CO-CREATORS VS E-RETAILERS: AN ANALYSIS OF POWER IN THE DIGITAL VALUE CHAIN

REFERENCE: ABS02

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Track: micro-economic
Keywords: Power, Business models, Digitalization, Consumer surplus, value chain.

Abstract
Supply chains as descriptors of business models provide processes of value creation and value delivery, which are often performed by a number of different companies. This article develops a framework of unbalanced power in capturing value between those who create value and those who deliver it, giving a better academic comprehension of how empowerment distorts B2B relations throughout the value chain. The context of analysis is the book industry, in which authors and publishers are considered as co-creators of value and E-retailers deliver value. We propose that servitization and digitalization of the industry has brought the industry towards a demand chain approach empowering E-retailers. We empirically validate this proposition through a unique survey containing information of 8,000 consumers residing in UK and US. The estimation of demand functions using the payment card method determines that while in new releases market price equals profit-maximization point for publishers, in book categories in which there are not well defined property right like classic novels, E-retailers impose discounts of 30%-40% in respect to the publisher's profit maximization price. Results have implications for practitioners and policy makers.

1. Introduction
Business Model refers to the design of the value creation mechanism, delivery to consumers and capture or appropriation of their surplus (Teece, 2010). Supply chains as descriptors of business models provide processes of value creation and value delivery, which are often performed by a number of different companies. The supply chain in creative sectors (i.e. books, music, motion pictures) contains three agents relevant to this study: authors/artist, publishers, and retailers. Authors/ artists are originators and creators of content. Publishers hold and manage the property rights of content. Retailers offer the content to end users using a broad range of sales channels (Vendrell-Herrero et al., 2013). Recent research has proven that authors obtain greater benefit when employing such intermediation services (Broekhuizen et al., 2013; Hracs, 2013). Therefore, in this research the authors and publishers are considered as co-creators of value.
The appearance of electronic commerce and improvement on shipping and logistics were the main drivers for new entrants in the retailing sector, known as E-retailers.

Examples are Netflix for cinema, iTunes or Spotify for music or Amazon for books. There is an increasing rivalry between co-creators and E-retailers. The main goal of this article is to shed light on the shifts of power within the dynamic processes of value capture in the digital value chain (Cox, 1999).

The increasing alternatives and the threat of piracy strengthen the position of the consumer, who demands more quality at a lower price. The understanding of consumer needs is vital and it requires a shift from supply to demand perspective in the management of the supply chain (see for instance Bustinza et al., 2013). In this new scenario E-retailers are the ones that can interact and obtain direct information from consumers (Parry et al., 2014) and hence can strength their power. In the other side, co-creators of content have a strong position in the commercialization of bestsellers as there are not real consumption alternatives. Models of power within the supply chain have mainly focused on the relation of power between competitors measured by concepts like reputation, efficiency or branding (Meehan & Wright, 2012). Our approach builds upon other important source of rivalry, the one between supplier and client in the value chain - in our case envisaged in the conflict between co-creators of content and E-retailers.

Our analysis focuses on the context of book industry, in which the main rivalry stays on the determination of ebook pricing. There is an increasing debate with regards to the pricing strategies of E-retailers in the publishing sector. Previous literature has focused on complementarity between device and content (Yu et al., 2011), pricing strategies of digital format to libraries (Besen & Kirby, 2014) and pricing strategies for cross-selling retailers (Li et al., 2013), but understanding of consumer surplus and worth value (Lepak et al., 2007) in terms of consumer surplus for different agents in the supply chain remains unresolved. We fill this gap by developing a novel methodology exploiting survey data for 8,000 consumers residing in UK and US. The empirical application estimates the demand function of ebooks using the payment card method (Ryan & Watson, 2009). The demand functions complemented with some microeconomic assumptions allow us the estimation of the price point that maximizes the profit of the publisher. Our results clearly determine that market price equals profit maximizing point if and only if co-creators hold strong property rights on the content (i.e. new releases). For those book categories in which the copyright are not clearly defined (i.e. classic novels) E-retailers have more power and force a discount in the price of ebooks – being the market price in the range of 30% to 40% lower to the profit maximization point.

This analysis is developed in the context of rivalry between Amazon and publishers; a rivalry that has come out in the press in recent years, especially with the Hachette case. The threats are becoming stronger and real, and Amazon even cancelled the sales of hardcover titles from Hachette in its online store. This rivalry focuses entirely on the processes of value capturing throughout the supply chain. The case of Amazon has had major interest in business school for developing teaching cases, this is the example of Harvard Business School (e.g., Anand et al., 2009; Applegate, 2008); there is also some recent studies analysing the relation of Amazon with its competitors and its coopetition strategies (Ritala et al., 2014); however, to the best of our knowledge there is not academic research focusing on the B2B relation between Amazon and its suppliers, in our framework the co-creators of value.

The paper proceeds as follows. Next section develops the theoretical underpinning, positioning the article towards the implementation of service-orientated business models in creative industries and its forthcoming effects on the shifts in power throughout the industry value chain. Theoretical insights allow the development of a general theoretical proposition. Section three builds upon the particular case of the book industry; in particular the work models the pricing strategy of publishers and E-retailers and derives a testable proposition for their competing strategies depending on the capability to protect property rights. Section four develops the data gathering process, describes methodology and shows results. Section five closes the work with a collection of relevant managerial implications and indications for future research avenues.

2. Theoretical Underpinning

2.1 Servitization as a source of change in the industry value chain

The work of Porter (1979, 2008) has focused extensively in the analysis of industry profitability and competiveness regarding the intrinsic forces operating in the industry – this model is well-known under the terms of five forces of Porter. The vertical axis of this model looks at the demographics (threat of new competitors) and product substitutability (threat of substitutes). Those forces are not within the objective of this research. Instead we focus upon the horizontal axis, which represents the internal competition and the degree of power of consumers and providers. This is normally represented as the industry supply chain management, with the main purpose of coordinating and controlling processes throughout all the agents participating in value generation (Kauffman, 1997).

Supply chain management is conceptualized as the network of organizations, linked upstream and downstream in processes and activities, delivering products and services to the ultimate customer (Christopher, 2005). Supply chain management literature analyses the relations between manufacturers, wholesalers, retailers and distributors. In this regard supplier linkages are a crucial determinant of supply chain performance and value generation (Lee et al., 2007). Those relations incur in transaction costs (Kauffman et al., 2000) that need to be reduced through long-term formal or relational contracts (Gibbons, 2005). Those agreements define how the value generated through the value chain is captured by each party. In stable conditions the process of value capture remains constant; however it heavily changes when disruptive shocks arise.

This is the case of business models moving from the traditional product-centric dominant logic to a service dominant logic as a source of value in B2B relations (Vargo & Lusch, 2004, 2011). In this regard, Vandermerwe and Rada (1988) define servitization as an increment in the entire market package of customer focused combinations of products, services and knowledge offered by a firm searching for additional value to their base product offerings. Based on the competitive advantage generic strategies established by Porter (1979) the concept of servitization is linked to firm differentiation obtained by knowing the requirements of a customer base and creating barriers to entry through adding services which enable products to be differentiated (Matthyssens & Vandenbempt, 2008). Whilst firms may servitize due to strategic rationale, literature also shows economic and environmental rationales for firms to go downstream and capture value from adding services (Wise & Baumgartner 1999).

This downstream movement enables new business opportunities for manufacturers who are able to draw upon increased volumes of consumer data and improving methods to analyse such data (Neely 2008; Parry et al., 2014). New business models have appeared for manufacturers which unlock latent value from technology, forming a connection between technical potential and realization of economic value (Chesbrough & Rosenbloom 2002), product companies can servitize before (i.e. consulting), during (i.e. financing) or after (i.e. maintenance) the product purchase. The success of new business models reflects the extent to which firms understand what their customer wants, how the value proposition is delivered, how the customer is locked in and the way to capture value and make a profit (Teece, 2010). Business models emerging from the process of servitization develop the firm's innovative capabilities in creating value at the customer level by creating the correct balance of products and services (Suarez et al., 2013; Visnjic & Van Looy 2013).

Those business models change the structure of the industry supply chain, giving more relevance to customer, a derivation of supply chain management dubbed as demand chain management (Santos & D'antone, 2014). Demand chain management analyses the customer perceived benefits obtained from a product or a service and compares them to the purchasing price (Johnson et al., 2008). The objective of demand chain management is to align supply chain management processes such that they achieve greater customer responsiveness (Godsell et al., 2006). Analysis of consumer preferences is of great importance for services as the consumer has a central role as a resource in service production (Vargo & Lusch, 2004). Juttner et al. (2007) define demand chain management under the paradigm of new business models aimed at creating value by combining the strengths of marketing and supply chain competencies. Under this conceptualization, demand chain management is understood as a dynamic network that facilitates the firm's capability to establish, maintain and enhance profit-making relationships with customers (Chase et al., 2007). Demand chain management is based upon a customer-focused business culture (Lin et al., 2012) and it is able to pool channel resources to create additional value (Agrawal, 2012). The demand chain perspective shifts the power away from suppliers towards the consumer; and can disruptively affect the forces and agreements between the different agents in the supply chain. In this regard those companies being able to directly interact to the consumers and collect data will be able to have a better understanding and increase their relative power in the supply chain.

In creative industries Servitization is a natural business model response (Adner, 2002) to disruptive digital innovation e.g. MP3 technology, internet etc. (Tidd et al., 2005). Retailers of creative content diversified from product-centric business models to providing bundles of physical and digital formats, requiring new forms of contracts with the publishers (Parry et al., 2012) and hence modifying the power relations. Servitization opened the market to new entrants exploring novel value delivery mechanisms. Whilst there have been many failures (Rosenzweig et al., 2011) a small number of these explorative new entrants have been very successful such Spotify in the music industry, Netflix for film and Amazon who began in books diversified across most sectors.

The presence and power of retailers in digital value chains is increasingly important, taking significantly larger stakes than high-street retailers in creative industries. These changes have produced significant shift in relative profitability among the different

agents in the value chain. For instance Amazon has increased their market value since he price of shares moved from $40 to $300 during the last decade. In contrast the profitability of publishers (Myrthianos et al., 2014) and artists (Byrne, 2012) are decreasing in the digital arena because digital offerings have changed the value expectation and perception of consumers.

2.2. Inter-organizational power within supply chain

There are three school of thought of inter-organizational power. Depending on the school of thought power can be attributed to individuals (Wilson, 2000), relational exchanges (Nielson, 1998) or organizations (Cox, 1999, 2004; Sanderson, 2004); being the third one the dominant paradigm in supply chain management and purchasing literatures. Our research builds upon organizational power within the supply chain and follows the definition of power developed by Cox (1999), who defines power as an unbalanced relationship in which one company in the supply chain has the capacity to appropriate most of the value generated.

For the sake of simplicity and argument development let's consider the simplest form of value chain in which we have a producer and an intermediary who takes the role of retailer selling directly to consumers. Some markets like grocery, car manufacturing or creative industries could be catalogued in this simplified form of supply chain. Let's also consider that the main variable of decision is price, which in common market theory is the main determinant of sales and profits and has a tactical nature (Anderson & Narus, 2004).

Armstrong (2006) provides a formal model of retailing in which power stays with the retailer who sets the price. This is known as wholesale model where normally a producer receives its designated wholesale price for each unit of the product and the retailer sets the retail or market price, which is the one that determines total industry revenues. This model is appropriate when the optimum price range of producers and retailers is similar as it simplifies the process of price setting, as is the agent collecting more information from the consumer and hence with a more precise knowledge of the demand function who sets the market price.

This is also a good way of developing a partnership or close business relationship (Voeth & Herbst, 2006). However, retailer setting the price can face important drawbacks when the optimal prices significantly differ between the producer and the retailer. Rysman (2009) describes an alternative where the producer sets the market price and the retailer sells the product as its agent getting a portion of the market price. This relation also described as agent model is beneficial for the producer in those circumstances where the retailer would have the incentive to significantly deviate from the market price.

Meehan and Wright (2012, p. 674) identified different origins of power at organizational level. Some of them are related to the market environment such as the level of competition, the reputation of the brand, or the product development strategy. Other factors reside on the commercial attractiveness such as the dependency on the supplier/client or the quality and range of products purchased/sold. However, they don't include in their model the power enhancement/reduction depending on the strategic position in the value chain. In demand chain management approaches having the capacity to appropriate to the linking channels (Bustinza et al., 2013) and directly approach the consumers produce

an enhancement of strategic power, allowing to those companies to appropriate larger stakes of the value generated. In this regard the retailer would gain significant power and hence major capacity to determine price.

In a demand chain management approach the producer needs to protect their position thanks to the strength in its competitive advantage of the market power. If the consumers perceive substantial differences between the producer and its competitors it still will be able to highly influence market price even without having access to linking channels. In more formal terms the producer can better protect itself when it faces inelastic demand function, while the retailer faces highly elastic demand.

In this regard an exemplary situation is the book industry which will be explored in depth in the next section. For the time coming and for reinforcing our argument let's see how are demand function of the main E-retailer in the market, Amazon. For doing this we should refer to the pseudo-natural experiment of Baugh et al. (2014) who analysed the effect of a tax on online purchases implemented in several US states, and which in the practice only affected to Amazon. The authors were able to estimate the price elasticity of demand of Amazon, and situated it around -1.3.

The demand is even more elastic when the analysis is focus only on large purchases, estimating the price elasticity of demand in -3.2. Barely speaking this means that an increase (decrease) of 1% in the price, produces a decrease (increase) of 3.2% of the units sold. The demand for Amazon is price sensitive as the same books can be found in other digital or physical outlets. However, this threat of substitution does not affect producer – in this case the publishers and authors – especially when comes to new releases. Consumers interested in books like Harry Potter, Fifty shades of grey, or Lord of the rings rarely will buy a substitute if this is not available. Therefore, in general terms the demand function faced by publishers when selling bestsellers is inelastic, with low sensitivity to price increases. The same intuition can be applied to other markets transforming to a demand chain management and getting servitized. All this theoretical development allows us to make explicit the following theoretical proposition:

Theoretical proposition: Industries lead by a demand chain management approach will enhance the organizational power of retailers –as they control linking channels with final consumers– if and only if the capacity of the producer to protect their resources is low.

3. The ebook industry supply chain

3.1. Background and relevant players

As other creative industries, the book industry moved the business model from selling only tangible physical format to digital. With internet and E-commerce in the 90s first E-retailers enter the market selling physical books in online stores. Only in US appeared rapidly more than 30 E-retailers (Clay et al., 2001, p. 532). The market moves naturally to sell also ebooks, a market which rises significantly after 2007 when appropriate hardware like kindle from Amazon was launched (Anand et al., 2009).

After the launch of Kindle Amazon increased dramatically its market share – nowadays it is estimated that in US Amazon's market share is 60% in ebooks and 30% in physical books (see more info here http://www.ft.com/cms/s/0/ab87b634-e5ad-11e3-aeef-00144feabdc0.html#axzz34mua7vxp).

The other 40% of the market of ebooks is divided through a range of companies including Apple, Barnes & Noble, Google, Asda and others (see Table 4 for more detail).

Before 2010 publishers offered physical books and ebooks to retailers at a wholesale price or suggested retail price and make recommendations about list or market prices. The recommended list price was normally stipulated as 20% larger than the wholesale price. In those conditions the retailer, as described by Armstrong (2006), could sell ebooks to consumers at whatever price they choose. Given this contractual conditions and the boom of ebook selling at that time in 2009 Amazon decided to develop a more aggressive strategy on pricing offering discounts on ebooks; in particular they offered in US new releases and bestsellers in ebook format at the price of $9.99, making a loss in most of the titles. Publishers received the wholesale price in full but considered this price as offensive as it was significantly below to the average list price. They fear resides in two factors. First small prices could negatively affect the consumer's perception of books, and second excessive discounts on digital books could cannibalize sales in hardcover books.

The six largest publishers in US accounting for 90% of the ebook market decided to retaliate the ebook price policy of Amazon. Different possibilities arise to pressure Amazon increase their prices. One of the initiatives was windowing, or offering the ebook version of the new release two to three months later to the release of the hardcover. The main problem with this measure was that it generates discontent with consumers and can stimulate piracy. The launch of the iPad from Apple in January 2010 gave the publishers the opportunity they were looking for. All of the big six with the exception of Random House signed an agency contract with Apple to sell their content in the iBookstore. The agreement was completely different to the one signed with Amazon years before. Apple was the agent and sold the ebooks in name of the publishers at the market price decided by them (Rysman, 2009). This agreement had three conditions from Apple. First, they wanted a 30% commission of the stipulated market price, second they wanted all the other retailers to have the same model of contract and not selling ebooks at a cheaper price and third the prices could not be excessive and needed to depend on the market price of hardcover version. With this agreement most of the prices increased from $12.99 to $14.99, an increase in between 30% to 50% for consumers.

Amazon had to accept the new conditions of the game and signed new contracts with the publishers, selling the ebooks as publishers' agent. Amazon was unhappy on this situation and demanded Apple and the publishers to the anti-trust court (see more info here http://www.justice.gov/atr/cases/f299200/299275.pdf). The main argumentation focused on the reduction of the consumer surplus produced by the increase of prices, which was a direct result of the implicit collusion between publishers and Apple. Amazon won the demand in 2013, which produced a renegotiation of the conditions.

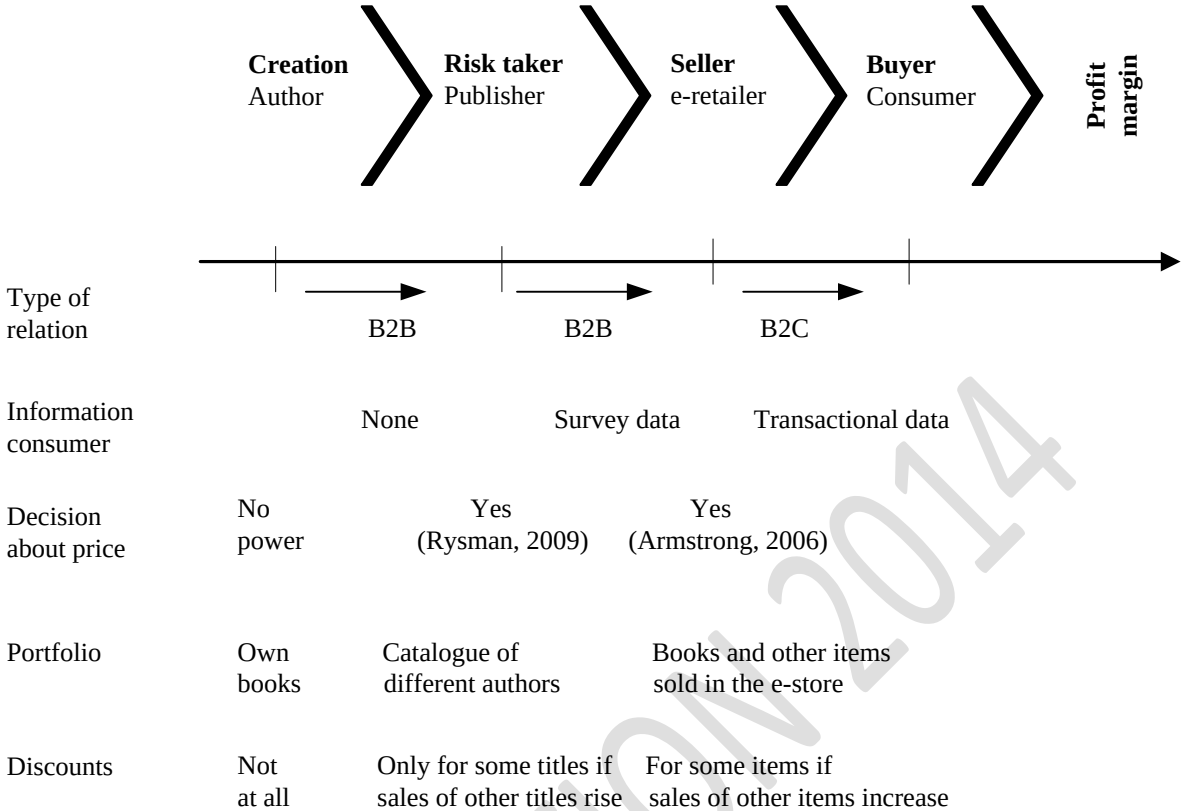
At the time of writing this article the general conditions in the ebook market were still not specified, and those agreements achieved have confidentiality clauses. What is clear is that there is a clear dispute between Amazon and most of the publishers, being in the extreme the case of Hachette widely discussed in the media. As long as they don't reach an agreement, Amazon pressures by not selling the hardcover version of Hachette's books. Amazon also pressures other publishers by introducing the possibility to print on demand if the publishers run out of stocks. The publishers are

scared about this situation because there is no guarantee that fast processes of printing of Amazon offers good standards of quality (see more info here http://www.bbc.co.uk/news/technology-27884580).
All in all the publishers and Apple demanded Amazon as it is increasing its market power; however the court announced that even having a monopsony power Amazon acts in the benefit of the consumer as low prices increase consumer welfare, and hence the court cannot take legal actions.

3.2. Description of the ebook supply chain

We could not have new releases or bestsellers without the authors, the creators of cultural content. E-retailers like Amazon proved to engage them, phenomena called disintermediation, offering a larger portion of the pie for selling their books, as the publishers would be out of the business. However, the economic incentives for creators still seem to be in the side of the publishers. Recent research has proven that authors obtain greater benefit when employing such intermediation services (Broekhuizen et al., 2013; Hracs, 2013). Therefore, in this research the authors and publishers are considered as co-creators of value. The authors develop most of the creative effort and the publishers take commercial risks and promote the titles.
The supply chain reflects the inherent conflict between creators, publishers and retailers within the market. Retailers are willing to make greater discounts providing they have large portfolios and know that the willingness to purchase will increase in line with frequency of visits and purchases on their website. Li et al. (2013) found that E-retailers with cross-selling capabilities reduce item prices more aggressively than other retailers without such capabilities. In this regard, Amazon has huge Cross-selling capabilities and this is one of the main reasons pursues a reduction of prices.
As have been described in section two Amazon as any other retailer also face elastic demand (Baugh et al., 2014), getting important benefits from price decrease in terms of volume enhancement. Moreover, E-retailers look to protect their business model by setting barriers to entry for competitors by employing their scale to reduce the price of key offers.
The price reduction strategy may benefit the E-retailer, but creators and publishers benefit from prices that maximize profits. Therefore, when the E-retailers hold the power (Armstrong, 2006) the market price will be lower than the publishers' profit-maximizing price, and when the publisher or creator holds the power (Rysman, 2009), the market price will be close to the publishers' profit-maximizing price.
The increasing size of E-retailers such as Amazon is benefited from the demand chain management. Amazon controls the linking channels (Bustinza et al., 2013) and better identifies the requirements of consumers. Figure 1 describes the supply chain of the ebooks in more detail. With this information we can develop the empirical proposition for the particular case of the ebook sector.
Empirical proposition: ebook supply chain is lead by a demand chain management approach and the retailer has more power, adjusting prices for those titles not protected by property rights. In those titles in which the publisher hold well-defined property rights (i.e. new releases) market price will be equal to publisher's profit maximizing price. Instead, in those titles in which the publisher do not hold unique property rights (i.e. classic novels) market price will be significantly discounted in relation to publishers' profit-maximizing price point.

Figure 1: Value Chain in the publishing sector



4. Methodology, data and results

4.1. The measurement of the publishers' profit maximizing price for ebooks

The evidence provided comes from a publisher's consumer survey and is based on a quasi-natural experiment, focusing exclusively on the demand functions for novels and distinguishing between two forms of novels: classic and modern. The main difference of these forms of novels is who owns the property rights: modern novels (i.e. Harry Potter) have well defined property rights and this provides the publisher greater power in the relationship and allows them to set the prices; classic novels (i.e. Romeo and Juliet) have property rights which frequently not adequately defined, if they exist at all, and hence the retailer has much greater power in price setting.

The measurement of profit maximizing prices requires massive information in complex scenarios like the publishing industry. We will make some assumptions to simplify the problem; nevertheless we consider that those simplifications give a realistic picture of the market.

The first assumption refers to the fact that consumers do not purchase the same content in different formats (Koukova et al., 2012). In particular we assume that there are n consumers who may select in which format they buy the book: physical or digital. This decision will depend on the relative prices of formats. If B_P is the amount of books sold in physical format and B_E are the books sold in digital format, we will have that $B_P + B_E = n$. In addition, if $Q_P = B_P/n$ is the market share of physical books, and $Q_E = B_E/n$ is the market share of digital books we have that $Q_P + Q_E = 1$, or what is the same $Q_P = f(Q_E) = 1 - Q_E$.

The second assumption refers to the price of physical format, which we assume to be constant. The rationale behind this assumption is twofold. First, books in paper is a

mature format and the consumers know its price and the publishers know quite better the demand functions for this format. Second, physical format serves as anchor in the decision of buying the digital format. This anchor effect is well-described in the literature of experimental economics (Jones-Lee, 1989), which suggest the implementation of the payment card method (Ryan and Watson, 2009). This method consists in offering the new format (ebook in our case) at varied price points from below to above the reference product's price (in this case the physical format). The stepwise variations are presented sequentially until the consumer switches (or not) from one product to the other. The switching point price difference is then used to determine the respondent's willingness to pay for the new product. Again, points of maximum revenues for markets can be calculated. Consumers may positively value the offer, which is the offer is valued at a point higher than the anchor. In our case that would mean the digital format of the book is given a higher value than the physical. In such a case, the indirect utility function of a consumer purchasing one unit of the physical format is:

$$U_P = R - P_P \quad (1)$$

Whereas the purchase of a unit of the digital format implies a utility:

$$U_e = R + W_i - P_e \quad (2)$$

where R represents the consumer's reservation price, P_p the price of the physical format, P_e the price of the ebook, and W_i consumer i's specific extra-value (positive or negative) that the consumer gives to the digital format in contraposition to the physical format. Then, a consumer will prefer the ebook only if $U_e > U_p$, which implies the following holds:

$$W_i > P_e - P_p \quad (3)$$

Equation (3) implies that a consumer buys the ebook and not the paper version only if his/her valuation for the digital format offsets the price difference across formats.

The empirical execution of the payment card requires first the collection of market data. An estimated price has been calculated using average prices per genre and country. Market price estimates are made using the average of thirty books more sold – bestsellers – on www.amazon.com in each genre based upon prices in September 2013. Table 1 reports market price for the novel forms (Modern and Classic) and countries (UK, US) considered in our analysis.

In October 2013 we conducted an extensive survey to 4,000 consumers in UK and 4,000 consumers in US in collaboration with a leading international publisher. We included the payment card questions based on the data collected previously, allowing for the estimation of the switching points. Table 2 gives detailed information about the switching points. The cheapest price proposed to the respondents was half of the market price. A huge proportion of the population still prefers to read novels in paper. For instance, in US classic novels market price is $17.99, while its digital version is $8.99. In our payment card, we offered the ebook to American consumers to a discounted price of $4.49, but still with this large discount 44.1% of the respondents prefer the version in paper, with a price four times bigger.

With the data collected with the payment card we can directly estimate the demand functions $P_E = g(Q_E)$ and total revenues ($TR = g(Q_E)*Q_E$). The form of the function $g(.)$ requires further analysis. We only have 7 switching points (or observations) per genre and country, therefore the degrees of freedom condition the estimation of g. For that reason we estimate only linear, second and third degree polynomials. We performed

the log likelihood test after model estimation and in most of the cases we could reject the null hypothesis that all polynomials forms considered had the same information, implying that third degree functions were the most informative and efficient to explain the form described by switching points (results can be obtained upon request). The explanatory capacity of those models were quite high, ranging from $R^2 = 0.93$ to $R^2 = 0.98$.

Table 1: Average prices and costs of physical (p) and digital (E) books

		UK	US
P_P			
	Modern	£7.99	$12.49
	Classic	£11.49	$17.99
P_E			
	Modern	£5.99	$9.99
	Classic	£5.99	$8.99
Profit margin			
	$1 - c_P$	20.26%	20.26%
	$1 - c_e$	52.50%	52.50%

The information collected until this point of the analysis is informative and is sufficient to estimate revenues optimal points; however, the publisher is profit maximizing organization, and hence it is needed the profit maximizing price. The identification of this price requires the collection of further information on the margin contribution of digital $(1 - c_E)$ and physical $(1 - c_P)$ formats. We have limited availability to this information, but industry partners provides an average margin contribution for the sector, as it is specified at the bottom of Table 1 the margin contribution to profits of ebooks is a bit larger than 50%, and the one of paper books is on the range of 20%. Our third assumption is then that the margin contribution is constant, and does not depend on the country or the type of novel.

With all the data collected and three assumptions mentioned above we can express the profit function in terms of the market share of ebooks.

$$\pi = P_P * (1 - Q_E) * (1 - C_P) + g(Q_E) * Q_E * (1 - C_E) \quad (4)$$

Where P_P, C_P and C_E are held constant, and $g(Q_E)$ is a third degree demand function with estimated parameters with the switching points.

Demand and profit functions are drawn in Figures 2 to 5. In those figures can be observed that the profit maximizing point determines the market share of ebooks in the profit function (graph at the bottom of the figure), and market share of ebooks determines the price that maximises profits in the demand function (graph at the top of the figure). As can be seen in Table 3 the results support our theoretical proposition. Both in UK and US the profit maximizing price practically equals the market price in modern novels, suggesting that when property rights are adequately protected the power of the E-retailer with a position of monopsony is not enough to retaliate and decrease market prices. Our evidence suggests that in modern novels we are under an agent regime where the publisher decides the market price. Instead, for classic novels where property rights are not adequately defined there are massive discounts. In the UK profit maximizing price for the ebook is £8.59 and the market price £5.99, suggesting that the E-retailer is responsible for a discount marginally larger than 30%. In the US profit maximizing profit maximizing price for the ebook is $14.99 and the

market price $8.99, suggesting that the E-retailer is responsible for a discount superior to 40%.

Table 2: Switching points and ebook market share (Q_E) in the payment card

UK – Modern		**US - Modern**	
P_E	Q_E	P_E	Q_E
£2.99	0.458	$4.99	0.510
£4.49	0.352	$7.49	0.435
£5.99	0.264	$9.99	0.348
£7.99	0.123	$12.49	0.189
£9.49	0.018	$14.99	0.065
£10.99	0.011	$17.49	0.021
£12.49	0.011	$19.99	0.016
UK - Classic		**US - Classic**	
P_E	Q_E	P_E	Q_E
£2.99	0.498	$4.49	0.559
£4.49	0.466	$6.74	0.525
£5.99	0.377	$8.99	0.484
£7.99	0.289	$11.24	0.354
£9.49	0.185	$14.49	0.292
£10.99	0.129	$16.74	0.245
£12.49	0.062	$18.99	0.114

Table 3: Market price and profit maximizing point

		Market Price		**Profit maximizing point**		**Discount**
UK	**Modern**	£	5.99	£	6.08	1.48%
	Classic	£	5.99	£	8.59	30.27%
US	**Modern**	$	9.99	$	9.93	-0.60%
	Classic	$	8.99	$	14.99	40.03%

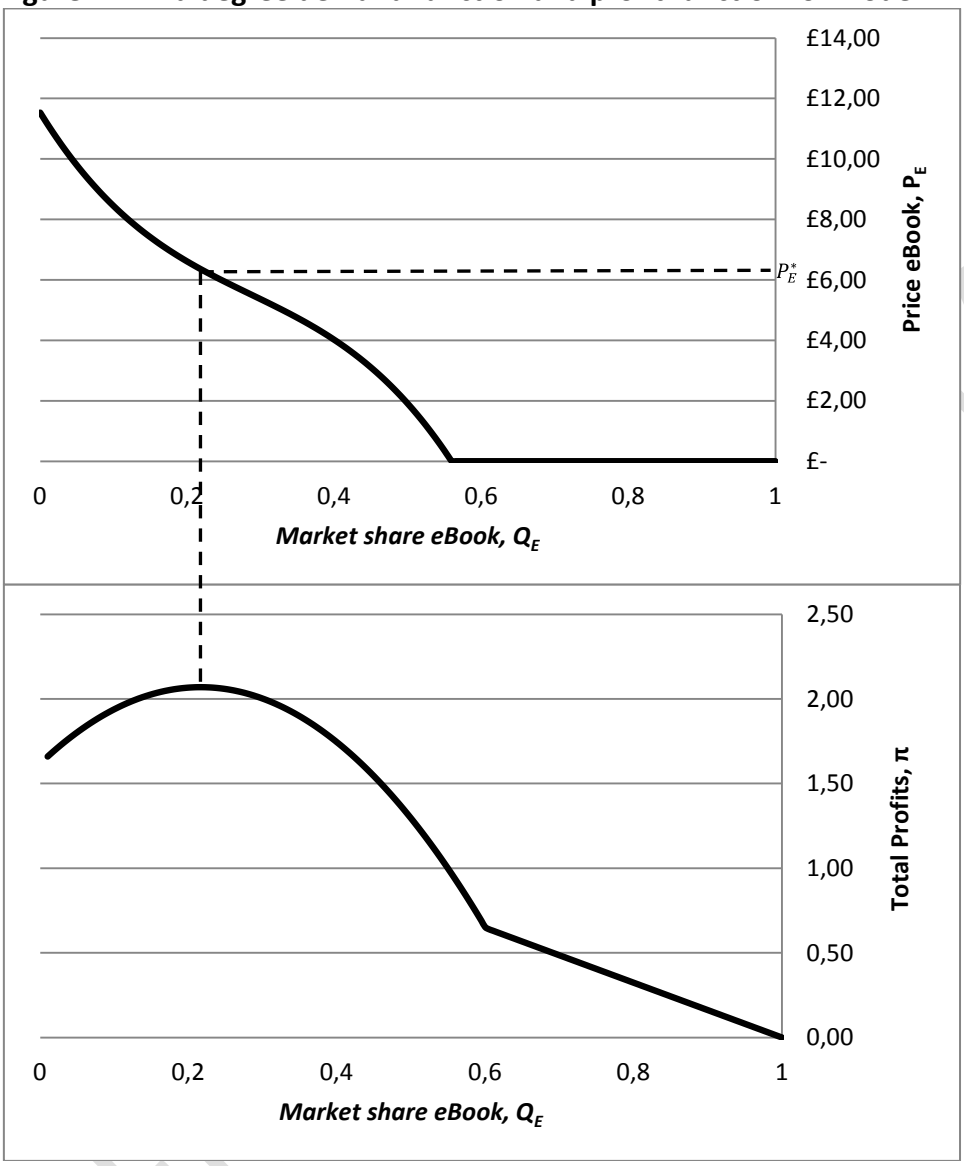
4.2. Robustness tests and other results

The evidence provided supports the empirical proposition of this article. With dynamic industry conditions and a supply chain managed with a demand approach E-retailers have an increasing power in the digital value chain. This is the case of Amazon, which with cross-selling capabilities (Li et al., 2013) and high elasticity of demand (Braught et al., 2014) has economic incentives to bring prices down. According to our results market price in classic novels is 30%-40% discounted with respect the publishers' optimal price. Obviously the power of E-retailers is not unlimited and hence publishers can still protect their resources when the enforcement of property rights is feasible, which is the example of new releases where according to our analysis market price equals profit maximization point.

E-retailers interact directly with consumers and construct linking channels (Bustinza et al., 2013), a strategic factor in demand chain management. One example of linking channels is the E-reader, in the case of Amazon the Kindle (Anand et al, 2009). This guarantees a captive market since once the consumer has bought the E-reader why is he/she going to purchase ebooks in other sites not compatible with this specific hardware? Other example of Amazon's linking channels is the Amazon prime.

Consumers subscribed to Amazon prime paying $99 a year receive free shipping plus other exclusive offers. Once the consumer is subscribed to Amazon prime why is he/she going to purchase hardcover books in other online sites?

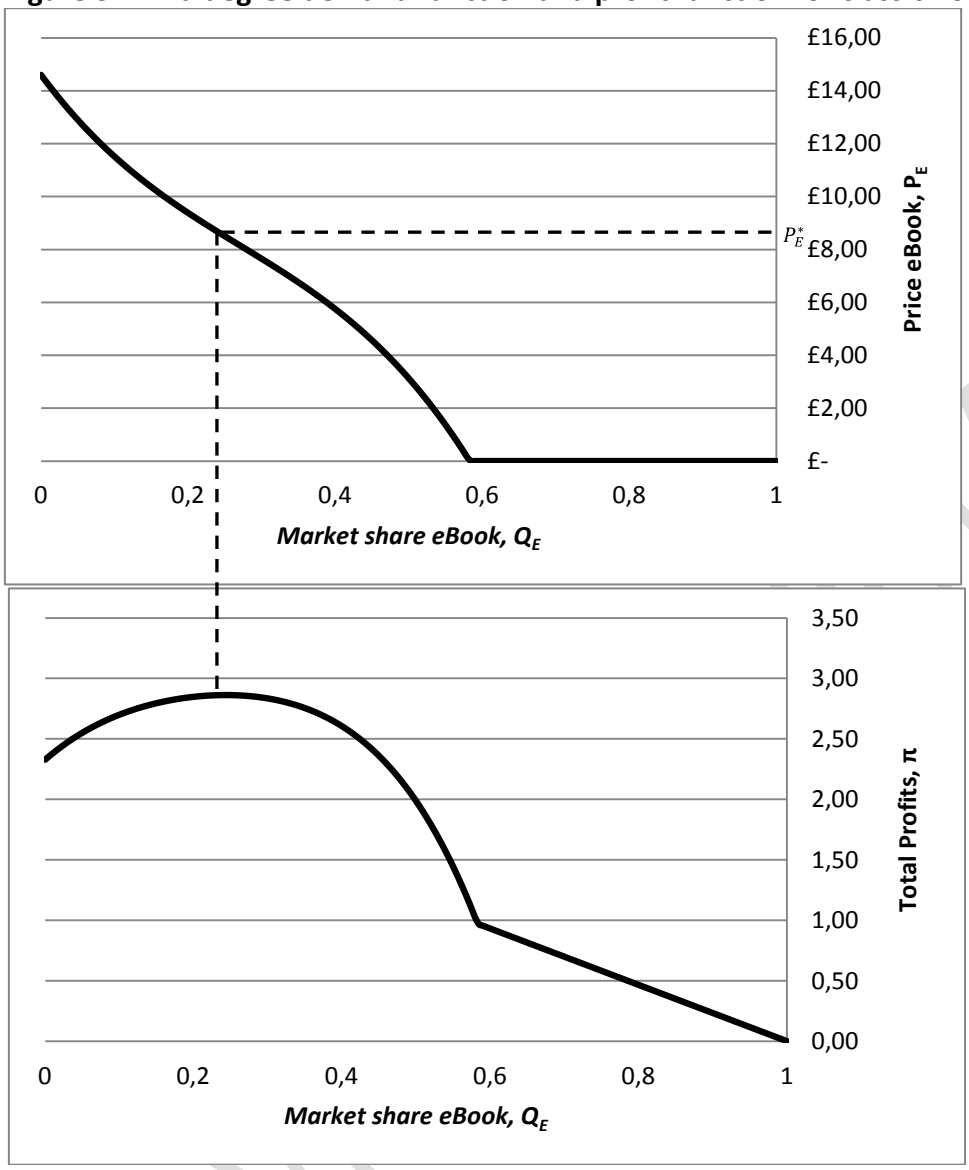
Figure 2. Third degree demand function and profit function for modern novels in UK



This win-win strategy reduces the price elasticity of demand of captive consumers, those owning Kindle device or subscribed to the Amazon prime service. They don't consider alternative online stores. This management of the supply chain allows to strength Amazon position in the negotiations with publishers. For more precise information we can gather data from the industry survey.

The survey contains questions regarding E-reader ownership and the online stores in which consumers have ever purchased. Table 4 reports mean values for those variables. In terms of E-readers Amazon has slightly bigger market share. 19.6% of US households and 27.6% of UK households own the Amazon's device – with ~9% in US and ~12% in UK of captive consumers owning only Kindle as E-reader device. Its main competitors are iPad from Apple and android tablets. Their market share ranges between 15% and 20%.

Figure 3. Third degree demand function and profit function for classic novels in UK



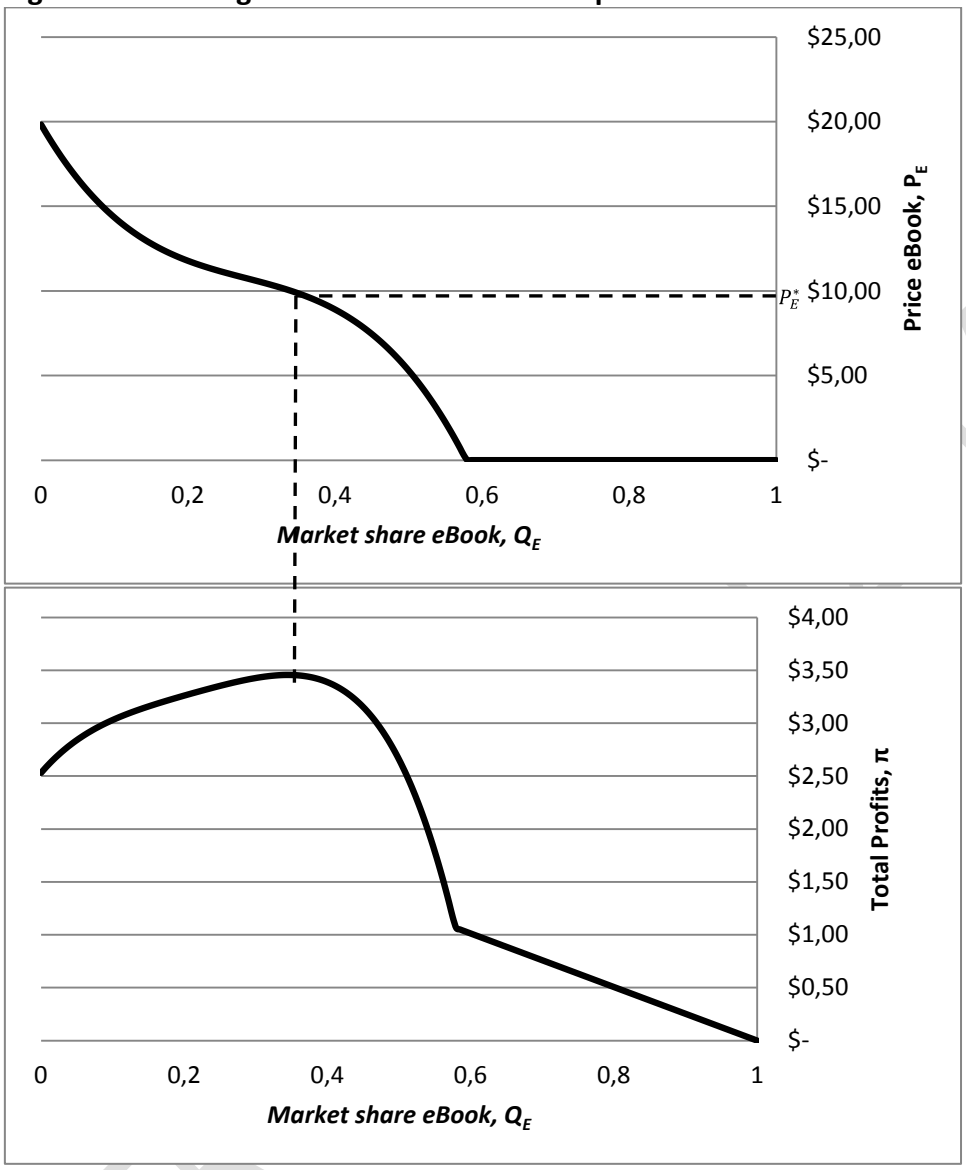
The market power of Amazon is by far more evident as an online store. Results show that 54% of UK consumers and 36% of US consumers have purchased at least one item in the Amazon's online store. The iBookstore from Apple is significantly far with only 3-4% of consumers purchasing in it. All the rest of E-retailers also show significantly lower market shares.

As shown in Figure 1 E-retailers make informed decisions based on their collection of transactional data (Parry et al., 2014). Although this information is valuable and strategic for publishers to reinforce product and pricing strategies (see for example Chintagunta et al., 2012), they hardly have direct access to this source.

Do E-retailers share transactional data with publishers? To respond to this question we refer directly to industry experts. Interviews are a valuable qualitative source of information (Yin, 2003), particularly for studying business-network related issues (Halinen & Tornroos, 2005). Between September 2013 and July 2014 we had the opportunity to engage executives in two of the big-six publishers. We had several meetings in publisher's headquarters and the opportunity to exchange emails in

regular basis. Industry experts were keen to share their opinions but were reluctant to share details on formal agreements with E-retailers due to confidentiality clauses.

Figure 4. Third degree demand function and profit function for modern novels in US

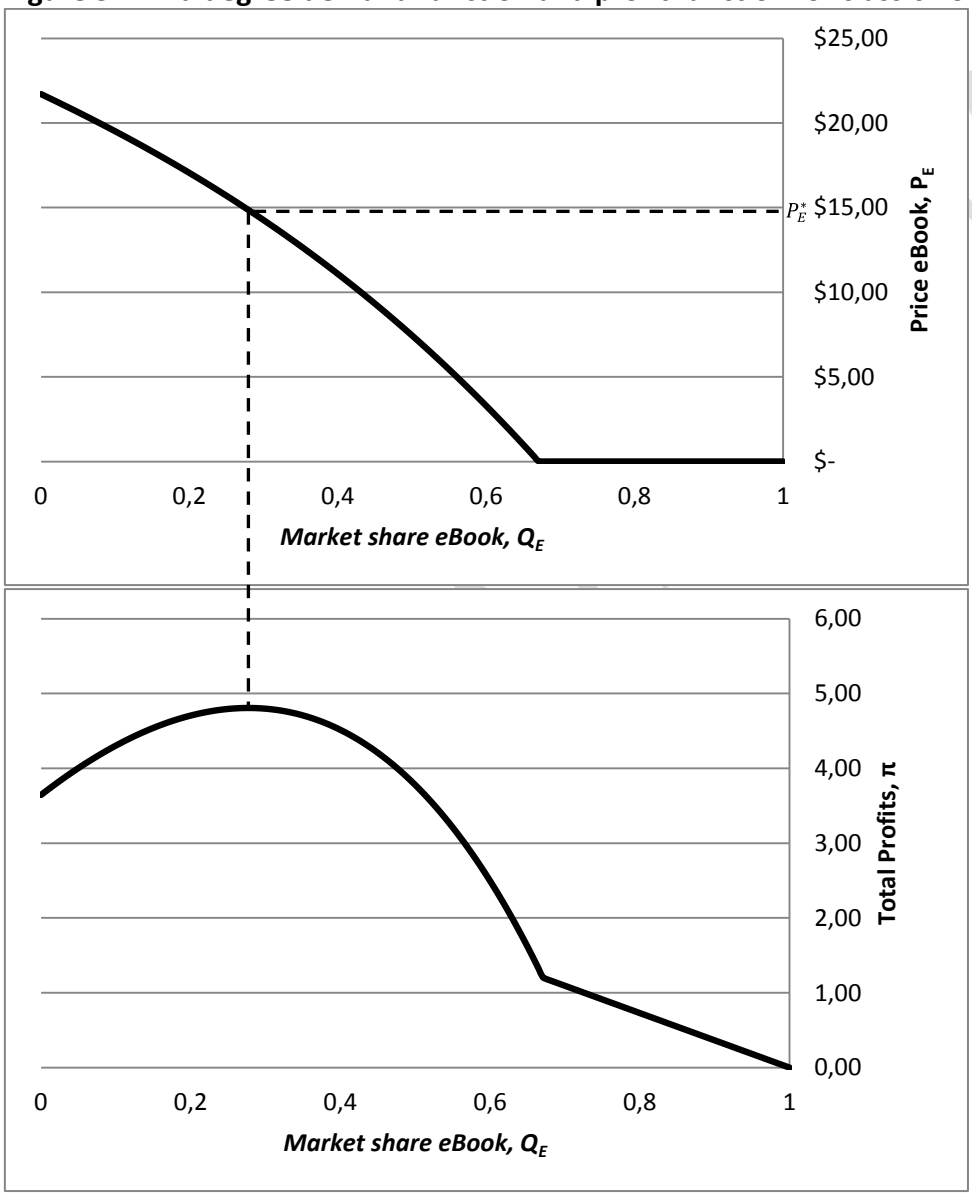


One of the senior executives commented that they currently receive some transaction data from the E-retailers. There are several variables affecting consumer decisions, and only with transactional data they can develop reliable analysis. Other executive highlights the fact they need to further develop internal surveys to empower them in the negotiations with retailers. On the top of that he commented that certain consumer attitudes and motivations could be only identified with survey data.

We also enquired industry experts about the methods used to understand consumer value. One of the experts explained that the usual method in the industry is to infer the willingness to pay. They ask consumers about the maximum price – a method used for example by Prata et al. (2013) for the case of Injectable Contraceptives in Ethiopia. Given a sufficient number of respondents a graph of price against number of consumer provides a view of the cumulative market and it is possible to capture at a given price point. It is then possible to estimate the demand functions and at which price point revenues are maximised. Nevertheless, they recognized some problems

with the method like the fact that there is not anchor effect (consumers do not have restrictions in setting a price), or the results cannot be reassessed in a lab. They were unaware of the payment card method, and they were willing to include the questions in their October 2013 survey (as explained in previous section). They considered results from the payment card method beneficial for a better understanding of consumer value. In fact, we also estimated the demand functions with the willingness method, and the fit of the models (R^2) were significantly smaller, ranging around 75%-80%.

Figure 5. Third degree demand function and profit function for classic novels in US



The power in the digital value chain also involves the understanding on retailing competition. Amazon main goal is to set the lowest price in the industry; however they cooperate with other retailers too. Ritala et al. (2014) recently described this Amazon's coopetition strategy with a couple of relevant examples. First, Amazon Marketplace or the single store strategy, which enables other retailers to present their offers on the same product detail page on the Amazon's website. Second, based on their large and successful experience in E-retailing, Amazon offered web services to other retailers,

providing full online operations services. Amazon's coopetition strategies also have elements of demand chain management as they focus on consumer satisfaction.

Table 4: Market share of Amazon's kindle and Amazon's store

Hardware (% ownership)	**US**	**UK**
Kindle	19.6%	27.6%
Kindle as the only hardware to read ebooks	8.9%	12.3%
iPad	15.9%	19.0%
iPad as the only hardware to read ebooks	8.0%	7.7%
Android tablet	17.4%	19.8%
Android tablet as the only hardware to read ebooks	8.5%	8.4%
Online store (% at least one purchase)	**US**	**UK**
Amazon.com	36.1%	54%
iBookstore	4.3%	3.4%
Google books	3%	2.7%
eBay	5.9%	15%
Barnes & Noble	7.8%	--
Asda.com	--	6.2%
Audible.com	2.9%	2.9%
Abebooks.com	2.4%	4.2%
Alibris.com	1.9%	2.3%

All industrial marketing strategies from Amazon combined (captive consumers and coopetition) enhance consumer value. This is widely accepted from industry experts. For instance the bookseller's editor Philip Jones claimes, "*The worst thing that could happen [to book publishers] would be for Amazon to go away*" (http://www.bbc.co.uk/news/technology-27994314).

Table 5: Passion for different categories of creative content*

Creative content	**US**	**UK**
Books	24.1%	26.7%
Music	26.4%	20.9%
Films	16.0%	14.4%
TV shows	13.5%	8.6%
The internet	24.3%	22.9%
Videogames	8.2%	9.6%

*Shows percentage of respondents answering "it is an important part of my live" to the question "is (Creative content) a passion of yours?".

We are aware that it is difficult to show a quantitative validation of this sentence with cross-sectional data. However, Myrthianos (2013) points out that in creative industries total consumer surplus could be inferred from the aggregated level of passion. In this respect, the survey also contains information about the passion for books, music, films, TV shows, the Internet and videogames at individual level. Table 5 reports the aggregated level of passion for each category. Approximately 25% of UK and US consumers are passionate for books. This number is only comparable with the passion for music. This descriptive evidence suggests that the book industry supply chain management produces positive (or at least not-negative) effects on consumer

satisfaction.
Philip Jones also states "*The second worst thing would be for it to become more dominant*". This sentence suggests that Amazon already captures most of the value generated with the implementation of its industrial marketing strategies, and any increase of its power would imply to take part of publisher's benefits.
In sum, publishers need to recover its power position in the book industry, where they combat with a retailer with monopsony power. The main response of doing this is to stay united showing a single negotiation voice within all co-creators of value (Broekhuizen et al., 2013; Hracs, 2013). In this regard, the legal barriers for implicit collusion with other Amazon's competitors (section 3.1) would eventually invite publishers to grow with mergers and acquisitions.

5. Conclusions
The present article builds upon to the existent literature on power throughout the value chain (Cox, 1999), by adding a dynamic element. The context selected is the book industry (see Figure 1), suffering from the introduction of new digital and service orientated formats, like other creative industries (Parry et al., 2012). This dynamism offers new business opportunities like E-commerce, and publishers and retailers cooperate in generating value but compete in the capture of value, redefining the business models (Teece, 2010).
The power of retailers resides in its proximity to consumers in a supply chain increasingly focused in demand chain management, and hence consumer's satisfaction (Santos & D'antone, 2014). Amazon is the leader of E-retailers –according to our primary information its market share is 36% in US and 54% in UK. Their management and captivation of demand strength the linking channels (Bustinza et al., 2013) by offering Kindle, which is the leader in the E-reader market; and Amazon prime subscription, a subscription service offering free shipping. The power of the publishers resides in the ownership of copyrights for new releases, which means that publishers have lost power in genres in which property rights are not well defined, such as for example classic novels.
This article models the differences in strategy and power between E-retailers and co-creators (authors and publishers) of content when setting the prices for ebooks. The profit maximization price of co-creators is set using payment card method (Ryan and Watson, 2009). The evidence comes from extensive surveys to 8,000 consumers residing in UK and US. Findings validate our framework showing that publisher's profit maximizing price equals market price for new releases, and that in classic novels Amazon set discounts of 30%-40% in relation to publisher's optimal price (see Table 3). Thus, findings suggest that there is an important degree of rivalry between E-retailers and co-creators. This contributes to existent literature on power, which did not explicitly consider the power enhancement/reduction depending on the strategic position in the value chain (Meehan & Wright, 2012).
Business servitization is profitable strategy (Suarez et al., 2013; Visnjic & Van Looy 2013), but requires direct contact points with consumers, or more formally linking channels (Bustinza et al., 2013). In this regard, the evidence provided exemplifies the consequence of not controlling the linking channels and it is a valuable source for managers and practitioners in creative industries.

Literature on national competitiveness agrees on the fact that human capital and creative classes foster economic development (Florida et al., 2008). Amazon uses its market power to move the prices of creative content down and this directly affects the economic incentives for creative classes. In this regard the case of Amazon is relevant for policy makers, who should protect the right of creators by setting regulatory limits on monopsony power.

The work also has a pair of methodological caveats that open avenues for further research. First, confidentiality clauses and data constraints forced the use of assumptions on the relation of formats, the form of the demand functions and cost structure of publishers. With new data availability future research will fill these methodological gaps. Second, demand functions estimated with survey data suffer from hypothetical bias. Future work should correct for this bias, eliciting demand functions in the lab (Camacho-Cuenca et al., 2004).

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