interactions between the single pairs of actors and, therefore, for value co-creation.

Meso-Level

Extending the observational perspective, we move from the narrower Micro-Level to the broader Meso-Level, in which the observer's attention is no longer placed on dyadic interactions between single pairs of actors, but on the relationships that are established among the different couples (Chandler and Vargo 2011). This is due to the embeddedness of new institutions that regulate the new and more complex situations that the interactions between the pairs of actors generate (Akaka et al., 2013). These interactions, considered as a whole, constitute a sort of interactional network in which the integration of operant and operand resources is even more synergistic since it involves a bigger number of actors (Akaka et al., 2012).

In e-commerce, the interaction network could consist of the set of relationships established between all the actors operating on the same platform; therefore, in addition to buyers and sellers, it could involve the owner of the platform, marketing manager, warehouse employee, conveyor, after-sales assistant and so

on. Naturally, as often happens, at the Meso-Level each actor is involved in a plurality of relationships, whereby he exchanges material and immaterial resources with a large number of other actors.This condition implies the need for a better coordination of the operation rules of the platform: the co-creation of value arises due to the effect of the institutional arrangement, definable as a set of interrelated institutions that enable resource integration among the actors (Spohrer and Maglio, 2010), allowing passing from consonance (relational compatibility - in the potential sense) to resonance (effective interaction - in a practical sense) of the whole relational network (Barile and Polese, 2010a, 2010b).

Recalling the previous example, at Meso-Level, the misalignment of the purposes pursued by the buyer and seller (actually we could consider any other actor directly or indirectly involved in the activities of the e-commerce platform), could determine the destruction of value for the entire observational level and, therefore, of eBay. This happens because, although the actors can freely exchange material resources (especially money, but also physical goods) without any predetermined constraint, they are still required to align with the set of institutions defined on the basis of the specific platform: although eBay presents itself as a free platform, some constraints are set for both buyers and sellers (and for all other actors).Specifically, the buyer has to pay within a reasonable time and/or to give communication on any problemabout the settlement of the transaction: in case of insolvency, the seller, possibly after the opening of a dispute, will decide whether to conclude the transaction without consequences or to stimulate the buyer to fulfill his task. The seller, on the other hand, is obliged to create listings without extra charges, with descriptions corresponding to the product actually offered for sale. Another limit that derives from the regulation of the platform, valid for both buyers and sellers, is represented by the auction expiration date: beyond a predetermined time limit, it is no longer possible to formulate or receive offers and the product offered for sale will be awarded by the buyer who will have formulated the best proposal up to that moment.

Macro-Level

By further expanding the observational perspective, it is possible to consider the broader level of every service ecosystem: the Macro-Level. At this level, the observer realizes the existence of a network of networks, consisting of the various interactional networks between the different actors (Meso-Level), in turn inserted into individual dyadic relationships (Micro-Level). The institutional arrangement necessary to guarantee the co-creation of value assumes a more general connotation, having to face the needs of actors belonging to different realities, each one with its specific set of institutions. The institutional arrangement that takes shape at Macro-Level presents characteristics that take into account the cultural, social and political peculiarities of all the realities to which the actors belong.

Returning to the example discussed above, it is possible to imagine that the Macro-Level incudes all existing e-commerce platforms (so, in addition to eBay, even Amazon, Ali express, Shopify, Magento, YoKart, Big Commerce, VTEX, Woo Commerce , Tictail, an so forth). In addition to the e-commerce platforms, at Macro-level other actors operate, such as the Ministry of Economic Development, workers' unions, companies that offer digital payment services and money transfer via the Internet (for example, PayPal), and so on. Naturally, what occurs at the Macro-Level produces an impact that has repercussions on the less extensive observational levels and, therefore, on the Meso-Level and on the Micro-Level.

For example, if one of the platforms started selling a product at a particularly reduced price, this choice would automatically reflect on the other platforms (which could decide to respond with an equally aggressive strategy) and on buyers (who could benefit from buying the products at a lower price). Likewise, if a company offering digital payment services began to apply a higher commission on money transfer, this choice would have repercussions on both e-commerce platforms (which might decide to rely on another payment company), and on buyers (who could feel discouraged to make the purchase because of the higher price determined by the more expensive commission).

Implications and Conclusion

The rereading of e-commerce in the service ecosystems perspective offers important insights from a dual point of view, both theoretical and practical.

Regarding the first aspect, the work is configured as an absolute novelty in the literature, as it provides an original reinterpretation of e-commerce according to the observational perspective offered by the service ecosystems. In this way,

the research attempts to fill the gap that characterizes the scientific studies carried out so far, represented, as claimed by Letaifa and Reynoso (2015), by the lack of contributions aimed at qualifying the main elements of service ecosystems through the consideration of phenomena of the observable reality (De Groot et al., 2010). The originality of the work can also be seen in the conceptual reconfiguration of e-commerce not based on the static description its elements but rather on the identification of the dynamics characterizing the interaction among the different actors involved in the processes of value co-creation.

Furthermore, following the indications of Lusch et al. (2016), the study also aims to contribute to the debate on the service ecosystems and on their different nested levels (Micro, Meso, Macro) in which the resource integration is realized among the actors involved in the process of co-creation of value. The treatment of the dynamics that characterize the service ecosystem as a whole and the individual levels provides valuable information on the coordination mechanisms typical of each e-commerce platform (Polese et al., 2017a, 2017b).

As previously mentioned, the work also offers ideas from a managerial point of view. In particular, it is a conceptual basis for the definition and consequent implementation of strategies aimed at optimizing the engagement of the plurality of actors that crowds the e-commerce platforms, highlighting the importance of paying maximum attention to each of them.

More in detail, the rereading of the Micro-Level indicates to the managers of the e-commerce platforms to define their strategies by starting from the consideration of the dyadic interaction between single pairs of actors to intercept their needs and expectations in the best possible way. Instead, the conceptualization of the Meso-Level highlights the need not to neglect the role of the institutions, understood not only as the specific rules defined by the platform itself, but, rather, as the set of guidelines, principles, values, habits of all the actors directly or indirectly involved by e-commerce activities. This need is felt even more in the broader observational level of service ecosystems, the Macro-Level, where the importance of institutional arrangements is reflected in the maximization of the opportunity to ensure the fit between the objective of the ecosystem and the goals of each single system inside it (Barile and Polese, 2010).

Thanks to the conceptualization of actors operating at different levels, coordination mechanisms (institutions) that regulate their interactions and integrated resources in a synergistic way for the co-creation of value, decision-makers can find advantage in identifying and classifying consumer preferences to be met to generate long-term benefits.

All this is important, since the levels of the e-commerce service ecosystem are nested: what happens in each level inevitably affects the other one. So, for example, in the definition of return policies, in addition to the needs and expectations of individual consumers involved in dyadic interactions (Micro-Level), it is not possible to disregard the other effects that such policies may produce on other levels, such as on the storage or transport employees (Meso-Level) or on the strategic choices adopted by the other e-commerce platforms (Macro-Level).

What described above, if on the one hand emphasizes the importance of deepening the concepts that are at the basis of service ecosystems, on the other hand highlights the limit of the work, linked to a purely theoretical treatment of e-commerce. This limit leads us to consider opportune to carry out further studies in this direction, possibly based on the analysis of empirical findings obtainable, for example, by following a qualitative approach in the administration of interviews with the different actors working within or in contact with e-commerce platforms. In this way, for instance, the opinions expressed by the buyers could be compared with those of the sellers and other actors involved in e-commerce activities in order to properly understand their vision of the whole service ecosystem and of the individual levels that compose it.

REFERENCE

[1] Agwu EM, Murray PJ. Empirical Study of Barriers to Electronic Commerce Adoption by Small and Medium Scale Businesses in Nigeria. International Journal of Innovation in the Digital Economy. 2015; 6(2): 1-19.

[2] Akaka MA, Vargo SL, Lusch RF. The complexity of context: a service ecosystems approach for international marketing. Journal of International Marketing. 2013; 21(4): 1–20.

[3] Alderson W. Dynamic marketing behavior. Homewood: Richard Irwin; 1965.

[4] Aljifri HA, Pons A, Collins D. Global e-commerce: a framework for understanding and

overcoming the trust barrier. Information Management & Computer Security. 2003; 11(3): 130-138.

[5] Araujo L, Spring M. Services, products, and the institutional structure of production. Industrial Marketing Management. 2006; 35(7): 797–805.

[6] Arndt J. The political economy of marketing systems: Reviving the institutional approach. Journal of Macromarketing. 1981; 1(2): 36-47.

[7] Assessment ME. Millennium ecosystem assessment. Ecosystems and Human Well-Being: Biodiversity Synthesis. World Resources Institute: Washington; 2005.

[8] Barile S, Polese F. Service Dominant Logic and Service Science: a contribute deriving from network theories. In: Gummesson E, Mele C, Polese F (eds.) Service Science, S-D logic and network theory. Naples, Italy: GianniniEditore; 2009 p.11-23.

[9] Boley H, Chang E. Digital ecosystems: Principles and semantics. In: Chang E, Hussain FK (eds.) Digital EcoSystems and Technologies Conference, 21-23 February 2007, Cairns, Australia, pp. 398-403.

[10] Botti A, Grimaldi M, Vesci M. Integrating VSA and SD logic for conceptualizing viable value co-creation: an application to entrepreneurial intention and innovation in service ecosystems. In: Gummesson E, Mele C, Polese F (eds.), Service Dominant Logic, Network and Systems Theory and Service Science: Integrating three Perspectives for a New Service Agenda. The 5th Naples Forum on Service, Sorrento, 6-9 June 2017.

[11] Brander LM, Wagtendonk AJ, Hussain SS, McVittie A, Verburg PH, de Groot RS, van der Ploeg S. Ecosystem service values for mangroves in Southeast Asia: A meta-analysis and value transfer application. Ecosystem Services. 2012; 1(1): 62-69.

[12] Carson SJ, Devinney TM, Dowling GR, John G. Understanding institutional designs within marketing value systems. The Journal of Marketing. 1999; 63(1): 115–130.

[13] ChandrasekarSubramaniam MJS. A study of the value and impact of B2B e-commerce: the case of web-based procurement. International Journal of Electronic Commerce. 2002; 6(4): 19-40.

[14] Chiu CM, Wang ET, Fang YH, Huang HY. Understanding customers' repeat purchase intentions in B2C e- commerce: the roles of utilitarian value, hedonic value and perceived risk. Information Systems Journal. 2014; 24(1): 85-114.

[15] Chou CH., Wang YY, Wang YS., Tang TI. Exploring the determinants of repurchase behavior in c2B e-commerce. International Journal of e-Education, e-Business, e-Management and e-Learning. 2014; 4(4): 271-282.

[16] Coppel J. E-Commerce: Impacts and Policy Challenges. Paris: OECD Publishing; 2000.

[17] Corbera E, Brown K. Building institutions to trade ecosystem services: marketing forest carbon in Mexico. World Development. 2008; 36(10): 1956-1979.

[18] Cortner HJ, Wallace MG, Burke S, Moote MA. Institutions matter: the need to address the institutional challenges of ecosystem management. Landscape and urban planning. 1998; 40(1): 159-166.

[19] Costanza R, d'Arge R, De Groot R, Farber S, Grasso M, Hannon B, Raskin RG. The Value of the World's Ecosystem Services and Natural Capital. Nature. 2016; 387(1), 253-260.

[20] Cunningham MJ, Cunningham MJ, Cunningham MJ, Cunningham MJ. B2B: How to build a profitable e-commerce strategy. Cambridge: Perseus; 2001.

[21] Delone WH, Mclean ER. Measuring e-commerce success: Applying the DeLone& McLean information systems success model. International Journal of Electronic Commerce. 2004; 9(1): 31-47.

[22] Devaraj S, Fan M, Kohli R. Antecedents of B2C channel satisfaction and preference: validating e-commerce metrics. Information systems research. 2002; 13(3): 316-333.

[23] Duddy EA, Revzan DA. Marketing: An institutional approach. New York: McGraw-Hill; 1953.

[24] Egoh B, Rouget M, Reyers B, Knight AT, Cowling RM, van Jaarsveld AS, Welz A. Integrating ecosystem services into conservation assessments: a review. Ecological Economics. 2007; 63(4): 714-721.

[25] Flint DJ, Lusch RF, Vargo SL. The supply chain management of shopper marketing as viewed through a service ecosystem lens. International Journal of Physical Distribution & Logistics Management. 2014; 44(1/2): 23-38.

[26] Gangeshwer DK. E-commerce or Internet Marketing: A business Review from Indian context. International Journal of u-and e-Service, Science and Technology; 2013; 6(6): 187-194.

[27] García-Holgado A, García-PeñalvoFJ.Architectural pattern for the definition of eLearning ecosystems based on Open Source developments. In: Sierra-Rodríguez JL, Dodero-Beardo JM, Burgos D.International Symposium on Computers in Education (SIIE), November 2014,pp. 93-98.

[28] Gefen D, Straub DW. Consumer trust in B2C e-Commerce and the importance of social presence: experiments in e-Products and e-Services. Omega. 2004; 32(6), 407-424.

[29] Gefen D. E-commerce: the role of familiarity and trust. Omega. 2000; 28(6): 725-737.

[30] Giesler M. Conflict and compromise: drama in marketplace evolution. Journal of Consumer Research. 2008; 34(6): 739-753.

[31] Heide JB, John G. Do norms matter in marketing relationships?. The Journal of Marketing. 1992; 56(2): 32-44.

[32] Humphreys A. Megamarketing: The creation of markets as a social process. Journal of Marketing. 2010; 74(2): 1-19.

[33] Hunt SD. General theories and the fundamental explananda of marketing. The Journal of Marketing. 1983; 47(4): 9-17.

[34] Huston MA, McBride AC. Evaluating the relative strengths of biotic versus abiotic controls on ecosystem processes. Biodiversity and ecosystem functioning: synthesis and perspectives. Oxford: Oxford University Press; 2002.

[35] Jones CG, Lawton JH, Shachak M. Organisms as ecosystem engineers. In Ecosystem management (pp. 130-147). New York: Springer; 1994.

[36] Kaartemo V, Akaka MA, Vargo SL. A Service-Ecosystem Perspective on Value Creation: Implications for International Business. In Value Creation in International Business. New York: Springer; 2017.

[37] Kabanda S, Brown I. Interrogating the effect of environmental factors on e-commerce institutionalization in Tanzania: a test and validation of small and medium enterprise claims. Information Technology for Development. 2017; 23(1): 59-85.

[38] Karpen IO, Bove LL, Lukas BA. Linking service-dominant logic and strategic business practice: A conceptual model of a service-dominant orientation. Journal of Service Research. 2012; 15(1): 21-38.

[39] Klopping IM, McKinney E. Extending the technology acceptance model and the task-technology fit model to consumer e-commerce. Information Technology, Learning, and Performance Journal. 2004; 22(1): 35-48.

[40] Laudon KC, TraverCG. E-commerce. London: Pearson; 2013.

[41] Leonard LN. Attitude influencers in C2C e-commerce: Buying and selling. Journal of Computer Information Systems. 2012; 52(3): 11-17.

[42] Li F, Tian C, Cao R, Jiang S. Value network model for service ecosystem in business environment. In: Brunner M, Westphall CB, Granville LZ. NOMS IEEE Network Operations and Management Symposium. 7-11 April 2008, Piscataway, USA. pp. 955-958.

[43] Li SS, Karahanna E. Online recommendation systems in a B2C E-commerce context: a review and future directions. Journal of the Association for Information Systems. 2015; 16(2): 72-107.

[44] Lu Y, Zhao L, Wang B. From virtual community members to C2C e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention. Electronic Commerce Research and Applications. 2010; 9(4): 346-360.

[45] Lusch RF, Vargo SL. Service-dominant logic. London: Cambridge University Press; 2012.

[46] Lusch RF, Vargo SL. Service-dominant logic: Premises, perspectives, possibilities. London: Cambridge University Press; 2014.

[47] Macdonald R, Carroll J. Plagiarism—a complex issue requiring a holistic institutional approach. Assessment & Evaluation in Higher Education. 2006; 31(2): 233-245.

[48] Maglio P, Vargo SL, Caswell N, Spohrer J. The service system is the basic abstraction of service science. Information Systems and e-Business Management. 2009; 7(4): 395–406.

[49] Maglio PP, Spohrer J. Fundamentals of service science. Journal of the Academy of Marketing Science. 2008; 36(1): 18-20.

[50] Maglio PP, Vargo SL, Caswell N, Spohrer J. The service system is the basic abstraction of service science. Information Systems and e-business Management. 2009; 7(4): 395-406.

[51] Odum EP. The strategy of ecosystem development. Sustainability. 1969; 164(3877), 262-270.

[52] Pels J, Barile S, Saviano M, Polese F. VSA and SDL contribution to strategic thinking in emerging economies. In: Gummesson E, Mele C, Polese F(eds.) Service-Dominant Logic, Network & Systems Theory and Service Science: integrating three perspectives for a new Service Age, 6-9 June 2017. Sorrento, Italy.

[53] Polese F, Carrubbo L, Bruni R, Maione G., The viable system perspective of actors in eco-systems, The TQM Journal. 2017a; 29(6): 783-799.

[54] Polese F, Ciasullo MV, Troisi O, Maione G. Intellectual capital in Service Ecosystem Perspective: some evidencesfrom university context. In: Gummesson E, Mele C, Polese F (eds.) Service Dominant Logic, Network and Systems Theory and Service Science: Integrating three Perspectives for a New Service Agenda, 6-9 June 2017, Sorrento, Italy.

[55] Ponce-Campos GE, Moran MS, Huete A, Zhang Y, Bresloff C, Huxman TE, Scalley TH. Ecosystem resilience despite large-scale altered hydroclimatic conditions. Nature. 2013; 494(7437), 349-352.

[56] Prisha P, Neo HF, Ong TS, Teo CC. E-Commerce Security and Identity Integrity: The

Future of Virtual Shopping. Advanced Science Letters. 2017; 23(8): 7849-7852.

[57] Pu C, An J, Fang M. Research on credit evaluation model and algorithm for C2C e-commerce website. Journal of Information. 2007; 8(1): 105-107.

[58] Raisch W. The eMarketplace: Strategies for success in B2B eCommerce. New York: McGraw-Hill; 2002.

[59] Rajgopal S, Venkatachalam M, Kotha S. The value relevance of network advantages: The case of e–commerce firms. Journal of Accounting Research. 2003; 41(1): 135-162.

[60] Ramanathan R. E-commerce success criteria: determining which criteria count most. Electronic Commerce Research. 2010; 10(2): 191-208.

[61] Rayport JF, Jaworski BJ, de ParresCárdenas CV, Martínez MA. e-Commerce. Boston: McGraw-Hill; 2001.

[62] Riedl C, Boehmann T, Leimeister JM, Krcmar H. A framework for analysing service ecosystem capabilities to innovate. Proceedings of 17th European Conference on Information Systems, 5-10 June 2009, Guimarães, Portugal.

[63] Romano NC, Fjermestad J. Electronic commerce customer relationship management: A research agenda. Information Technology and Management. 2003; 4(2-3): 233-258.

[64] Scholl HJ, Barzilai-Nahon K, Ann JH, Popova OH, Re B. E-Commerce and e-Government: How do they Compare? what can they Learn from each Other?. In: Sprague Jr. RH. 42nd Hawaii International Conference on System Sciences, Waikoloa, 5-8 January 2009, USA, pp. 1-10.

[65] Schröter D, Cramer W, Leemans R, Prentice IC, Araújo MB, Arnell NW, Anne C. Ecosystem service supply and vulnerability to global change in Europe. Science. 2005; 310(5752): 1333-1337.

[66] Seppelt R, Dormann CF, Eppink FV, Lautenbach S, Schmidt S. A quantitative review of ecosystem service studies: approaches, shortcomings and the road ahead. Journal of applied Ecology. 2011; 48(3): 630-636.

[67] Simon E, Harangi S, Baranyai E, Braun M, Fábián I, Mizser S, Tóthmérész B. Distribution of toxic elements between biotic and abiotic components of terrestrial ecosystem along an urbanization gradient: Soil, leaf litter and ground beetles. Ecological Indicators. 2016; 60(1), 258-264.

[68] Simpson M, Docherty AJ. E-commerce adoption support and advice for UK SMEs. Journal of small business and enterprise development. 2004; 11(3): 315-328.

[69] Spohrer J, Vargo SL, Caswell N, Maglio PP. The service system is the basic abstraction of service science. In: Sprague Jr. RH. Proceedings of the 41st Annual Hawaii International Conference on System Sciences, 7-10 January 2008, Waikoloa, USA. pp. 104-104.

[70] Statistical Office of the European Union. Available from:http://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics.

[71] Tianhong L, Wenkai L, Zhenghan Q. Variations in ecosystem service value in response to land use changes in Shenzhen. Ecological economics. 2010; 69(7): 1427-1435.

[72] Tommasetti A, Vesci M, Troisi O. The internet of things and value Co-creation in a service-dominant logic perspective. Berlin: Springer; 2015.

[73] Troisi O, Carrubbo L, Maione G, Torre C. The more, the merrier: Co-Working as practical expression of Value Co-Creation in Sharing Economy. In: Russo-Spena T, Mele C (eds.). What's ahead in service research: new perspectives for business and society, XXVI RESER Conference, Naples, Italy, 8- 10 September 2016, pp. 1130-114.

[74] Ugnich EA, Chernokozov AI, Velichko EV. Innovation ecosystem of higher educational institution as a driver of commercialization of intellectual activity results. Mediterranean journal of social sciences. 2015; 6(6), 239-245.

[75] Vargo SL, Lusch RF, Horbel C, Wieland H. Alternative Logics for Service(s): From Hybrid Systems to Service Ecosytems. In: Spath D, Ganz W. (eds.) Taking the Pulse of Economic Development. München, Germany: Hanser Service Trends; 2011. p. 123-135.

[76] Vargo SL, Lusch RF. Institutions and axioms: an extension and update of service-dominant logic. Journal of the Academy of Marketing Science. 2016; 44(1): 5-23.

[77] Vargo SL, Lusch RF. It's all B2B… and beyond: Toward a systems perspective of the market. Industrial marketing management. 2011; 40(2): 181-187.

[78] Vargo SL, Lusch RF. Service-dominant logic: continuing the evolution. Journal of the Academy of marketing Science. 2008; 36(1): 1-10.

[79] Vargo SL, Maglio PP, Akaka MA. On value and value co-creation: A service systems and service logic perspective. European management journal. 2008; 26(3): 145-152.

[80] Vargo SL, Wieland H, Akaka MA. Institutions in innovation: a service ecosystems perspective.

Industrial Marketing Management. 2015; 44(1): 63–72.

[81] Veciana JM, Urbano D. The institutional approach to entrepreneurship research. Introduction. International Entrepreneurship and Management Journal. 2008; 4(4), 365–379.

[82] Venkatesh A, Penaloza L, Firat A. The market as a sign system and the logic of the market. In Lusch RF, Vargo SL (eds.) The service-dominant logic of marketing: Dialog, debate, and directions. Armonk, USA: Sharpe, 2006. p. 251–265.

[83] Wieland H, Polese F, Vargo SL, Lusch RF. Toward a Service (Eco) Systems Perspective on Value Creation. International Journal of Service Science, Management, Engineering, and Technology. 2012; 3(3): 12-25.

[84] Wohlfahrt G, Anderson-Dunn M, Bahn M, Balzarolo M, Berninger F, Campbell C, Eugster W. Biotic, abiotic, and management controls on the net ecosystem CO2 exchange of European mountain grassland ecosystems. Ecosystems. 2008; 11(8): 1338-1351.

[85] Yaffee SL. Ecosystem management in practice: the importance of human institutions. Ecological applications. 1996; 6(3): 724-727.

[86] Zhao B, Kreuter U, Li B, Ma Z, Chen J, Nakagoshi N. An ecosystem service value assessment of land-use change on Chongming Island, China. Land Use Policy. 2004; 21(2): 139-148.

[87] Zheng Q. Introduction to E-commerce. Introduction to E-commerce. Berlin: Springer-Verlag; 2009.

Citation: *Antonio Botti, Ph.D, Gennaro Maione,. "E-Commerce Platforms as Service Ecosystems". (2018). Open Journal of Economics and Commerce, 1(2), pp.8-19.*