

The homeostasis paradox of new business models

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Abstract

Purpose – The speed and variety of new business models emerging in the current economy created a disruptive environment that lacks theoretical frameworks and perspectives to help academics, practitioners and policy makers to critically understand and appraise the phenomenon of new business models emergence. This paper addresses this neglect by discussing the phenomenon of service innovation from a systems thinking perspective, shedding light on issues concerning change and adaptiveness of business models.

Design/Methodology/approach – We revisit fundamental questions raised by Normann (2001) to discuss change and creation phenomena. We also build upon his concepts of ‘bifurcation points’ of instability as well as Beer’s concepts of attenuation and amplification of variety (Beer, 1981) to differentiate ‘homeostatic change’ from ‘disruptive change’. We use the theoretical perspective developed in the paper to explain the emergence of new business models enabled by digital technologies in a service sector context.

Findings – We point out that adaptive variability does not necessarily entails reestablishment of an original state of equilibrium. This is particularly the case of companies developing new business models. The newness of a ‘new’ business model infers non-existence of an antecedent original state that provides basis for adaptation towards equilibrium. The novel state of a new business model can be considered as a new referential state for future homeostatic changes to maintain equilibrium until other disruptive changes take place.

Practical implications – From the theoretical perspectives here addressed, one can see disruptive technologies as drivers of bifurcation points of instability for organisations. To deal with these instabilities, companies can opt for implementing either an attenuation or amplification strategy. The attenuation strategy is developed through homeostatic changes that attenuate disruptions in order to maintain a state of equilibrium. On the other hand, the amplification strategy can be implemented through disruptive changes that amplify disruptions by contextualizing the disruptive technologies into a new business model proposition for the market.

Originality/value – We provide a systems thinking perspective for service innovation through new business models. We infer that the development of a new business model entails change to a different organisational state that, due to lack of a referential status for equilibrium, represents a state of dynamic disequilibrium, which paradoxically may provide basis for a state of equilibrium if the new model is successful. In this sense, we postulate that in organisations developing new business models homeostatic adaptations to restore equilibrium are typically preceded by adaptation to a different state of temporary dynamic disequilibrium.

Key words – systems thinking, homeostasis, service innovation, business models

Paper type – Conceptual paper

1. Introduction

The rapid evolution of digital technologies over the last decade has paved the way for an upsurge of new business models that capitalise on the many facilities, functionalities and resources available on the internet in particular. The speed and variety of new business models emerging in the digital economy created a disruptive environment that lacks theoretical frameworks and perspectives to help academics, practitioners and policy makers to critically understand and appraise the phenomenon of new business models emergence.

In a time when there is little consensus on what a business model actually is (Osterwalder, Pigneur & Tucci, 2005), the lack of theoretical basis to explain the emergence of new business models augments the complexity of the problem. In this paper we address this neglect by discussing the phenomenon of new business models emergence from a systems thinking perspective, shedding light on change and adaptiveness issues concerning business model innovation. For this, we revisit fundamental questions raised by Normann (2001) when he discussed change and creation phenomena. How do companies adapt to the increased complexity of market contexts? Which systems principles can differentiate reactive from proactive change?

Various lines of academic enquiry have drawn from systems theories and approaches such as general systems theory (von Bertalanffy, 1968), open systems theory (Katz & Kahn, 1978), cybernetics (Weiner, 1948), viable systems (Beer, 1981; Barile & Polese, 2010), system dynamics (Forrester, 1998) and complex adaptive systems (Schneider & Somers, 2006), to explain how companies adapt themselves to face new challenges. An underlying tenet in these theories and approaches is the homeostasis principle, which is one of the most remarkable and most typical properties of open and complex systems. Homeostasis is the principle of equilibrium, a systems property to react to external disturbances in order to maintain stability and survive. It implies self-adaptation to offset disrupting changes and re-establish a previous state of equilibrium.

From a business perspective, homeostasis refers to a company's ability to maintain its state of equilibrium by counteracting internal and external turbulences through absorption of contextual variety (Ashby, 1958; Ng *et al.*, 2012). A key issue we discuss in this paper is that adaptive variability does not necessarily entails reestablishment of an original state of equilibrium. This is particularly the case of companies developing new business models.

For instance, the newness of a 'new' business model infers non-existence of an antecedent original state that provides referential basis for adaptation towards equilibrium. Thus, we infer that the development of a new business model entails change to a different organisational state that, due to lack of a referential status for equilibrium, represents a state of dynamic disequilibrium, which paradoxically may provide basis for a state of equilibrium if the new model is successful. In this sense we postulate that in organisations developing new business models, homeostatic adaptations to restore equilibrium are typically preceded by adaptation to a different state of temporary dynamic disequilibrium.

To explain this phenomenon we build upon Normann's perception of 'bifurcation points' of instability, where a "system as a whole may take on new properties that no longer seem related to the original elements or its initial state" (Normann, 2001, p. 166). Furthermore, we also build upon Beer's concepts of attenuation and amplification of variety (Beer, 1981) to differentiate 'homeostatic change' (adaptation to attenuate disruption and reestablish an equilibrium state) from 'disruptive change' (adaptation to amplify disruption to a novel state that can conceivably influence the environment). The novel state can be considered as a new referential state for future homeostatic changes to maintain equilibrium until other disruptive changes take place.

As practical illustration, we use the theoretical perspective developed in the paper to explain the emergence of new business models in the retail sector that are enabled by digital

technologies. From the theoretical perspective here addressed, one can see disruptive technologies as drivers of bifurcation points of instability for organisations. To deal with these instabilities, companies can opt for implementing either an attenuation or amplification strategy. The attenuation strategy is developed through homeostatic changes that attenuate disruptions in order to maintain a state of equilibrium. On the other hand, the amplification strategy can be implemented through disruptive changes that amplify disruptions by contextualizing the disruptive technologies into a new business model proposition for the market.

Besides the theoretical contributions developed in the paper, which provides a useful basis for better understanding and explaining business model innovations in terms of systems adaptation and change, we provide insights for practical business management by discussing business model innovations enabled by the internet in the fashion retail sector in the light of homeostatic and disruptive changes.

The paper is organised as follows. In the next section we develop some theoretical considerations that deal with issues concerning the application of the homeostasis principle of systems in the particular case of system adaptation towards a new business model. In the sequence, we develop a practical perspective of the subject by presenting a number of business model innovation initiatives in the fashion retail sector that illustrate homeostatic and disruptive adaptations of business systems. Finally, we conclude the paper by pointing out relevant issues for future research on the disruptive business model discussed in the paper.

2. Theoretical considerations

2.1. On new business models

Despite the substantial attention that the business model subject has been drawing from academics and practitioners over the last years, there is no overall agreement on what a business model is (Osterwalder *et al.*, 2005). Some scholars (Zott *et al.*, 2011) recognise that business model as a subject-matter has been regularly employed to address three phenomena:

1. e-business and the use of IT by organisations;
2. strategic issues related to competitive advantage, organisational performance and value creation; and
3. innovation and technology management.

In this paper, we take into account Amit and Zott's (2001) perspective of business models by considering business model innovation as a phenomenon enabled by innovative application of technologies and the contextual business structure and processes they are embedded in to create value to customers.

We are mainly concerned with discussing business model innovation from a systems thinking perspective. For this, we consider the unit of analysis as being the business model as a whole, instead of its component parts only. As Magretta (2002) puts it, a business model described as a system explains how the parts of a business (resources and processes) fit together in order to achieve strategic performance. Elaborating on this view, Osterwalder *et al.* (2005, p. 17) suggest that a business model “*can be seen as the conceptual link between strategy, business organization, and systems. The business model as a system shows how the pieces of a business concept fit together, while strategy also includes competition and implementation.*”

In this paper, we are particularly interested in discussing, from a systems perspective, the way firms alter their business models in order to meet new challenges, changing their value creation system to build and maintain sustainable performance over time.

In reality, most firms' business models are exposed to external pressures and thus constantly subject to change. For instance, technological innovations, new business legislations, new initiatives from competitors and shifts in consumer behaviours are significant drivers of change, requiring companies to adjust or totally revamp their business models in order to respond to new market contexts (Linder & Cantrell, 2000; Creager, Lunbeck & Norton, 2007).

From a systems perspective, a viable business has to deliver despite changes in the environment (Beer, 1981). Hence, it must have the capacity to dynamically adjust its productive system to achieve consonance with the environment and thus preserve its stability (Barile & Polese, 2010). This relates to the homeostasis property of systems (von Bertalanffy, 1968), which is further discussed next.

2.2. Homeostasis and new business models

According to Burnes (1996), organisations do not achieve success because of their ability to predict and create planned strategies. They achieve success because of their ability to constantly change and adjust to the environment. This assertion can be linked with Beer's (1981) view that it is to the rate of change, rather than to the changes themselves, that organisations have to adapt. From these two viewpoints we can infer that change is a necessary phenomenon for organisational survival and equilibrium. Indeed, a fundamental premise of change management theory links change with equilibrium by stating that change is about moving the system from one state of equilibrium to another; when equilibrium is disturbed, the forces for and against change move the system to another point of balance (Millett, 1998).

In systems terms, equilibrium refers to the homeostasis property of systems to adapt to external disturbances (contextual variety) and restore their point of balance in order to maintain stability and survive (Ashby, 1958; Beer, 1981). From a business perspective, homeostasis implies an organisation's ability to self-adapt to counteract variety and re-establish a state of equilibrium. In practice, one can see, for example, technological innovations and shifts in consumer behaviour as contextual varieties threatening the stability of a business; for the new contextual conditions make the business unfit for its environment. To counteract these threats and restore stability, the firm must implement homeostatic changes such as adoption of new technological resources and redesign of business processes to match new customer requirements.

The main cognitive problem in applying the homeostasis principle to explain organisational changes towards new business models is that new business model initiatives, although ultimately pursuing adaptation to survive, are not necessarily aimed at restoring previous states of equilibrium. For the newness of a 'new' business model infers non-existence of an antecedent original state. In this sense, organisations developing new business models are in reality changing to a state of temporary dynamic disequilibrium. To deal with this paradox, it is necessary to consider the notion of homeostasis in relation to different types of change.

According to Normann (2001), change can be described along many dimensions. It can be a reactive process where change takes place through continuous improvement, or it can be an essentially proactive process where change takes place through a radical rethinking and renewal of the business model. In the former case (reactive adaptations), homeostatic change in its strict sense takes place, i.e. change seeks to restore a previous state of equilibrium. In the latter case (proactive changes), the organisational system is no longer seeking survival through homeostasis; rather, disruptive change seeks equilibrium through moving the system from its current state to a new state that represents a new point of

balance. The new point of balance, by its turn, constitutes a referential state of equilibrium for subsequent homeostatic changes in the future.

The implementation of a new business model by an organisation can therefore be seen as a process of disruptive (and proactive) change that shapes a new referential state of equilibrium for the organisation. This is, from a systems perspective a new business model represents new state of the organisational system that serves as a basis for future homeostatic changes.

Furthermore, restoring or shaping equilibrium states is a strategic choice, i.e. companies can decide whether they consider contextual variety as negative feedback for homeostatic changes or as positive feedback for disruptive changes. For Normann (2001), this strategic dichotomy represents 'bifurcation points' of instability where the system may change either by homeostasis or by 'phase change'. In the latter situation, the system takes on new properties that seem no longer related to its previous state. As Normann (2001, p. 166) puts it, "*The phase change is characterized by principles of positive feedback (as opposed to the 'negative feedback' principles characterizing traditional systems research and engineering aiming at producing homeostatic systems).*" Such phase changes effectively take place when they reach a critical mass. For instance, as the number of customers grows the versatility and potential value of a new business model grows and when scale is reached the system has undergone its phase change.

The strategic dichotomy above can be linked with Beer's concepts of attenuation and amplification of variety (Beer, 1981). Applying these concepts to understanding business models, homeostatic change can be seen as adaptation to attenuate disruption and reestablish an equilibrium state of the current business model. By its turn, disruptive change can be seen as adaptation to amplify disruption into a new business model whose novel state that can potentially influence the environment.

3. Practical perspectives

The theoretical aspects discussed in the previous section provide a useful basis for better understanding and explaining business model innovations in terms of systems adaptation and change. As illustration, we will discuss, in the light of homeostatic and disruptive changes, business model innovations enabled by the internet in the fashion retail sector.

Over the last decade, advancements on digital technology and innovative ways of using new web resources and platforms on the internet have paved the way for a renaissance in consumers' online shopping experience, particularly in the fashion sector.

Challenging the sceptical view that consumers would not buy apparel and accessories without feeling the fabric and testing for size and look, online fashion sales is growing fast. Traditional brick-and-mortar retailers as well as new start-up companies are seizing the digital opportunity by bringing about innovative business models set to improve the customer shopping experience.

The fashion sector plays a significant role in many economies around the world. For example, in the UK according to the British Fashion Council (www.britishfashioncouncil.com) the fashion industry contributed about £21bn to the total UK GDP in 2009, generating over £13bn of direct taxation to government and supporting about one million direct jobs. To build upon this significant position, electronic retailing is seen by the Council as a key area with great potential to grow and a fertile land for innovations. In general, it is noticeable that recent business model innovations in the sector are capitalising on the social power of the internet.

Indeed, many companies in the fashion sector are recognizing the need to embark into the digital economy world, where global consumers can communicate, share information and

shop with the help of technological resources available on the internet. These technological resources are paving the way for a relentless focus on digital innovations in the industry. In the following sections we point examples of homeostatic and disruptive changes taking place in the sector.

3.1. Homeostatic business model innovations

A major challenge faced by online fashion retailers is the fact that it is impossible for online shoppers to try physically the items of clothing they are interested in buying. In the industry this is the so-called “online fit problem”.

The online fit problem associated with the wide variation in sizing standards even within a single brand or retailer increases the level of returns in online clothing purchases, i.e. clothes returned due to wrong size purchase or fitting problems.

To deal with this contextual variety, fashion retailers are using the internet to improve their business models with functionalities such as personal subscription, mass customisation and social merchandising.

Personal Subscription

The personal subscription of customers has become a standard functionality in online retail and innovations in this area are now centered on the way retailers integrate the concept into their business models.

Personal subscription is particularly critical in online fashion retailing because its functionality allows retailers to capture detailed and specific information on customer style, tastes, age, gender, preferences, size measurements, and so forth, which is captured when customers complete a subscription form in the joining process. This resource enables personalised interactions and product selections according to customers’ profile, resulting in greater customer loyalty and better inventory management (Sorescu, *et al.*, 2011; Wang *et al.*, 2005).

For example, the group Ermenegildo Zegna is a traditional Italian company in the fashion industry that has focused on retailing, pioneering early entry in emerging luxury markets and the BRIC markets in particular. The company’s global retailing strategy is reinforced by its online operations through their online shop Zegna.com (www.zegna.com). To consolidate its business culture based on a company-wide quest for quality and a constant focus on customers, Zegna’s online shop adopts personal subscription functionalities to reinforce their corporate identity with customised products. More specifically, the company uses personal subscription resources to capture specific information about customer style, size measurements and product delivery addresses stored together with the customer profile. The company also uses virtual fitting room platforms on the internet (e.g. Fits.me) to help customers to visualise more accurately how the items of clothing they are browsing fit their size measurements. Customers can also opt to receive corporate newsletters and information about fashion events. Specific fashion shows and events can also be streamed Live on iPhone and iPad Zegna Apps. The online environment also has customer review functionalities, RSS feeds and integration with facebook, twitter, YouTube and Google+. Zegna also uses personal subscription resources to implement a private VIP access to a specific area of its online retail shop called Zegna World Pass, where customers have access to highly personalised and made-to-measure services. The company has also a specific channel for Corporate Gift collections, through which a dedicated team works with corporate clients to customise products to the customers’ logo and brand.

Mass Customisation

The number of retailers implementing mass customisation models has been considerably growing over the last decade (Dellaert & Dabholkar, 2009). In this model, customers can actively participate in the design of the products they want to buy, individualising items according to their specific choices of style, shape, size, colour, and other aesthetic attributes. This functionality can be compared to a pull production system where the customers trigger the production of products rather than the retailer pushing pre-manufactured items to the customers.

Retailers implementing this model can differentiate themselves from the competition by selling products with a high degree of personalisation, which is harder to both replicate and be found elsewhere (Dellaert & Dabholkar, 2009; Sorescu *et al.*, 2011). Recent technological advancements are making the implementation of business models based on mass customisation concepts more feasible and the 3D-printer technology is a remarkable example to illustrate this aspect.

For instance, the company Shapeways (www.shapeways.com) is a New York based company that shaped its business model around the 3D printing technology. The company prints 3D products on demand, including a range of fashion items, via customised and personalised orders. Fashion accessories, shoes and the N12 bikini from the company Continuum Fashion (www.continuumfashion.com) are concrete examples 3D-printable fashion products being commercialised by Shapeways. Customer can choose from different types of source materials such as silver, stainless steel, hard or flexible plastic, ceramic, etc. to be used in the 3D printing process. Shapeways also allows customers to upload and share 3D printing designs, making product design more accessible worldwide.

Presently, most of the retailers selling 3D printed products are doing it through business models based upon online environments. However, a recent case of 3D printing technology adoption in a brick-and-mortar context shows that 3D printers can also be used in-store as a complementary service. For example, the company MakerBot (www.makerbot.com) manufactures consumer-ready 3D printers (i.e. desktop 3D printers for end consumers) and related consumables that are relatively cost-effective. They provide expertise and customer service for the items that can be created with their printers. MakerBot has recently opened its first conventional high-street retail shop in New York, where customers are able to experience the 3D printer technology demonstrated by 3D design staff and have the chance to buy gifts and accessories made on MakerBot 3D desktop printers. In the shop, besides buying 3D printers and related consumables, customers can also buy personalised gifts, watch MakerBot 3D printers working live to create new objects and attend tutorials and workshops.

It is still early to predict the impact of 3D printing technology on traditional brick-and-mortar retailers. Nonetheless, as the use of desktop 3D printers scales up and their retail prices go down, we can logically infer that in the long-term 3D printers are likely to make their way into end-consumers' homes, where people will be able to 3D print traditional items such as plastic cups, cutlery, small gifts, accessories, toys, etc. This will almost certainly pose a threat to retailers that sell items that can be easily printed at home. In the short- and medium-term, it would not be a surprise to find conventional retailers following the MakerBot lead to adopt 3D printing technology in-store to sell customised items as a complementary service.

Social Merchandising

In practical terms, social merchandising models in online environments implement effective word-of-mouth communications in form of user-generated content, which is more widely known as customer ratings and reviews. Retailers exploring this model not only make use of

customers' opinions and perceptions to leverage sales, but also to connect with customers' social networks (Picazo-Vela *et al.*, 2010). This allows retailers to project their products to a wider audience and, furthermore, to inform potential customers on which of their social network contacts are also customers.

The well-known online retailer Amazon.com has long ago integrated customer ratings and reviews into its online model. In the fashion sector, recent business model innovations draw on both the social and the media power of the internet to project products to customers' social networks. In short, one can say that social merchandising is also going visual. For example, The Danish company LazyLazy.com (www.lazylazy.com) is a virtual shopping centre where different brands have their own web-shop environment with core shopping functionalities and resources available. Their web-shop environment includes the virtual fitting room platform Webcam Social Shopper developed by Zugara (www.zugara.com). With this technology shoppers can "virtually" try clothing items as well as capture their look on photos and share the images with friends on social networking websites such as Facebook and Twitter. This technology reinforces the implementation of the "social shopping" or "shop with friends" concept explored by the company. For instance, by using the social integration resources and functionalities available in their online environment customers can shop together with friends and family no matter where they are. They can share screens with friends, chat real time and create styles from their favourite brands. Customers can also virtually visit different stores together with friends, show friends clothes that they would like to buy and, even though they are participating together on the same "shopping trip", they can place things in their own individual baskets.

Interestingly, the virtual fitting room technology is also making its way into traditional brick-and-mortar environments through virtual mirrors (or their interactive or magic mirrors variations). These technologies are enabling social merchandising capabilities in conventional fashion retailing. For example, in an initiative to engage with young customers in Facebook, the fashion retailer Diesel has not limited itself to just opening a Diesel shop on Facebook, they also brought Facebook connectivity to in-store points. The idea was to turn customers into Diesel models with the support of cameras specially installed in special mirrors placed in a particular section of fitting room areas so that customers could easily share with their social contacts images of the items they were trying.

Despite the initial scepticism about the widespread adoption of virtual mirrors in-store due to implementation issues concerning technical failures, overflow of customers crowding into specific shop areas and non-intuitive controllers (Lyndsay, 2004), the potential adoption of this type of technology in-store should not be underestimated. Strong technology players such as Intel, Toshiba and Microsoft with its Kinect technology are behind recent developments in virtual (or interactive) mirror technology. Moreover, traditional fashion retailers such as Macy's, Republic and others are experimenting with the adoption of virtual mirrors in-store in order to equip staff with a unique sales tool to leverage sales, to drive traffic to their social platforms/shops on the web, and to enable customers to access their profile data in-store.

From a systems perspective, the business model innovations above presented represent homeostatic adaptations of business systems to contextual variety brought by new digital technologies and social networking behaviour. Overall, the business systems in the examples presented are seeking to maintain their current business models (i.e. to preserve the equilibrium state of their system) by counter-acting disruptive changes in the environment. To do this, the systems attenuated variety by absorbing new digital technologies to implement a higher level of customer and social engagement, matching this way the new contextual configuration they faced.

3.2. Disruptive business model innovations

New and disruptive business models emerging in the digital economy have thus far focused predominantly on sectors that involve digital products and services, e.g. publishing, banking, music, film and photographic industries enabled by the digitisation of text, financial data, images, sound and video. More recently, a number of new business model innovations in the digital economy are extending the scope of disruption by leveraging the web as a sharing platform where social networks can engage in collaborative consumption models that are widening access to physical goods and venues beyond conventional retailers' environments. More specifically, these business models combine social networking technologies to extend traditional e-commerce beyond the sale of digital products to further value-added activities based upon the sharing of goods such as cars, bikes, apparel, equipment, tools, residential spaces, as well as the sharing of skills and expertise. The rapid expansion of new businesses based upon collaborative consumption models is paving the way for a so-called "sharing economy" where the dominant consumption logic is shifting from product ownership to product usage, i.e. consumers in collaborative consumption models are mainly interested in using products rather than owning products (Botsman & Rogers, 2010).

Collaborative consumption models focus on the creation of marketplaces where unused space, goods, skills, money, or services can be rented, borrowed, bartered, traded, and swapped. By up-scaling sharing as a the main predominant form of exchange, these models are rapidly emerging due to a convergence of technological, social and economic factors such as online connectivity, environmental consciousness, and the current economic downturn (Botsman & Rogers, 2011). In other words, the development of collaborative consumption models has been influenced by economic austerity, awareness of the wasteful nature of consumerism, and issues of global warming and environmental pollution.

In practice, collaborative consumption models represent an inclusion of online social networking into online social commerce business models which build upon the maturation of the social web and e-commerce. These models may have a strong and potentially disruptive impact on e-commerce and retailing in general because of their global nature and great potential for growth. As a matter of fact, the social commerce market for physical goods and services is predicted to grow from \$5 billion in 2011 to \$30 billion by 2015 (Anderson *et al.*, 2011). Business start-ups providing online platforms to collaborative consumption models, including peer-to-peer banking, are proliferating and leveraging billions of dollars in information infrastructure (including mobile technology and services, telecommunications, and internet social platforms), logistics services, and other web platforms and cloud services, e.g. PayPal, Facebook, Twitter and Google (Sacks, 2011).

These new forms of social commerce based upon sharing values are expected to disrupt significantly conventional modes of commerce by creating a socio-economic groundswell that can potentially transform the way people consume and the value proposition of businesses (Christensen, 2003; Gansky, 2010). This posits profound implications for the economy and the retail industry in particular, as people now can potentially consume goods and services from each other in an unprecedented scale.

In terms of value, collaborative consumption models seem to be expanding the boundaries of value co-creation from the dyad company-customer to the triad company-customer-society, establishing a "*much broader constellation of economic actors in which activities are reshuffled in an increasingly intertwined web*" (Normann, 2001, p.105), thus breaking up traditional and sequential models. That is, these new models are creating value creation systems emerging from the juxtaposition of online social networking and e-commerce and they are not merely reallocating existing value creation activities between groups of actors; they are actually constructing new propositions of value creation systems with new types of system outputs.

It is possible to find concrete examples of collaborative consumption initiatives in the online fashion retail sector. A typical example of this model in the online fashion retail sector is the one implemented by the company I-Ella (www.i-ella.com). Under the motto "*share your closet*" the company has developed a collaborative consumption platform on the web where registered members are able to buy, borrow, swap, sell or lend fashion apparel, accessories and shoes. I-Ella also features auction events backed by celebrities and style icons. In these auctions, celebrities pull together their most-loved pieces and give a brief history for each. Users then can bid on items during the auction period, with proceeds benefiting the celebrity's charity of choice. In addition to celebrities, fashion industry veterans will have the opportunity to sell their pieces and promote their causes as well. In their revenue model, there are no fees for listing products on the platform, but the company collects fees over completed transactions. For instance, when products are sold the sellers keep 85 percent of the paid price and the company keeps 15 percent as transaction fee. Ten percent of this transaction fee is donated to a charity selected by the buyer. Donation to charities is a strong feature of the I-Ella business model.

From a systems perspective, business model innovations based upon collaborative consumption models represent disruptive adaptations of business systems to contextual variety brought by new digital technologies and social networking behaviour. These business systems are amplifying variety (i.e. getting positive feedback from changes in the environment) by shaping new business models based upon value creation systems that combine technologies and processes derived from e-commerce and social networking systems. The number of business model initiatives based upon collaborative consumption models that can be currently found on the internet suggest that critical mass around the new model has been reached and the system has undergone its phase change. Consequently, the recently shaped collaborative consumption model represents a new state of a business system that serves as a basis for future homeostatic changes to maintain the sustainability of the model.

4. Conclusion

This paper contributes to the development of a systems perspective of business model innovations by discussing issues concerning the homeostasis principle of systems in the context of business change and adaptiveness phenomena driven by new digital technologies, specially the internet, and shifts in consumption behavior. When discussing theoretical and practical aspects of systems change through new business models, we point out that adaptive variability does not necessarily entails reestablishment of a previous state of equilibrium for a specific business system. The novel state of a new business model can be considered as a new referential state of the system for future homeostatic changes to maintain equilibrium until other disruptive changes take place.

From a practical perspective, one can see disruptive technologies as drivers of bifurcation points of instability for organisations. To deal with these instabilities, companies can opt for implementing either an attenuation or amplification strategy. The attenuation strategy is developed through homeostatic changes that attenuate disruptions in order to maintain a state of equilibrium. On the other hand, the amplification strategy can be implemented through disruptive changes that amplify disruptions by contextualizing the disruptive technologies into a new business model proposition for the market.

From the systems perspective discussed in the paper, one can conclude that the development of a new business model entails change to a different organisational state that represents a state of dynamic disequilibrium, which paradoxically provides basis for a state of equilibrium if the new model is successful. In this sense, we postulate that in organisations developing new business models homeostatic adaptations to restore

equilibrium are typically preceded by adaptation to a different state of temporary dynamic disequilibrium.

The paper also discusses core aspects of collaborative consumption models as disruptive business model innovations. These emergent models typically draw on themes such as sustainability and social sharing of resources for a better world and benefit from the convergence of technological, social and economic factors such as online connectivity, environmental consciousness, and the current economic downturn. In our view, the growth of collaborative consumption models can potentially have a strong disruptive impact on retailing (online and offline) and other service sectors. It is therefore crucial for researchers, retailers, entrepreneurs and policy-makers to better understand the underlying success factors of this new phenomenon. Important areas for future research in this field can involve:

1. Definition of a typology for different types of collaborative consumption models.
2. Critical investigation of the context within which these business models are emerging, including inhibitors and drivers to growth.
3. Development of a detailed explanation of the model uniqueness and mechanisms for value creation.
4. Investigation of consumption behaviour in collaborative consumption models and the fundamental differences between buying versus renting decisions.

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