# 13

# Entertainment Distribution Decisions

As we noted earlier in this book, entertainment markets are characterized by an abundance of products. This market structure assigns an important role to distribution mechanisms, which function as gatekeepers for entertainment products. Distributors decide which products gain access to consumers and which do not, influencing the success of entertainment products via "supply-side effects." Several scholars have provided empirical evidence of supply-side effects, most of them in the movie context, in which the limited number of available theaters restrict consumers' access to films. Prominent studies include those by Elberse and Eliashberg (2003), Clement et al. (2014), and Karniouchina (2011).[365]

For other entertainment products that are sold or rented via stores or websites, less scholarly research evidence exists, but more should generally

[365]These studies all use large data sets with mainstream films and model the number of theaters in which a film is shown with a separate equation, using the resulting estimates as a "success driver" in the box office equation (instead of the "raw" number of theaters). The distribution elasticities calculated this way are quite consistent. Anita Elberse and Josh Eliashberg estimate a weekly elasticity for the number of theaters in the same week of 0.81 for the North American opening week and of around 1.50 for different European countries; elasticities for the following weeks are around 1, across countries. Michel Clement and his colleagues find elasticities of slightly above 1 for North America and Germany for both the opening week and the next weeks. And Kate Karniouchina estimates a distribution elasticity of slightly below 1 which varies little over the weeks in which the movie is shown in North American theaters. Please note that these elasticities should not be compared with those for product and communication measures, or pricing: whereas product and communication decisions aim at generating demand for entertainment (and price decisions aim at maximizing returns for the producer based on such demand), distribution's role is to ensure that consumer demand for a product can be transformed into revenues. Thus, empirical elasticities of about 1 indicate that markets, in general, work effectively with regard to fulfilling consumer demand for entertainment.


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be better when it comes to the distribution intensity for entertainment. Intense distribution has been shown to be a key to success for convenience goods (e.g., Coughlan et al. 2006) and durables (e.g., Bucklin et al. 2008 for cars) which are targeted at large consumer segments, just as commercial (and many "independent") entertainment products also are.[366] That is why we consider access to distribution channels to be a critical strategic resource for entertainment companies, by the way. An exception might be in those distribution channels in which "shelf space" is rare and costly, as is the case with physical venue distribution—every empty seat in a movie theater on a Friday night is irredeemably lost. For those channels, if a new product is distributed too widely, such oversupply can threaten the product's availability in the following weeks and months, as theaters drop such films in favor of more lucrative offerings—see our discussion of the niche concept of integrated entertainment marketing.[367]

In this chapter, we look beyond the mere intensity of product availability and which might be the "right" distributors for an entertainment product. Instead, we focus on three other distribution issues that are of key importance for an entertainment product's success. The first is timing the new product release. Timing deserves particular attention because entertainment life cycles are usually short, the consumer motivation for spending money on entertainment is hedonic (the time must be "right" for entertainment fun), and entertainment markets are crowded and competitive. We will discuss both the absolute timing of launching a new product and the timing relative to that of competitors.

Second, because books, music, games, and movies are all information goods and thus can be made available in pure digital format, broadband Internet technology has dramatically increased the number of potential distribution channels for entertainment. Coordinating these channels is tough, particularly with regard to the timing dimension: when should a specific distribution channel be opened and closed? When should the next channel be opened?

[366]To avoid misunderstandings: for some mainly artistic entertainment products, being available via a maximum number of distributors is not the essence, but rather getting access to the "right" ones. But distributors are often the same for commercial and independent products (e.g., Spotify, Amazon), and few producers of artistic products would refuse being successful beyond their core niche target segment, so that in the end, the wider their products are available the better. Things are somewhat different for the theatrical movie channel (and other forms of venue distribution), as we discuss in the text.

[367]In a study of "film survival" at the level of the individual movie theater, Chisholm and Norman (2006) offer rich insights into theater owners' strategic decisions based on 2000/2001 data from 13 movie theaters in the Boston area. Their results provide strong evidence that theaters indeed base their decisions on a film's (relative) performance in the previous week.

Making a specific product available to consumers at different points in time across different channels or formats has a long tradition for books and movies, but channel coordination today is more complex than ever.

And third, again because of its information character, entertainment has been among the industries hit hardest by piracy. We will look at what *Entertainment Science* scholars have to say regarding the effects of piracy, as well as about the effectiveness of anti-piracy measures.

## The Timing Challenge: When is the Right Time for an Entertainment Product?

Timing the release of a new entertainment product is a multi-faceted decision. In the following, we discuss both the "isolated" timing of a release and its timing in relation to competitive offerings. Please note that we do *not* discuss the coordination of release timing *between* channels at this point, but have dedicated a separate section to this prevalent issue.

### Isolated Timing Effects

Producers of entertainment products have to determine when to enter a market. Even when leaving out an explicit consideration of competitive products, producers have to account for long-term factors (such as the readiness of a market), mid-term timing factors (such as the season of the year), and also short-term aspects (e.g., the day and hour at which a new TV show is aired). Managers have developed heuristics to address these issues, but the evidence does not support all of them. Let's take a look.

#### Long-Term Timing

> "Hollywood could get used to this recession thing."
> —Cieply *and* Barnes *(2009)*

Long-term timing decisions are situated at the crossroads of distribution and innovation decisions. Developing a new entertainment product is often a time-consuming process that can span years. At the point of greenlighting an idea, producers need to have an eye on multiple factors that, at a much later time, will surround the introduction of the product and influence its reception by consumers. Knowing and understanding these factors allows

the producer to vary the speed of the innovation process (to accelerate it or to slow it down) to meet the "right" window in time, but also to completely abandon a project if he or she senses that this window is closed and won't re-open in the foreseeable future. What are these factors that determine a market's readiness for a new entertainment product within a time window? We name technology, infrastructure, cultural trends, and the state of the economy.

Given the important role that *technology* plays in the creation and distribution of many entertainment products, producers have to anticipate the availability of technologies on which the success of their product depends and, if necessary, facilitate the technology's advancement. Remember that James Cameron and his co-workers intentionally delayed the production of their Avatar movie to personally contribute to the improvement of what they considered to be essential technological advances for putting their vision on film. Avatar would probably not have become such a gargantuan hit if they had employed premature versions of motion-capturing and 3D, the two key technologies needed for realizing the filmmakers' vision.

With regard to *infrastructure*, take a look at Fig. 13.1: it shows the development of 3D screens in North America, over time. Before 2009, the number of screens that could show a film in digital 3D was too small to make this format a nationwide success; distribution infrastructure was a limiting factor, a price that several early 3D productions (such as Warner's The Polar Express) had to involuntarily pay. The producers of Avatar timed their release perfectly—2009 was the first year in which sufficient 3D distributive capacity was available in major markets, a development that was at least in part endogenous, being driven by the strong buzz that the film makers were able to create for their film.[368]

Relatedly, ambitious serialized stories, such as House of Cards and The Get Down, have a much higher success potential these days because of technological advances such as broadband Internet connections. It is the wide availability of this technology and its adoption by consumers that allow consumers to indulge in on-demand binge watching and to follow the series' complex, horizontal, episode-spanning storytelling; the infrastructure serves as the foundation of the rise of services such as Netflix and Spotify.

[368]Please see our coverage of empirical findings on the link between 3D technology and product success and the critical role of time in Chapter 8 on entertainment search qualities.

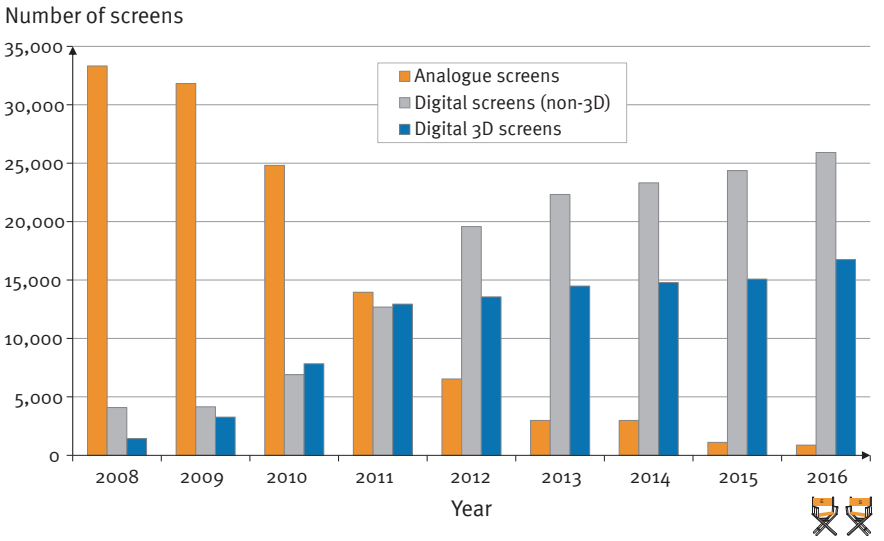


**Fig. 13.1** The evolution of analogue, digital, and digital 3D screens in North America
Note: Authors' own illustration based on numbers reported in several annual MPAA publications.

Beyond technology and infrastructure, *cultural trends* can make consumers "ripe" for a product. We have already discussed the *zeitgeist* concept—the idea that the fit of any entertainment product's genres and themes with people's interests and desires may be high or low at a given time. Part of a producer's challenge is to anticipate that *zeitgeist* ahead of time and plan a product's release time accordingly. It could make sense to defer the production or release of a film, game, or book for a number of years, hoping that its topic becomes more *en vogue*. However, postponement can cause substantial conflict with the creatives who are behind the product: if you have spent a year writing a screenplay, you usually hate to see it delayed for economic reasons.

History shows that such patience can indeed pay off though; it may not only help the commercial reception of the product, but also its critical standing. The script for the western movie Unforgiven was written in 1976. It was purchased by Clint Eastwood in 1983, who then delayed transforming it into a film for almost a decade (Schickel 1996). Mr. Eastwood, an artist, did not offer analytical arguments except that he felt "too young" to portray the lead character. But his decision corresponded with the insight that the revisionist nature of the story felt much more timely in the 1990s, when westerns had become a rarity for both for the actor and Hollywood in general. Only in such a modern cultural environment, this film could be

appreciated for looking back on the now defunct genre and reflecting on its naïve stereotypes, providing an explanation of its demise, and also as a revision of Mr. Eastwood's own (now long "retired") historic western persona known for its violence. The film became a major commercial hit and also won the Oscar for best picture in 1992.[369]

Finally, the hedonic nature of entertainment and its underlying "pleasure principle" imply that demand for entertainment is also influenced by a society's *economic* conditions. Are entertainment and the economy connected in a counter-cyclical way, with entertainment motives (such as escaping from the everyday life) making entertainment products even more attractive in bleaker economic times, despite consumers having less money at their disposal?

*Entertainment Science* scholars Dhar and Weinberg (2015) tested this argument with 26 years of weekly North American movie market data, and their results provide empirical evidence for the existence of such a counter-cyclical demand pattern. The nationwide consumer sentiment in the month a movie is released has a negative effect on movies' box office in the scholars' GMM regressions, above and beyond other drivers of movie success (such as distribution and genre—but not advertising). The elasticity of consumer sentiment is −0.32: a 10% decrease in sentiment leads to an increase in movie demand of about 3%, on average. It seems plausible that different kinds of entertainment are affected to varying degrees, as they address more or less crisis-related motives (e.g., are comedies a more intuitive choice than dramas in rough times?). Dhar and Weinberg do not test for such genre differences, so we add this to *Entertainment Science*'s "To Do" list.

## Mid-Term Timing

> "July 4 Opening Is No Guarantee for Success at Box Office."
> —Schwartzel *(2016), after the launch of the movies* Tarzan *and* The BFG

So we have seen that distribution timing requires strategic skills from the entertainment manager. But it also demands tactical knowledge to determine the "right" season of the year—one that will maximize a new entertainment product's success potential. As we will show in this section,

[369] Unforgiven's global box office was $159 million (in 1990 dollar value), at a budget of about $14 million.

gaining statistical insights on the matter is challenging, as seasonal revenues are determined not only by fluctuations of consumer demand, but also by managers' heuristics regarding such demand. But before we look at studies that aim to disentangle these effects, let us first take a descriptive glance at seasonal patterns.

### *Seasonal Patterns*

While our need for entertainment is so fundamental to human nature, our ability to consume entertainment is a function of the utilitarian duties we have no choice but to fulfill. Only when we, as employees, students, or *Entertainment Science* writers, have accomplished our day's work, can it be the time for entertainment. These utilitarian duties are unequally distributed over the year. Movie theater owners, for example, often cite the time availability of teenagers and families (in terms of school vacations across the U.S.) as a proxy for a given week's commercial potential—because it facilitates spending time at the movies (Fritz 2017).

Entertainment revenues bear this out. Panel A of Fig. 13.2 reports the North American theatrical box office for each week of the year for the years 2010–2014. The differences between weeks are glaring: the highest revenues are generated in the summer months of June and July, in certain pre-summer weeks, and in the Thanksgiving and Christmas weeks. The first quarter of the year, in contrast, yields the lowest box office numbers, along with the weeks from late August to mid-October—here, over the observation period, average revenues were less than half those of the peak times.

Scholars have provided evidence that such seasonal differences are significantly associated with film success.[370] For example, for our sample of 331 films released in 1999–2001, we find that films released either in the summer or around Christmas generate, on average, a higher box office both during their opening weekend and in the weeks that follow (Hennig-Thurau et al. 2006). Brewer et al. (2009), in an analysis of 466 successful films released in North America between 1997 and 2001, find movies released in summer and at Thanksgiving/Christmas to have about 10% and 7% higher revenues, on average. And Clement et al. (2014), who use an index value for each calendar week based on the week's past theatrical revenues in North

[370]Keep in mind the short life cycles of entertainment products, which, in combination with success-breeds-success effects, often prevent an entertainment product from making up for a disappointing opening.

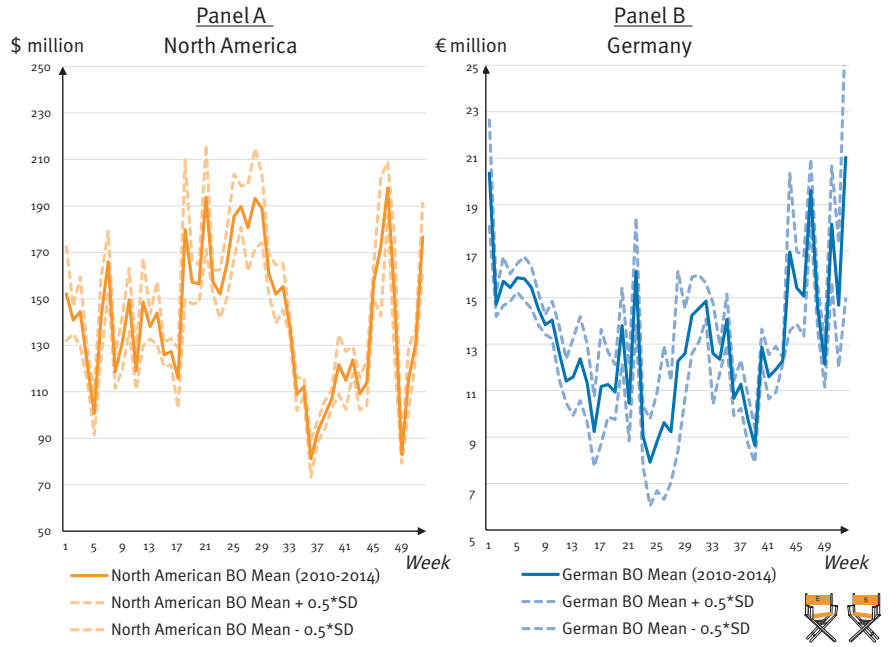


**Fig. 13.2** Seasonal box-office revenues for movies: North America and Germany
Notes: Authors' own illustration based on weekly per-movie box office numbers from 2010 to 2014 reported by The Numbers and Blickpunkt:Film. The straight line is the mean value for a week. The dotted lines are the mean for a week multiplied by one standard deviation; they show the variation that the box office in a given week has experienced from 2010 to 2014. Larger deviations from the mean line indicate stronger variation. BO = box office. SD = standard deviation.

America, estimate a "season" elasticity of 0.29 for revenues: a 10% higher average box office in a movie's release week corresponds with approximately 3% higher theatrical revenues for the film. For Germany, the scholars find an even higher elasticity of 0.57.

Seasonality also correlates with the success of other forms of entertainment. Average monthly TV ratings differed by almost 30% over the course of a year between 1998 and 2005 (Hennig-Thurau et al. 2013), and we found that the month in which a film is aired on TV is significantly linked with the film's viewership, even when key film characteristics are also considered (the parameter for month is of a similar size as the one for the film's genre and stars). For music, researchers point to the holiday season as crucial; Bhattacharjee et al. (2007) find that music albums that are released in December enjoy, on average, a 23% longer time on the Top 100 charts than other albums. And for books, Schmidt-Stölting et al. (2011) show that sales differ between seasons in Germany, and that the seasons' commercial appeal

differs between hardcover books (for which sales are clearly lower for first quarter releases) and paperback editions (which are most successful when released in the first quarter and least successful when released in the fall).

Seasonal sales patterns not only differ between forms of entertainment and product types, but can also do so between countries. Panel B of Fig. 13.2 illustrates that a seasonal pattern exists for movie attendance in Germany too, but the pattern clearly differs from its North American counterpart. Instead of the summer peak found for North America, we note a summer *dip* in Germany, where June and July are the months with the lowest average movie attendance. Obviously, German and North American consumers decide differently when they have to trade off the cool darkness of a movie theater for sunshine. Managers need to take note of such cultural differences in sales patterns instead of applying an ethnocentric perspective.

### *Demand-Sided Versus Supply-Sided Effects*

But there might be other factors in play beyond simple variations in consumer preferences. Before Steven Spielberg's movie Jaws was released in the June of 1975 in North America, the seasonal pattern of U.S. movie viewership was much more like it is in Germany. Back then, Hollywood studios "viewed the hot weather months as a time when people were too busy traveling or frolicking outdoors and not typically inclined to go to the movies" (Canning 2010, p. 531).[371] So why was Jaws, the expensive inaugural "blockbuster" movie,[372] released in the summer, if it was considered a low-demand period? Not because of a manager's vision, but because of an accident: the movie was scheduled to be released in the winter of 1974, but ran over time and budget, and Universal, the producing studio, was too impatient to wait another 6 months to get reimbursed by moviegoers.

As we now know, the film became a huge hit despite its release date. Or was it a hit *because of* the release date? The key question here is to what degree the differences in sales we observe for an entertainment product are *caused* by the level of customer demand that exists during a certain week or month—versus *supply*-side influences. Think of self-fulfilling effects: if managers release only weak products at a certain time of the year because they *think* demand will be low, consumer demand *will* be low. Not because it

[371] See also the statistics provided by Vogel (2015, p. 94).

[372] We discuss the blockbuster concept and Jaws' role for it in our chapter on integrated entertainment marketing.

is intrinsically low, but because of the weakness of the offered products. In econometric terms, this would be a classic case of supply-sided endogeneity.

Separating the demand- and supply-sided factors at play is essential for understanding whether it makes sense to release a product in a week when demand is usually high, or to release the product at a time when demand has been low. Keep in mind that if everyone in the industry uses the same seasonal heuristic, "high-demand" seasons will face heavy competition, whereas there will be much less competition in what is widely regarded as "low-demand" seasons. In fact, there are a number of indicators that point to the existence of such supply-side effects. Figure 13.2 also displays deviations in the box office for the exact same week over the 2010–2014 period, and it is probable that these variations, which are quite strong for several weeks, were caused by the products that were released in the respective periods in a given year. Take the example of what happened when Disney released Star Wars: The Force Awakens at Christmas in 2015: the sequel broke all records and set a new all-time opening weekend record, generating $248 million in North America in its first three days (more than six times the previous record). Isn't it fascinating that the Christmas timing was once more the result of a production delay—the film was originally scheduled to be released in May, just like all six previous Star Wars films (Child 2013).[373]

Liran Einav (2007) conducted an in-depth investigation of seasonal effects, aimed at the difficult separation of demand-side and supply-side effects. Using a data set of almost 2,000 movies that were released in North American theaters between 1985 and 1999, he estimated a nested logic demand model to separate the part of success that can be attributed to the movie characteristics that determine the commercial appeal of a film (such as the production budget, advertising spending, and genres) from the "true" underlying demand effect. His findings, which he corroborates with several robustness analyses, provide evidence of the existence of supply-side effects—and that their size is managerially relevant. Specifically, he estimates that about one-third of the seasonal variation in movie ticket sales in his data is caused by the kinds of movies that managers choose to show at a given point in time.

In contrast, the other two-thirds can be attributed to differences in "true" demand, according to Einav's results. In other words, supply-sided effects (or endogeneity, technically speaking) amplify the demand effects by about 50%. So consumers' time availability matters, but there is also

[373]Completing the picture, you, our readers won't be surprised to hear that the *initial* Star Wars film was originally slated for a December 1976 release, but had to be postponed to May…

room to release products in seasons that historically have less demand. The industry has recently followed suit and now tends to release its blockbuster productions that have been traditionally considered "summer fare" in a more flexible way, and the sales numbers offer external validity for Einav's findings. Maybe the words of Jeff Goldstein, as president of Warner Bros.' film division, slightly exaggerate the market response, but they capture the essence: "There's no question it's a 12-month calendar now" (quoted in Fritz 2017).

Do such supply-sided effects also exist for other forms of entertainment than movies and other distribution channels than theaters? In general, we assume this to be the case, but the somewhat idiosyncratic nature of theatrical movie distribution patterns reminds us to be careful. Additional scholarly investigation of the matter with other products would certainly be helpful.

### *Moderating Factors*

The impact of seasonal timing on product success also depends on a number of product factors. For example, we have shown that the value of awards can differ depending on release timing; movies that win an Oscar benefit financially from that win when released at the right time of the year. This means that awards moderate the season-success link: for Oscar contenders, the average financial advantage of a fall release will be higher than for movies that have no chance at winning an award. Movie producers thus have to balance these effects with more general demand-sided considerations regarding timing.

Seasonal timing has also been shown to interact with advertising. We have reported earlier that Luan and Sudhir (2010) found that the effectiveness of advertising for a movie on DVD varies strongly with the release timing; consumers are more sensitive to advertising in high demand seasons (i.e., the holidays, Valentine's Day). This means that the economic attractiveness of releasing an entertainment product at such a point in time can be increased by high levels of advertising spending—or, vice versa, there is additional value in releasing a film that is targeted for strong advertising support in a high-demand period.

## Short-Term Timing

Finally, for some entertainment products, the short-term timing of release can have an effect on success. This timing dimension applies in particu-

lar to products that are part of a linear distribution mechanism where the consumption time is determined by the producer/distributor instead of the consumer, such as series and movies on TV, songs on radio, and movies in theaters.

For TV content, the pioneering work by Goodhardt et al. (1975) and Webster and Wakshlag (1983) stresses the role of "structural" aspects for consumers watching a specific show or film. Among these aspects are the day and time of a TV program's airing, as well as so-called "inheritance" (or "lead-in") effects that describe the role of timing relative to the previous program that precedes the program in question. Several studies point to the importance of air time and day. For example, Reddy et al. (1998), in an effort to develop an optimal scheduling algorithm for TV stations, use weekly data for 26 shows aired on a U.S. cable network. They find both certain times and days to be significantly related to ratings, an insight that Wilbur (2008) confirms with data for programs shown during prime time on the major TV networks in May 2003.

Our own PLS analysis of 674 movies shown on nationwide German TV channels gives an estimate of the quite remarkable size of such short-term timing effects (Hennig-Thurau et al. 2013). A measure of the average rating of the day-time combination at which a film was broadcast was the second strongest determinant of a film's viewership, with only the films' audience numbers in German theaters exhibiting a higher parameter.

Studies also provide evidence that "inheritance" effects matter for TV programs. A widely used empirical approach here is to study the correlations between a program's viewership ratings and those of the show that precedes it. Research usually reveals significant associations (e.g., Tiedge and Ksobiech 1986, in a study of almost 1,000 prime-time series aired during 1963–1984, find an average correlation of 0.49). But causality is once more unclear—TV managers may incorporate the effect into their decisions and choose attractive shows to lead consumers into watching other attractive shows. Wilbur (2008), while not fully accounting for the endogeneity bias caused by managers' decision heuristics, includes a program's lead-in audience in his regression to explain the program's market share, controlling for several other program and network characteristics. He finds that the lead-in parameter is significant, as also is a "lead-out" parameter (by which he intends to capture the attractiveness of the subsequent show).

Similar short-term timing effects exist for music played on the radio. Some days (weekdays) and hours (morning and meal times) are more attractive to consumers than others (weekends and evenings). Thus, radio consumption peaks early in the day (in Germany around 7am on weekdays and around 9am on weekends) and declines continuously, dropping to very low levels by the early evening (e.g., Gattringer and Klingler 2014). Lees and Wright (2013) provide evidence that "inheritance" effects also matter in this medium in a study using radio diaries by more than 1,000 consumers in New Zealand; we assume that their findings should hold for most other Western markets.

And moviegoers also have varying preferences regarding different days of the week and the hours at which they prefer to watch a movie in a theater. Figure 13.3 shows that, in 2016, the weekend accounted for about 71% of all box-office revenues. These day/time-related preferences of movie audiences imply that the way theater owners schedule their showings during the day and over the week impacts the success of each film. *Entertainment Science* scholars Jehoshua "Josh" Eliashberg, Charles "Chuck" Weinberg, and Berend Wierenga, together with colleagues, have developed SilverScreener—a complex econometric model that provides theater owners

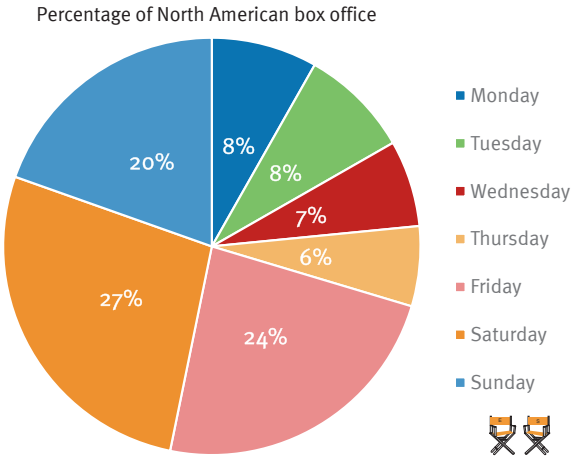


**Fig. 13.3** Average box-office revenues per day of the week
Notes: Authors' own illustration based on data from The Numbers. The percentages in the figure refer to the box office generated by the ten most successful films in a given week over the course of the year 2016. For example, the total average weekly box office was $193.7 million, so that 27% equates to about $53 million for an average Saturday (including all holidays).

with scientific support regarding their decision of when to screen a particular movie (e.g., Swami et al. 1999).[374]

Overall, these findings show that short-term timing can influence the success of entertainment products quite substantially, in addition to long-term and mid-term timing factors. But because short-term timing decisions are largely in the hands of distributors, the influence of entertainment *producers* on short-term timing is usually quite limited. The major way to exert some influence might be to do so as part of the production or distribution deal, i.e., when selling a movie to a TV network or leasing it to a theater.[375] If that does not work, then providing the distributor with convincing arguments about the perfect time slot for a product and trusting him or her to implement it might be the only tool remaining for the producer.

## Competitive Timing

Our discussion of timing effects so far focuses heavily on demand- and supply-sided effects, but has excluded the role of competition. Despite the hedonic character of entertainment (which limits the products' comparability), managers act under the assumption that competition also affects entertainment success. This is why Hollywood studios have subscribed in unison to the "Competitive Positioning" report assembled by the National Research Group (which determines consumers' awareness of and interest in seeing upcoming films and identifies potential conflicts due to competition; Epstein 2005) and reference the "Feature Release Schedule," as published by Exhibitor Relations.

In the following, we will present scholarly investigations of the extent to which competition influences the performance of entertainment products. We will then look at scholarly attempts to craft strategies for timing the release of a product in a way that accounts for competitive reactions, often drawing on the logic of economic game theory.

### How Competition Affects Entertainment Product Success

The majority of empirical scholarly work on competition effects has examined the theatrical performance of movies. Scholars create measures of the competition that existed when a certain film was theatrically released

[374]In addition to the initial study, let us recommend the articles by Eliashberg et al. (2001, 2009) for more details on their approach and its implementation.

[375]As an example of such "deals," Schwartzel (2017) reports the terms that Disney imposed on theater owners for showing The Last Jedi movie.

and then link these measures to the success of the film under scrutiny. Because these measures of competition vary across studies, results not only shed light on the degree to which competition influences movie success, but also highlight the facets of competition that deserve the most managerial attention when making release decisions.

One key facet of competition is the *similarity* of other available films. Studies provide evidence that the presence of highly similar alternatives hurts a new movie's success. Elberse and Eliashberg (2003) find a competition elasticity of −0.22 for the North American box office for the number of films in the Top 25 that are of the same genre *or* the same MPAA rating as a newly released film:[376] a 10% higher competition level reduces the theatrical success of a newly released film by about 2%, on average. In their analysis of three Western European countries, they find that competition is also significant, but less strong, whereas it is more than twice as high in the UK. When Clement et al. (2014) replicated this approach for North America and Germany with newer and larger data sets, they found very similar parameters.

But it matters how such similarity is defined. Ainslie et al. (2005), in their modeling of the diffusion of 825 movies, also find that competition, in terms of films of the same genres and ratings, matters (adding them to the analysis results reduces box office prediction errors by almost 40%). But they point out differential effects of two different kinds of similarity: releasing a new film against movies of the same *genre* hurts opening week sales and reduces the peak of sales over time. Competition in terms of *age ratings* also decreases initial sales, but then the scholars note a "displacement effect"—the audience members lost to same-rating competitors in the opening week flock to the film in subsequent weeks. With ever shorter life cycles, it remains unclear though whether there would be still enough time left today for such a "displacement" effect.

Broader competition measures that also include films that are less similar appear to be less diagnostic. Clement et al. report that the number of *any* other new releases at a movie's opening weekend (weighted with their respective ad spending) correlates with sales only about half as strongly as *similar* new releases do.[377] And Calantone et al. (2010), who use about 3,000 movies released in North American theaters between 1997 and 2004, find the usual negative correlations between same-genre competition and weekly revenues. But those between *different*-genre competition (a *very* low similarity measure) and weekly revenues are basically zero.

[376]Elberse and Eliashberg divide each film by its "age" in terms of previous weeks.

[377]In their empirical models, Clement et al. also find that this (weighted) number of all new films influenced the number of *theaters* allocated to a film by distributors/theater owners.

Clement et al. further include a competition measure that looks at *previously* released films—they find that success barely correlates with the average age of the movies against which the new movie runs. This insight points to the role of *time* for competitive effects. Gutierrez-Navratil et al. (2014) shed more light on this issue in an analysis of 2,811 movies released in five countries (the U.S., United Kingdom, France, Germany and Spain) between 2000 and 2009. They specifically study the role of competition by releases over different weeks, estimating a fixed-effects regression across the different countries. The scholars use a cross-sectional estimation approach (to minimize the endogeneity problem associated with weekly effects of competition) and measure competition as the number of all other movies that were released in a country in a given week, weighting each competitor with its own opening weekend theaters.

Their analysis then includes seven competition measures, ranging from three weeks prior to a film's release to three weeks after its release. For example, when the first Iron Man movie was released on May 2, 2008 in North America, same-week competition in the area was mainly the parallel release of Made of Honor's 2,729 theaters and the 30 theaters of Fugitive Pieces. The previous week's competition (which takes into account that not all consumers interested in a film see it during its opening week) was Baby Mama, Harold and Kumar Escape From Guantanamo Bay, and Deception, which all opened in more than 2,000 North American theaters on April 25. The scholars controlled for a movie's own opening weekend theaters in their analyses, but for no other characteristics of the film in question.

Gutierrez-Navratil et al.'s findings show that the role of competition varies quite strongly with time. Figure 13.4 reports the elasticities per release week, showing that the influence of competition peaks in the release week, and that its impact fades quickly afterward—other releases only play a role in the two weeks prior and two weeks after the release week. Competition's effect is also asymmetric, with post-release actions mattering more than what competitors do before one's film is released.

And Gutierrez-Navratil et al.'s study offers another insight: competition effects appear to be non-linear in a given week. The significant and negative nature of a squared term of the competition measure suggests that the effect of competition decreases with the number of rival products. Gutierrez-Navratil et al.'s elasticity estimate (which takes first-order and squared terms into account) for an average movie peaks at −0.18 in the opening week, quite similar to what we learned from the work of other *Entertainment Science* scholars.

We know much less about competition in other entertainment formats. One noteworthy exception comes from the work by Luan and Sudhir (2010), who study the role of competition for DVD sales. They find that competition also matters in this distribution channel—and that there are,

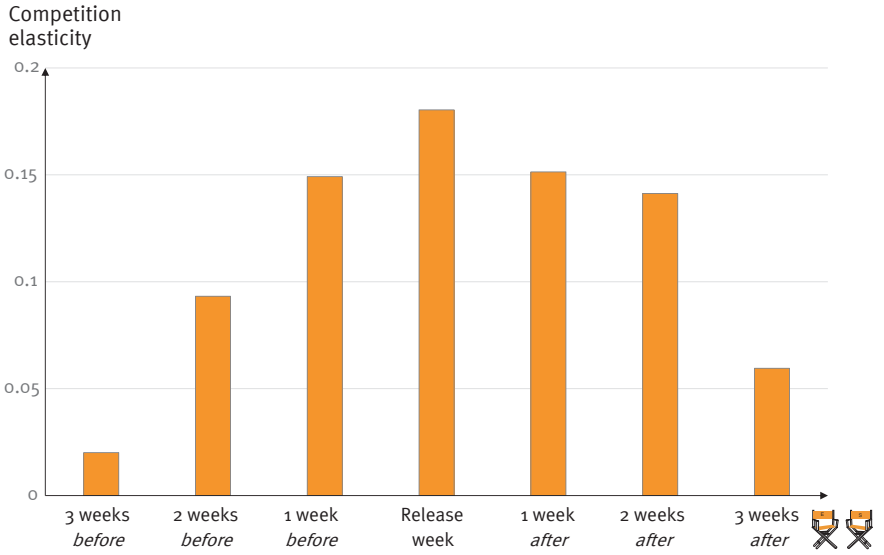


**Fig. 13.4** The effect of release, pre-release, and post-release competition for movie success
Notes: Authors' own illustration based on results reported in Gutierrez-Navratil et al. (2014). The numbers are elasticities (first and second order) of the competition in a given week on the total box office of a movie.

in this case, two different sources of competition. The first source comes from other DVD releases (the number of DVD titles released in the next two weeks, weighted by their success in theaters), which are found to have a significant, but small effect: a 10% higher between-DVD competition corresponds with a mere 0.5% decrease in sales.

The second source of competition is much higher and less expected: the authors find that DVD sales are also impacted by what is happening in *theaters* at the same time. Here, a 10% change in theatrical competition (i.e., the box office in the DVD's release week for *all* films shown) reduces the sales of a DVD by 2.2%. Luan and Sudhir's (2010, p. 454) straightforward conclusion: "studios should avoid releasing their DVDs in the same week as box office blockbusters are released."[378]

## What is the Right Time to Enter a Competitive Entertainment Market?

Understanding the impact of competitive products is certainly valuable information, as is knowing about the conditions under which substitution—the effect that underlies competition—is most strong. A related, but separate

[378]In a more general way, their findings point at inter-channel cannibalization between theaters and the sales of DVDs.

question is how a producer of entertainment should time the market entry of a new product in a competitive environment, i.e., relative timing.

A number of scholars have tackled this challenge for theatrical movie releases, treating the producer's decision as part of a "game" and drawing from game theory. Game theory is the only economic theory we can think of that Hollywood has ever honored with a leading role in a mainstream movie (and a best picture Oscar!). But be warned: A Beautiful Mind is not the most reliable source for learning about the theory itself (see, for example, Rey 2008).

An excellent example of timing research using game theory is by Krider and Weinberg (1998), who conduct a game-theoretical analysis based on a "dynamic attraction model." The scholars provide analytical (but not empirical) evidence that in a two-movie constellation in which one movie is strong and the other is weak (in terms of marketability), it is *optimal for both* movies if the weaker one delays its release, compared to both films being released in the same week.

What if both movies are more similar in terms of marketability, with one being only *slightly* more marketable than the other? For this situation, Krider and Weinberg deduce from their analysis that the same release pattern is still optimal for the (marginally) stronger film, but brings suboptimal results for the weaker movie. It is nevertheless likely to occur because the weaker movie has more to lose than the stronger one. Krider and Weinberg argue the situation constitutes what game theory refers to as a "chicken game." They compare it with a situation in which a Volkswagen van and a Greyhound bus are careening toward a head-on collision: whereas both vehicles will lose time when avoiding the other, and although each vehicle swerving would result in a stable situation, the Volkswagen has a higher probability of swerving because its driver is more likely to lose in a collision. Thus "the weaker movie, analogous to the Volkswagen, is most likely to delay its opening" (p. 8)—to swerve, so to speak.[379]

In a follow-up study, Einav (2010) builds on his separation of demand and supply effects on timing decisions for movies and develops a game-theoretical model of competitive distribution timing decisions, empirically analyzing what he calls the "movie release timing game." He uses the same set of films released between 1985 and 1999 as in his earlier study, this time combining it with release data announcements from film producers, as reported by Exhibitor Relations in their "Feature Release Schedule" report.

[379]The scholars also reflect on what can be expected to happen when both movies are *equally* liked by consumers, having similarly high playability. In this case, Krider and Weinberg conclude that it would be best for both movies to open at the same time, and early in the "season," so that their playability potentials can be fully realized. This finding might deserve a second look, though, when taking into account the lesser-than-usually argued differences in consumer demand between different release dates as reported by Einav (2007).

By drawing on his measures of "true" demand per release week (stripped of any supply-side effects), Einav estimates a model which tests whether producers adequately balance the demand at a given time with the substitution caused by competing films. His model assumes a two-player constellation in which one producer makes the first move (setting the release date for his film not knowing the other's release date), and the other then acting afterward, with full information.

His results suggest that producers, in the time frame represented by his data set, tended to overweight the impact of seasonal differences in demand, but underweight the impact of competition. As a result, too many movies were released during holiday weekends. Einav determines that this overweighting is quite substantial: to justify the clustering of releases around peak periods, the inherent demand during those periods would have to be twice as large as he finds it to be in reality. Einav's solution: a more flexible release pattern, with releases shifted away from the most clustered weeks of the year. This has been, as noted above, the direction in which the film industry has been moving.

## Changing the (Release) Time

The game-theoretic approach toward competitive timing suggests that, at least under certain conditions, those who set their release dates first have a competitive advantage over those who follow (Einav 2010). So the (film) industry has adopted a routine in which release announcements are often made years in advance, sometimes even before the script or cast of a film exist.[380] A side effect of such early determination of date is that circumstances might require a change of the release, due to delays in the creation of the product or competition-related developments. Among the almost 2,000 films in Einav's (2010) data set, the release date was changed for more than 20% of them. Most of these changes are short-term; only for about 5% of the films was the release date changed by more than five weeks (earlier or later). Announcing and changing release dates is not exclusive to movies, by the way: for example, Brad Thor's publisher switched the release date for his new book, Use of Force, from June 6, 2017, to three weeks later.[381]

[380]As just one example, Fox announced in the summer of 2017 the release dates for four Avatar sequels, none of which had started filming by then (and for most of which, we assume, no screenplay existed). Via the brand's Facebook page, they tell fans, along with industry competitors, that "The journey continues December 18, 2020, December 17, 2021, December 20, 2024 and December 19, 2025!" (*Avatar* 2017).

[381]The publisher argued it was an independent move, not a response to the announcement of star author John Grisham's new novel for the same day (Gamerman 2017).

How are such release date changes perceived by consumers and financial investors? Einav and Ravid (2009) empirically analyzed stock market reactions to release changes, focusing on those changes that affected the release date by at least 60 days (earlier or later). Their data set is a subset of the films that Einav (2007) used; it comprised 302 changes for 260 movies from 25 publically-traded entertainment companies. Using an event-study method, they measured changes in producers' stock prices after a date-change announcement, finding that financial investors, anticipating consumers' responses, react mostly negatively to date changes—regardless of whether a new date is part of the announcement or not.

The average negative impact on a firm's value in response to the announcement is $22 million. But there are strong differences between movies: for films with higher production costs, stock market reactions are significantly stronger, probably reflecting the higher losses that might occur for the producer when consumers perceive that the date change indicates a troubled production. The scholars do not investigate whether films with changed dates indeed perform more weakly at the box office—but taking these results and the less-than-usually-argued seasonal variations in consumer demand into account, entertainment producers should balance the pros and cons of very early announcements carefully instead of trying to block a time slate at all costs.

So far, we have only looked at timing decisions that affect the *initial* launch of a new entertainment product. But today, this launch is merely one facet of a new product's distribution, as products are now made available to consumers in various formats across a large number of distribution channels. Orchestrating those formats and channels represents another massive challenge for entertainment producers, with the timing of the market entry for each format being of core concern. We will dive into this topic next.

## The Multi-Channel Challenge: Orchestrating the Multiple Formats of Entertainment

> "Television: that's where movies go when they die."
>
> —*Entertainer* Bob Hope *in 1953 when hosting the first televised Oscars (quoted in* Martinez *2003)*

> "I say to you that the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone."
>
> —*Film industry lobbyist* Jack Valenti *in 1982, arguing why the VCR should be illegal in a U.S. Congressional subcommittee hearing (in Committee 1982)*

Many products and services today are distributed via multiple channels. For example, you can buy train tickets at a travel agent, at the train company's

physical outlet, via an online site, at a kiosk at the station, or from the conductor on the train. Multi-channel availability is also true for most entertainment products. But something is quite different for entertainment products versus train tickets: the different channels of distribution are not simply gateways to the exact same consumption experience, but they are often linked to a unique entertainment *format*. A train ride remains the same, regardless of through which channel the consumer purchased the ticket. But watching a movie in a theater is not quite the same as watching it on DVD or in streaming format. Each is a different format or mode of consumption for which consumers have differing preferences: some prefer the darkness of the theater, others the convenience of the living room. This is what we have in mind when we talk about distribution channels in the following pages.

Each kind of entertainment content we discuss in this book was originally made available commercially in a single format only: films in theaters, music on vinyl discs,[382] novels on printed paper, and games on machines in mall arcades or bars. Since then, technological developments, and particularly the recent advances in the digital connectivity of consumers, have made alternative formats possible for all those contents. Entertainment has been critical toward new technologies and formats from the very beginning (the introductory quotes in this section bear witness of this quite conservative attitude), but that has not slowed the popularity of the new formats with consumers, usually to the industry's own advantage.

Film producers now make multiple times the revenue from an individual movie compared to what they made when movies where released only in theaters (Epstein 2010), with the majority of revenues now coming from the many channels other than theaters (Friend 2016). Music revenues nearly doubled when the industry made their content available in CD format in the mid-1980s, in addition to via vinyl discs and cassettes (Degusta 2011); they have (finally) started to grow again as firms have begun embracing music streaming (*ifpi* 2017). Book sales have benefited from the availability of digital book formats (Anderson 2016), and games sales have reached unprecedented levels since they were made available for home use by consumers in the early 1980s (*Fandom* 2017). Jon Feltheimer, as Lionsgate executive, illustrated the plurality of formats and its importance as early as 2010: "'Weeds,' our hit show on Showtime, averages about two million viewers an

[382]We know that there was also the shellac disc and the phonautograph, but recorded music *really* became a mass market when vinyl discs were used as a storage medium.

episode but, in addition to more than $100 million in DVD revenue, it has also dominated iTunes charts… is available for streaming on Netflix's Watch Instantly service… and is sold by episode or season on Amazon, Zune, CinemaNow, Movielink and VUDU. Overall, it has already generated nearly five million digital transactions and counting" (quoted in Smith 2010).

Some might argue that the different formats of the same film, game, album, or novel are simply versions of a particular piece of entertainment content whose management we should better discuss in this book's section on "versioning" (see our pricing chapter). However, doing so would gloss over key insights. Although the price might differ between formats, it is not the focal issue. Instead, it is the *timing* that has absorbed the lion's share of the industry's discussion regarding different formats and channels.

Specifically, many entertainment products are rolled out *sequentially* across distribution channels—an approach known as "windowing" in the industry. Such sequential distribution has been at the center of both managerial and scholarly attention, as a result of the proliferation of channels and the presumed far-reaching implications any changes to the "status quo" would have for producers and distributors. In the following, we will first take an analytical look at the state of (sequential) entertainment distribution, before identifying the multiple forces that need to be carefully considered when making channel timing decisions. We will then cover empirical studies of sequential distribution which help explain how changes in the traditional distribution models would affect the industry, and who would win the most (and who might lose). Based on these insights, we will also take a look whether, and how, forms of entertainment which currently do not use sequential distribution could benefit from the approach.

## What's to be Considered When Designing the Optimal Channel Mix

### A Quick Overview of Entertainment Windows and Underlying Interests

> "Ten years from now, we'll release a film and you'll be able to consume it however you want… Do you want it in a theater? In your home? In your car?"
>
> —Yair Landau, *as vice chairman and president of Sony Pictures (quoted in* Smith *2005)*

Sequential distribution is a marketing strategy that is designed to maximize a producer's profit by making a product available to consumers in different formats in succession (see also Hennig-Thurau et al. 2007a).

Producers' profit maximization strategies almost never *fully* align with those of the distributors of their products, but joint interests in channel distribution timing of producers and distributors can be substantial. For example, book publishers and retailers have had only limited dispute over the time gap between the release of hardcover and paperback versions of printed books.

But when different formats are offered through *different* distributors, the producer's profit maximization efforts can impact those distributors differently, fueling the flames of conflict. This is why the history of sequential distribution has known some fierce battles. Consider the case of movies: whereas theater owners distribute films in their theatrical format and (only) earn profits from the corresponding revenues, retailers (or rental firms or streaming providers) capture the margins when a film is distributed through them in a home entertainment format: the traditional theater does not get anything when a film is a hit in DVD format. Theater owners thus aim for configurations that maximize theatrical revenues, whereas home entertainment distributors look for a maximization of the revenues that are generated via their respective home entertainment channel.

For movies, sequential distribution was introduced in the mid-1950s when Hollywood studios began to sell the TV rights of their films to individual TV stations (not networks). The initial theater-to-TV "window" spanned multiple years, and the first feature film to be aired in consumers' homes during prime time was MGM's The Wizard of Oz, a full *17 years* after its 1939 theatrical premiere (Dirks n.d.). But even with this delay, theater owners, along with the majority of producers, opposed the alternative movie format because they feared the generic competition between films shown in theaters and on TV; Bob Hope's quote at the beginning of this section speaks volumes about this first channel conflict.[383] The window between a movie's theatrical release and other formats of its presentation has been shrinking continuously ever since.

Today, Hollywood films are released for home consumption three to four months after their theatrical premiere, and frequent efforts are exerted by producers and new "middlemen" who want their own place in the value chain, to shorten this window even further. Recent windowing models reach as far as advocating the simultaneous release of films in theaters and home channels.

[383]For those who want to know more about the complicated historic relationship between Hollywood and TV, which raised the idea of "sequential distribution," we recommend the book by Segrave (1999).

Proposals for this strategy range from "premium VOD" services (such as the one suggested by Sean Parker's The Screening Room, in which consumers would pay $50 for a new film, as well as $150 for a special set-top box; Smith 2016) to simultaneous availability without *any* constraints. This is the recent approach for Netflix movies such as Beast of No Nation, which the streaming firm makes available to its subscribers parallel to the (usually limited) theatrical premiere, and for independent films like Margin Call, which debut on VOD before being offered in theaters (James 2015 and Miller 2012).[384] Each of these models has faced strong headwinds from theater owners who feel that their business model is threatened and have employed measures as far-reaching as boycotts of current or future releases of the studios that participate in efforts to disrupt the established sequence of windowing (e.g., Lang 2015).

In other areas of entertainment, such timing-related conflicts now also exist between producers and other value-chain members. For books, digitalization has enabled the creation of ebooks and e-readers that challenge the sequential hardcover-then-paperback model established in the 1930s, and are favored by digital retailers such as Amazon. Some publishers, most notably Simon and Schuster, a part of CBS/National Amusements, delayed the release of the digital versions of their books in 2008/2009 by up to four months after the hardcover release, in support of printed books and physical retailers, but returned to parallel releasing hardcover and digital versions.

More recently, the format competition for books has shifted from distribution timing to pricing as reflected in publishers' efforts to harmonize the prices for all formats, which reduces the attractiveness of ebooks (that were often available for lower prices, reflecting their lower production costs) for consumers. But the simultaneous release of hardcover and ebook versions has put pressure on the hardcover-paperback window, which, for some titles, is now down to six months, from the former 12-month norm (Bosman 2011). Windowing is also applied to rental offers for books (such as the flat rates offered by Amazon under different programs such as "Prime Reading"), which are designed to protect higher retail margins.[385]

[384]In a certain way, such simultaneous release would mean a return to the film industry's channel-related beginnings: on March 10 in 1933, the first motion picture was aired on TV in Los Angeles while it was still shown in theaters. We have to note that The Crooked Circle was more of a technological experiment than a business model innovation, with only a handful of consumers owning TVs at that time. It had also premiered half a year earlier in Los Angeles' theaters; the theatrical life cycle was *much* longer by then. See also Novak (2013).

[385]Offering different formats such as retail and rental versions for different prices is a kind of price discrimination, which we discuss in the following chapter.

For games and music, windowing is less prominent these days. Games were traditionally re-released in a separate hardware format, but today, producers focus on offering multiple versions of a game at the same time. Game producers see no advantage in delaying consumers' access for certain formats, so that pure digital formats are released parallel to their packaged equivalents; ailing physical game retailers cannot prevent these simultaneous releases. Most songs and music albums are now available for consumers in the format of their choice, including CD or vinyl, digital download, or stream, either as a single transaction or as part of a subscription.

But as with any other form of entertainment, this simultaneous-release model must not be taken as a given: the music industry has tampered with the idea of distribution windows for quite a while. For example, Bhatia et al. (2001), as Booz Allen Hamilton consultants, suggested a sequence from (high-priced) CDs, to (mid-priced) digital downloads, to (low-priced) digital subscriptions, arguing that this windowing model would "allow labels to protect existing revenue streams and still offer consumers new ways to purchase music" (p. 73). They proposed their model at a point in time when Napster was defanged, and the authors thought that piracy was under control. As we will discuss in a little while, history proved them wrong—and the industry put their windowing ideas aside.

But as we write this about 15 years later, music labels are now beginning to experiment with similar sequential models, although they avoid calling them that. In December 2015, singer Adele released her album 25 on CD and digital download, but not on streaming platforms (Sisario 2015); it was eventually made available (seven months later) in that format on Spotify and other streaming platforms. Whereas Adele named personal reasons for the delayed streaming release,[386] the labels studied the performance of her music closely. The results were stunning: the album sold over eight million copies in its release month and about 18 million in its first six months, during which it was not available for streaming (McIntyre 2016).

These numbers seem to illustrate the benefits of windowing for music releases—although a final judgment would also need to consider the delay's impact on streaming revenues.[387] And, beyond Adele, there is more happening in terms of sequential music distribution. In 2017, Universal imposed

[386]To quote the singer: "It's a bit disposable, streaming." In *Time* (2015).

[387]No streaming numbers have been disclosed for the album, but we saw that it did not make it to the most streamed list after becoming available on Spotify. The final assessment of a decision like Adele's is even more complicated, as we elaborate in the next section: the physical album sold *more* (not fewer) songs in the weeks following its delayed release on streaming (Caulfield 2016).

a general two-week window for its music on the advertising-based streaming of Spotify (Roettgers 2017). In addition, streaming providers make attempts to make some music available *only* through their channel, at least for a certain period, reversing the order that Adele chose—an example is Jay Z's 2017 album 4:44, which was exclusively available on streaming service Tidal for a week before it became accessible in other formats and streaming platforms.[388]

Behind most of the windowing practices (both traditional and newer) are managerial assumptions, which, as we know from discussions with various industry managers, are just that—*assumptions*. The current practices are *not* grounded in reliable empirical data or solid theories of windowing practices. And the limited empirical tests the studios have conducted use designs that are severely flawed from a methodological standpoint. Often the specific content used prevents generalization, such as in the case of Steven Soderbergh's micro-budgeted, very experimental film Bubble, which was among the first films made available on home entertainment channels at the same time it premiered in theaters (Risen 2005).

In other cases, effectiveness of the actual windowing strategy is unclear because of boycotts from theaters, as in the case of the sixth Paranormal Activity film, which was part of an "early-VOD" experiment by Paramount (Mendelson 2015). Finally, some of the experiments involve inherently unattractive offerings—we believe that very few people were surprised that offering films for $30 via AT&T's DirecTV 60 (!) days after their release in theaters did not create much excitement among consumers.

*Entertainment Science* researchers, however, have systematically explored the complex forces that need to be balanced when making multi-format distribution decisions and, acknowledging these forces, also found ways to shed robust empirical light on the intricate issue. But let us first look at the forces that determine the effectiveness of sequential distribution configurations.

## A Framework of the Forces that Determine Optimal Windows

The profitability of a distribution model for entertainment products that are sold and/or rented to consumers via multiple channels depends on a number of forces. Figure 13.5 overviews key forces, distinguishing those that are rather abstract (relating to general consumer preferences, "macro-level"

[388]See also our overview of the market for music in our chapter on entertainment business models, in which we name some other exclusive productions by streaming services.

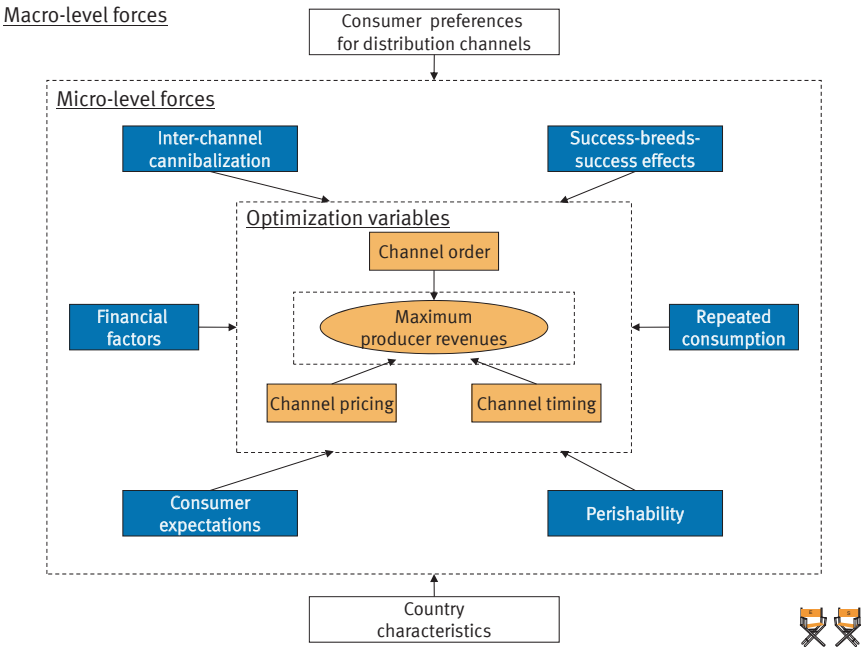


**Fig. 13.5** Forces that influence the optimality of a channel design for entertainment producers

Source: Reprinted with minor adjustments with permission from Journal of Marketing, published by the American Marketing Association, Hennig-Thurau et al. (2007c) The Last Picture Show? Timing and Order of Movie Distribution Channels, October 2007, Vol. 71, No. 4, pp. 63–83.

forces), from others that relate to more specific features of channels and their interrelationships (i.e., "micro-level" forces) (Hennig-Thurau et al. 2007a). All these forces are "given" in a certain industry setting and cannot be influenced by a single producer. However, at the figure's center are variables that the producer can indeed determine (or at least heavily influence): the order and timing of the channels, and the pricing within each channel. Because of their active nature, we call these "optimization variables."

In practice, entertainment managers will face other factors when trying to optimize distribution configurations. What about the costs of protests and boycotts by members of the entertainment value chain who oppose a particular channel sequence or configuration, or even generally fight *any* distribution changes? These aspects are matters of channel power, which we separate from our optimization discussion: we consider it more helpful to first determine the raw effects that any distribution configuration would have for producers if *no* conflict occurred, essentially applying the *ceteris paribus* approach.

This then gives us a baseline against which producers can judge the costs of a potential conflict: if I know that I would gain $100 million from a different distribution model, I would have more incentive to fight for it than if I know I would gain only $1 million. But our analysis is by no means a call to seek out such channel conflicts: instead, designing channel configurations in a way that addresses consumer interest better should enable the industry to identify models that benefit *all* parties involved in the creation of entertainment value. But being able to do that requires a better understanding of the mechanisms, which is why we use analytics and theory.[389] Let us now take a closer look at macro- and micro-level forces that we have named in Fig. 13.5.

*Macro-Level Forces*

Two general, abstract characteristics influence the financial attractiveness of a particular channel configuration for an entertainment producer: consumers' preferences for each channel and, if applying a global perspective, certain country characteristics.

*Consumers' channel-related preferences*. The more value something offers to consumers, the more those consumers are willing to pay for it. This general truth applies also to entertainment distribution channels—the more customers value a channel, the more are they willing to pay for using it. Entertainment firms have strong normative beliefs regarding what a certain channel is worth: watching a movie in a theater is "superior" to watching it on a TV screen, and experiencing a film on a smartphone is something close to a disgrace. Director Christopher Nolan received applause from many in the movie business when he said about his film Dunkirk: "[T]he only way to [carry the audience through the film] is through theatrical distribution" (quoted in Busch 2017). Similar arguments are made for music, where vinyl is often considered by managers to be the "true" medium for musical recordings and artists often disrespect streaming—Adele is certainly not alone here. And among publishers and authors, reading a book on a digital device is certainly considered inferior to a "real" printed one.

[389]Our discussion here, as in most of Part II of this book, takes the perspective of an individual producer of entertainment. Let us add that there might also be the need for an aggregate, industry-wide look at distribution configurations. Our analysis of the consumer behavior in entertainment points to the possibility that the amount of emotional and imagery processes might vary with the medium in which an entertainment product is consumed. If movies we watch in a theater have a stronger impact on us than those which we watch on Netflix (because they get more of our attention), the configuration of distribution channels might impact the relevance of filmed entertainment *as a whole*. For example, a shift from theater visits to Netflix views thus might generate higher revenues in the short term, but carry the risk of a reduction of imagery production and, subsequently, importance of movies in the longer term. A similar argument could be made for the music industry for a shift from vinyl and CDs to digital streams of music.

Those industry-insider beliefs are not driven by what consumers actually think and feel about the different channels, but much more so by the history of each medium and considerations of "objective" quality. It is not by accident that theaters, vinyl discs, and hardcover books are the industry's darlings—they were the first widely used formats, and so the artistic status of entertainment is closely tied to them, particularly for those whose personal coming-of-age is tied to their usage (which is the case for most industry leaders these days).[390]

From a scholarly perspective though, it is one thing if *artists* make such normative judgments, but quite another if producers and other managers do. Looking down on a certain channel because of its low "cultural esteem" fails to address changes in consumer preferences. We sense that culture-related arguments often serve as a straw man for reactionary thinking by producers—which is neither adequate nor helpful when it comes to shaping the present and future of entertainment.[391]

In reality, consumers' preferences are quite complex. For movies, some consumers prefer a theatrical experience (Puig 2005 quotes a moviegoer saying "I .. love the mythos of the darkened theater"), whereas others argue that 'there's no place like home,' where "nobody next to you rustles with fast-food and endlessly slurps his empty cola ice-cream, where nobody yatters and kicks you in your back with his feet" (Berlinale chief Dieter Kosslick, quoted in *epd Film* 2017).

Consumers' channel-related preferences are also dynamic. They have been particularly affected by the rise of digital technologies and the new opportunities that come with it. Streaming allows us to "binge watch" (or binge-listen) entertainment content with unprecedented convenience, and new serialized content adds value to this opportunity—and thus the streaming channel. Netflix reports that three out of four consumers who streamed all seven episodes of drama series Breaking Bad's first season did so in a single session, and that such binge-watching was even higher for seasons 2 and 3 of the show (which had *13* episodes each; Ascharya 2014).[392] Because of these

[390]See our discussion of how certain phases in a person's live shape his or her entertainment preferences (e.g., the "reminiscence bump") in our chapter on entertainment product characteristics, which also applies to the channels through which entertainment is experienced.

[391]Focusing on economic effects of channels and configurations is not the same as ignoring artists' opinions about channels. Instead, managers must be aware that their distribution decisions can also influence the "supply side" of the business—the flow of talent that wants to work with them. Thus, there is a certain similarity between the roles of artists and distributors when designing distribution models—their respective attitudes should be considered in conjunction with profitability effects.

[392]Who enjoys binging, and on what content? Schweidel and Moe (2016) are among the few scholars to shed light on the phenomenon so far. Based on an analysis of a very heterogeneous set of TV content from streaming provider Hulu (including game shows, news, and sports), they suggest that binge watching differs according to consumer traits (i.e., watching patterns), as well as with program characteristics (comedies and drama content are more likely to be "binged").

preference dynamics, entertainment producers must regularly update their distribution models. They must do so to strive to achieve profit potentials, but also to avoid threatening the relevance of their content, in general.

If people prefer spending their time at home versus in a theater, restricting a movie's availability to theaters will drive people away from movies to other forms of entertainment. Alternative choices for a person who foregoes a movie might be video games, books, or music; however, they might also turn to completely different forms of entertainment, such as social media (which most consumers today consider as a kind of entertainment on its own; Leggatt 2011) and short videos on YouTube and similar platforms. As Disney-CEO, Bob Iger has pointedly phrased this need to rethink distribution systems: "if we tried to fight [technological change] or slow it down or do anything at all aimed at deterring its impact on our business, we were going to lose that battle. … It's imperative .. that we embrace [Internet distribution channels], .. because [that is] where the consumer is today" (quoted in Ryan 2016).[393]

*Country characteristics*. We have highlighted differences that exist in the demand for entertainment products between consumers in different cultures and countries more than once in this book. Such differences almost certainly affect consumers' preferences for distribution channels. Some countries, such as France, have a century-old adoration for the institution of movie theaters, whereas in others, such as in many Asian countries, theaters lack this cultural esteem (and history); people there have a stronger inclination to watch films at home.

Related to differences in consumer behavior are infrastructure conditions that affect the quality and convenience of entertainment consumption. Streaming a movie is far less fun without a speedy broadband connection, and so consumers' interest in streaming will be lower under that condition. Convenience is tied to the effort that is required to access a channel, so that a customer's usage of a channel or format will depend on its easy availability, such as access to physical theaters, retail stores, and rental outlets. The same logic applies to the ease of having a CD or DVD shipped to the home, or shopping a printed book: if there is a Barnes and Noble Superstore around the corner, printed books will have a higher commercial outlook compared to when retail availability is lacking.

[393]This forward-looking perspective of its CEO is behind Disney's ambitions to vertically integrate and to become a provider of streaming services itself. Let us note that this does not mean that we wholeheartedly endorse Mr. Iger's *content*-related strategy to address such changing channel preferences—which focuses solely on large-scale, brand-based blockbusters ("My mantra for films is: Make them big and make them great."; quoted in Lieberman 2017).

Other culture/country parameters that need to be considered for the design of distribution configurations are local regulations and laws. Although the design of windowing in the U.S. is fully up to negotiations between market participants, French law prevents any film that has been shown in a theater from being released on VOD until four months have passed. The window for streaming platforms such as Netflix in France, the birthplace of cinema, in 2017 is three *years*. As a consequence of this legislation, Netflix does not release its films in French theaters at all and has experienced clashes with the French film industry (Wilkinson 2017). In Germany, any movie that receives government subsidies for its production faces a legal embargo of six months before it can be released on DVD or VOD, of 12 months for pay-TV, and 18 months for free-TV.[394]

*Micro-Level Forces*

The macro forces we highlighted impact the financial attractiveness of certain distribution configurations directly (e.g., consumers might switch to other forms of entertainment if their preferred channel is not available), but also indirectly because they influence certain micro-level forces. We will now take a closer look at these forces, each of which also influences the optimality of channel configurations.

*Interchannel cannibalization*. When the same content is made available in different channels, there is the risk that one channel cannibalizes the other because a "good movie is a good movie, regardless of where it's shown" (film producer Martin Bregman, quoted in Arnold 2005). Interchannel cannibalization provides an argument for postponing the release of a product in a channel that has a lower margin so as not to hurt the higher margins generated in the other (previous) channel. For books, Clerides (2002) offers evidence of such an effect and insight into its size. When he studies sales patterns for about 500 books by an American publisher that were released in both hardcover and paperback format, he finds that when the paperback release is delayed (which happened in three out of four cases), hardcovers accounted for 38% of total book sales, whereas hardcover sales are only 12% of total book sales when both formats are introduced *simultaneously.*

But cannibalization is format-specific. Chen et al. (2017) study consumers' reactions to a delayed release (by between one and eight weeks) of *ebook* versions of 99 book titles as part of a "natural experiment" that happened

[394]For an overview of recent cultural regulations for movies, take a look at MacNab et al. (2017).

when a leading publisher stopped releasing ebook versions of new releases at Amazon in spring 2010. Using a negative binomial panel regression (with weekly book sales as dependent variable), the scholars do not find significant cannibalization between ebooks and print sales. Their results show that ebook sales decline by more than 40% at U.S. book retailers in each week when a title is not immediately available at Amazon, but weekly sales of *print* books at Amazon and other retailers do *not* increase because of the unavailability of the electronic version. In other words, the (un)availability of an ebook format does not make consumers switch to the printed format, suggesting that digital-affine consumers do not really see the formats as substitutes. It's not clear though whether consumers who prefer printed books would react similarly loyal to the printed format.

For movies, scholars provided evidence that, at a time when traditional video rental by Blockbuster and others was still a viable business, video rentals could cannibalize theater attendance (e.g., Frank 1994; Lehmann and Weinberg 2000). They also found that the effect is not one-sided: attractive theater releases can hurt DVD sales in a given week (Luan and Sudhir 2010).

More recent studies show that online channels can cannibalize physical channels. Kumar et al. (2014) investigate how the unavailability of digital versions of films for rental (VOD) and purchase (Electronic Sell Through, or EST) influences DVD rentals. They made use of a "blackout" period for the digital formats (but not the DVD) that existed around 2008–2010 before a film's showing on pay-TV. For a data set of 194 movies aired at that time by the Top 4 pay-cable networks, they find with a SUR analysis that the "blackout" increases DVD sales by around 6% per week.[395] People rent the DVD because a movie is not available in a digital format.

Yu et al. (2017) study the interplay between Netflix and DVD sales, using Netflix's decision to no longer list 128 movies from Paramount, Lionsgate, and MGM in 2015 as a "natural experiment" (the films were picked up by less popular streaming service Hulu instead). A difference-in-difference model finds that from months 2 through 6 after content becomes unavailable at the streaming service, DVD sales of the films increase by 25%, on average. They calculate that this translates into an increase of about $600,000 in retail sales (about 60% of which, or $360,000, would have flowed back to the studio). Splitting the data set showed that availability on Netflix affected only more-recent titles and box office hits; for recent titles, the DVD sales increase averaged about 60%.

[395]The second equation in their model uses DVD sales as dependent variable—we will get to this in a few paragraphs.

Some additional insights on cannibalization from streaming options can be derived from a study by Ananthakrishnan et al. (2016). The scholars do not use actual SVOD consumption data, but use the free availability of episodes of the hit series Downton Abbey on TV station PBS' website and look how such availability (which can be compared to the "gratis" nature of Netflix content for the service's subscribers) influences the digital EST sales of the series. Using a fixed-effects regression, Ananthakrishnan et al. provide evidence that when PBS made Downton Abbey episodes available for a limited time frame in 2014, EST sales of those episodes of the series shrank by an average of 8.4%.

Little evidence of cannibalization exists for theatrical visits. Based on a survey of 1,200 consumers, research firm MarketCast reported in early 2016 that close to 25% of the respondents indicated that they would trade a theater visit to see a desired movie for a "$50 Day-and-Date Premium VOD service," if such an option was available (Busch 2016). But we have noted throughout the book the problems associated with such self-reported surveys, and the hypothetical "what-if" nature of the question certainly does not mitigate this concern.

However, for some entertainment formats, there is evidence that they are *not* considered as substitutes by consumers. When Weijters and Goedertier (2016) conduct a latent class analysis of Belgian music consumers, they find that more than half of the respondents are loyal to a single format, using either CD or online formats, but not both, i.e., the formats are not substitutes for them. And when Danaher et al. (2010) use NBC's withdrawal of 5,200 TV series episodes of 75 series such as Battlestar Galactica and Heroes from Apple's iTunes store (EST channel) in August 2007 as another natural experiment,[396] they find *no* switching effects for sales of physical DVDs (via Amazon.com). The physical DVD format, which contains whole seasons of a show, is not seen as a substitute for the digital show format (which is sold episode-by-episode) by most consumers. In Kumar et al.'s study of the "blackout" period of digital movie formats, they also look at DVD *sales*—and find them to benefit much less than DVD rentals from the unavailability of digital formats.[397] Obviously, consumers switch more easily when it comes to renting a movie then buying one.

[396]See Barnes (2007) for background information on NBC's content withdrawal. The authors also looked at whether the withdrawal affected *illegal* downloads—see our discussion of piracy later in this chapter.

[397]In a joint model with DVD sales and rentals, the "blackout" effect is 10% compared to the 6% when only DVD rentals are studied. But in an isolated DVD sales equation of the SUR model, the "blackout" parameter is not significant.

*Success-breeds-success (SBS) effects*. Although cannibalization is generally a negative thing, some channels can also exert a *positive* effect on others. We dedicated a whole section of this book to such action-based cascades, or SBS effects, and we recommend that managers revisit that section before making distribution decisions. In essence, the existence of SBS effects implies that the performance of an entertainment product in an earlier channel can send a signal to consumers about the existence or quality of the product, helping the product's performance in subsequent channels.[398] If a product is released simultaneously in multiple channels, such an effect between channels will be limited or non-existent.

Gong et al. (2015) find a positive spillover effect in a study of two transactional digital channels for movies (i.e., EST purchases and VOD rentals), although it does not stem from a film's success in one channel, but from a marketing measure in the other channel. The scholars conduct a 14-week field experiment to analyze how EST price reductions for 233 "catalogue" studio movies (i.e., excluding the most commercial titles) affect rental revenues. The results of a fixed effects negative binomial regression[399] show that reducing a movie's retail price *increases* rental revenues for the respective film by between 2 and 9%. Gong et al. attribute this to a "positive informational spillover effect" between the channels, i.e., price discounts for sales offers increase awareness of a product in a rental channel.

*Repeated consumption*. A second positive effect that one channel or format can have on another is that its usage can trigger a desire within the consumer for *subsequent* consumption experiences with the same entertainment product again (and again…; see also Luan 2005). Remember, though, that such repeated consumption is the exception rather than the rule in entertainment because of satiation effects.

A general argument is that rental transactions can trigger purchases, whereas the reverse is much less probable. For music albums, about half of the consumers who buy an album on vinyl have already listened to it through an online channel, such as digital streaming, which suggests that vinyl sales benefit from an album's availability in digital channels (*The Economist* 2017). For movies, Smith and Telang (2009) find that movies' DVD sales can profit from airings of the movies on free-TV. The scholars analyze DVD sales for 522 movies that were aired on over-the-air and free cable TV in the U.S. during

[398]Keep in mind that the positive statistical effect of SBS can also work *against* a product—because if the product lacks success, it is then stigmatized as a flop in later channels!

[399]The method accounts for the non-normal distribution of sales and the large number of zero sales in the weekly data.

an eight-month period in 2005–2006. Using a weekly fixed-effects regression, the scholars find a significant increase in DVD sales at Amazon.com that begins in the week a film is aired and lasts for two to three weeks.[400] Thus, watching a film on TV stimulates consumers to buy its DVD, with the effect being substantial: DVD sales increase by up to 120% (for terrestrial broadcasts) and almost 30% (for cable), on average, in the airing week, before declining afterward. Does this mean that movies should be aired earlier to stimulate home entertainment revenues? No—because the results are only valid under the conditions in which the data was gathered, they inform us that DVD sales benefit from TV airings when *several years have passed* since the movies were originally released. Not more, but also not less.

And Kumar et al. (2014), in their study of pay-TV-aired movies, also look at DVD sales. They find that sales increase by 8%, on average, after the airing of a film on a pay-TV channel, an effect the authors label the "broadcast" effect. The authors' explanation is basically the same as the one by Smith and Telang for free-TV broadcasts: buying a DVD allows the consumer to add a movie that was newly discovered on pay-TV to his collection. They find no such repeated consumption effect by TV broadcasts for DVD *rentals*, by the way—in other words, watching a movie on TV, something we consider an act of "renting" in our value creation analysis (see our chapter on entertainment business models), does not stimulate more of the same.

*Perishability*. The short life cycles of entertainment products imply that products lose attractiveness for consumers as time passes. Scholars such as Frank (1994), Lehmann and Weinberg (2000), and Prasad et al. (2004) all have thus argued that when a producer delays the release of a movie, game, or book in a channel or format, a "wear-out" or "decay" effect takes place. Industry managers have articulated a similar perception, and a decline in consumer interest has been a key argument for shortening channel windows. Bob Chapek, as Disney's home entertainment president, compared a movie to a melting ice cube: "The longer it sits, the smaller it becomes" (quoted in Dutka 2005).

In their empirical investigation of book success in Germany, Schmidt-Stölting et al. (2011) show that the sales of a book's paperback version vary with the weeks that have passed since its hardcover release. Assuming a linear time effect, they find that each week by which the paperback release is delayed, the book's paperback sales shrink by 0.7%. Considering that the mean window length in their study was 78 weeks and the average variation

[400]This effect exists only for movies that were available for purchase at Amazon.com when the airing took place. In the regression, the weeks around the airing of a film were coded 1 and then multiplied with the number of viewers, whereas all other weeks were coded 0.

was 18 weeks, shortening the window by those 18 weeks would result in a sales increase for the paperback of more than 12%. Of course, this does not tell us anything about how such a move would influence hardcover sales through cannibalization.

*Consumer expectations*. One might argue that producers could develop a profit-maximizing channel configuration based on the other micro-level forces—but open a secondary channel as soon as a specific product has fully exploited the primary one (because then no cannibalization can happen anymore). But such a perspective leaves out consumers' strategic decision making. In the context of films, Prasad et al. (2004) have argued that consumers who would prefer to watch a film in a later channel (such as home entertainment) make their decision whether to watch the film in an earlier channel (e.g., the theater) based on their *expectation* of when the film will become available in their preferred channel.

So, when producers shorten the time between a film's theatrical release and its home entertainment availability (e.g., because the film was a flop), consumers might *strategically defer* their consumption of other movies at theaters—because they expect to soon be able to rent or buy them in the channel that they prefer. Preventing such "anticipatory cannibalization" is a main argument for the current existence of a time lag of several weeks or months in which films are no longer shown in theaters, but are also not available in any other channel for consumers—and thus cannot generate any revenues at all during this "blackout." The tradeoff is that the product's economic value melts during this time period, as we have argued above.

What are the sources for consumers' channel-related expectations? They get information from retailers (who publicize release dates early on),[401] but mainly rely on personal experiences based on "industry standards." These standards are also the reason why theaters do not want producers to shorten windows for single titles, or even to *test* potential effects. Theater owners fear that the mere act of doing so could influence consumer expectations and encourage strategic deferral, with consumers bypassing the theater even when no actual shortening takes place.

*Financial factors*. In addition to consumers' channel preferences, the economic attractiveness of a specific channel configuration also varies with certain financial parameters. First, because delaying a channel opening means

[401]For example, Amazon sent emails to their German customers in the week before the movie Star Wars: Episode III was released in theaters, inviting them to preorder the DVD for the new movie. Today, the retailer often provides consumers with the opportunity to pre-order the home video format of a film at its theatrical release.

that revenues will flow back later to the producer, the industry-specific discount rate is relevant. The higher the discount rate, the more a producer should be interested in getting his or her money back early, because, all else equal, waiting for a later channel to open means losing more money.

Second, the revenues from different channels flow back to producers at different rates and under different terms. Thus, an economic perspective suggests prioritizing channels in which a producer earns higher shares over those in which others get the lion's share of the money that is generated by the entertainment product. We have glossed over the different ways revenues are shared between producers and distributors in entertainment earlier in this book and in our discussion of fixed payments. These different producer shares need to be considered[402]—even if the shortening of the window between theaters and digital home channels would result in lower total net revenues, such a change *could* still be attractive for producers if their *share* of revenues from digital home channels is substantially higher than that from theatrical box-office revenues.

## Valuing Alternative Distribution Models Empirically

The complexity of orchestrating channels results from the parallel existence of all the forces that we discussed in the previous section. In some of the empirical studies we cited, different forces were already intermingled. For example, when Smith and Telang (2009) found a positive effect of a movie's TV airing on its DVD sales due to repeated consumption, this result is essentially a "net effect," because it also incorporates the cannibalization of DVD sales by the previous showing for *some* consumers. And when Kumar et al. (2014) find that a movie's showing on pay TV has no effect on DVD *rentals*, this can also be seen as the result of oppositional forces that neutralize each other: whereas some consumers will probably avoid renting an aired film because they have already seen it (i.e., cannibalization), others may want to revisit it (i.e., repeated consumption).

We have demonstrated that such secondary data-based approaches generate insights for understanding inter-channel effects. They are much less powerful, however, for judging *alternative* channel configurations. The reason is that the variation in channel timing and order in real-world entertainment markets has been very limited, and extrapolations outside of the

[402]Let us note that doing so can be quite demanding if different allocation models have to be compared (such as fixed payments on Netflix versus a revenue share from theaters).

available field data range lack validity in general.[403] Even occasional "natural experiments" (such as the sudden unavailability of some content via a certain channel) only allow selected glimpses, as the changes studied are usually restricted to a single channel and a specific condition.

These problems are avoided by studies that have made the *modeling* of complex channel configurations the focus of their work, using insights from lab experiments to shed light on the effectiveness of channel options that have not been used in industry practice. We combined experimental insights and analytical modeling with data from a representative survey of 1,770 consumers in three countries (the U.S., Germany, and Japan) in an attempt to study simultaneously the various effects at play in complex entertainment channel systems (Hennig-Thurau et al. 2007a).

We focused on movies and studied the four major distribution channels that existed at that point in time: theaters, DVD retail, DVD rental, and EST (i.e., the sales of digital files over the Internet). The general logic of our study followed the Indiana Jones principle of "Anything Goes": we considered all possible combinations of channel order and timing. At the heart of our study was a conjoint experiment we conducted in 2005, in which we asked the participants to choose between alternative options for consuming a movie they had indicated an interest in watching via one of the four channels listed above. To ensure a high level of realism, the movies from which participants chose were nine actual films that were forthcoming at that time (e.g., X-Men 3, Chronicles of Narnia, The DaVinci Code).[404] The consumption options differed with regard to the channel, but also other key characteristics, namely the price, the availability of "extras" (like a "Making Of" featurette), and the language options. The consumers' choices in the experiment were used to extract the personal preferences of each participant regarding the different channels (measured as "conjoint part-worths"), along with his valuation of the other consumption characteristics.

We then combined that preference data with individualized information we had gleaned from the survey to tap the other forces that influence the profitability of a channel configuration (which we discussed above), such as success-breeds-success, cannibalization, and repeated purchase tendencies. For the financial forces of costs of waiting and the revenue allocation of each channel,

[403]And there is also the issue that release dates are often affected by endogeneity: for example, attractive books might have a systematically longer delay before being released in paperback format, which interferes with the measured effects of the delay length on the success of the paperback version.

[404]Each participant rated his or her interest in the films based on their posters, trailers, plots, and casts.

we made assumptions based on real-world observations.[405] Using cutting-edge conjoint techniques, for each of the three countries, we examined all 875 alternative channel configurations and determined which channel an individual consumer would have chosen. When we aggregated this information across all 500+ participants, and calculated how these choices, under the assumptions of our study, would have impacted producer revenues, we learned the following:

- Compared with the standard channel configuration that was in play at the time of our study (a six-month theatrical window followed by a release on DVD retail and rental, and another six-month window until the EST release), producers could increase their revenues substantially via alternative channel configurations. For the three countries we studied, we found configurations that promised between 11.6% and 16.2% higher revenues. In other words, considering alternative distribution models indeed bears the potential for substantial revenue increases for producers of entertainment.
- Optimal distribution configurations for producers varied strongly between countries—and probably still do. The best scenario for a producer in the U.S. was a *simultaneous* release in theaters, DVD rental, and EST,[406] followed by a DVD sales release just three months later. In Fig. 13.6, we report the resulting effects for producers (as well as the different distributors) and contrast them with the results for Germany—where the ideal model was an exclusive theatrical release, followed by a DVD retail release three months later, with another nine-month wait before a film is released on DVD rental and VOD. Consumer preferences regarding channels vary between countries, and channel solutions need to acknowledge such heterogeneity. But we acknowledge that having different distribution patterns in different parts of the world carries its own challenges, given that in today's digital age, entertainment travels fast between continents.
- In *all* the revenue-maximizing configurations for producers, at least one distributor faced shrinking revenues, and sometimes these losses would be substantial. The figure shows that in the simultaneous release scenario in the U.S., theaters would lose more than 40% of their revenues; in the producer-optimal German scenario, theaters would gain, but DVD rental would have shrunk by almost a third.

[405]Specifically, using prevailing industry averages at the time, we assumed that producers would get a 50% share of theater revenues (the remaining 50% remain with the theater owner), 60% of DVD sales revenues (40% remain with the DVD retailer), 40% of DVD rental revenues (and 60% remain with the DVD rental company), and 50% of EST revenues (with the other half remaining with the Internet company).

[406]Please keep in mind that our results reflect a time when consumer preferences for watching movies via the Internet were quite low (below 5% in importance).

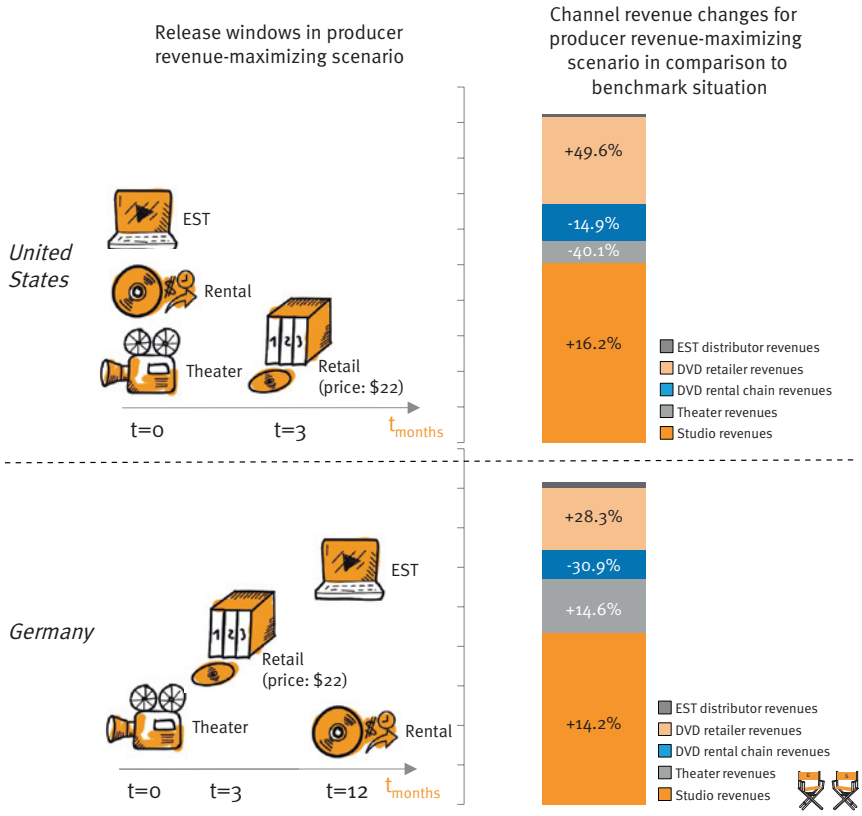


**Fig. 13.6** Channel configurations that maximize film producer revenues
Notes: Authors' own illustration based on results reported in Hennig-Thurau et al. (2007a). With graphical contributions by Studio Tense.

- "Win-win" compromise scenarios, in which producers benefit, but no other channel is hurt, also exist. For the U.S., a three-month window between theaters and DVD retail, followed by another three-month delay before a film becomes available on DVD rental and VOD, would increase the producer revenues by 7% (compared to the baseline constellation) without harming theaters. Studying the development of the market over the last decade, it seems to us that the film industry is moving toward the adoption of this type of compromise model. But compromises, by definition, require some players to forgo an even more profitable constellation for a greater good. This implies that the system will experience instability, because who doesn't want a greater slice of the pie?

The main insight from our study is that adjusting channel configurations carries the potential for higher revenues for entertainment producers—and is thus a worthwhile endeavor. At the same time, the implications of changes are extremely multifaceted and cannot be anticipated intuitively, given the complexity of the many forces at play. Given the probably hard-to-reverse consequences, changes should be evaluated thoroughly by producers and their distribution partners, with rigorous analyses.

Whereas our results were robust under the assumptions of the study,[407] our approach leaves out some aspects; the influence of *illegal* channels on a channel configuration's optimality is certainly a notable one. In a partial extension and update of our study, Burmester et al. (2016) added illegal file-sharing to the options a consumer faces when deciding whether, and through which channel, to consume an entertainment product. In addition to theater visits, DVD sales and rentals, and EST they also consider two more legal channels that have gained popularity since we conducted our study: VOD (i.e., digital rentals of movies) and Blu-ray purchases; they also offer the choice between high and low definition for VOD offers. Their revenue model, however, is a simplified version that leaves out several of the key forces we discussed earlier, and the authors take an *industry* perspective (producer plus distributors), not a producer's perspective on channel effects.[408]

When *not* accounting for illegal channels, the scholars find for a sample of about 2,500 German movie consumers that the channel configuration that maximizes revenues for the industry is a parallel release of a film in movie theaters, DVD purchases, and VOD (for a high price of 30 Euro—the equivalent of what the industry terms "premium VOD" these days). But Burmester et al.'s results are biased toward a faster release across channels because they do not account for repeated purchases or SBS effects. And does the inclusion of an illegal channel alter the results much? The scholars' answer is no: although theater visits and DVD purchase prices should be somewhat lower in such an environment (but the channels still should be made available at the same time), and VOD rentals should be introduced one month later, file sharing tends to affect every channel similarly. Burmester et al. also apply their approach to books, facing the same limitations.

[407]For example, when we estimated the actual channel configuration at the time we conducted the study, the results reproduced the "real world" quite accurately, with the estimated percentage of producer revenues resembling actual channel percentages closely (±2 percentage points).

[408]Burmester et al. (2016) calculate each channel's revenues simply by multiplying a channel's price by its "market share" from the channel-preferences determined via conjoint analysis.

In summary, although *Entertainment Science* studies do not provide a final blueprint for managers for the exact design of channel configurations, they do highlight the relevance of considering the topic. And they offer a methodological path through which realistic insights can be generated regarding the effects that changes in the timing and order of channels would have on the producers' and distributors' revenues. Not too much value should be put on the specific *results* of existing studies, as they do not fully reflect the current realities facing entertainment consumers (think of subscription streaming). Thus, general learnings are possible, but updates and extensions are recommended. The approaches developed by scholars should also warn managers to avoid overly simple conclusions: the studies we featured in this section provide us with an idea of how complex channel constellations work.

Before we move on to a more in-depth investigation of the effects of illegal channels (and how they can be dealt with as part of entertainment distribution), let us mention that a related timing problem exists for the coordination of *international* releases of entertainment products. Should a product be released simultaneously across the world (as it is usually done with games and music), or sequentially (as it is often the case with movies and books)? With cannibalization being less of an issue between (most) countries versus between channels ("geoblocking" and languages help managers to limit inter-country substitution), a key element of this problem is the existence of SBS effects between countries—something we already addressed in some detail in the communication chapter of this book.

## The Piracy Challenge: How to Deal with Competitors Who Offer One's Own Products for Free

> "It's wrong to steal. It hurts other people, and it hurts your own character."
> —Steve Jobs *(quoted in The Deadline Team 2013)*

Because entertainment products are information goods, they can be duplicated at relatively low costs. Whereas this carries massive economic advantages for their producers (who can extend supply quickly and globally, realizing enormous economies of scale), it also comes at a price: an incentive for others who do not have the legal right to copy the product to benefit from its duplication. This includes bootleggers *and* consumers, a distinction that is often blurred as the rights of the consumers are somewhat unclear for duplicating an entertainment product.

The concept that the creator of an original idea or creation is granted an exclusive right to use and distribute that idea or creation has a long history; the "Statute of Anne" (which granted the publishers and authors of written works protection from being copied by others), codified by the British parliament in 1709, is usually considered the first copyright law. Since then, producers of entertainment have long complained about copyright violations and have tried to minimize user rights, arguing that duplicates hurt the financial viability of producers and, thus, threaten any creative industry, as a whole. Consumers and their advocates, in contrast, argue that copyright should not restrict consumers' rights of usage (for example, producing backups for your own use of a product you paid for, reselling it, or lending it to a friend). And the discussion of what qualifies as legal "fair use" of copyrighted ideas is quite controversial and ongoing.

In the pre-digital age, in which entertainment products involved a material element and content was stored in analogue form, such as on an audio/video cassette or vinyl disc, producers already ran initiatives to fight duplications. Examples ranged from publicity campaigns such as "Home taping is killing music" in the U.K. in the early 1980s, when dual-cassette players were introduced (Zaleski 2016), to attempts to tax and even prohibit recording technologies (such as the tape recorder and the video recorder). However, in the pre-digital age the problem was of somewhat limited proportions because the analogue format of the content resulted in a loss of quality with every duplication, giving the original a built-in advantage over unauthorized copies.

Things changed fundamentally with the introduction of storage media such as floppy discs and CD-ROMs, CDs, and DVDs, which now contained the entertainment content in a digital format, enabling lossless copying. Further, the Internet and a growing file-sharing infrastructure then popularized the copying of all sorts of entertainment, from music and movies to books and games, in a truly unprecedented way. Peer-to-peer service Napster, founded by then-teenagers Shawn Fanning and Sean Parker and unleashed in May 1999, had 20 million users in less than a year. Complemented by new hardware technology, such as CD burners or MP3 players, downloaded files quickly became an attractive substitute for the purchase of legal entertainment products (Liebowitz 2008). Although Napster itself was short-lived in its original form, the world of entertainment had become forever different.

Napster's heritage is still omnipresent today: statistics show that consumers visited sources of illegal entertainment and software content around 179 billion times globally in 2016 (*MUSO* 2016). In the UK, 25% of those

consuming entertainment or software during a three-month period in 2016 accessed at least some of that content via illegal sources (with percentages ranging from 12% for books, to 18% for video games, 20% for music, and 24% for films; *Intellectual Property Office* 2016).

But there are also dynamics at play, and the overall trend seems to point to fewer people being attracted to illegal entertainment sources than in previous years. In the UK, the share of those who consumed illegal audio-video content and music since 2012 shrank by 23 and 13%, respectively.[409] Also, the channels through which piracy is accessed have changed. Sharing entertainment files with other consumers via the Internet is still a substantial resource, but streaming content from unofficial sources has become by far the dominant means of illegal consumption for audio-visual content. Downloading content from filehosting sites and "stream-ripping" (where consumers download content that is intended to be streamed only) have increased in popularity. Across all kinds of content, *MUSO* (2016) reports that about 60% of piracy now happens via streaming, 19% via peer-to-peer file sharing, 17% via downloads, and 4% via ripping. Our discussion of anti-piracy strategies will take these trends into account.

Industry representatives and organizations have published numerous statistics on economic piracy effects, most of which suffer from a biased nature and unrealistic assumptions (such as treating every illegal download or site visit as a lost sale). Instead of helping the industry in its fight against piracy, perhaps such numbers do the industry a disservice as they call the industry's credibility into question by journalists and consumers (see, for example, blogger Masnick 2016). Scholars, driven by academic curiosity versus commercial interests, have also investigated the piracy phenomenon and yielded rich insights regarding piracy. In the following, we first summarize what scholarly studies have found about the link between piracy and the use of legal channels and industry revenues, before we then offer insights on the drivers of entertainment piracy and, relatedly, the effectiveness of anti-piracy measures.

[409]Why then do some argue that piracy is *growing*, instead of shrinking (e.g., Steele 2015)? We speculate that this is mostly because presenting piracy as an essential threat serves their agenda; in a world that is fixated on growth, financial, political, and societal support would be much harder to get for a phenomenon of shrinking importance. Their empirical arguments usually refer not to the number of files pirated, but to the volume of *data* that is exchanged via pirate sites. This volume has indeed been growing—but such growth can be attributed more to the much larger file sizes of today's pirated copies versus those which were shared a decade ago. Just consider the development of storage media since the beginning of digital piracy: whereas early, low-resolution rips of films were between 1 and 3 gigabytes (GB) in size, the availability of high-definition versions increased the file size to about 8 GB, and 4K versions are even around 4.5 times that size.

## The Impact of Piracy

Understanding and measuring the effects that illegal sources have on consumers and their spendings for legal forms of entertainment is not trivial, as such illegal sources can have countervailing effects. We have argued, and offered some empirical evidence, that providing consumers access to samples of a product (e.g., trailers or excerpts) can help the product's commercial performance, and also that positive effects can exist between channels, caused by spillover, success-breeds-success, or repeated consumption (e.g., showing a movie on TV may increase purchases in its DVD format). Those who have tried to defend illegal channels with economic arguments have almost always claimed that these effects also apply to piracy.

But, as we will show in the following, empirical evidence shows overwhelmingly that illegal channels predominantly cannibalize legal forms of entertainment, as consumers use pirated versions as a substitute for regular, commercial offerings. This dominance of the "destructive" over the "constructive" effects of piracy is also consistent with the drastic decline of the music industry in the 2000s, which we sketched earlier in this book. But why have other industries not been affected as badly as the music industry? To some degree, this difference may be due to the more-demanding infrastructure challenges associated with transferring audio-visual film and interactive game files over the Internet. It can also be due to the rise of legal alternatives offered by disruptive services such as Netflix (for films) and Amazon (for ebooks), as well as explicit anti-piracy strategies, as we will discuss later in this chapter.

The majority of piracy-related studies have been conducted in music, where Napster & Co. first turned illegal consumption into a mass phenomenon. Broad consensus exists among scholarly studies that music piracy substantially cannibalizes industry revenues, and that piracy is the main single reason for the music industry's shrinkage.[410] Some scholars have used cross-sectional surveys in which they asked about both legal purchases and illegal consumption, and then tried to statistically isolate the effect illegal consumption has on legal purchases. Because music involvement drives both legal *and* illegal behaviors (which tends to inflate the piracy effect due to endogeneity), scholars have used instrumental variables (which should

[410]Let us clarify that "broad consensus" does *not* mean unanimity. The most prominent study which does *not* find a sales-decreasing impact of file sharing is by Oberholzer-Gee and Strumpf (2007). Other scholars, however, have pointed to "important problems with that paper" (Liebowitz 2008, p. 852).

facilitate file sharing, but not affect legal consumption)[411] instead of the raw amount of illegal consumption. Example studies are by Rob and Waldfogel (2006) who, for a survey of 419 university students, estimate that five music album downloads displace the purchase of one album, and by Zentner (2006), who studies a European sample of more than 15,000 consumers and calculates that access to file sharing reduces the probability of music purchases by 30%.

Others have estimated piracy effects based on aggregated secondary data over time. Among those is Stan Liebowitz (2008), who studied the change in cumulative album sales per consumer between 1998 and 2003 in about 100 Nielsen-defined geographic areas. He combined sales data with each area's Internet penetration, as a measure for the amount of file sharing in the area.[412] Liebowitz finds that sales and Internet penetration are strongly linked and estimates that the attractions of the Internet are responsible for an average decline of 1.55 albums sold per consumer in 2003. But how much of that effect can be attributed to *illegal* activities such as file sharing? Comparing album sales with changes of other non-Internet-based media activities (such as TV consumption), Liebowitz estimates that about 76% of that decline (or 1.19 albums) are caused by file sharing.

But, extrapolated, this amount would be more than the *actual* decline in record sales between 1998 and 2003! Liebowitz acknowledges that, pointing out that his results suggest that music revenues would have grown between 3 and 4% each year without file sharing's existence. When he later conducts a review of existing findings (Liebowitz 2016), he concludes that the majority of studies report that "file sharing explains the entire decline" (p. 19) of music sales, and that, when averaging the "raw" numbers from all studies, the share of sales decline to be attributed to file sharing is over 100%.

There is a caveat, however. Those findings are from a period when consumers had *no legal digital alternatives* to file sharing. So, does the threat of piracy persist now that consumers can consume music legally via the Internet, purchasing it on iTunes or subscribing to services such as Spotify? We get back to the role of legal streaming services for the use of illegal channels when discussing anti-piracy measures.[413] Let us add that not all kinds of music might be affected by piracy to the same extent: the findings from

[411]An example for such a variable would be the speed of a consumer's Internet connection—at a time when legal versions were not available via the Internet.

[412]For a similar approach using Nielsen's geographic areas, or "DMAs," see Chintagunta et al.'s (2010) study on word-of-mouth effects.

[413]See our discussion of unbundling and its effect on music revenues in our pricing chapter.

Lee (2018), who analyzes weekly bit torrent downloads from an undisclosed "private network" along with sales for about 2,000 albums in 2008 with a GMM panel approach, suggest that cannibalization is strongest for top-tier albums (defined in terms of sales) and weaker for less popular albums for which the creation of awareness via "sampling" might be more valuable than for albums which are widely known already.

For movies, things look quite similar when it comes to piracy effects; robust studies consistently find that piracy hurts industry revenues. When Rob and Waldfogel (2007) collect information in the spring and summer of 2005 from 470 students in two rounds of surveys, they find that the degree to which piracy cannibalizes paid consumption depends on *when* piracy happens—if piracy is the first channel through which a consumer experiences a film, a pirated viewing costs about 80% of the average paid viewing of a film. For their sample, they calculate that paid movie consumption, across legal channels, would have been about 3.5% higher—but only 5% of movie viewings happened via file sharing in their sample, which limits the generalizability of this calculation.[414]

In a study we conducted ourselves in 2006, we ensured generalizability by employing a representative quota sample of 1,075 (German) consumers (Hennig-Thurau et al. 2007b). We surveyed them three times over the course of eight months, tracking their legal and illegal consumption behaviors over the life cycle of 25 movies that were released in theaters and on DVD during that time frame.[415] We asked about both consumption intentions and actual behaviors regarding the movies; when doing so, we carefully avoided any moral or legal judgments. These steps contributed to a much higher, and more realistic, number of "unpaid" consumption experiences than in Rob and Waldfogel's study (i.e., 17% prior to DVD release). To determine whether file sharing had an effect on legal channels, we then ran logistic regressions for each legal channel and movie, in which we included the file sharing intentions and movie characteristics, such as the number of theaters in which a film was released and its quality rating by IMDb users.[416]

So, what did we find? File sharing substantially hurt legal consumption, and did so not only for theaters, but also for DVD sales and DVD rental. Simulations show that in the absence of illegal channels (and corresponding

[414]In addition to the convenience sample, another factor limiting the study's generalizability was that the participants had to recall a period of *three years* of movie watching, which probably caused a potential memory bias.

[415]770 of the respondents participated in all three survey rounds.

[416]Specifically, we used ReLogit regression—a specific variation of logistic regressions which accounts for the large number of zeros (non-viewings) in our data set.

intentions to use them), theater revenues would have been almost 13% higher, DVD sales would have been almost 15% higher, and DVD rental revenues would have gained more than 10.5%. Figure 13.7 also shows the corresponding annual dollar amounts for the German market (in 2007 value), which are substantial. Interestingly, we find that it is not mainly the actual file sharing that cannibalizes revenues—instead, the consumers' *intentions* to watch a free copy of a movie are responsible for the majority of the financial loss attributed to piracy, regardless of whether the consumer actually follows through accessing the illegal copy.

These results are in line with those of Ma et al. (2016), who used secondary data for 533 movies released in North America between 2006 and 2008, and included the time when a pirated version of a movie became available. They build on Eliashberg et al.'s (2000) MOVIEMOD prediction model of movie success,[417] which they adapt for the existence of pirated versions of a film as an alternative for a theater visit. The scholars then calibrate the model parameters with a Markov chain Monte Carlo algorithm.

Their estimations suggest that all movies would have fared better at the box office if illegal formats had not been available, showing a loss of 15% (or about $1.3 billion) per year for the 2006–2008 period and a similarly sized one for 2011–2013. An interesting facet of their approach is that it allows, under the model's assumptions about consumers' decision-making processes, to separate potential positive, demand-enhancing effects of piracy and negative cannibalization effects. When disentangling these effects, Ma et al. find a small positive "sampling" effect of pirated content of 1.5%, which, however, is dominated by the larger number of consumers who prefer the free copy over seeing a movie in theaters.

Games and books have received less scholarly attention regarding how piracy influences industry revenues (see also Watson et al. 2015). We know, though, that game and book markets have developed in ways that limit the destructive effects of piracy, which now seems to be less of a threat for these products (e.g., Depoorter 2014). In contrast to films and music, games are not well suited to be streamed, so they benefit from the recent shift in piracy media from file sharing toward streaming, a change that also reduces piracy of books. In the following section, we demonstrate this shift was not accidental, but at least partly the consequence of strategic industry moves.

[417]See our discussion of the MOVIEMOD approach in the innovation management chapter of this book.

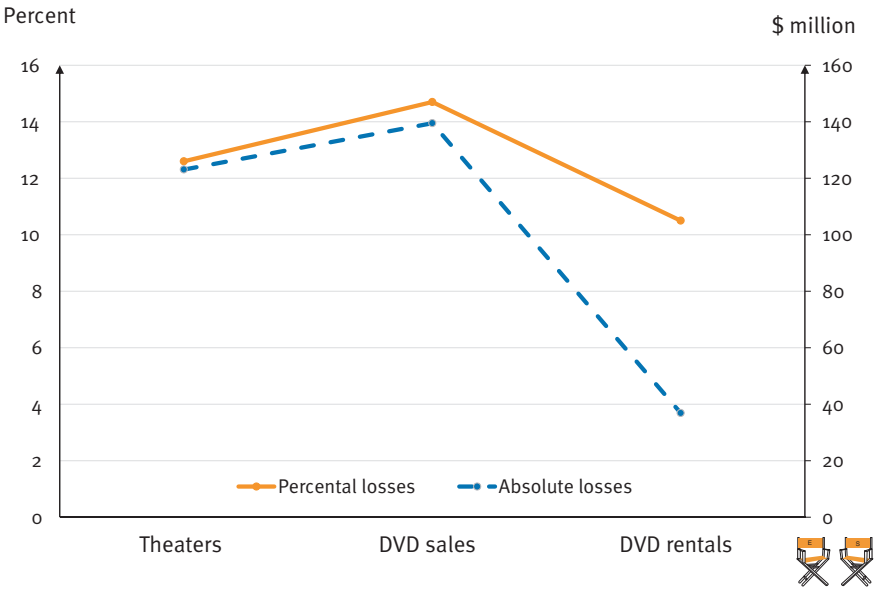


**Fig. 13.7** How file sharing impacts German movie revenues
Notes: Authors' own illustration based on results reported in Hennig-Thurau et al. (2007b). Dollar amounts are transformations of the original Euro amounts in the study; they are not adjusted for inflation.

## How to Fight Entertainment Piracy

Theories and empirical results can also offer some help for finding ways to counter piracy. Let us provide you with a theory-based, systematic look at the determinants of piracy and distill their relative influences on consumers, as reported by empirical studies. We then discuss the effectiveness of selected anti-piracy strategies for entertainment products, again combining theoretical arguments and empirical insights.

### Why and When Do Consumers Prefer the Illegal Copy Over the Original?

One approach to understanding the factors that determine a consumer's decision to engage in piracy is taking an economic utility standpoint. Doing so tells us that legal and illegal formats of any entertainment product are alternatives between which a consumer chooses when making a consumption decision. According to economic utility logic, consumers

prefer a pirated format (over the legal one) when they perceive it to offer greater utility.

The first application of a utility perspective to piracy traces back to French scholars Rochelandet and Le Guel (2005), who applied the utility logic to music consumption. They used logistic regression and found that, among other factors, moral costs a consumer faces lower the likelihood of file sharing, whereas his or her Internet skills (which lower the consumer's transaction costs to engage in piracy) increase it. We extended their ideas into a consumer utility framework of piracy, introducing a set of categories that determine consumers' utility perceptions of legal and pirated formats and, subsequently, consumers' piracy behavior (Hennig-Thurau et al. 2007b). The framework consists of four main categories of piracy determinants:

- The *utility* consumers expect to derive from the *legal format*, including both the gross utility and the costs associated with its consumption. The higher the legal format's utility, the less a consumer will be inclined to prefer the illegal copy.
- The *costs* consumers associate with the acquisition and consumption of the *pirated format*. The general logic here is that the higher the costs of the illegal format, the lower its utility and the less a consumer will be inclined to prefer the illegal copy. Higher knowledge about file sharing enables consumers to expend less effort to retrieve illegal copies, thereby making them more attractive.
- The *specific utility of the illegal format*. The higher such utility, the more a consumer will be inclined to prefer the illegal copy.
- Finally, the degree to which consumers consider the legal and the pirated format as *substitutes*. The lesser the perceived degree of substitutability, the less a consumer will be inclined to prefer the illegal copy.

The exact variables in each of the categories will differ somewhat between entertainment forms and products. When buying a CD at an online retailer, other kinds of costs can accrue compared to those for watching a movie in a theater, where one has to find a parking spot and pay for a babysitter at home. Figure 13.8 shows the different specific variables for each of the framework's four categories for the movie context, when the consumer has to choose between going out to the theater to watch a film or accessing a file-sharing version of it (Hennig-Thurau et al. 2007b).

The figure also contains the results of an empirical test we ran for a sample of 813 German consumers. Using partial least squares, we analyzed how each of the proposed drivers of file sharing is associated with consumers

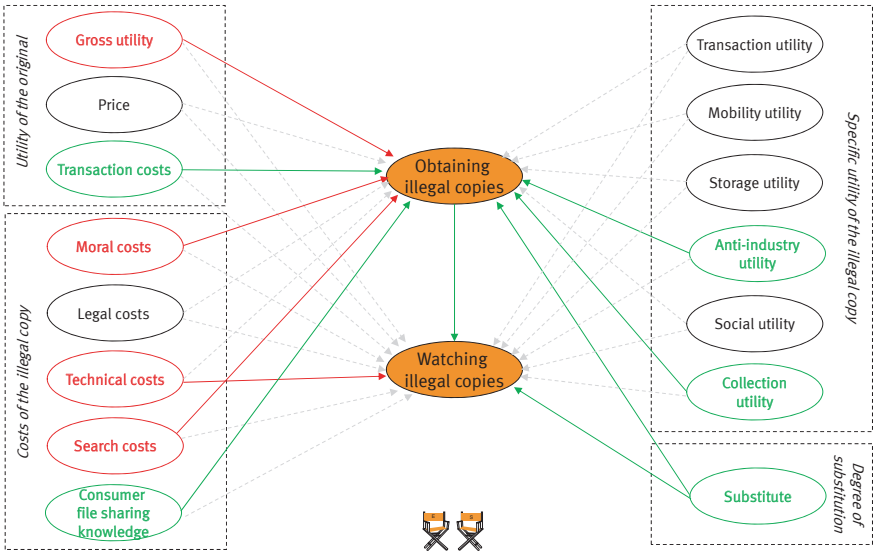


**Fig. 13.8** Drivers of movie piracy
Notes: Authors' own illustration based on results reported in Hennig-Thurau et al. (2007b). Green arrows mean that higher values for one variable increase the value of the other variable, whereas red arrows mean that higher values for one variable lower the value of the other. Grey arrows are not statistically significant.

obtaining and watching an illegal movie copy. Data showed that among the features of the theatrical movie, the transaction costs (such as parking and the sitter's pay) facilitate sharing most strongly, followed by the theater visit's utility (which reduces file sharing); the price of the ticket was not significant (probably because it's largely constant for movies).

The costs associated with the illegal copy also matter strongly for our sample: consumers' search costs and their knowledge about file sharing are among the strongest piracy drivers. Moral costs and technical costs (such as the risk of the copy being virus-infected) also determine file sharing. The legal costs, however, do not influence our respondents; we assume that, at least at the time we collected our data, the risk of getting sued was too abstract to prevent consumers from consuming illegal copies. We will get back to this important issue in the next section.

But we also learn that illegal copies can offer benefits that consumers do not see in legal formats, and that these trigger file sharing quite strongly. In our case, the collection utility is a main driver—illegal copies enable consumers to live out their desire to have large repertoires of films at hand. Note that we collected our data before legal digital copies and archives were available, namely subscription services such as Netflix, which provide a consumer

with instant access to large numbers of films. And we see that piracy can be an act of protest; the more critical people's attitudes are toward the film industry and its treatment of consumers, the more they are willing to circumvent its legal offers. Finally, the results confirm our argument that the more consumers consider an illegal format as a "full substitute" (versus an imperfect knock-off), the more they tend to prefer it over the legal format.

Overall, our model explains about 20% of file sharing intentions, leaving room for more in-depth studies. Watson et al. (2015) provide a broad review of additional scholarly insights on file-sharing drivers, covering studies on all forms of entertainment, as well as software. From 195 studies, they largely stress the relevance of the categories and variables we discussed above, with few additional explanations being provided. We thus conclude that these determinants will provide a good start for understanding entertainment piracy.

Knowing these factors that influence consumers' decision to engage in piracy is also a prerequisite for developing effective strategies to counter piracy behavior for entertainment products. In the final section of this chapter on distribution decisions in entertainment, let us now explore which anti-piracy strategies are the most promising, and which do not work so well.

## Some Thoughts (and Findings) on Anti-Piracy Strategies in Entertainment

Over the last decades, the entertainment industry has developed a number of different approaches to counter illegal consumption, targeting various aspects of the piracy framework we laid out above. *Entertainment Science* scholars have empirically tested several of these strategies' effectiveness, offering feedback which enables the industry to recalibrate their efforts. Here is what scholars have found.

*Strategies that increase the attractiveness of legal formats*. When digital formats for storing entertainment such as MP3 became available by the late 1990s, the industry was hesitant to use them out of a desire to avoid spoiling the existing value chain of formats and channels. Consequently, fully digital formats of entertainment products were only available illegally, a condition that is widely considered a major reason for the collapse of music sales. With the exception of video games, traditional entertainment producers remained hesitant for many years to foster new digital formats, such as legal downloads and VOD, that would provide consumers with the same utility to which they had become accustomed from illegal competitors.

Thus (and luckily for producers of entertainment *and* for consumers), companies from outside the industry filled the vacuum. Apple provided songs and albums (and later movies) for sale via iTunes from 2001 on, Spotify began to offer a legal music flat rate, and Netflix popularized legal streaming of films and series. All these offers were considered valuable by consumers with regard to price and quality, but they also copied the benefits of the *illegal* offers (e.g., access via the Internet, anytime access to large repertoires in the case of Spotify and Netflix). It was only afterward that the studios embraced such formats, and some still do so only halfheartedly. So, although we describe this rise of new entertainment formats as a "strategy," let us note that it was one that was mostly forced upon the industry's traditional players rather than being actively originated by them.

Some empirical evidence for the effectiveness of fighting piracy by offering *attractive* legal formats has been compiled by scholars. Poort and Weda (2015), in representative Dutch surveys from 2008 and 2012, find indications that the availability of titles, price, and the technical quality of legal offers are crucial factors for getting consumers to switch from illegal to legal formats. More rigorous insights come from Sinha and Mandel (2008) via a series of lab experiments in which they manipulate the features of a legal music web site and then measure participants' "likelihood to pirate." In particular, for a sample of 165 business students, the authors find that a "high functionality" website reduces the students' likelihood to pirate quite substantially (by 27%) compared to a "low functionality" website; even a "medium functionality" website was beneficial, reducing the likelihood of piracy by 17%.

Do you remember Movielink, the Hollywood studios' early failed effort to establish a legal alternative to illegal downloads of movies? The joint venture of five studios, launched in 2002, offered a very limited selection (the initial list was just 175 titles, all of which were already available in rental stores for several months), only rentals, and also restricted watching films to computers, with a focus on security instead of usability (Harmon 2002). Looking at the scholarly findings reported above, we now can be pretty sure why the effort did not resonate more with consumers.

Sinha and Mandel's findings are nicely complemented by an analysis of actual market data by Danaher et al. (2010), who investigated the impact of NBC's removal of a large arsenal of TV series episodes from Apple's iTunes store. In addition to examining the impact of that action on DVD sales of the removed titles, they also studied the amount of piracy for this content. Using a BitTorrent tracker to measure piracy over time, Brett Danaher and his colleagues treated NBC's content removal as a natural experiment and

used the content's availability on iTunes for explaining the number of daily illegal downloads. An OLS regression, in which the scholars control for the changes in piracy for other content in the same time period (whose availability on iTunes did *not* change) reveals that piracy of NBC content increased by 11.4% in the two weeks after the closure of the legal format—they measured 48,000 additional illegal downloads per day. And that number is not the upper limit: for certain kinds of content, such as comedy and sci-fi, which appeal mostly to younger, more piracy-affine consumers, the increase is as high as 20%.

We have noted that film studios have begun to consider popular SVOD platforms, and Netflix in particular, as a threat, despite profiting from selling licenses to them. de Matos et al. (2017) indicate that they also benefit from reduced piracy because of these services. Based on a field experiment conducted in an undisclosed country in which a telecommunications firm provides its customers an "SVOD-like" package of movies and series for free, the scholars matched consumer IPs with BitTorrent traffic to study how the legal package influenced consumers' upload and download Torrent traffic. For those consumers whose preferences fit with the movies included in the "SVOD" package, they find that upstreams decrease by almost 50% (downstreams saw less of a decrease, which might be attributed to study limitations, though).[418] But their results also show that content value definitely matters—if the legal content does *not* match a pirate's preferences, no reduction of piracy is found.

And there might even be another positive effect of opening these digital channels that are so popular among consumers: they might help to improve the industry's reputation. Keep in mind that we found that a bad reputation drives piracy, with piracy becoming an act of "revenge." Because of its refusal to open up its models to new technologies, entertainment firms do not hold a sterling reputation among consumers as being customer focused—instead, they have been associated with "friction and customer alienation" (Lasica 2005, p. 4). Making their products available in new formats such as Spotify and Netflix (even if this might have been someone else's idea) might reduce consumers' anti-industry attitudes and, consequently, their use of illegal copies.

*Strategies that increase the costs of illegal formats*. Opening legal digital channels that meet consumers' expectations for accessing an entertainment product might reduce piracy by switching effects and a potential increase

[418]de Mathos et al. determine the preference fit with the overlap of automatically created recommendations for a user and the inclusion of such recommendations in the "SVOD" package.

in industry reputation. But remember that entertainment choices are also very often about network effects, in which the value a consumer gets from a product increases with the number of other users of a product or the platform on which it is offered. This economic logic also applies directly to file sharing networks: an increase in the attractiveness of legal formats reduces the attractiveness of illegal formats by shrinking the illegal network in terms of the people who make content available, limiting the number of available pirated copies of a product. That, in turn, then increases the consumers' search costs for illegal formats (see also Depoorter 2014).

But there also are other, more active strategies that are targeted at increasing the costs of pirated versions. One of them has been to increase the search costs of pirated copies for consumers *by shortening supply*. Danaher and Smith (2014) investigate how the January 2012 shutdown of the global piracy site Megaupload.com, then a leading platform of piracy activity that was responsible for about a remarkable 4% of global Internet traffic, affected the digital sales and rental revenues of two film studios.[419] The authors measured how Megaupload's share of total Internet traffic varies across countries: they estimate the legal movie revenues in a country in a given week as the result of the country's Megaupload Internet share in that week. An OLS regression provides clear support for the existence of the expected impact: Danaher and Smith calculate that the site's shutdown resulted in 6.5–8.5% higher total digital revenues over the 18 weeks after the shutdown in 12 countries. They find that the size of the effect was comparable for sales and rental transactions.

Increasing consumers' search costs by limiting access to illegal content is also the logic behind "Digital Rights Management" measures, or DRM. In the case of DRM, however, the target is not the platform through which illegal content can be distributed for free, but the consumer who has *paid* to access entertainment content legally. DRM restricts the consumer's own usage of the obtained content to prevent others from accessing the content without paying for it. DRM can either take the form of limiting the number of devices on which a song can be heard or a film can be played (i.e., "individual" DRM) or the consumer's ability to distribute the purchased content to others, such as by limiting the number of shares (i.e., "shared" DRM). Essentially, such behaviors are equated with sharing content with unknown others via file sharing or filehosting sites.

[419]For some background information on the Megaupload case, see, for example, Gross (2012).

We don't want to discuss the industry's moral right to do so here, but instead to see if increasing consumers' search costs via DRM is an effective strategy. The trouble with DRM is that it not only lowers the net utility of any copy for those who have not yet purchased it (because of higher search costs)—but it might also lower the utility of the *legal* format, which we know is a key driver of piracy. Sinha et al. (2010) provide empirical evidence for the problematic nature of DRM for entertainment; they draw on reactance theory (Brehm 1966),[420] arguing that DRM is perceived as a threat to consumers' personal freedom to enjoy music; they also report some descriptive statistics that support this logic.

Based on two lab experiments with 800 and 1,300 students in which they systematically vary individual and shared DRM of music, they conclude that DRM strongly reduces the utility that consumers derive from *purchasing* music. They argue that this finding starkly contrasts with the lack of evidence for DRM's ability to reduce the number of available free copies. The scholars find particularly strong effects for "shared" DRM, the *removal* of which not only increases consumers' willingness to pay for digital music, but also turns consumers from pirates into paying consumers of legal music formats. Individual DRM, in comparison, has neither a positive nor a negative effect on consumers. Based on these results, Sinha et al. conclude that "pursuing a pure DRM-free or significantly relaxed DRM strategy may be optimal" (p. 51).

A different approach for raising the costs of illegal copies for consumers is through increased *technological burdens*. This strategy has been considered a major reason for the reduced piracy for console games. Running illegal copies on a PlayStation or Xbox mandates hardware modifications that require expertise and time and carry the risk of voiding a warranty. The oligopoly of consoles hardware makes it difficult for the consumer to circumvent such restrictions by using third-party technology, something that is much easier to achieve with PCs (for which piracy is a much bigger issue; see Depoorter 2014). This is also the reason why film producers have been so concerned about interfaces like Popcorn Time that have made "accessing pirated content as easy as turning on Netflix" (Thielman 2015).

We have noted that the *legal costs* of using illegal copies are another determinant of piracy. Although we did not find that consumers were influenced by costs in our study from the mid-2000s, several legal approaches have been implemented since then across the world. These legal strategies differ extensively in their specific goals and approaches, so results are difficult to

[420]See also our discussion of reactance theory in the context of (too many) brand placements in our chapter on entertainment business models.

generalize. Danaher et al. (2014) studied the French "Hadopi" law, which passed the French parliament in May 2009. It is a "graduated response system" that considers a three-stage governmental intervention to piracy, ranging from email notification to rigid penalties such as Internet suspension.

The scholars compare how the law influenced legal sales of digital music on iTunes by comparing sales trends in France to a control group of other European countries in which no piracy-related policy changes happened during the same period. They study differences between actual and "normal" revenues (simulated sales in France without the new law which they derived from the other countries). Danaher et al. conclude that digital song and album revenues via iTunes were about 22–25% higher in the two years after the law took effect, the equivalent of nearly 14 million Euro. They also estimate a differential impact for music genres; "younger" and more "piracy-affine" genres like rap and hip-hop experienced an even higher revenue bump of 30% in their models, whereas less "piracy-affine" genres (such as jazz) generated only about 7% more due to the higher legal costs caused by the law.

But let us note that there might be a side effect of increasing legal costs. In their experimental analysis of consumer reactions to file sharing measures, Sinha and Mandel (2008) also manipulate consumers' risks from engaging in illegal consumption. Whereas consumers who tend to avoid risking legal threats have a lower tendency to engage in piracy when the risk is high, no such effect was found for consumers who have a high need for stimulation ("sensation seekers"). Their likelihood to pirate was even about 6% *higher* (although not statistically significant) when legal threats were high!

A final approach to deal with piracy is *strategic (re)targeting*: a strategy that has been successfully practiced by producers of console games. Our previous discussion reported only the *average* importance of piracy determinants across consumers, but the video game industry has built on the assumption that these importances vary between consumer segments. For example, whereas teenagers will be price sensitive (because of small personal budgets) and relatively insensitive toward measures that raise the costs of pirated content, this is not the case for older consumers, who more highly value convenience (and will not engage in piracy if it's inconvenient).

Over the last decade, the games industry has successfully shifted its focus from teens to adults, at least for console games, and drastically reduced piracy for this format. Less tech-savvy adults resist "jailbreaking" their consoles, and instead prefer spending $60 for a game that can be accessed in an easier and less time-consuming way. Now compare this to the film industry, whose products are mainly targeted at teens whose piracy affinity is much

more difficult to counter—with a strong intensifying trend toward such segments.[421] In digital times in which entertainment producers cannot avoid competing against illegal copies of their products, putting heavy focus on a consumer segment that tends to prefer "cheap" over "inconvenient" may not turn out to be the most effective approach.

## Concluding Comments

The digitalization of entertainment products has dramatically reshaped entertainment distribution. In this chapter, we have shed light on three fundamental distribution-related issues that entertainment managers are dealing with today, based on insights generated by theoretical and empirical studies: the timing of a new product's initial release, the orchestration of the plethora of channels that today exist for most entertainment products, and the threat of illegal offerings.

Scholarly research shows that descriptive statistics on the commercial potential of certain release periods are misleading, as they combine demand-sided influences with supply-sided effects caused by managers themselves—just another case of endogeneity that should be taken into account when deciding when to release a new product. We also pointed to findings by *Entertainment Science* scholars on the role of competition (when does it matter? How should it be defined and measured?) and game-theoretical learning about how to deal with it.

We provided a useful framework for determining channel configurations. The current distribution models are based on decade-old logic, with resistance toward change being the main force behind them. The industry has tampered with new models, but in an ad-hoc way, and we agree with critical voices from within the industry that such power-driven changes could massively harm entertainment, at least in the longer run. We showed that scholars have taken a much more systematic approach by identifying the macro- and micro-level factors that should be considered when valuing alternative distribution models. Approaches that consider these factors indicate that huge gains are available for the producer at the cost of certain distributors, but that also distribution models exist in which producers win, but no distributor loses. The main learning here is that solutions inspired by *Entertainment Science*, that account for the hyper-complex channel relations that exist in today's entertainment world, should be preferred over gut-feeling-based approaches.

[421] See also our discussion of where the industry is heading in our chapter on integrated entertainment marketing.

We compiled evidence that piracy remains a major threat that entertainment firms have to deal with, but whose role today should not be exaggerated. We summarized rich insights into the drivers of consumer piracy, which also should guide managers when developing anti-piracy measures. The evidence is pretty clear that increasing the utility (and/or decreasing the costs) of legal copies is a promising path—one that entertainment firms have neglected for a long time in efforts to protect their traditional channels and which they still seem to be embracing only half-heartedly. These strategies also come with the side benefit of enhancing the entertainment firm's reputation, which further decreases consumers' motivations to pirate their content. Strategies that focus on blocking access to pirated content seem to support such efforts, whereas approaches that reduce the value of the legal product by adding restrictions are not recommended.

Having looked at product, promotion (communication), and now place (distribution) issues, we turn to the last "P" of the marketing puzzle, the pricing of entertainment content. Pricing may be the most underdeveloped component of the marketing mix in entertainment, but we will show in the next chapter that good reasons exist to pursue progress in pricing.

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