

How streaming services make cinema more important

Lessons from Norway

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Abstract

The technocultural disruption triggered by digitization has radically changed the way in which we consume films outside cinemas and transformed content providers' business models. In Norway, between 2010 and 2016, DVD/Bluray and subscription-based streaming services switched places as major and minor platforms for home video consumption. Hence, home video consumption has migrated from a high-yielding platform at the head of the home video release cycle to a low-yielding platform at the tail end, where films also face tougher competition from drama series and international content tends to surpass local content. A case study of the earnings generated by local films released by a major distributor in this period suggests that home video revenues have diminished, making local films much more dependent on theatrical revenues and vulnerable to changes in cinema-going behaviour.

Keywords: film, windowing, streaming, cinema, disruption

Introduction

Within a decade or so, digitization has radically changed the way in which we consume films outside cinemas. Smartphones and tablets, together with an improved broadband internet infrastructure and other technological developments, allow us to watch films on the go, expanding our understanding of “home video” to cover film consumption basically anywhere except in cinemas. Consequently, for most of us, the arena for home video consumption has expanded in both time and space, and online streaming services have quickly grown into leading market channels while former dominant channels, such as the physical DVD and Bluray formats, have been marginalized (Squire, 2017). These disruptive shifts not only

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affect the distribution market channels but have major ripple effects across the whole audiovisual value system on producers with talent and crew in the other end. The new channels operate with different business models from the old ones, so, when viewership moves from one to another, the change is felt economically by content providers. Most have been forced to reconsider not only their channel strategies but also what they produce and how the production is financed. Consequently, technology is changing not only *how* we consume but also *what* we consume, and the disruption is thus best described as technocultural (Burger, 1961; Penley & Ross, 1991).

The effects of this technocultural disruption on feature film production in Norway were examined in a white paper to the Norwegian Ministry of Culture in 2018 (Gaustad et al., 2018), of which the overall objective was to identify how digitization has affected revenue streams for films and drama series made available in the Norwegian market. In this article, I analyse the key results regarding local feature film distribution and consumption, and my analysis draws primarily on theories for value creation and capture, including the value system (Porter, 1985) and windowing (Owen & Wildman, 1992) models. The objective is to understand better how the revenue streams from local feature films have changed and the implications for the future production and consumption of local films.

For film producers generally, one problem resulting from the shift in home video consumption is that it has migrated from high- to low-yielding channels. Films are normally distributed following a windowing model (Owen & Wildman, 1992), whereby they are released sequentially to different channels according to the income that each can generate, from high to low. In recent years, audiences have migrated from DVD and Bluray, a high-yielding window at the head of the home video cycle, to subscription-based streaming services, a low-yielding window at the tail end. Consequently, in these new channels, more viewers receive fewer fresh products in the form of feature films, and this contributes to tilting the competition for viewers' time and attention in favour of drama series, which often have a streaming service as their premier window (Agger & Mortensen, 2016).

Moreover, since the new channels often have different geographical footprints from the old ones, the implications differ between internationally and nationally oriented producers. For producers in smaller national markets, like Norway, an additional challenge may be the lesser emphasis on local content in new channels. In most markets, the shift in consumption towards subscription streaming services means a greater presence of large global services. These are likely to prioritize content with a broad international appeal that attracts viewers in all the territories where the service is offered. If so, a negative economic impact from the distribution disruption is likely to be felt more strongly by smaller, local content providers than by the larger, internationally oriented ones.

Together, the challenges facing smaller, local content producers following the digitization of the home video market may cause concern about national film production, which in most countries is an important element of cultural policy,

as it adds diversity and both reflects and shapes national identities (Murschetz et al., 2018). Despite generous state finance institutions (Kanzler & Talavera, 2018), most producers are dependent on market revenues to finance new projects (Gaustad, 2009). A drop in home video revenues will have consequences for producers' ability to finance new productions, unless the drop is compensated for by higher theatrical revenues or state support.

While there is a significant amount of empirical literature on the effects of film consumption migrating to non-yielding channels, such as pirate downloading and streaming platforms, migration to low-yielding channels, such as subscription- and advertising-financed streaming services, have received less attention. The first stream of research has addressed audience migration to unauthorized distribution channels, which generates no direct revenues for content producers (see e.g. Bai & Waldfoegel, 2012; Herz & Kiljański, 2018; Rob & Waldfoegel, 2007). As early as 2007, the international film industry losses due to piracy were estimated to exceed \$3 billion annually (De Vany & Walls, 2007), and most studies have concluded that piracy inflicts significant losses on content providers. The effects of audience migration to low-yielding channels may be similar, but less extreme, for any given amount of migration. However, since the volume migrating to legal low-yielding channels is likely to be larger than that migrating to mostly illegal non-yielding platforms, the technocultural effects may still be stronger.

Understanding the technocultural effects of migration to low-yielding channels is important both for strategy and for policy. Unlike piracy channels, these channels are used within content providers' control and authorization, employed as conscious, deliberate parts of their windowing strategies. Therefore, content producers retain the option not to license their films to low-yielding channels if they believe that the total revenues could be higher from keeping them exclusive to higher-yielding channels. In effect, there is then a trade-off between availability and earnings. Limiting availability may increase earnings at the expense of local films' presence in popular streaming services. Making the films available through these services may, on the other hand, reduce the overall earnings and thus the producers' ability to finance new projects.

To gain a clearer understanding of how the shift in consumption to low-yielding channels has changed the revenue streams from local feature films, I look at the changes in the Norwegian market between 2010 and 2016. Within this period, DVD/Bluray and streaming services switched places as the platforms generating the most and least revenues from home video consumption. What is the effect on producers' overall market revenues, on the distribution of revenues between the theatrical and the home video market and on the earnings from each market channel within the home video market? The economic implications for local film producers are not immediately observable, as they are obscured by the project-based organization of film production and distribution, but a case study of a major Scandinavian distributor revealed major shifts in revenue streams between market channels for local films in the study period. The results suggest

that subscription streaming channels generate few revenues for film producers and that the home video market as a whole has declined, making film producers more dependent on the revenues from their premier window, cinema releases.

The rest of the article is organized as follows. The next section reviews the literature on value creation and capture models in the film industry. Then I present a model of key functions and transactions between producers and audiences, exposing the key money and product/service flows. The case study method and data collection are then described and the results and data analysis are presented. The final sections provide discussions of the implications and conclusions.

Feature film value creation and capture models

The film industry's value creation logic is basically that of transforming various creative and humdrum inputs into products in the form of films (Caves, 2000). All the required activities typically take place in a mostly sequential interlinked chain of firms, from producers at one end to cinemas and other outlets at the other. The most common industry division used in both practice and literature is to divide the process into three main sectors according to their functions: production, distribution and exhibition (Finney & Triana, 2015; Hadida, 2009; Litman, 1998; Wasko, 2003). At each stage, value is added to a film project. Production starts with a concept and joins the script, director, actors and numerous other elements into a complete viewable product. Distribution adds marketing to build a potential audience and licenses films to make them available through various market channels. Exhibition, containing all these market channels, presents and makes films available to end consumers.

A film's value, as experienced by an end consumer, is dependent on the work carried out in all the sectors, such as the quality of the production, a good fit between the expectations created through marketing and the film itself and an enjoyable presentation in the form of comfortable cinema seats or uninterrupted streaming. In this chain, which is considered to be vertical in value system terms (Porter, 1985), products flow downstream from production to exhibition, while money flows upstream from exhibition to production, creating a circular flow of products and money.

Some firms may fit perfectly within a sector, while others may not. Some may only cover certain functions within their sector, for instance producers that only develop new projects but turn to others for physical production. Others may overlap sectors and are therefore considered to be vertically integrated. A producer may, for instance, extend into distribution if it carries out some of the marketing and licensing for its films. New global subscription streaming services, such as Netflix and Amazon, often extend partially into both distribution and production for some of their products, reaching a high level of vertical integration.

In Norway, the term "content provider" is usually associated with producers. However, the producer–distributor alliance may fit better. Producers and dis-

tributors typically collaborate closely when creating the value of a film project. Together they create a product and image that may best be understood as a brand (Gaustad, 2013; Hennig-Thurau & Houston, 2019). They normally sign a contract before a project enters production, and distributors may influence production decisions and producers' distribution and marketing decisions. In fact, the Norwegian Film Institute, which is the main source of public funding for Norwegian films, requires a distributor to be attached to a project before production funding is granted to the producer. Distributors typically carry marketing investments in a film, and they are the biggest private contributor to production finance (Gaustad, 2009; Gaustad et al., 2018; Ryssevik et al., 2014). The alliance and common faith of a producer and distributor with regard to any specific film project are reflected in the common use of revenue-sharing contracts, through which a producer receives a share of the distributor's revenues from the exploitation of the film (Baumgarten et al., 1992; Gaustad et al., 2018). Moreover, distributors are the suppliers to which buyers in the exhibition sector normally turn for films, with the exception of TV channels, which often license films directly from producers. Considering distributors as content providers is also in line with our thinking of major Hollywood studios as content providers, as they are primarily distribution companies (Gaustad, 2013).

Windowing models concern the licensing of films to various market channels in the exhibition sector. Films are licensed to be made available to consumers in different markets in succession, and the price paid by a consumer will be the highest in the first window and then gradually decrease in the following windows, the purpose of this price discrimination being to maximize the revenues from any single film (Owen & Wildman, 1992). Consequently, a film becomes more extensively available to the market over time as it reaches new sets of consumers with lower willingness to pay in each consecutive window (Lehmann & Weinberg, 2000). Transformations in the way in which content is distributed and consumed require adaptation in windowing models (Doyle, 2016). However, finding the optimal timing of each window is demanding, and empirical research has shown contradictory results (Ahmed & Sinha, 2016). This is partly because of conflicting interests. Producers and distributors of theatrical films may for instance increase the total earnings by reducing the length of the theatrical window and bringing home video releases forward, but, as this would have devastating effects on cinema owners, they naturally resist (Hennig-Thurau et al., 2007).

In addition to the availability and timing of each window's release, producers and distributors must consider the impact of success factors, which will vary across windows. For instance, the distribution intensity and date of release have been found to have a significant impact on theatrical revenues but not on secondary home video releases (Hennig-Thurau et al., 2006). There is also interdependence between windows and between performance and resource allocation (Elberse & Eliashberg, 2003). Windows are interdependent in that the results in primary windows have ripple effects in subsequent windows. A film's theatrical

opening weekend performance will generally affect both the length and the width of its remaining cinema release and its performance, and thus its value, in subsequent windows. In addition, strong openings typically encourage distributors to allocate more resources to the remaining release cycles (Hennig-Thurau et al., 2006).

Product and money flows

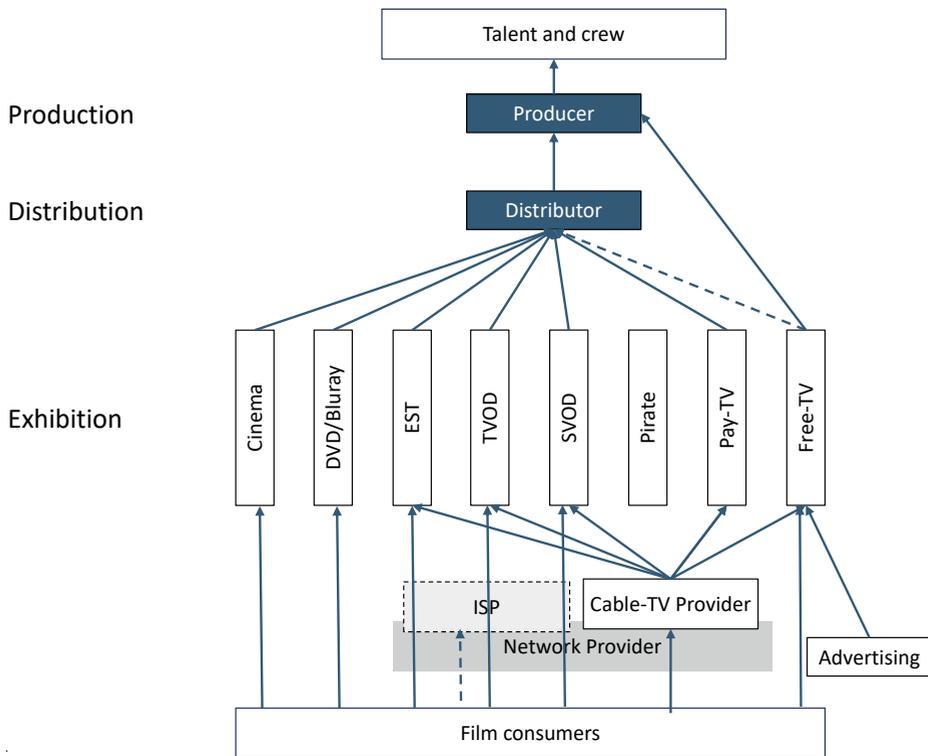
Combined, the value chain and windowing models provide the basis for our understanding of how value is created and captured in the film industry. On this basis, more detailed and bespoke models can be developed to track the product and money flows, guiding our analysis of the effect of consumption shifts between market channels on content providers (Benjamin, 2017). In the film industry, “product flows” will naturally also include a number of services, from story consulting and casting in the production sector to ticket sales and cleaning in the exhibition sector. Tracking product and money flows implies that a model is transaction oriented. We are seeking to map not the economies of production, distribution or streaming companies but the exchange of films and money between these and consumers. The analysis follows John R. Commons (1934) and Roald H. Coase (1937), who identified the transaction as the ultimate unit of economic activity.

Figure 1 below shows a schematic model for the current Norwegian film industry, based on a model developed by Hollywood’s pioneer economic and financial analyst Art Murphy (1995). Functions are represented by boxes and money flows by arrows. For simplicity, product flows are not drawn with separate arrows but follow the money arrows in the opposite direction.

Products flow down from filmmakers and producers, at the top of the model, through distributors and a number of market channels in the exhibition sector to the audience. Money flows back up: in the form of consumer payments to various market channels, in the form of licensing payments to distributors and finally according to sharing contracts between distributors and producers. Producers may also pay profit participation or royalties to filmmakers, but most payments from producers are in the form of salaries and fees.

Since many of the payments follow the succession of product flows, there are financing requirements throughout the value system but with a greater demand for financing as one moves upstream, since this is where both the costs per film and the time gap between products and services delivered and consumer payments are the greatest. There will normally be years between a producer’s payments to filmmakers and the consumers’ payments to the market channels at the tail end of the windowing cycle. However, since the primary concern here is the shifts in consumer spending and revenue streams, public and private investor payments and repayments are omitted from the figure to keep matters simpler.¹

To map the shift in consumer spending and the implications for revenue streams, the following market channels are included from the exhibition sector:

Figure 1. Product and money flows in the Norwegian film industry

Comment: Revenues flow from consumer payment at one end to filmmaker fees and salaries at the other, while products and services follow the same arrows in the opposite direction. Public support, private investments and payments to and from copyright collectives are omitted.

cinema, physical home video (DVD/Bluray), digital home video, television and piracy. Digital home video represents key disruptive services in the study period and is here divided into three major types of streaming services: electronic sell-through (EST), transactional video on demand (TVOD) and subscription video on demand (SVOD).² First, EST services allow consumers to purchase films, typically on a film-by-film basis. EST is the streaming equivalent to DVD/Bluray sell-through. It gives consumers permanent access to the films that they buy. Second, TVOD services allow consumers to rent films for a limited time, often for 24 to 48 hours, also on a film-by-film basis. It is the streaming equivalent to the DVD/Bluray rental market. Finally, SVOD services allows consumers to purchase access to a library of films and other content for a limited time, typically on a monthly basis. SVOD services may be seen as time-shifting on-demand versions of the more traditional pay TV channels. Sometimes the prefix “premium” is used to indicate that an SVOD service is placed higher up in the content windowing sequence, thus offering films and series that have only previously been released on DVD/Bluray and/or EST and TVOD services in the home video market and

not yet on TV channels.

All three types of streaming services may be offered over the top (OTT), which means that they are directly available to all consumers on the internet, or they may be offered through and exclusively by a cable TV provider.³ Some cable TV providers also include OTT services in their bundles, and internet service providers (ISP) may include OTT SVOD services with their monthly broadband subscriptions.

Consumers' payments for pay TV channels are made via their cable TV provider, and their bundles include free TV channels. Consumers also pay for what we consider to be free TV in the form of compulsory license fees to the public service broadcaster and, indirectly, by spending time watching advertising, which generates payments from advertisers to the channels.

Piracy is also included as a market channel in the model, since it represents an unauthorized channel that is used by some consumers to access films. However, piracy services seldom require consumer payments and never generate any revenues for content providers, so no arrows connect this market channel with the system of money flows for feature films.

Distribution case study

The money flows from film consumption that are split by consumers through various market channels are mostly joined again when they reach distributors (see Figure 1 above), and this is therefore a good point for measuring the economic effects of channel disruptions on content providers. As revenue data are not publicly available and typically confidential, they must be collected from channels or distributors. Due to scope and scale economies in film distribution (Waterman, 1993), the market is typically dominated by a small number of distributors. In Norway, the five largest film distributors account for more than 85 per cent of theatrical revenues (Film & Kino, 2018) and therefore also a similar share of the home video market for theatrical films. Case studies on any of these would thus provide valuable insights into the changing revenue streams.

The alternative would be to access revenue data directly from producers. However, with the exception of some television license fees going directly to the producer, the distributor typically collects film rental from cinemas as well as royalties and license fees from home video channels on behalf of the content provider alliance of producer and distributor. Before sharing these revenues with producers, distributors normally deduct distribution fees, which vary between market channels, as the required licensing and marketing work is different from channel to channel, and recoup their marketing investments (Baumgarten et al., 1992; Gaustad et al., 2018; Haimoff, 2017). Therefore, shifts in the revenue streams between market channels are often measured better and more precisely in distributors' than in producers' earnings. Distributors also act as aggregators, distributing films from a number of producers. To gain access to revenue data for the films collected by one distributor at the producer level, one would have

to access data from a number of producers, which may also have different accounting systems. Overall, this favours distributors for case studies of shifting revenue streams.

In Norway, local films are predominantly distributed by two major Scandinavian distributors, Nordisk Film Distribusjon and SF Studios, both of which are among the top-five distributors. Since, in the current setting, we are primarily interested in the conditions for local films, these were the prime candidates for a case study. For my work on the government white paper (Gaustad et al., 2018), each company provided different data that, when combined, offer a rich insight into the overall dynamics of the industry. One provided revenue data for each Norwegian theatrical feature film that it had released from 2010 to 2016. The data were provided on a film-by-film basis and showed revenues divided by the following market channels: theatrical, DVD/Bluray, EST/TVOD, pay TV and SVOD. Revenues from free TV were not included, as these rights are typically licensed directly by the producer, not via the distributor. The other company provided data on an aggregated level for all its Norwegian films in 2016, and these were used as a reference case to check for conflicting patterns with the main case.

The revenue data from the main case distributor were anonymized in two ways before being delivered to us. First, film titles were not included. Each film was only identified by the release year and by classification as a smaller, medium or larger film in terms of cinema admissions. Second, revenues were not provided in absolute figures but through an index whereby the average theatrical revenues for all 2010 and 2011 films were set to 100. Thus, if, for instance, one of the 2016 films was listed with theatrical revenues of 200 and combined EST and TVOD revenues of 80, it would mean that it had earnings from cinemas equal to double the 2010/2011 average and EST/TVOD revenues, equal to 80 per cent of the 2010/2011 theatrical average.

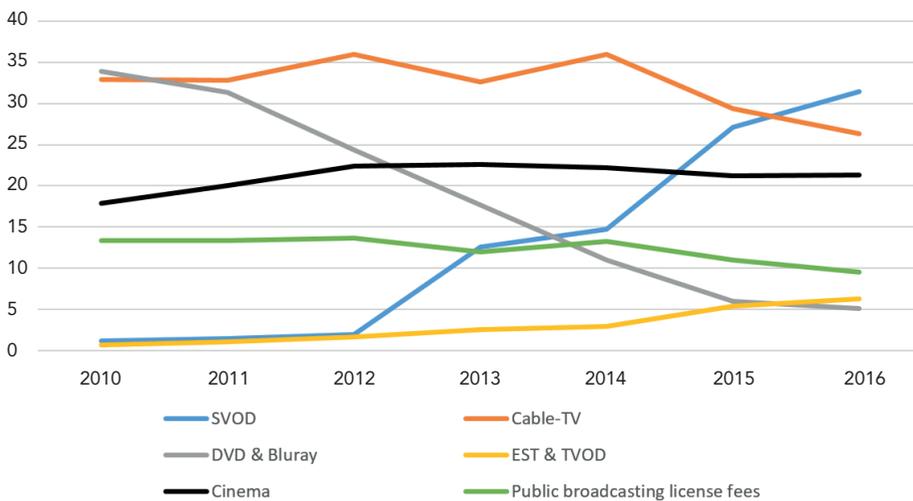
The quantitative data were supplemented by interviews with executives from both companies. Semi-structured interviews were carried out ahead of the quantitative data collection to identify major trends and appropriate data categories and following the first data analysis to discuss the results. The data triangulation, accomplished through the use of both qualitative and quantitative data, as well as a reference case, increased the validity of the quantitative findings (Eriksson & Kovalainen, 2008; Yin, 2014).

Empirical evidence

Before turning to the case study results on content provider revenue shifts, I examine the changes in consumer behaviour during the study period. The migration of consumers between market channels was surveyed from numerous sources and documented in the government white paper (Gaustad et al., 2018). We do not have numbers for local feature film consumption alone, but Figure 2 below shows the development of the market shares in terms of consumer spending on

films and drama series between channels for the period from 2010 to 2016. As series are largely absent from cinemas but dominate SVOD and TV consumption, these numbers are somewhat skewed in terms of spending on feature films. Furthermore, since both local and international films and series are included, the accurate consumption of local content is obscured. For instance, in 2016, the overall local share of films and series was 13 per cent, but it made up as much as 29 per cent, 24 per cent and 18 per cent for the public broadcaster, cinemas and DVD/Bluray, respectively, and as little as 8 per cent and 5 per cent for pay TV and SVOD (Gaustad et al., 2018). However, Figure 2 shows accurate trends in film and series consumer migration between the market channels and thus provides a good picture of the changing market conditions for local film.

Figure 2. Market shares of consumer spending on films and drama series in Norway over time (per cent)



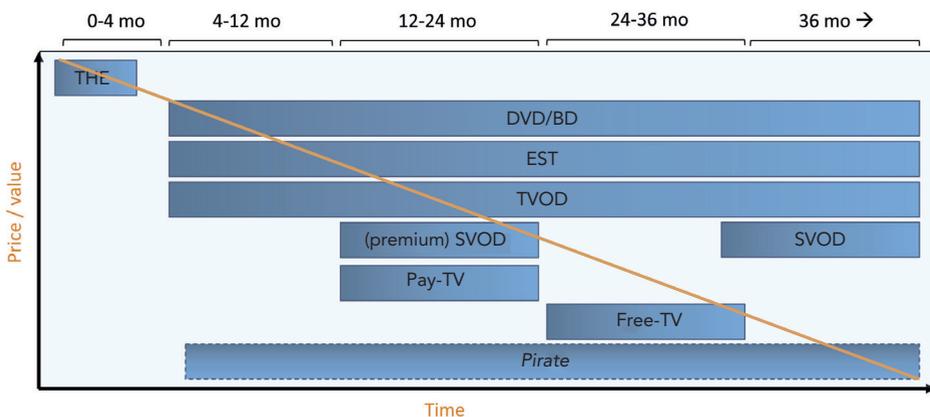
Source: Gaustad and colleagues (2018).

We can see that cinemas retained a relatively stable share of between 18 per cent and 23 per cent of the market. However, the dominant home video platform in 2010, DVD and Bluray, which then held a market share of 34 per cent, was diminished to only 5 per cent in 2016. During the same time period, SVOD grew from 1 per cent to 31 per cent and claimed the position as the dominant channel. Consumer spending on SVOD services experienced a major increase around 2012, when Netflix was launched in Norway. The other streaming services, EST and TVOD, which mainly offer films for purchase and rental, also increased their market share over the period but at a much slower pace. From a combined share of 1 per cent in 2010, it increased to 6 per cent in 2016, just overtaking DVD and Bluray. Cable TV providers' share of the market was increasing and stable until 2014 but then declined through 2016. The decline is in line with the international trends of “cord-cutting” and “cord-shaving”, meaning that some consumers cancel or reduce their cable TV packages in favour of OTT services.

However, some have argued that the growth in OTT services will outweigh the cord-cutting and -shaving so that the combined cable TV and OTT market will expand (see e.g. Samit, 2015), and the relatively modest decline in cable TV against the strong growth in SVOD shown in Figure 2 supports this theory. As shown in Figure 1, cable TV payments cover both free and pay TV channels but also include the EST, TVOD and SVOD services carried by the cable TV provider. The final category included in Figure 2 is consumer spending on compulsory household license fees to the public broadcaster, NRK. It declined slightly from 13 per cent to 10 per cent, while the license fee increased marginally above inflation (MedieNorge, 2018).

That the main trend of migration from DVD/Bluray to SVOD represents a shift from the head to the tail of the home video windowing cycle is illustrated in Figure 3 below. It shows the typical release and availability patterns of films released by the main case distributor, with an overlying graph indicating how a film's price and value diminish following its initial release. DVD/Bluray, and their streaming equivalents EST and TVOD, represent the first and highest-priced home video market channels. While films typically remain available through these channels, most revenues are typically generated up front in their exclusive window of four to twelve months following the theatrical release, before the films are re-released in the pay TV and premium SVOD windows. The catalogue SVOD window is placed at the very end, following the free TV window and usually starting 36 months after the theatrical premiere, and it is the lowest-priced window.

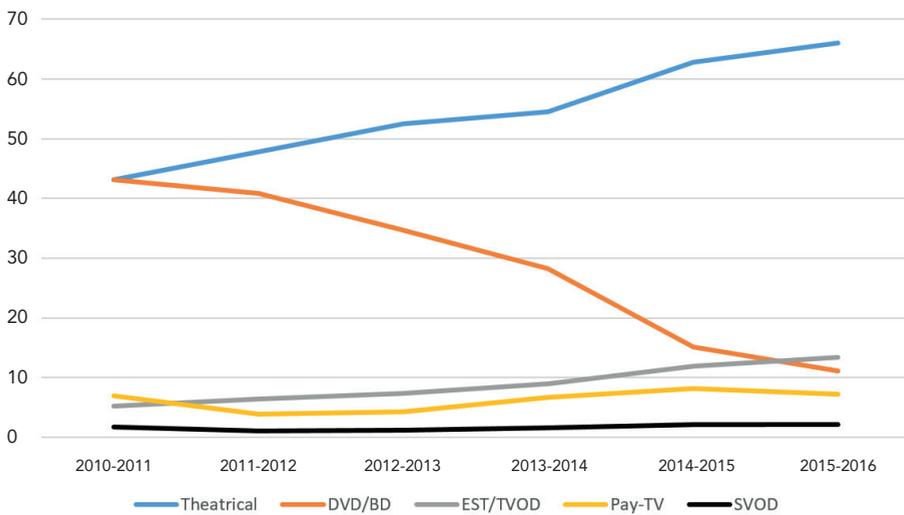
Figure 3. Windowing and value



Comment: Windowing model for the sequential release cycle of films, with an overlying graph illustrating a film's diminishing market value over time.

As may be expected when consumption shifts to a low-priced channel with a small share of local content, the distributor case study data suggest that local content providers' revenues have not followed the same trends as consumer spending. The developments in revenue shares by market channels are shown in Figure 4 below.

Figure 4. Share of the total market revenues per channel for the case distributor's Norwegian films over time (per cent)



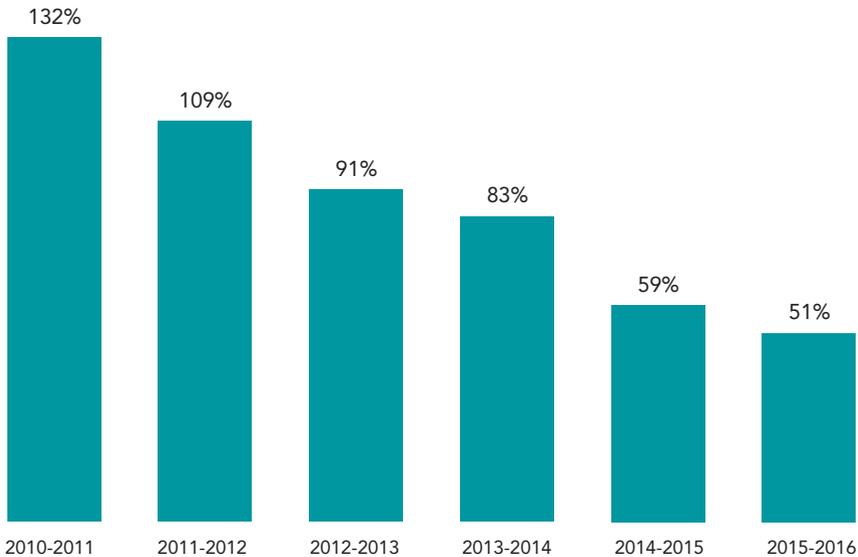
Source: Gaustad and colleagues (2018).

Throughout the analysis, film data were merged and categorized into two following years to reduce the divergence due to single titles by creating larger categories. For films released by the distributor in 2010 and 2011, the revenues from DVD/Blu-ray equalled the theatrical revenues. Each market channel accounted for 43 per cent of the total market revenues. For the 2015/2016 films, the DVD/Blu-ray share was reduced to 11 per cent. Now EST/TVOD was the home video channel generating the most revenues, yet it contributed only 13 per cent of the total revenues. Consequently, cinemas generated 66 per cent, or about two-thirds, of the average film's revenues. In other words, on average, the theatrical market generated about five times the revenues of the highest-grossing home video channel. The SVOD market, on which consumers spent the most for films and series, generated only 2 per cent of the market revenues for the distributor's local 2015/2016 films, an increase of half a percentage point from the 2010/2011 films.

The development of the relative weight of the theatrical and home video markets for the distributor's local films throughout the period is illustrated in Figure 5. It shows the total home video revenues as a share of the theatrical revenues. For the 2010/2011 films, the home video market generated revenues equal to 132 per cent of, or 1.3 times, the theatrical market. For the 2015/2016 films, the earnings from the home video market were reduced to just above half of the theatrical revenues.

The data from the other major Scandinavian distributor, used as a reference case in this study, did not indicate that any of these trends revealed between theatrical and home video markets, and within home video markets, are specific to the case distributor.

Figure 5. Home video revenues generated by the case distributor's films compared with their theatrical revenues (per cent)



Source: Gaustad and colleagues (2018).

Discussion

The technocultural disruption playing out in the home video markets may not seem to have affected cinemas' position in the overall film market. Film consumption in cinemas remained stable throughout a period with otherwise volatile film markets. However, the steady total sales figures may disguise important adaptations to a changing market on micro levels. First, Norwegian cinemas were digitized between 2009 and 2013, allowing cinema operators to programme with greater flexibility. Second, the empirical research shows that the effects of digitization on cinema repertoire include both a blockbuster effect (Elberse, 2013), whereby the most popular films take a larger share of the total market than before, and parts of a long-tail effect (Anderson, 2006), in that the number of unique titles released has increased significantly (Gaustad, 2017). Hence, over the study period, suppliers of local films may have dealt with a theatrical market of a stable size but a changing nature.

Local films' growing dependency on theatrical revenues gives cinema owners a stronger position in any negotiations over the cinema window, even more so if international films follow the same pattern. Reducing the window, either by shortening its period or by limiting its exclusivity⁴, may increase the short-term gains for film suppliers but would also involve great risks in the current market. First, it may significantly reduce the total earnings if audiences leak from cinemas to lower-value home video markets without also notably growing the total home video audience. Second, if it reduces the cinema earnings enough to discourage

investments in cinema maintenance and upgrades, it could indirectly cause long-term harm to film producers and distributors by making audiences' cinema experience less attractive.

In the home video market, there seems to be a mismatch between consumer spending and revenues for local films. Consumers have migrated to SVOD services, while it is the EST and TVOD services that generate revenues for local films. The underlying reason may be that popular SVOD services do not prioritize local films. Their position at the tail end of the windowing cycle reflects, at least partly, their low willingness to pay for local films. Netflix, which became the leading SVOD service in Norway during the period, is known for its effort to build its own brand, which may be achieved more effectively through original series than through licensed films (Wayne, 2018).⁵ Consequently, the question may arise for local film producers and distributor of whether they may gain more from withholding their films from SVOD channels. As shown in Figure 3, SVOD services compete with EST and TVOD (as well as DVD/Bluray) in the sense that these are channels through which a film would be available simultaneously. Withholding it from SVOD may therefore direct some more consumption to EST/TVOD services and, if the SVOD license fees are sufficiently low, possibly generate enough extra earnings to outweigh the forgone SVOD revenues. However, the presence of pirate services may undermine this strategy, as consumers who cannot find a film on their SVOD services may turn to pirate channels rather than EST/TVOD services.

If holding back local theatrical feature films from SVOD services can increase the total revenues, implementing such windowing strategies would make sense for content providers, but it would be paradoxical in terms of cultural policy. On the one hand, it would increase producers' revenues and thus strengthen the incentives to produce more local films, but, on the other hand, it would make local films less accessible to their national audiences. In addition, viewership, regardless of the revenues generated, is a significant part of these films' *raison d'être*, since Norwegian films, on average, receive about half of their production financing from public sources (Gaustad et al., 2018). Achieving solid viewership for local films is one of the four key Norwegian film policy objectives guiding the allocation of public funding. Having a healthy economy within the national film sector is another (Norwegian Ministry of Culture, 2015). Hence, limiting the audience access to increase the revenues implies an inherent policy paradox, given these objectives.

The drop observed in home video revenues for local films (see Figure 5) presents a challenge for the financing and production of new films and is likely also to affect the type of films being produced. Producers are much more reliant on the theatrical market, and, with a blockbuster market in which "the winner takes all", producers may prioritize large popular projects with the potential to draw wide audiences or small niche projects requiring few market revenues. For blockbuster projects, producers are also reliant on distributors that are willing

and able to make the marketing investments necessary for such wide releases, and, for the niche titles, they need distributors that are able and willing to work effectively with limited resources. An opportunity for further research on the content perspective of the current technocultural shift would be to survey the types of local films released in this period, as this would give us a better picture of how films themselves have changed.

Conclusion

There has been a major shift in the way in which consumers access films in the Norwegian home video market. Within a period of six years, streaming technology, which at the outset was inferior to DVD and Bluray in terms of quality and other measures of importance to viewers, has outperformed the former home video market channels of choice. These are the trademarks of a disruptive technology (Bower & Christensen, 1995), and companies like Netflix and Amazon have adapted the technology in their disruptive innovation (Christensen et al., 2015) and grown into major global film outlets. As the way in which we consume films changes, feedback effects may also cause changes in the films that we choose to see and eventually the films being produced. These cultural effects of disruptive technology and innovation are best defined as technocultural, describing the interplay between technology and culture (Burger, 1961).

In the context of this technocultural shift, this article investigates the effects of market changes on the supply conditions for local films. It suggests that streaming services are making cinemas more important, as they generate few revenues for local films and therefore make the suppliers of these films more reliant on theatrical revenues.

In the home video market, streaming services for film purchase and rental (EST and TVOD) have become the most important source of revenues for local films, while the audience has mainly migrated to subscription-based (SVOD) services. The low-priced profile making SVOD services attractive to consumers renders them economically negligible for local film suppliers when their content does not support the strategic core and brand of these services (Wayne, 2018). Local content from small markets like Norway typically has a potential audience that is limited by language and culture (Hoskins et al., 1988), which makes it particularly sensitive to the low value created per SVOD viewer. In most cases, it will not benefit from the scale economy opportunities offered by global SVOD services. To support local films, policy makers and industry players may therefore achieve the greatest efficiency by concentrating on cinema and EST/TVOD services, market channels that seem to fit the film format and business models better. This may, however, involve a paradoxical policy trade-off between competing objectives of availability and economies.

The dramatic drop in DVD/Bluray revenues illustrates the market risk of being dependent on the dominant market channels in technocultural dynamic markets.

Film producers and distributors have lost one of their two “2010 legs” and now rely even more on the theatrical market. This makes not only cinemas but the whole local film industry vulnerable to disruptions in cinema-going behaviour.

Producers and distributors of local films are facing a tougher market with lower revenues. Nevertheless, the demand for and consumption of films and series has never been higher (Statistics Norway, 2018). If some of this consumption can be shifted back to higher-yielding market channels, local content providers may have a much brighter future.

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Notes

1. Money flows through copyright collectives are also excluded. These move mainly from market channels and carriers of market channels, such as cable and satellite services, to filmmakers via the collectives but represent only about 2 per cent of the market revenues (Gaustad et al., 2018).
2. Ad-supported video on demand (AVOD) and premium video on demand (PVOD) are omitted, as these types of services only had a marginal share of the Norwegian home video market for feature films in 2017 (Gaustad et al., 2018). AVOD services are financed by advertising and free to consumers, typically placed at the tail end of the windowing cycle, while PVOD services are similar to TVOD but are placed at the front end of the home video cycle, as they offer films at higher prices simultaneously with or shortly after their theatrical premiere.
3. I use “cable TV provider” to include all multichannel video programming distributors (MVPDs), which sell bundles of TV channels and other services via cable, satellite and digital terrestrial broadcasting.
4. For example through so-called day-to-date releases, whereby films are released simultaneously in cinemas and on PVOD or EST/TVOD services.
5. Netflix has been a significant investor in some Norwegian drama series, such as Lilyhammer and Norsemen, released as “Netflix Originals”. If SVOD services should make similar deals for local feature films, the SVOD window would no longer be at the tail end of the release sequence and these films would not fit into the overall pattern for theatrical feature films identified in this case study.

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