

Windowing television content:

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WINDOWING TELEVISION CONTENT: LESSONS FOR DIGITAL BUSINESS MODELS*

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One sentence summary:

The study reveals that customers who view partial content for free in controlled online environments are more likely to then spend money purchasing television packages.

Summary:

This paper investigates whether and to what extent a strategy where content is made available to consumers through different channels over time, named Windowing business models, may be appropriate for releasing television programmes.

By initially exposing consumers to a controlled quantity of free content greater value can be captured at later stages as 55% of these consumers are 13-20% more likely to become paying subscribers.

Results confirm that there is a market for successful distribution of television content using a Windowing strategy.

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JEL classification: K0, K42

Introduction

Disruptive innovation creates new business opportunities, but it also raises new challenges (Christensen and Overdorf, 2000; Govindarajan and Kopalle, 2006). Examples of disruptive innovations include internet broadband, increased computer capacity, compression algorithms for files and smart and connected products (Tidd, Bessant and Pavitt, 2005; Porter and Heppelman, 2014). The digitalization process particularly affects industries that create content that can be commercialized or shared on the web. These digital industries are catalogued under the heading *information industries* in the NAICS 2002 (Reitzig and Puranam, 2009), and include music, television broadcasting, motion pictures, media, software, videogames and books. Information industries face an on-going threat to their revenues from those who engage in illegally providing access, usually free, to their core content.

The Motion Picture Association of America estimates that film industry losses due to piracy exceed \$3 billion annually (De Vany and Walls, 2007). This implies that traditional business models and the laws that support them are out-dated as they fail to capture value in the market place (Jordan and Bolton, 2004). Industries may lobby for new and stronger regulation (Danaher et al., 2014), support the development of new business models (Bustinza et al., 2013), or both, in order to compete in the digital space (Forte, Hoffman Lamont and Brockmann, 2000). In this paper the work seeks to shed light on how digital business models can allow firms in information industries to re-capture some of the value lost.

Business model literature proposes a number of different frameworks, but the majority of research papers in the area provide reference to three core elements: the firm's value

propositions; the customer's value realization process; and the means by which the firm captures value usually in terms of financial worth (Parry and Tasker, 2014). Business Models are an appropriate unit of analysis as they provide the descriptor of how firms configure resources to create and capture value in a profitable manner (Baden-Fuller and Morgan, 2010). An organization's ability to learn and earn money is contingent on their business model (Zott and Amit, 2010). Business model literature describes linkages and connections to illustrate activities and flows between components (Chesbrough and Rosenbloom, 2002). This study seeks to contribute to the business model literature by assessing *Windowing*, a strategy where copyrighted content is released via different distribution channels using a phased schedule in order to maximize revenues. Windowing is perhaps best known in the motion picture industry where films are released to different channels according to the income each can generate, from high to low. Films may first have cinema release, then go to pay-per view TV or DVD, then to premium TV channels before being made available to terrestrial channels. However, Windowing does not have to follow such a 'high fee – low fee' strategy and online strategies that make content free of monetary cost available, but then capture value in terms of data on viewer demographic may also be applied (Wildman, 2008). In recent years, literature has examined whether Windowing strategies may provide an appropriate tool to combat digital piracy (Hennig-Thurau et al., 2007; Spotify, 2013). Drawing upon this body of research, in this paper we build on the work of Doyle (2016) and empirically assess whether Windowing is a suitable business model for television content releases.

Research has already shown that adoption of a Windowing business model strategy can re-engage consumers in music purchasing (Chi, 2008; Andersen and Frenz, 2010; Spotify, 2013).

Yet, to date, existing literature has not measured empirically the percentage of consumers which could be captured by adoption of a Windowing strategy by the TV industry using a large representative sample of population from multiple countries. The goal of this research is to quantitatively determine the correlation between different forms of exposure via Windowing strategies and the subsequent purchasing decision of consumers.

Windowing is investigated as a potential business model for television (TV) content. Analysis uses data from a large representative multi-country customer survey with information from more than 24,000 individuals. Analysis examines whether the exposure to unpaid material on peer-to-peer file sharing sites (Torrent sites, taken as a proxy for illegal file sharing), free streaming via TV catch-up services, and the market leading video sharing site YouTube, enhances the consumers' willingness to pay for TV subscriptions. The work identifies the appropriateness of the Windowing business model strategy and the main consumer group(s) to target. We find that a Windowing strategy allows television broadcasting firms to capture an increased share of consumer population. Specifically those individuals consuming free-streaming (55% of survey participants) are 13% to 20% more likely to form a potential client base for paid TV content than other individuals not subjected to Windowing.

The paper is structured as follows. The next section draws on business models and disruptions literatures that are focused on the information industries to develop the empirical hypothesis. Section three presents the methodology and describes the nature of the data. Section four presents the results and the work closes with a discussion with an emphasis on managerial implications.

Theoretical framework and empirical hypothesis

File sharing and legislation

Piracy is an emotive topic that receives significant media coverage. Sharing files may be portrayed in law as non-rivalrous because the original owner retains his or her copy of a downloaded file and their use does not limit the consumption of others. However, revenue in the information industries has been considerably reduced due to the unpaid illegal and legal sharing of digital content occurring outside of the firm or artist controlled link channels (Myrthianos et al., 2014). Significant effort has been expended by both private and public sectors to try and address issues of piracy and uncontrolled sharing through reforming copyright legislation and encouraging law-abiding behaviour¹ (Lunney, 2001).

Legal frameworks are in place as Copyright and Trademarks are highly regulated and unlike patents, IPR infringements in the US are sanctioned through criminal law (Manta, 2011). In the European Union, legislation is based on the directive for the enforcement of property rights (European Commission, 2004) requiring all Member States to apply effective, dissuasive and proportionate remedies and penalties against those engaged in illegal file sharing. However, the effectiveness of legislation is in doubt as the volume and financial value of IPR infringements were described as ‘alarming’ by the EU Commission themselves (European Commission, 2010). A number of bills were introduced to protect IPR, with examples from two of the larger European markets including the French *Haute Autorité pour la diffusion des œuvres et la protection des droits sur Internet* [Hadopi] (2009) and the United Kingdom’s *Digital Economy Act* (2010). The laws are different in their detail but place their focus upon the consumer and

¹ For example, via the Voluntary Copyright Alert Programme (Vcap) see <http://www.bbc.com/news/technology-27330150> for more details.

employ a graduated response model to deal with repeat or serious offenders. Sanctions involve a system of warnings and ultimately deterrent action against those who continue to illegally share material. Whilst the evidence suggests that those reforms have had some impact on sales recovery (Danaher et al., 2014; Parry et al., 2014), technology developments outpace legislative reform. Firms must innovate and need to develop suitable business models to recapture full value from consumers.

File sharing, business models and digital technologies

Developing innovative business models is proposed as a complementary alternative to regulation when addressing issues of illegal and legal but uncontrolled file sharing (Bustinza et al., 2013). Scandinavian countries have shown that innovative business models provide a very effective tool for combatting piracy when used in conjunction with the regulation². However, current trends show that potential pirates are becoming younger and information and communication technologies are developing much more quickly than legislation, which raises questions about the long-term effects of current legal measures on piracy and puts pressure on rapid innovation in business models.

The successful design of business models in practice is contingent on the extent to which firms understand what their customer wants, how the value proposition is delivered, and the way to capture value and make a profit (Parry and Tasker, 2014). The value proposition ties firms' capabilities, structure and strategy of the organization together, and links with the external relationships of the business environment (Zott and Amit, 2010). In the new digital domain this

² See <http://www.independent.co.uk/arts-entertainment/music/news/music-and-film-industries-winning-war-on-piracy-says-report-8714499.html> for more details.

normally involves the organizational understanding of new technologies, and how they can shape the way firms compete (Porter and Heppelman, 2014; Bustinza et al., 2017). Value creation is the process of applying firm digital capabilities to the needs and desires of the customer in a manner that is superior to alternatives (Teece, 2010). With the irruption of digital technologies, the cost of production of extra copies decreases, and in some contexts the marginal cost is zero (Rifkin, 2014). This is the case of information industries, where creative material can be easily copied and shared. This has transformed the way consumers allocate value to creative content, especially with the appearance of file-to-file platforms (Kucuk and Krishnamurthy, 2007).

Firms in those industries must adapt to the new market conditions and deliver value in a way to increase the willingness to pay of consumers. In particular, value delivery is the logistical process of bringing the value created by the firm to the customer in a way that satisfies demand without violating regulations or social norms (Davies et al., 2015). It connects the firm's organizational design to the structure of its markets. Technological advances enable firms to promote and distribute their work in different forms and platforms (McLean, Oliver and Wainwright, 2010). New forms of digital distribution might have an impact on the willingness to pay of consumers and hence the financial value captured (Vendrell-Herrero et al., 2017a; Myrthianos et al., 2016). Value capture in terms of monetary worth is the process that permits the firm to claim some portion of this increase in consumers' willingness to pay. Overall it reflects the ability of the strategy to appropriate some consumer surplus.

A Windowing business model strategy

Windowing is a business model centered on managing the release sequence for content as a way of maximizing returns from intellectual property rights (IPRs) (Doyle, 2016). The identification of differing segments of consumers, by platform or territory, is a requirement. The timing of release of content is an essential part of value delivery that creates an impression of scarcity and uniqueness in the minds of the consumers, and therefore increases their desire to purchase the content and their willingness to pay (Christophers, 2012).

Empirical research on the Windowing business model has traditionally been focused on the motion picture industry, in which release in the cinema comes first and a sequence of other link channels such as paid television services or DVDs come at a later stage. Whilst the evidence from motion pictures seems to indicate that Windowing significantly increases the revenues (Chiou, 2008; Hennig-Thurau et al., 2007; Elberse and Eliashberg, 2003) the evidence is less clear in other information industries such as music or television broadcasting (Doyle, 2016).

In the creative industries academic debates around illegal file sharing are contentious. Gopal et al. (2006) argued that illegal file sharing may offer a partial positive effect with regards to encouraging consumers to purchase based on the concept that exposure to a fragment of creative content (i.e., song, movie, episode) enables consumers to discover and evaluate unknown creative content. After this 'tasting' process illegal file sharers are able to make a purchase judgment. Thus consumers may increase their value perception through learning. Consistent with this argument, Blackburn (2004) proposes that the exposure effect is stronger for unknown material. However, piracy of material contradicts wider ethical and moral considerations of societal responsibility, a fact recognized by many who engage in this illegal activity (Davies et

al, 2015). Empirical analysis using large datasets shows illegal file sharing to be damaging to revenues (Bustinza et al., 2013), clearly demonstrating that illegal file sharing should be stopped. We contend that strategies cannot be developed that consider illegal file sharing as a Windowing strategy as this link channel is by its nature uncontrolled and uncontrollable. It is not rational to expect payment for access to content from significant numbers of people who are already acting illegally, as they would likely seek illegal access to that content and only a limited number would feel sufficient guilt to pay (Myrthianos et al., 2016).

To exploit the continuous free legal online availability of content allowing consumers unpaid access must form part of a broader Windowing business model strategy. Such a Windowing strategy would seek to increase value creation through continued controlled exposure of consumers to unpaid content as well as through decreasing consumer ambiguity with regards the potential quality of the content, with the strong assumption that this exposure will increase the future willingness to pay of those consumers who access the online content (Gopal et al., 2006; Blackburn, 2004). The sequence in which an offer is made available to consumers modifies value delivery, which, in turn, increases the capacity of firms to capture value in the future. Based on these arguments we produce the following empirical hypotheses for the context of television broadcasting.

Hypothesis: In the television broadcasting industry, Windowing through exposing consumers to unpaid content first enhances the likelihood of consumers paying for services containing related content.

There is currently a lack of evidence as to how Windowing may increase audience and sales in the television industry, though some empirical research from the music industry has provided

evidence supporting this hypotheses, the findings are inconclusive at best. Research by Chi (2008) analyzed how exposure to music increases consumers purchasing, using a survey of 60,000 households in U.S. and Canada for the period 2004-2006. They found a correlation between illegal downloads and legal music purchases and also that file sharing activities increased the probability of purchasing. After identifying both substitution effect and sample exposure effect they conclude that the sample exposure effect dominates substitution, reasoning that this why the positive correlation was observed. Subsequent work by Andersen and Frenz (2010) employed a survey of 2,002 Canadian respondents and initially found no evidence of P2P file sharing effecting CD albums sales. They substituted the file sharing variable with two other variables, substitution effect and sample exposure. Both coefficients have similar value with different sign, so these two effects are opposite and cancel one another out, leaving them with no evidence of a relationship between P2P files downloaded and CD albums sales.

Spotify (2013) in a recent company report has provided further evidence consistent with the work of Chi (2008) and Andersen and Frenz (2010). According to their report, in the recent years companies in the music industry have explicitly started to resort to the Windowing business models through streaming platforms (Parry et al., 2012). Firms offer partial content on streaming sites while offering additional content on a proprietary basis. Spotify, along with other legal streaming companies give evidence to suggest that content made available on their streaming service enhances or at least does not damage sales, which positions them in opposition to Windowing strategies (Spotify, 2013). According to Spotify (2013), One Direction and Robbie Williams, who released their albums in full on Spotify and did not resort to Windowing sold over 3 album copies per one BitTorrent download (i.e. pirate copy downloaded) in the Netherlands in

2012. At the same time, Rhianna and Taylor Swift used windowed releases and as a result of restricting access suffered a financial loss from piracy, selling on average slightly over 1 album per 1 BitTorrent download. Spotify argue that since all four acts cater to the same segment of the music market, reported differences “cannot be explained by differences in the target audience” and so claim that Windowing business models should not be employed (Spotify, 2013, p. 17). Nevertheless, there are obvious age and income differences between the relevant audiences of the 4 albums analysed by Spotify. Furthermore, it is difficult to draw conclusions about the impact of Windowing business models on sales from data available for only one European country (Netherlands) and with products which may be of different (heterogeneous) quality which is difficult to measure and quantify. The dataset selection is a particularly limiting factor in the Spotify analysis given the fact that several other examples show that Windowing could be used effectively.³ In particular, Adele’s 2011 album “21” was windowed and, by November 2015 sold 31 million copies worldwide.⁴ Adele has chosen to release only one track from the album, “Rolling in the Deep”, through legal streaming and withheld the rest of the content.

Empirical Evidence

Context of the study

Although the majority of BitTorrent downloads are music downloads (up to 78% in the UK in 2012 according to Musicmetric⁵), downloading film, TV programmes and series as well as games is on the rise. In the UK alone, film and TV programme downloading has been increasing

³ Spotify is notorious for its commitment to “no windowing” strategy. In 2016, Spotify refused to window the latest Radiohead album “A Moon Shaped Pool” despite missing out on releasing albums of Beyoncé, Drake, Rihanna and Kanye West earlier that year (see <http://musically.com/2016/06/09/exclusive-spotify-pulled-out-of-radiohead-album-windowing-plan/> for more details).

⁴ See [https://en.wikipedia.org/wiki/21_\(Adele_album\)](https://en.wikipedia.org/wiki/21_(Adele_album)) for more details.

⁵ Source: <http://www.bbc.co.uk/newsbeat/14029865>

since 2006 while music downloading remained high but relatively stable. According to the Ofcom 2013 report, in the UK over any given 3-month period, 280 million of music items are accessed illegally followed by 52 million of TV programming items; 29 million of film items; 18 million of e-books and 7 million video games. Overall, Ofcom estimates that approximately 1/3 of all UK Internet users engage in piracy activities in one way or the other with young males (under 34 years of age) to be more likely to engage in illegal downloading than other groups of British population.⁶

The specific context of analysis of this research is the television broadcasting industry, with a focus on the content produced in the UK. British broadcasters have a long tradition of producing high quality drama and comedy programs and exporting them worldwide (Bloom and Van Reenen, 2010) and the UK is the European country with the largest number of international awards - Emmies, Monte Carlo, Montreux, and Prix Italia (Connolly et al., 2015). The industry is beginning to experiment with different formats and communication strategies, though Windowing is a business model that so far has been underexplored (Doyle, 2016) despite an expectation that it may bring more consumers to Pay TV services (Weeds, 2015).

Data collection, variables and method

In order to understand the pros and cons of a Windowing business model for visual content, we consider a large survey dataset collected by an anonymous industry partner with global market penetration that we will call *Company A*. Participants in the industry survey were asked to complete a short (15 minutes approx.) online questionnaire in which they indicated their

⁶ Source: <http://www.theguardian.com/media/2013/may/28/music-tv-film-piracy-uk-internet>; http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/online-copyright/w4/HIGH_VOLUME_INFRINGERS.pdf

preferences over a large variety of television programmes, films and other visual content. The resulting dataset contains 24,430 data points with each point representing an individual response to a survey. The dataset contains a cross-sectional data from 24 countries in Africa (South Africa), Asia (South Korea, China, Japan, India, Turkey, UAE, Singapore, and Indonesia), Europe (UK, Russia, France, Italy, Germany, Sweden, Norway, Poland, and the Netherlands), North America (US and Canada), South America (Brazil, Colombia, and Mexico) as well as Oceania (Australia). For each country, between 500 and 3,000 people took part in the study forming a representative sample. The survey started with a brief demographic questionnaire followed by questions about visual content from three leading television brands. For the purposes of this study we concentrate only on the content from one brand, our industry partner *Company A*, which designed the survey and collected responses. While the survey data contained a lot of useful information, the main drawback is that the survey was designed to understand consumer attitudes towards *Company A* as a brand (brand loyalty) and did not contain questions specifically designed to measure the impact of Windowing. However, from the collected information we were able to construct suitable variables which are sufficiently relevant to make predictions and inferences about Windowing business models for television viewers. We analyse available data using the approach summarised in Figure 1.

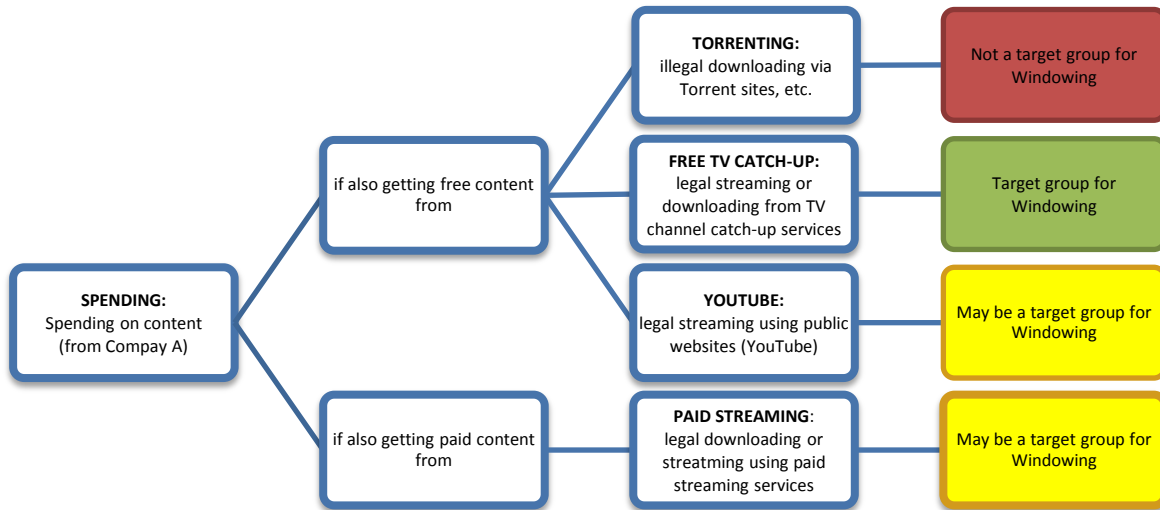


Figure 1 Approach to analysing of the appropriateness of a Windowing business model

In order to assess the appropriateness of the Windowing business model, we consider whether and to what extent the customer propensity to spend on television content can be predicted by this customer accessing similar content via various free and paid sources where partial and complete television series might be available. Particularly, one of the survey questions asks participants to reveal whether they pay for access to the TV channels and, if so, whether they pay minimum or premium fees. This allows us to construct a variable **SPENDING** which is equal to 1 if the respondent does not pay for TV channels; to 2 if the respondent pays minimum amount to get access to TV channels; and 3 if the respondent pays for premium channels and packages. Therefore, **SPENDING** is our dependent variable which we use as a proxy of spending: the higher it is the more money an individual spends on TV content.

In order to understand the determinants of **SPENDING** and, specifically, the impact of Windowing business model on **SPENDING**, we construct four explanatory variables. Variable

TORRENTING is equal to 1 if respondents stated that they downloaded TV content from peer-to-peer services or websites (specifically, Torrent sites) at least once a month and 0 otherwise. We use **TORRENTING** as a proxy of illegal streaming. Torrents appear to be primarily illegal sharing and the structure of Torrent software is specifically designed to circumvent anti-piracy measures (Vincent, 2008). **TORRENTING** refers to peer-to-peer digital sharing where a file is partitioned into multiple fragments containing very little data. On its own, each fragment does not mean anything, but when all fragments of the same digital product are downloaded from different peers and combined access to the entire digital product is gained. Whilst torrent peer-to-peer sharing of material is legal, the majority of content shared via torrents is copyrighted and so sharing is illegal. Therefore, data on **TORRENTING** can be used to make inferences about illegal file sharing, although downloading data from Torrenting sites is still a grey area of law.⁷

Variable **FREE TV CATCH-UP** is equal to 1 if survey participants stated that they watched TV episodes for free which are legally streamed over the Internet (specifically, via *Company A* TV channel catch-up service) at least once a month and 0 otherwise. Variable **YOUTUBE** is equal to 1 if survey participants revealed that they watched *Company A*'s content via a specific public website (particularly, YouTube) and 0 otherwise. Finally, variable **PAID STREAMING** is equal to 1 if survey respondents watched TV content by purchasing/renting it using paid streaming services (such as iTunes, Netflix, etc.). Table 1 summarises survey questions which allowed to construct our explanatory variables.

Table 1 Explanatory Variables and Corresponding Survey Questions

⁷ A number of Torrent sites have been made illegal in many countries. However, legal prosecution does not always follow due to an argument that each fragment of shared data on its own cannot damage the copyright. In other words, the protocol of downloading via Torrent sites is not illegal but, ultimately, accessing copyrighted material via Torrent download is illegal.

Explanatory Variable	Survey Question (Which of the following do you do these days?)
TORRENTING	Watch full TV episodes for free, that I have streamed or downloaded from peer-to-peer services or websites at least once a month (i.e., Torrent sites).
FREE TV CATCH-UP	Watch full TV episodes for free, that I have legally streamed or downloaded over the internet at least once a month (i.e., TV Channel catch up service).
YOUTUBE	Watch full TV episodes for free, that I have legally streamed via a publicly available website (e.g., YouTube). ⁸
PAID STREAMING	Watch full TV episodes, that I have paid for and streamed or downloaded over the Internet at least once a month that I have paid for via services where you can purchase/rent digital versions (e.g. iTunes, Netflix, etc.)

In this context our hypotheses is empirically framed in the following way. If Windowing has a scope for streaming services as a business model, the main market for Windowing will be people who use free streaming of partial content and yet spend money to access complete TV content of their interest. In the survey (see Table 1), 3 variables refer to free streaming: **TORRENTING**, **FREE TV CATCH-UP**, and **YOUTUBE**. However, only one of these variables (**FREE TV CATCH-UP**) can be used with confidence as a proxy of exposure to Windowing. TV catch-up services offer legal access to content, the access is open only to partial content (e.g., individual episodes from a TV series) and access is given under controlled conditions (e.g., streaming and download is possible only over a limited time frame). While **YOUTUBE** also offers legal free streaming, it does not often imply the controlled release of content (i.e., the release may or may not be initiated by the copyright holder) and may offer access to complete content of viewers’ interest (e.g., the entire TV series). Therefore, variable **YOUTUBE** must be treated with care if considered in Windowing strategies; it is not as controlled an environment as other link channels. **TORRENTING** often implies illegal free streaming, is not controlled by the copyright holder

⁸ Please, note that while it is possible to access paid content on YouTube, the survey question specifically refers to free streaming.

and also may provide complete content of viewers' interest. Hence, **TORRENTING is a very poor** proxy for Windowing.

This means that if there is a positive correlation between the magnitude of TV spending (variable **SPENDING**) and propensity to watch free-streamed partial TV content through the TV channel websites (variable **FREE TV CATCH-UP**), Windowing is a promising business model. If customers are watching partial content available through the free TV catch-up services and yet spend money on TV channels (on getting access to the complete content), they are a likely target group for successful Windowing business model.

Windowing may or may not be an appropriate business models for customers who use paid streaming services such as iTunes, Netflix, etc. (variable **PAID STREAMING**) and/or YouTube-type websites (variable **YOUTUBE**) as well as pay for TV channels as these services/websites may contain the complete content already (entire series) or partial content (individual episodes from a TV series) of viewers' interest. In other words, positive correlations between variable **SPENDING** and variable **PAID-STREAMING** as well as between variable **SPENDING** and variable **YOUTUBE** do not necessarily support an argument for Windowing as a business model – more research would be required. We assume that customers who engage in peer-to-peer downloading, which is often illegal, are unlikely to pay for TV channels and unlikely to be affected by Windowing. In other words, we do not expect to see positive correlation between variable **SPENDING** and variable **TORRENTING**.

Since content produced by *Company A* is of our particular interest, we identify people in the population who are particularly interested in *Company A*'s content. Particularly, we look at participants who have given a rating of 6 or higher on a scale from 1 (strongly disagree) to 10 (strongly agree) when they were faced with the following statement “*I would like to watch more content from Company A than I do at the moment*”. We take it as a proxy of interest in *Company A* content and narrow down our estimations to this group of people who are more likely to be *Company A*'s customers. There are 15,252 of such customers in the population. Table 2 provides a summary statistics of all variables used in our analysis.

Table 2 Basic Statistics

Variable	Values and meanings	# of participants	Total
SPENDING	1= does not pay for TV channels	3,724 (24%)	15,252
	2= pays minimum amount to get access	4,673 (31%)	
	3= pays for premium channels and packages	6,855 (45%)	
FREE TV CATCH-UP	1= watches TV episodes for free which are legally streamed over the Internet (i.e., by a TV channel)	8,464 (55%)	15,252
	0= otherwise	6,788 (45%)	
PAID STREAMING	1= watches TV content by purchasing/renting it using paid streaming services (such as iTunes, Netflix, etc.).	5,843 (38%)	15,252
	0= otherwise	9,409 (62%)	
YOUTUBE	1= associates <i>Company A</i> with online video streaming (particularly, YouTube)	6,967 (46%)	15,252
	0= otherwise	8,285 (54%)	
TORRENTING	1= downloads TV content from peer-to-peer services	6,799 (45%)	15,252
	0= otherwise	8,453 (55%)	

Results

To test our hypothesis, we conduct an econometric analysis using a series of ordinary least squares (OLS) regressions as well as ordered probit regressions with robust standard errors where errors are clustered at the level of each of the 24 countries in the dataset (Greene, 2003). Results of our estimations are presented in Table 3.

If Windowing is a good strategy, than we are looking for a positive correlation between variable **SPENDING** and variable **FREE TV CATCH-UP** because it establishes correlation between people who have access to the partial content but also pay money for the complete content.

The different models estimated have relatively low R^2 , but after including the control variables the OLS model explains over 9% of the decision of TV subscription purchase. Our results suggest that variable **FREE TV CATCH-UP** is positively correlated with TV subscription purchases. In particular, our results show that, before controlling for a number of factors such as age and income, consumers are 20% (OLS) and 28% (Ordered Probit) more likely to purchase TV subscriptions if they are subjected to Windowing. After adding the control variables (age, income, children and business travel), results remain significant although slightly lower: **13% in the OSL model and 20% in the Ordered Probit model more likely to purchase TV subscriptions if they are subjected to Windowing**. Overall, 55% of consumers between 16 and 65 years of age in our sample have access to the Windowed content. This result is significant at 1% (P-value=0.01). This means that since there are customers who watch partial content and then are likely to pay more for access to complete content via subscription to TV channels, there is scope for Windowing as a business model for TV content. The use of paid streaming services, YouTube, and even torrenting (i.e., illegal streaming) are also positively correlated with other

spending on entertainment channels although it is not clear whether and to what extent this may speak for Windowing as an appropriate business model. Specifically, people who purchase streaming services are 30% (OLS) and 46% (Ordered Probit) more likely to purchase TV content (variable **PAID STREAMING**). People watching free online content via YouTube and similar websites (variable **YOUTUBE**), are 19% (OLS) and 29% (Ordered Probit) more likely to subscribe to TV content. Furthermore, even people who engage in Torrent downloading (variable **TORRENTING**) appear likely to purchase TV content, although, unsurprisingly, this correlation is weaker than that between **PAID STREAMING** and **YOUTUBE** variables and our dependent variable (TV content purchases). We find that people who engage in torrent (i.e., illegal) downloading are 11% (OLS) and 17% (Ordered Probit) more likely to purchase TV content.

Table 2 Results of OLS and Ordered Probit Regression analysis to predict SPENDING using FREE TV CATCH-UP, PAID STREAMING, YOUTUBE, and TORRENTING. (Ordered Probit results appear in bold font).

Variable:	Model 1 (without control variables) Coefficient (Robust Standard Error)				Model 2 (with control variables) Coefficient (Robust Standard Error)			
FREE TV CATCH-UP	0.2032069** (0.0638255)	-	-	-	0.1362123** (0.0488326)	-	-	-
	0.2868835*** (0.0863069)				0.2029716** (0.0695887)			
PAID STREAMING	-	0.4013032*** (0.0585894)	-	-	-	0.305265*** (0.042746)	-	-
		0.5841122*** (0.0782178)				0.4663111*** (0.0586879)		
YOUTUBE	-	-	0.2669337*** (0.0569687)	-	-	-	0.1953984*** (0.0425898)	-
			0.3771315*** (0.074911)				0.290022*** (0.0584359)	
TORRENTING	-	-	-	0.1969849** (0.0610967)	-	-	-	0.1184797** (0.0428333)
				0.2781619*** (0.0843703)				0.1784893** (0.0626014)
<u>Control variables:</u>								
Age category (the higher the older)	NO	NO	NO	NO	YES	YES	YES	YES
Income category (1=low; 2=medium; 3=high)	NO	NO	NO	NO	YES	YES	YES	YES
Children (0=have children;	NO	NO	NO	NO	YES	YES	YES	YES

1=do not have children)								
Business travel (1=travelled on business in the last year; 0 otherwise)	NO	NO	NO	NO	YES	YES	YES	YES
R ²	0.0157	0.0584	0.0271	0.0147	0.0949	0.1183	0.1018	0.0932
Pseudo R²	0.0074	0.0281	0.0127	0.0069	0.0471	0.0596	0.0506	0.0462
N	15,252	15,252	15,252	15,252	15,137 [§]	15,137	15,137	15,137

* - significant at 0.05 level

* - significant at 0.01 level

*** - significant at 0.001 level

§ Control variables were not available for the entire subsample because several participants did not state their income level, age category, whether they have children or whether they have gone on business trips during the previous 12 months.

Conclusions

The development of the internet has disrupted the way firms create, deliver and capture value (Christensen and Overdorf, 2000; Govindarajan and Kopalle, 2006; Tidd, Bessant and Pavitt, 2005; Porter and Heppelman, 2014). In this research we analyse the particular case of a Windowing business models for the information industries. Windowing relates to the scheduled release of content via different customer link channels, ideally in a way that generates increased returns for the copyright holder. The motion picture industry has undertaken this practice for many years, typically showing movies first in the cinemas, then on video/DVD, then selling the rights to subscription TV channels before terrestrial TV release. The approach has been analyzed extensively (Chiou, 2008; Hennig-Thurau et al., 2007; Elberse and Eliashberg, 2003). With digitalization, other information industries have implemented Windowing business models using free streaming services to expose consumers to the content and then to make them purchase the content in another format (Chi, 2008; Andersen and Frenz, 2010; Spotify, 2013). The case of television is still underexplored (Doyle, 2016) and so this study assesses how a Windowing business model may benefit television broadcasters.

Our results show that certain free streaming services, particularly those based on Windowing strategies, are an appropriate channel of engagement for consumers who may then be converted to paid services. Further to this, we also find that peer-to-peer file sharing via torrenting and YouTube free streaming may engage consumers in purchasing. However, it is hard to say whether and to what extent YouTube and torrenting increase the propensity of consumers to purchase TV content as there is considerable ambiguity with regards the exact content which is accessed. Specifically, while it is clear in our dataset that windowed programs (available through

the fee TV catch-up) are the same as those which are later bought by the customers via TV content purchasing (offering a sample of the programs which are later purchased), it is possible that survey respondents watch programs on YouTube, and/or downloaded content via torrenting, that is different than the content which they purchase. Therefore, it is necessary to collect more detailed data in order to determine whether partial access to content via YouTube and torrent downloading leads to later purchases of the same TV content in full. Further, Torrent downloading (which often implies illegal downloading) does not currently appear to offer a viable strategic option as content sharing in this way is by its nature uncontrolled by firms, so it would not be possible to limit these channels to only sharing partial content. However, further research is required to assess if YouTube is a suitable link channel for use in Windowing TV business models.

The evidence indicates that in the digital environment the way in which value is delivered (i.e., time difference between format releases) can be a factor that enhances value creation. This is an important contribution to theory in business model literature, as value delivery is normally considered a mediator between value creation and capture (Teece, 2010; Zott and Amit, 2010).

In empirical terms this paper uses industry survey data to test the appropriateness of the Windowing business model for television content distribution. Focusing on the content from an anonymous industry partner with global presence, we conclude that there is a market for a Windowing business model for their content since customers who access partial content on the web are likely to pay for television products (such as basic and premium TV channels and special TV packages). Our research partially agrees with previous private sector reports for the

music industry (Spotify, 2013) in so far as we find that customers who pay for streaming services are also more likely to pay for other forms of access to content. However, our analysis disagrees with the Spotify 2013 report as we find that Windowing business models have the potential to solve two important issues for firms in the information industries. First, by increasing the value perception of consumers, Windowing separates the value of the content offered and the cost of production of an additional unit in the mind of consumers. This is important as in the digital context a consumer tends to value additional content at zero (Rifkin, 2014). Second, the exposure to content seems to disengage consumers from illegal file sharing sites and therefore reduces the number of individuals believing that piracy is legitimate behavior, described as the ‘Robin Hood’ belief (Myrthianos et al., 2016).

Recent research has concluded that the management and deployment of unique resources and property rights is essential for creators to maintain the capacity to capture value (Vendrell-Herrero et al., 2017b). In this regard, an important issue for managers of property rights is how to assure artists and creators that it is in their benefit to allow the content that they have generated to be made available on streaming as part of a Windowing business models. Some artists mistrust streaming to such an extent that they have withdrawn from streaming altogether. For example, Paul McCartney has taken all of his content off the leading music streaming services Spotify and Rhapsody. The evidence provided here gives economic support to the argument that specific sample content could be available via streaming as part of a strategy to increase future sales.

While our results suggest that Windowing may be a good business model for selling television content, this issue requires further investigation. Particularly, it would be beneficial to collect

more data from customer surveys by asking the respondents to reveal how likely they are to watch partial content through different internet sources and then spend their money to access the same content by purchasing access rights to television channels/premium services. Analysis of platform preference and the reasons why one link channel is preferable to another would be beneficial. It would be of particular interest to collect data about specific series and popular programmes, television game shows, etc. in order to test whether and to what extent customers are sensitive to different genres in terms of accessing partial content and then purchasing full content. A field experiment could be undertaken where different types of Windowing business model could be tested directly using different seasons of the same show or using similar shows with different release strategies in different countries and accessing the impact of these strategies on sales. Finally we acknowledge that the current work is cross-sectional and therefore is sustained by a single point of time (2013). A longitudinal design could provide greater understanding of how Windowing business models transform consumer willingness to pay.

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