



Customers becoming creators: how firms leverage technology and consumers for new value

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Proposed classification

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Purpose

The rapid development of Information & Communication Technologies (ICTs) has facilitated consumers' involvement in firms' value creation processes through increasingly near real-time information exchanges. This strategic opportunity configures new forms of ICT-enabled collaboration between firms and consumers. Firms can now immediately react to consumers' requests/complaints having gained real-time visibility of consumers' actions and behaviors. Despite the increasing deployment of ICT-enabled value co-creation projects, managers still poorly apprehend them as high potential strategic initiatives.

Approach

This paper investigates this gap through a multiple qualitative case study based on seventeen organizations that successfully implement ICTs based value co-creation initiatives, including Lego, Netflix, and Blablacar.

Findings

This study identifies two dimensions of the ICTs' value co-creation process: the firms' involvement, and customers' role in this co-creation process. Through these dimensions four ICTs based co-creation initiatives are observed and defined:

- Community: customers' contributions create the Firms' Value Proposition (FVP).
- Customization: customers' service consumption personalize FVP.
- Reputation: customers' contributions about the offered services completes the FVP.
- Sense: an algorithmic approach, designed to focus on learning from customers' consumption tailors FVP.

Originality/Value

This study advances a framework supporting managerial decision-making concerning the aptitude of co-creation initiatives to meet organizational goals. Managers may gain insight from its use especially in assessing emerging opportunities to engage consumers in the value creation process.

Keywords: consumer work, digital economy, value co-creation, IT value, strategic initiative, digital strategy

1 Introduction

In today's digital business environment, both firms and consumer are experiencing a tidal shift of their respective roles in value creation. Customers have gone from being a simple target of firms' offerings to playing an active role in participating and contributing to Firms' Value Proposition (FVP). As individuals buying and thus consuming products or services, consumers are now co-creators of the products and services offered by firms. For example, Nike allows consumers to design their very own shoes through a digital interface named NikelD. This represents a departure from the traditional stylist driven offering.

Information & Communication Technologies (ICTs) foster value co-creation (Lusch and Nambisan, 2015, p. 168) by providing both firms and consumers with a wide range of tools to enable direct and near real-time interactions. Personal computers, smartwatch applications and social media are the new tools that multiply customers' contact points across digital channels and media within omnichannel strategies. The unprecedented information processing power of ICTs empowers firms with the ability to build, modify, or adapt their value proposition according to the sensed actions and behaviors of consumers. In this sense, consumers are co-creators of the service and consequently co-creators of the FVP (Prahalad and Ramaswamy, 2004). Consumers co-create the service value by mobilizing their resources – *i.e.* skills, capabilities, and knowledge – jointly with those mobilized by the firm. These tools represent the building blocks for co-created ICT-dependent strategic initiatives, where ICTs play a fundamental role, but “as part of an activity system that fosters the creation and appropriation of economic value” (Piccoli and Ives, 2005).

Despite the central role of ICTs in enabling the combination of resources that underpin value co-creation, little is known about value co-creation initiatives available to managers regarding their business opportunities.

To address and fill this gap, this paper provides managers a framework representing strategic initiatives that managers can pursue to profit from digital co-creation. We identify four distinct types of ICTs value co-creation initiatives: community, customization, reputation, and sense.

The paper is organized as follows. We first propose a definition of value co-creation as a service created simultaneously by both the firm and its customers through resource integration. We then illustrate the role played by ICTs in the value co-creation process (Lusch and Nambisan, 2015).

On these premises, we advance a two dimensional framework based on the roles played by the firm and the customer in the co-creation process. We distinguish a firm's role as either productive, or complementary, and a customer's role as being either a consumer, or a contributor. These dimensions

are used to identify four types of co-creation strategic initiatives that can be leveraged by managers, to classify, discover, and prioritize co-creation initiatives.

We illustrate and detail, through a qualitative data analysis of seventeen firms that have successfully mastered the co-creation process, and discuss the practical implications for managers.

We also call for further research on the challenges of engaging customers in the value co-creation process. Specifically, we argue that the identified types are not mutually exclusive, and that firms may benefit from a coordinated effort on multiple initiatives.

2 Value co-creation initiatives in the digital age

2.1 Consumer value co-creation: a paradigm shift?

In 1978, Von Hippel argued that firms were switching from a business environment in which they perceive needs, analyze them, and generate product ideas to one in which firms must efficiently perceive and gather external ideas (von Hippel, 1978). Since Von Hippel, the explosion of the Internet, the Web, and ICTs based collaborative tools have reshaped the business environment, thus fostering customers' participation in the process of value co-creation (Barrett et al., 2015; Prahalad and Ramaswamy, 2004). The paradigmatic shift in value co-creation stems from the massive ICTs-enabled contribution of customers in the value creation process (Füller et al., 2009; Vargo and Lusch, 2004)

A clear understanding of the role of ICTs tools in supporting customers' participation in co-creation processes is missing in the literature. So, as the enabler of this shift, we argue that a clear understanding of these processes is necessary for managers.

2.2 Firms' integration of customers' resources with ICTs as a means of value creation

Many of today's most successful firms have established value co-creation initiatives in their FVP. For instance, Airbnb, the website where people can rent places proposed by others, does not own any of the spaces that it rents; Blablacar, the website where people can travel using available seats in other peoples' cars, does not pay drivers or provide cars for the journeys it sells. The latest trends, like big data, are one way that services are increasingly being designed for a very specific set of customers, sometimes only one (Pigni et al., 2016, p. 9). *De facto*, customers are key participants in the value creation process because they mobilize knowledge and other resources that affect the success of a FVP in a way that the firm cannot develop internally. Consequently, co-creation integrates firms' stakeholders' resources –e.g. customers' review– to build, adapt, or modify FVP. Allowing customers to partake in the design process or specify the service, or build the service itself using a firm's resources is a challenge for businesses. We argue that the expected involvement of customers to the co-creation

process is a fundamental dimension of a firm's ICTs based value co-creation strategy. We posit that customers' involvement varies from consumers to contributors.

- **Consumers** are customers who benefit from the consumption of services provided by the firm. For example, if a customer buys a product suggested by a firm's recommendation system, she just consumed the service offered. This category also includes customers who, prior to consuming the product or service, simply select different attributes/options based on their own specific needs without directly influencing the structure of the FVP, as with NikeID.
- **Contributors** are customers who directly and purposefully contribute to the creation, design, or even production of a service offered by the firm. For example, with AirBnB or Blablacar, a customer that purposely proposes and uploads an offering is a contributor because the product in itself is built upon her contribution. This category also includes customers who, after consuming the product or service, purposefully rates or comments on their own specific experience because this directly influences the FVP.

Beyond firms' expected customers' contributions to the co-creation process, the resources that customers mobilize have to be integrated into a firms' processes in order to create value. Thus, the co-created FVP is built with resources that firms integrate from customers by means of ICTs (Barrett et al., 2015, p. 138). Resource integration is defined as a firm's use of tangible or intangible elements – knowledge, skills, products, etc. – that originated from another stakeholder, *e.g.* a customer (Lusch and Nambisan, 2015, p. 159). Concretely, it means that the extent to which firms are ready to integrate customers' resources is a fundamental dimension of the value co-creation process. Indeed, integrating external resources may lead to the reconfiguration of current production processes - as with NikeID - or to the selection of a specific approach to the ICTs' used by a firm, like when Amazon incorporated XML, a coding language widely used to interconnect and personalize the interface of e-commerce websites. Thus, the second dimension to take into consideration when a firm decides to implement ICTs' based co-creation strategy is how it can modify its internal processes, *i.e.* its involvement in the co-creation process. We argue that such involvement can vary from productive to complementary.

- **Productive** involvement is based on the exploitation of integrated customers' resources to the production of the service that a firm sells. It means that customers' integrated resources have a direct and extensive impact on the firms' processes that build its FVP. For example, on the Lego Ideas platform, when a customer chooses to share a design for a new Lego set, which customers will or will not select and Lego validate, the firm should integrate this contribution into its manufacturing process.

- **Complementary** involvement is based on the integration of customers' resources from different channels, which complete the service that a firm sells. It means that the firm does not need to directly modify the way FVP is produced, rather they complete it with customers' integrated resources. For example, recommendation systems used by Amazon or Netflix recommend services based on the algorithmic exploitation of customers' data (e.g. purchase history or similar customers' behavior).

2.1 A Decision Support Framework for ICTs based Value Co-creation

Based on our proposed dimensions, we identify four value co-creation initiatives: community, customization, sense, and reputation (see Table 1).

[INSERT TABLE 1 ABOUT HERE]

In this section, we review each initiative by confronting it with a multiple case study sample, while maintaining a strong focus on the ICTs used and the business impact in terms of firm involvement when implementing such initiative(s).

3 Value co-creation initiatives in the age of digital transformation

3.1 The Community Initiative

The Community Initiative is based on customers' direct contributions to Firm Value Proposition (FVP), supported by firms' ICTs. The company acts as a means for enabling and facilitating the exchange. The firm allows its customers to mobilize their own resources to discuss, suggest, try, modify, or design the offered services. To foster the contribution of customers in co-creating their own services, trust is a critical factor (Füller et al., 2009, p. 81). Trust is defined as "the belief that the other party will behave in a dependable manner in an exchange relationship." (Kim et al., 2004, p. 394). Interestingly, firm reputation positively impacts trust (Jøsang et al., 2007), generating positive feedback with the Reputation Initiative we discuss later.

For example, Threadless, a web-based apparel seller, allows its customers to design and select the t-shirts that are produced and sold on the firm's website. Thus, t-shirts manufactured and sold by the company are imagined, designed, and selected by customers.

In the Community Initiative, customers' resources are integrated during the early stages of service creation, before the actual production and sourcing processes begin. To implement a Community Initiative, a firm has to reshape its sourcing processes. Design sharing software, as used by Threadless, and an open discussion platforms are the ICTs tools that enable the customers to enhance the use of their resources.

For instance, a Wiki¹ represents an ICT based collaborative system that supports customers in the generation of content. The successful implantation of this initiative exceeds what would have been possible without it. A well-known case for this Community Initiative is Wikipedia. The English-only part of Wikipedia contains more than 60 times the number of words that the next largest competitor has, and has become the 5th largest website in the world.

Community Initiatives require the firm to rely on contributions that it has no control over. Thus, it requires a productive firms' involvement.

For instance, ETSY is a marketplace where both consumers and professionals can sell their crafted products. The productive involvement of the firm was an essential factor in supporting the success of craftsman in matters pertaining to legal or marketing related issues. ETSY aims to support rapid and transparent buying and information sharing processes between both sellers and buyers'. They found that 90% of craft buying occurs offline, so beginning in 2012, they invested in real shops, to foster community development.

Consequently, to implement a Community Initiative, a firm needs to directly and conjointly build its services with its community of users.

3.2 The Customization Initiative

The Customization Initiative is based on the use of customers' resources for an individualized consumer experience. Customers play a consumer role in a Customization Initiative when they select personalized services that most closely meet their needs, using the firms' provided parameters (Merle et al., 2010). Nowadays mass customization initiatives are known and commonly implemented (Fogliatto et al., 2012).

For instance, in 2008 Mars launched My M&Ms, an online customization tool for M&Ms candies. Using a website customers can customize these classic candies by adding text messages or pictures to them; however, they can't modify the candy recipes or select the location where text or pictures will appear, or even the colors. By allowing for the customization of only one feature, the firm can keep its current manufacturing processes intact.

Customization Initiatives rely on ICTs based products or services configurators to build an interactive process where firms have the opportunity to add value to the FVP through a customized offer (Merle et al., 2010; Vargo and Lusch, 2004). This ICTs based system has to be connected to the manufacturing and supply chain processes of the firm to build the customized offer.

¹ A « wiki » from the Hawaiian word « quick » is a website offering collaborative tools for the co-creation of media rich documents.

For Instance, Dell Online opened in 1998 and gave customers the opportunity to customize their computers. This Customization Initiative led to Dell becoming the world's leading PC manufacturer, earning 3 million dollars in revenue per day.

The customization Initiative requires firms to create a clear flow of information between different supply chain stakeholders. Firms are then able to manufacture on demand while providing customers relevant information about processing and delivering.

For instance, Nike considers reinforcing its Customization initiative, where customers can create their shoes from a range of options, as a strategic investment that requires investment in their supply chain.

Thus, Customization initiatives require productive firm involvement as they strongly impact manufacturing and supply chain.

3.3 The Reputation Initiative

A Reputation Initiative eases the decision a consumer will make about firm offerings. It is based on information that is provided by consumers regarding their past experience. Reputation is what is generally said or believed about a person's or thing's character or standing (Jøsang et al., 2007). In a Reputation Initiative, while consumers contribute to FVP they do not directly contribute to the offered service. Instead, customers supplement information on the associated product or service.

For example, EBay's success is built on its reputation system where customers evaluate their experience with both sellers and products (Chen et al., 2009).

Implementing a Reputation Initiative is about developing a system "that collects, distributes, and aggregates feedback" about participants' past behavior" (Resnick et al., 2000). Studies have shown that reputation systems positively affect trust which means that Reputation and Community Initiatives positively reinforce one another (Kim et al., 2004). Thus, they are generally implemented together, which is consistent with our data shown in appendix 1.

For instance, customers using Blablacar, the notorious ride-sharing community, evaluate their journey by expressing their evaluation of both the driver's driving skills and the overall experience.

This initiative is based on ICTs platforms that support customer feedback management and then repurpose it. With Reputation Initiatives, firms aim at establishing a service presence online and at motivating customers to share information about the products or services that they bought.

For instance, Decathlon, an international manufacturer and seller of sportswear and equipment, leverages more than 250,000 customer opinions to develop their FVP. Recently, the firm committed

to the removal or redesign of a product if at least 25 customer evaluations are below 3 out of 5 over a 12 month period.

A Reputation initiative requires the complementary involvement of firms, as it mostly impacts customers' relationship processes to allow firms to deal with unsatisfied customers.

3.4 The Sense Initiative

The Sense Initiative is about offering a service to customers related to the resources, mostly digital data, they unobtrusively provide to a firm. This initiative aims at providing a form of targeted marketing by creating a personalized shopping experience for each customer (Linden et al., 2003).

For instance, when on Amazon's website, customers experience a personalized interface, customized in real-time, based on different variables like previously bought or watched items, *etc.* (Linden et al., 2003), as shown in the screenshot below.

[INSERT ILLUSTRATION 1 ABOUT HERE]

Precisely, whenever a customer navigates a webpage or uses its smartphone application, firms deploy several ICTs to monitor and collect information on customers' actions and behaviors. By splicing all of these digital information flow, named *Digital Data Streams* (Pigni et al., 2016), firms may increasingly customize their product or service.

Spotify, the music streaming firm, implemented this initiative to suggest music to their listeners depending on their own previous service history in addition to the service history of other customers with similar interests and preferences.

The Sense Initiative requires the firm to be able to take advantage of digital data streams. Purposely, the production process of the service is adapted by following the use of those streams. This means that the firm must access the resources to exploit the collected data (Pigni et al., 2016).

For instance, Netflix, known for its Sensing Initiative through its recommendation systems, estimates that the initiative allows the company to save about 1 billion dollars per year. To reinforce the performance of its Sensing Initiative Netflix launched, in October 2006, a challenge with a 1 million dollars prize. This challenge, which ended in 2009, allowed Netflix to access a large pool of experts (the resources they needed), as more than 27,000 competitors entered the contest.

This example illustrates that complementary involvement of the firm is necessary for the Sense Initiative to be implemented.

3 Managerial implications

The framework we advance offers a supportive decision-making tool for managers who are increasingly challenged by digital transformation. This contribution offers guidelines for managers in selecting ICT's based co-creation tools that foster the value co-creation initiative they wish to implement.

It is important to note that these initiatives are not mutually exclusive, and firms may profit by a plurality of incentives. For instance, Airbnb, Blablacar, and Uber, which are involved in generating the Community Initiative, also strongly invest in building trust among their contributors with the early implementation of the Reputation Initiative.

[INSERT TABLE 2 ABOUTE HERE]

4 Conclusion

Through multiple case studies, this research identifies four types of value co-creation initiatives that a firm can leverage: Community, Customization, Reputation, and Sensing. For managers, these categories represent types of strategic initiatives enabled by the increasing availability ICTs tools. This unique framework may help managers select relevant ICTs from a plethora of available alternatives.

Our framework is also an initial contribution to the mapping of strategic groups of value co-creation initiatives according to a specific industry, and thus aids in understanding adoption patterns and uses. We call for further research on the proposed framework. While the framework dimensions are proven robust through our analyses, further investigations should consider how to extend our qualitative study, toward eventually improve our theorizing; the aim being to design both a measurement scale and associated variables, to both improve and validate our framework.

TABLE 1: ICT Based Value Co-creation Initiatives Framework

Customers' expected involvement		
Firms involvement	Contributor	Consumer
<i>Productive</i>	Community <i>Open source development and community sharing tools</i>	Customization <i>Mass customization and personalization tools</i>
<i>Complementary</i>	Reputation <i>Rate, share, and comments tools</i>	Sensing <i>Algorithmic and products recommendation tools</i>

TABLE 2: Managerial Implications of ICTs Based Value Co-Creation Initiatives

	Community	Customization	Reputation	Sensing
Suggested ICTs	Open source development tools Community contests tools	Mass customization interface Personalization tools	Rate, share and comments tools Community management systems	Algorithmic recommendation tools Data analytics and business intelligence systems
Impact on existing business processes	Need to be completely reshaped from new product design to customer delivery	Need to be partially reshaped, especially manufacturing processes and relations with providers	Need to reshape customers' relationship management	Need to integrate and merge different sets of Data sources and skills to exploit them
Resources and competencies required	Strong strategic support with high skilled community managers and ergonomic interfaces. Manufacturing processes should be tailored so as to allow customer integration in the value creation process.	Business processes managers for on-demand manufacturing. Ergonomic interfaces for customers to design and near real time data transmission in the manufacturing process. This implies dealing with data security and integrity thus needs strong IT skills.	Complete database of product and services available by a web interface. Ergonomic web allowing customers input, community managers answering and dealing with complaints.	Data Scientist and strong IT skills with access to customers' information and an interactive website or app as distribution channels that are based on customer parameters.

ILLUSTRATION 1: Amazon recommendations for one of the authors

APPENDIX 1: List of cases

[INSERT EXCEL FILE ABOUT HERE]

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