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Find Your Niches: A Guide for Managing Intermedia Effects Among Content Distribution Channels

Florian Mann [a], Rolf Mahnke [b] & Thomas Hess [b]

[a] Burda Digital GmbH, Germany

[b] Institute for Information Systems and New Media, LMU Munich School of Management, Germany

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Find Your Niches: A Guide for Managing Intermedia Effects Among Content Distribution Channels

FLORIAN MANN
Burda Digital GmbH, Germany

ROLF MAHNKE and THOMAS HESS
Institute for Information Systems and New Media, LMU Munich School of Management, Germany

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Content providers such as movie studios that embrace the Internet as an additional distribution channel are encountering the issue of measuring *and* managing *intermedia effects. In multichannel distribution arrangements, content owners and distributors must know whether channels will cannibalize or complement one another and the circumstances under which such behavior will occur. With this knowledge, content providers can depart from merely* describing *cross-media effects and move toward* managing *cross-media. The authors present a five-step guide for measuring and managing cross-media effects on media content in multichannel distribution environments. The analytical framework builds on the ecological theory of the niche, which states that the intensity of intermedia competition depends on the degree of differentiation among channels. This framework is the first attempt to combine niche theory with conjoint analysis to develop a method of data collection and analysis. The use of the five-step guide is demonstrated with preference data from a quantitative survey of 552 potential consumers of digital movies.*

THE UNSOLVED ISSUE OF MANAGING INTERMEDIA EFFECTS

The general approach to content distribution has fundamentally changed with the emergence of ubiquitous broadband, the mobile Web, and services

Address correspondence to Dr. Florian Mann, Burda Digital GmbH, Arabellastr. 23, 81925 Munich, Germany. E-mail: florian.mann@burda.com

that are based on these technologies. Media companies have a larger set of potential distribution channels from which to choose. As demonstrated in the past, embracing new channels for content distribution has frequently affected the distribution power of established channels. Thus, content providers are confronting the issue of coordinating the chosen set of distribution channels to optimize revenues.

In both research and practice, the issue of cross-media effects has arisen repeatedly in the past. This issue always appears when a new medium that is believed to have considerable substitution potential is established. For instance, prior studies have concentrated on the influence of radio (Lazarsfeld, 1940), television (Belson, 1961), and video recorders (Henke & Donohue, 1989) on the media consumption patterns of users. Recently, the Internet has increasingly become the object of investigation in studies that address the effects of media interaction (Coffey & Stipp, 1997; Ferguson & Perse, 2000). In particular, numerous academic works that study the mutual effects of traditional and Internet-based movie distribution structures embrace cinema, vision carriers (such as Digital Versatile Discs—DVDs), and (pay) TV. Remarkably, the findings on interaction effects (e.g., substitution or complementarity) are highly diverse. Although the authors of several studies have concluded that Internet-based distribution channels primarily have positive effects on traditional channels (e.g., Smith & Telang, 2009; Danaher, Dhanasobhon, Smith, & Telang, 2010; Hennig-Thurau, Henning, & Sattler, 2007), other studies have argued the opposite (e.g., Das, 2008; De Vany & Walls, 2007; Rob & Waldfogel, 2007). Thus, the results of research on intermedia effects are highly heterogeneous. A general theory is far from being established.

A similar picture emerges when approaching the issue of intermedia effects on movie distribution from a practical perspective. Currently, most of the established exploitation chains for movies follow the scheme of the "windowing strategy." First, films are typically released in major theater chains because such releases enable studios to generate the highest revenues in the least amount of time. The remaining distribution channels are then "cascaded" depending on their anticipated revenue potential. Theatrical releases are typically followed by DVD/Blu-ray, pay TV, and finally broadcast TV (Owen & Wildman, 1992; Vogel, 1994). Typically, delays of 3–6 months are applied for the arrangement of each individual exploitation window. In addition to the previously mentioned distribution channels, studios also establish Internet-based services, such as electronic sell-through (EST) and video on demand (VOD). The optimal integration and placement of these new channels within the established distribution framework has not yet been defined. Meanwhile, Internet distribution imposes pressure on the current windowing logic, and fundamental shifts are expected (Eliashberg, Elberse, & Leenders, 2006).

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However, at the moment, Internet-based distribution channels live a shadowy existence. Providers adhere to the established exploitation chain to the greatest extent possible because they may be concerned about the potential substitution effects of established channels. In other words, providers can neither estimate nor control the interaction effects of parallel distribution channels.

This article offers a solution to this research gap by employing a new approach. Although the core of the issue that is discussed in this article is similar to that of earlier studies, our approach differs considerably. This article is focused on the *situational management* of intermedia effects rather than the *description* and analysis of these effects. For this reason, the formulation "A Guide . . ." has been used in the title. In general terms, every content provider aims to enhance sales performance when distributing content over more than one channel. Optimal sales performance can be achieved by creating complementarity and avoiding substitution among multiple distribution channels. This study intends to develop a theoretically sound guideline that is able to assist media companies in optimizing their multichannel distribution setups. Our central concern is to assist these companies in controlling intermedia effects by inducing complementarity while avoiding substitution to the great extent possible. In this work, substitution is defined as one medium (e.g., video on demand) that draws users away from another medium (e.g., movie theaters). Complementarity implies the supplementary use of several types of media. To reduce complexity and to maximize the extent to which our guide can be generalized, we focus on the concept of the *utility* of media products rather than on performance indicators, such as revenue or profit. User perceptions of the utility of a media product can be considered a proxy for all possible aims of media companies, such as revenue. Furthermore, the model is not limited to the analysis of Internet-based content distribution; rather, this model offers a generalized view of the management of intermedia effects. As a result, this research will be applicable to innovative distribution channels that include those discussed in greater detail in the following, in addition to traditional channels.

The core of this article consists of a five-step guide for measuring and managing cross-media effects in multichannel distribution environments. Before developing the five-step guide, we establish the conceptual basis and the theoretical and methodological foundations. The innovative momentum of the guide lies within its normative power and methodological approach. For the first time, niche theory is combined with a conjoint analysis. As a result, we are able to analyze the competition among distribution channels for media content on the basis of consumer preference data. The article also includes an exemplary application of the guide to an Internet-based movie distribution network. We close with a summary of the implications and results.

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NICHE THEORY AS THE CONCEPTUAL BASIS

The theory of the niche, which originates from ecology, constitutes the conceptual foundation of our guide. In its original context, ecology refers to competition for scarce resources, such as food or living space, among several species and populations: "The theory of the niche was evolved by ecologists to answer questions concerning how populations compete and coexist on limited resources in an ecological community" (Dimmick & Rothenbuhler, 1984). The ecological niche of a population can be defined by its use of resources relative to the total available resource space (Hutchinson, 1957). Because the available resource space is regarded as *n*-dimensional (*n*-dimensional hyperspace), the ecological niche of a population can be analyzed quantitatively.

Dimmick and his colleagues were the first researchers to apply this approach to the media industry (Albarran & Dimmick, 1993; Dimmick, Chen, & Li, 2004; Dimmick, Kline, & Stafford, 2000; Dimmick, Patterson, & Albarran, 1992; Dimmick & Rothenbuhler, 1984). Analogous to the bio-ecological approach, the niche approach features the presence of several content distribution channels that compete within their surroundings for limited resources. The scarce resources can be attention, budgetary resources, or the ability to satisfy consumer needs. Consistent with Dimmick and his colleagues, this study focuses on the ability to satisfy consumer needs. This focus conforms to the well-established "uses and gratifications" (U&G) approach (e.g., Blumler & Katz, 1974) in the area of media research. According to this approach, the decision to use certain distribution channels results from the "gratifications sought" (GS) that are directed toward a channel and that lead to the "gratifications obtained" (GO) during media use (e.g., Palmgreen & Rayburn II, 1985). The GO, which is an indicator of the ability of a medium or distribution channel to satisfy consumer needs, constitutes an essential measure in the following explanations.

The core of the niche analysis of intermedia effects comprises three key indicators that can be applied to GO measures: niche breadth, niche overlap, and superiority (Dimmick et al., 2000). Niche breadth is a measure of the generalization (or specialization) of a distribution channel. For example, in the movie industry, video cassette recorders (VCRs) exhibit the greatest breadth, followed by cable TV and finally broadcast television, due to the degree of content diversity (Albarran & Dimmick, 1993). Niche overlap describes the similarity between a channel and another channel in terms of the gratifications obtained. Therefore, the examination of niche breadth and niche overlap enables us to analyze the intensity of competition among multiple channels. If the examined competition among distribution channels is high (high levels of niche overlap and low levels of niche breadth), then the direction of the potential substitution can be evaluated via the measure of superiority. Greater competitive superiority is obtained if one channel

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is superior in providing gratifications to the audience. In the following discussion, the three indicators are presented in detail.

Niche breadth, B, reflects the range of gratifications that is covered by a distribution channel. Channels that can satisfy a wider range of needs have higher values of B. The maximum value of B (B = 1) is achieved when each participant within a survey values the gratification performance of the channel with the figure u, the upper bound of the scale, across all dimensions of gratification. The lower limit of niche breadth (B = 0) is reached if no gratification utility in any dimension is ascribed to the channel. Thus, a high value of niche breadth suggests a high level of generalism for the channel, whereas lower values demonstrate increasing specialization. B can be formalized as follows:

$$B = \frac{\sum_{n=1}^{N} \frac{\left(\sum_{k=1}^{K} GO_{k,n}\right) - Kl}{K(u-l)}}{N} \in [0;1]$$

where u and l are the upper and lower bounds of gratification scales, $GO_{k,n}$ is respondent n's gratifications obtained rating on scale k, K is the number of gratification scales, and N the number of respondents.

The functional similarity (i.e., the identity of the gratification intensity) of two distribution channels i and j, which is decisive for evaluating the substitution potential, can be quantified with the assistance of the indicator niche overlap O. Because niche overlap is an inverse indicator, low values indicate a high functional similarity for the channel. The lower value limit (O = 0) expresses identical gratification scales in each dimension of gratification. The upper limit of the measure, which is identical to the maximal functional difference of the channel, is (u – l). This value is reached when the gratification utility of one channel is specified as the minimum value, and the gratification utility of the other channel is specified as the maximum value across all gratification dimensions. A low value for the key figure O suggests a high potential for substitution and intensive competition between the two types of media because both types satisfy similar consumer needs. O can be formalized as follows:

$$O_{i,j} = \frac{\sum_{n=1}^{N} \sqrt{\sum_{k=1}^{K} \frac{\left(GO_{k,n,i} - GO_{k,n,j}\right)^2}{K}}}{N} \in [0; u-l]$$

where i and j are the distribution channel i and j, $GO_{k,n,i}$ and $GO_{k,n,j}$ are the respondent n's gratifications obtained rating on scale k regarding distribution channel i and j, K is the number of gratification scales, and N the number of respondents.

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However, it is not possible to discern the direction of a potential substitution (i.e., which one of the two distribution channels will overtake the other channel in a competition). For this purpose, a third indicator, superiority, has been established. Represented by S, superiority comprises a pair of variates that is bilaterally defined for two channels, i and j. According to Dimmick, the medium that is superior has an S value that is significantly higher than the S value of the second channel and will replace the other channel in situations of high niche overlap. The following equations display the formalization of S:

$$S_{i>j} = \frac{\sum_{n=1}^{N} \sum_{k} \left(GO_{k,n,i}\right)}{N} \text{for all k} = \left\{k \in [1;K] \,\middle|\, GO_{k,n,i} > GO_{k,n,j}\right\} \; S_{i>j} \in [0; \mathrm{k} * \mathrm{u}]$$

$$S_{j>i} = \frac{\sum_{n=1}^{N} \sum_{k} \left(GO_{k,n,j}\right)}{N} \text{for all k} = \left\{k \in [1;K] \,\middle|\, GO_{k,n,j} > GO_{k,n,i}\right\} \; S_{j>i} \in [0; \mathrm{k} * \mathrm{u}]$$

where i and j are the distribution channels i and j, $GO_{k,n,I}$ and $GO_{k,n,j}$ are the respondent (n)'s gratifications obtained rating on scale k regarding distribution channels i and j, K is the number of gratification scales, and N the number of respondents.

Thus, a consolidated examination of the three indicators enables us to analyze the intensity of the competition and the direction of the substitution among multiple distribution channels for media content. Greater niche similarity between two channels is associated with more intense competition between them and a higher probability of substitution and cannibalization.

In previous studies, niche theory has been used to understand and quantify intermedia competition in terms of substitution or complementarity. As a result, the competitive conditions among various types of distribution channels, such as newspapers, television, video recorders, or the Internet, have been subjects of distinct analyses (Albarran & Dimmick, 1993; Dimmick & Rothenbuhler, 1984; Dimmick et al., 1992; Dimmick et al., 2004). In addition, the current study focuses on the extensive potential of niche theory to explain intermedia effects. As a result of understanding the interdependencies that are underscored by the three indicators just described, the factors that influence intermedia effects become transparent. In turn, this transparency enables us to offer recommendations concerning the design of individual media distribution channels within a single firm and thereby influence the competitive relationships among these channels.

The objective of the five-step guide in the following sections is to create a connection between the explanatory/descriptive potential of niche theory and future recommendations for distribution design.

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FIVE STEPS TOWARD THE MEASUREMENT AND MANAGEMENT OF INTERMEDIA EFFECTS

The aim of this guide is to develop a theoretically sound and practical tool to improve the management of interactions among distribution channels. In principle, the applicability of our guide extends to all types of content. The guide is designed to be sufficiently versatile to encompass all conceivable distribution channels for media content, including illegal channels if necessary for research purposes. Through this guide, intermedia effects can be analyzed for any distribution channel that publishes movies, song titles, written text or pictures. As a result, whether the content has been produced in-house or purchased from external sources is irrelevant. However, content-providing companies must have sufficient resources to distribute their content across the channels under investigation.

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Step 1: Defining the Set of Distribution Channels

In the first step, we identify the individual distribution channels that are intended to distribute the content. The following competition analysis is conducted for this set of channels. In terms of niche theory, this step identifies the competing "populations." For the prioritization of the channels in use for a scope-oriented supply, it is logical to use a target group-oriented portfolio analysis. The dimensions of the channels in the relevant target group are the "current share of use" and the "growth of use." Thus, we can ensure that innovative and growing channels are included in addition to the current media usage behavior.

Step 2: Identification of Competitive Dimensions

The second step focuses on identifying the dimensions in which the channels under investigation are competing. According to the utility-oriented paradigm of the uses and gratifications approach (see second section), a consumer's media choice depends on the ability of a channel to satisfy his or her needs. In this step, we identify and systematize the reasons that consumers ultimately choose certain media services. These reasons are referred to as utility dimensions. Two possibilities emerge for the identification of the relevant utility dimensions. First, we can refer to the extensive body of knowledge on media consumption theories (e.g., McQuail, 1997, for an overview). Second, we may use qualitative market research methods, such as focus groups or expert interviews.

In addition to quantifying intermedia effects, the primary objective of this guide is to manage these effects. Therefore, in the identification of the utility dimensions, it is important that these dimensions can at least partly

be influenced by the content providers. If we exclusively considered utility dimensions whose values are exogenously fixed, then content providers would not be able to exert any influence.

Step 3: Profiling of Channels

In the third step, we develop utility profiles for each distribution channel. In this process, we quantify the extent to which the distribution channels that were defined previously (see step 1) fulfill the relevant utility dimensions (from step 2). Thus, we record the performance of the individual channels with respect to the satisfaction of recipient needs on multiple dimensions.

Many studies that follow the uses and gratifications approach directly survey gratification levels using Likert scales. Previous studies that applied niche theory followed the same pattern (e.g., Dimmick et al., 2004; Ramirez, Dimmick, Feaster, & Lin, 2008). Although this approach appears to have demonstrated value based on its frequent use, this method is still subject to several restrictions. First, this approach assumes that consumers are conscious of their individual motives when using media and that they can articulate these motives. Second, only media offers that are currently available can be evaluated. Third, we cannot determine how the importance of individual utility dimensions differs from the importance of other dimensions.

To minimize the effects of these three restrictions, we use an alternative method to collect and quantitatively evaluate consumer preferences in this guide: conjoint analysis (CA). The combination of intermedia analysis based on niche theory and CA constitutes a methodological innovation in media choice research. CA is a widely applied marketing method that is used to identify consumer preferences (Green, Krieger, & Wind, 2001; Vriens, 1995). This type of analysis has gained wide acceptance in marketing because it directly concerns the daily decisions of every consumer. The basic idea of CA is that products can be viewed as bundles of different attributes. CA is used when a decision maker must make a trade-off between the possibility that product A is better than product B with regard to some attributes and that product B is better than product A with regard to other attributes. CA follows a decompositional approach; thus, we can determine the utility contributions of individual characteristics from the recurring participant evaluations of complete product configurations. Moreover, the relative importance of individual attributes can be interpreted as the range in the utility values of the attributes relative to the total possible utility range of all considered attributes.

Multiple versions of conjoint analysis (e.g., full-profile CA, choice-based CA, adaptive CA) are proposed in the literature (e.g., Hair, 2010). Two criteria received particular attention in selecting the conjoint method in this study. There should be a realistic task that represents consumer decisions and that should be practicable regarding the cognitive effort and time requirements of

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respondents. Full-profile CA requires high cognitive effort because the complete set of products, including all possible variations of attributes and levels, must be evaluated by each respondent. Therefore, we require a version of CA that is capable of surveying only a subset of possible products to gain data for all possible combinations of attributes and levels. Choice-based CA would provide this capability by offering the most realistic task, in which respondents repeatedly choose products from a choice set of three to five products regarding all examined attributes. As a large number of attributes must be examined to analyze intermedia effects, this task would still be excessively complex for respondents (Green & Srinivasan, 1990). As a consequence, we choose adaptive conjoint analysis (ACA), in which the primary task involves a trade-off between two products that are presented as a combination of only a few attributes that vary in the course of the survey. In our guide, ACA is implemented according to the model that was established by Johnson (1987).

As a prerequisite to performing the CA, we must determine the attributes and attribute levels that will be examined. In the current context, the attributes are chosen in a manner such that they directly correspond with the previously identified utility dimensions of the distribution channels (from step 2). If, for instance, price has been identified as a relevant utility dimension, then we will also establish an attribute called "price" with multiple price levels. In other words, each utility dimension will be transferred into an attribute with multiple levels.

The data collection comprises four steps: (1) The participants directly evaluate the attractiveness of individual attribute levels, (2) the participants state their perceptions of the importance of the individual attributes, (3) repeated paired comparisons of product configurations are performed, and (4) the data are calibrated (Johnson, 1987).

In the third step of the described ACA (paired comparisons), the respondents express their preference between two alternative offers. The order of the attributes and paired comparison tasks in steps 1 to 3 of the data collection process are randomized to prevent potential order effects.

As a result of these steps, we obtain discrete preference data that can be transformed with the assistance of the hierarchical Bayes algorithm (HB). After the data are transformed, we obtain the individual part-worth utilities $\beta_{d,l,n}$ for each characteristic $l = 1, \ldots, L_a$ of the analyzed utility dimensions $d = 1, \ldots, D$. We then standardize the range of the individual part-worth utilities at [0;100] to facilitate intersubjective and aggregated analyses. Part-worth utilities have explanatory power that is independent from that of the concretely analyzed distribution channels. Moreover, the distribution channel manager now possesses information regarding the perceived benefits of isolated channel characteristics.

The individual total benefit $u_{m,n}$ of a distribution channel m can be additively calculated from the part-worth utilities according to the following model (based on Hair, 2010, p. 268):

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$$u_{m,n} = \sum_{d=1}^{D} \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,m}$$

with

$$x_{d,l,m} = \begin{cases} 1 & \text{if level l of determinant d exists, regarding channel m} \\ 0 & \text{else} \end{cases}$$

and where $\beta_{d,l,n}$ is respondent n's individual part-worth utility of level l of attribute d, D is the number of observed attributes, and L_d the number of levels of attribute d.

This (ex post) ability to freely combine utility data from the individual attribute characteristics has one substantial advantage: Statements can be derived concerning both the benefits of existing distribution channels and the (hypothetical) channels that exhibit variations within the analyzed shapes. This feature constitutes the key benefit, especially if the aim is to evaluate innovative (not yet existing) offers.

CA provides another important result beyond utility values: This method can also yield results concerning the relative importance $w_{d,n}$ of the individual utility dimensions. Hence, the importance of the individual dimensions of the channels under investigation can be clarified. The relative importance of an attribute $w_{d,n}$ is formally part of the total utility variation, which in turn is induced by all attributes.

$$w_{d,n} = \frac{\max_l \{\beta_{d,l,n}\} - \min_l \{\beta_{d,l,n}\}}{\sum_{d=1}^{D} \left(\max_l \{\beta_{d,l,n}\} - \min_l \{\beta_{d,l,n}\}\right)} \in [0; 1]$$

where $\beta_{d,l,n}$ is respondent n's individual part-worth utility of level l of attribute d, and D is the number of observed attributes.

This knowledge may be helpful in the subsequent prioritization of control measures in single dimensions. To analyze the data that were obtained in step 3, we arrange aggregated part-worth utilities and the aggregated importance of the attributes into a multidimensional graph, as demonstrated in the subsequent application of the example of concrete data.

Step 4: Quantifying Channel Competition

Although the result of the previous step is based on the isolated utility profiling of the analyzed distribution channels, we now focus on the analysis of competitive relations in step 4. With this step, we can analyze the issues of substitution and complementarity between the channels.

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For this purpose, the essential competition indicators of the niche theory (i.e., niche breadth, niche overlap, and superiority) must be determined. We already highlighted the pivotal differences between our approach and previous intermedia studies based on niche theory (e.g., Dimmick et al., 2000). According to this guide, the data collection is performed by conducting a conjoint analysis rather than through direct interrogation and rating scales. Thus, in contrast with the formalization that was used by Dimmick (e.g., Dimmick et al., 2000), it is necessary to modify the calculations of the three indicators. Rather than the fixed lower and upper limits of the rating scales (e.g., the values 1 and 5), the value range is now restricted by the maximum and minimum of the individually standardized part-worth utilities of the analyzed attribute d ($\beta_{d,n}{}^{min} = [0;100] \leq \beta_{d,n}{}^{max} = [0;100]$).

Based on the original design by Dimmick (Dimmick et al., 2000, p. 231), the formalization of the niche breadth B_m of a distribution channel m is now modified as follows:

$$B_m = \frac{\sum_{n=1}^{N} \frac{\left(\sum_{d=1}^{D} \beta_{d,n,m}\right) - \sum_{d=1}^{D} \beta_{d,n}^{\min}}{\sum_{d=1}^{D} \left(\beta_{d,n}^{\max} - \beta_{d,n}^{\min}\right)}}{N} \in [0;1]$$

with

$$\beta_{d,n,m} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,m} \quad \beta_{d,n}^{\min} = \min_{l} \left\{\beta_{d,l,n}\right\} \quad \beta_{d,n}^{\max} = \max_{l} \left\{\beta_{d,l,n}\right\}$$

where

$$x_{d,l,m} = \begin{cases} 1 & \text{if level l of determinant d exists regarding channel m} \\ 0 & \text{else} \end{cases}$$

and where $\beta_{d,n,m}$ is respondent (n)'s individual part-worth utility delivered by attribute d regarding distribution channel m; $\beta_{d,n}^{\min}, \beta_{d,n}^{\max}$ are respondent (n)'s minimum and maximum part-worth utility regarding all possible levels l of attribute d; $\beta_{d,l,n}$ is respondent (n)'s individual part-worth utility of level l of attribute d; D is the number of attributes; L_d the number of levels of attribute d; and N: the number of respondents.

Analogous to Dimmick's niche breadth, we measure the extent to which a medium is able to cover a spectrum of utility attributes. The upper limit of $B_m = 1$ is reached when the attribute characteristics that describe the analyzed channel are identical to the attribute characteristics that constitute the maximum part-worth utility of the respective attribute for each respondent. The lower limit of zero is reached when a channel consistently receives the lowest part-worth utilities from each respondent.

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Niche overlap O quantifies the perceived similarity between two distribution channels. To account for the particularities of the data (collected via CA), we modify the original calculation (Dimmick et al., 2000, p. 232) as follows:

$$O_{i,j} = \frac{\sum_{n=1}^{N} \sqrt{\sum_{d=1}^{D} \frac{\left[\left(\beta_{d,n,i}\right)-\left(\beta_{d,n,j}\right)\right]^2}{D}}}{N} \in [0; \frac{\sum_{d=1}^{D} (\beta_{\mathrm{d}}^{\max} - \beta_{\mathrm{d}}^{\min})}{D}]$$

with

$$\beta_{d,n,i} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,i} \quad \beta_{d,n,j} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,j}$$

$$\beta_d^{\min} = \min_l \left\{\beta_{d,l}\right\} \quad \beta_d^{\max} = \max_l \left\{\beta_{d,l}\right\}$$

where

$$\mathrm{x_{d,l,i}}, \mathrm{x_{d,l,j}} = \begin{cases} 1 & \text{if level l of determinant d exists regarding channels i and j} \\ 0 & \text{else} \end{cases}$$

$\beta_{\mathrm{d,n,i}}$, $\beta_{\mathrm{d,n,j}}$ are respondent (n)'s individual part-worth utility delivered by attribute d regarding distribution channels i and j; $\beta_d^{\min}, \beta_d^{\max}$ are the minimum and maximum part-worth utility of all levels l on attribute d; $\beta_{\mathrm{d,l,n}}$ are respondent (n)'s individual part-worth utility of level l of attribute d; D is the number of attributes; $\mathrm{L_d}$ the number of levels of attribute d; and N: the number of respondents. In addition,

O is an inverse indicator that illustrates a measure of distance from the entire identity of two channels, which is reached at the lower limit (O = 0). In this case, the niches of the analyzed channels are identical. The upper limit of O is the average scope of the part-worth utilities. The maximum value is reached when the channels are completely dissimilar.

To gain further information regarding the similarity of two channels (i, j) on the basis of their attributes, we can identify the difference measure $\Delta_{\mathrm{d,i,j}}$ per dimension according to the following equation:

$$\Delta_{d,i,j} = \frac{\sum_{n=1}^{N} \sqrt{\left(\beta_{d,n,i}\right) - \left(\beta_{d,n,j}\right)^2}}{N} \in [0; \beta_{\mathrm{d}}^{\max} - \beta_{\mathrm{d}}^{\min}]$$

with

$$\beta_{d,n,i} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,i} \quad \beta_{d,n,j} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,j}$$

$$\beta_d^{\min} = \min_l \left\{\beta_{d,l}\right\} \quad \beta_d^{\max} = \max_l \left\{\beta_{d,l}\right\}$$

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where

$$x_{d,l,i}, x_{d,l,j} = \begin{cases} 1 & \text{if level l of determinant d exists regarding channels i and j} \\ 0 & \text{else} \end{cases}$$

and where $\beta_{d,n,i}$, $\beta_{d,n,j}$ is respondent (n)'s individual part-worth utility delivered by attribute d regarding distribution channels i and j; $\beta_d^{\min}, \beta_d^{\max}$ are the minimum and maximum part-worth utility of all levels l on attribute d; $\beta_{d,l,n}$ is respondent (n)'s individual part-worth utility of level l of attribute d; L_d is the number of levels of attribute d; and N is the number of respondents.

We must now determine the relative superiority of the two distribution channels. In situations of high niche overlap (low values for O), we can determine which channel has a competitive advantage and thus a higher potential of replacing the other. In each case, superiority relates to the total utility of a channel.

The modified calculation accounts for utility values and is represented by the following pair of formulas (modified based on Dimmick, 2000, p. 233):

$$S_{i>j} = \frac{\sum_{n=1}^{N} \sum_{d} \beta_{d,n,i}}{N} \text{for all d} = \left\{ d \in [1; D] \,\middle|\, \beta_{d,n,i} > \beta_{d,n,j} \right\}$$

$$S_{j>i} = \frac{\sum_{n=1}^{N} \sum_{d} \beta_{d,n,j}}{N} \text{for all d} = \left\{ d \in [1; D] \,\middle|\, \beta_{d,n,j} > \beta_{d,n,i} \right\}$$

with

$$\beta_{d,n,i} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,i} \quad \beta_{d,n,j} = \sum_{l=1}^{L_d} \beta_{d,l,n} * x_{d,l,j}$$

where

$$x_{d,l,i}, x_{d,l,j} = \begin{cases} 1 & \text{if level l of determinant d exists regarding channels i and j} \\ 0 & \text{else} \end{cases}$$

and where $\beta_{d,n,i}$, $\beta_{d,n,j}$ are respondent (n)'s individual part-worth utility delivered by attribute d regarding distribution channels i and j; $\beta_{d,l,n}$ is respondent (n)'s individual part-worth utility of level l of attribute d; D is the number of attributes; L_d the number of levels of attribute d; and N the number of respondents.

The values $S_{i>j}$ and $S_{j>I}$ provide us with an indicator for each channel and enable us to bilaterally compare the two channels. If the difference between the superiority values in the two channels is statistically significant, then the channel with the higher S value will have global superiority. In this case, a *t*-test for paired samples serves as an adequate robustness check.

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Thus, the competitive relation among several media distribution channels can be quantified by the three indicators. The potential for and direction of substitution between two channels can be determined by regarding the two indicators niche overlap O and superiority S. The probability of substitution and cannibalization is high (a) when the overlap between niches is high such that both channels occupy a similar niche and (b) when one channel is significantly superior to the other channel.

Step 5: Adapting Channels and Feedback

The fifth step of our guide is intended to assist media content providers in capturing the complete benefits of the tool that is presented in this study. As a brief recap, the guide provides a step-by-step procedure for differentiating distribution channels. Channels are distinguished according to the utility dimensions that we identified in step 2. Concrete differentiation procedures begin with the utility profiles that we established in step 3 and the indicators concerning overlap in step 4. Thus, we proceed in a reverse direction. First, we identify the two channels that display the greatest overlap (established in step 4). Then, we consult the utility profiles (established in step 3). Finally, we can determine the utility dimensions in which the two channels have space for differentiation measures. For instance, if both channels already have utility values at the opposite limits of their respective scales, then there is no additional space for differentiation. If, however, both channels are located in a medium area for one attribute, then the provider can directly alter attribute characteristics from one or both channels to the extent that the utility profiles differ.

After this intervention, we recommend that providers enforce another utility profiling of the channels (step 3) to measure the results and to recalculate the substitution potential of the media using the three competition indicators. This control circuit should be executed in a feedback loop that continues as long as each relevant channel displays a sufficient level of differentiation and the intermedia competition has been regulated according to the desired level. Figure 1 provides a final overview of the five-step guide that has just been presented.

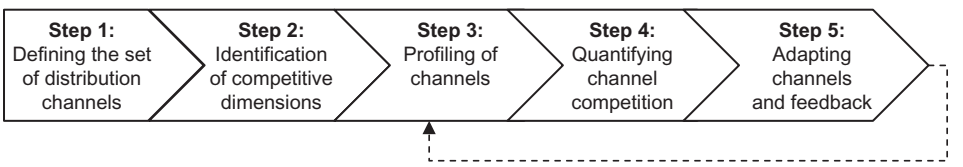

FIGURE 1 Five steps toward the measurement and management of intermedia effects.

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For the practical application of this guide, a software package for conducting the adaptive conjoint analysis, such as SSI Web (Sawtooth Software, Inc., Orem, UT) or EFS Survey (Questback AG, Cologne, Germany), in addition to standard spreadsheet software, such as Excel (Microsoft Corp., Redmond, WA), is recommended. In the process of measuring and managing cross-media effects according to this guide, most resources will be bound for step 3 ("profiling of channels") because a quantitative survey as a means of primary consumer research must be conducted.

EXAMPLE: THE CASE OF INTERNET-BASED MOVIE DISTRIBUTION

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In the following example, we demonstrate how to apply our guide to a movie distribution network. The underlying conjoint analysis method has been applied in a variety of marketing contexts. In our case, we assume that a provider presents its movies in theaters and, after a certain amount of time, offers them for sale on DVDs. Now, the provider also intends to offer its films via an Internet-based on-demand service but is concerned about cannibalization, which leads to decreasing attendance at theaters and lower sales figures for its DVDs. To cover the competitive relation quantitatively and to differentiate the channels to minimize cannibalization and maximize complementarity, we proceed according to the following five steps.

Step 1: Defining the Set of Distribution Channels

The target group-oriented portfolio analysis of distribution channels for movie content shows that in addition to the traditional channels (cinema, DVD for sale/rent, pay TV,[1] and free broadcast TV), Blu-ray and Internet-based services (Internet video on demand and electronic sell-through) are particularly attractive because of their high growth potential. For the following analyses, we focus on Internet video on demand as an additional distribution channel. VOD is an Internet-based on-demand service that is characterized by a restricted period of use (comparable to the classic model of renting). Furthermore, in most cases, movies offered by VOD services are "streamed" by a customer, rather than downloaded onto his or her computer. In the following specific case, the "set of distribution channels" under investigation includes cinema, DVDs for sale, and Internet VOD.

Step 2: Identification of Competitive Dimensions

To identify the relevant utility dimensions or attributes of the channels, we do not use qualitative market research methods; rather, we refer to the comprehensive literature on media consumption research and relevant areas by conducting a literature analysis.

The results of the literature analysis are nine theoretically sound attributes of distribution channels that imply utility to customers and may lead to usage. Therefore, the attributes that we identified can also be referred to as utility dimensions, which comprise price, advertising intensity, time delay, ownership and rights of use, digital rights management, medium and image size, image quality, place of usage/mobility, and user sovereignty in the choice of starting time. Table 1 presents an overview of these attributes. This table also provides the theoretical concepts underlying the attributes and an example of a correlation between an attribute and a customer's perceived utility.

The described utility dimensions of audiovisual media satisfy both the needs of a theoretical foundation and the condition of designability by the provider. Each of the nine attributes can be directly influenced by the provider. Therefore, all nine attributes qualify for this guide, which aims to both describe and manage intermedia effects.

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Step 3: Utility Profiling of Distribution Channels

To determine the distribution channel profiles using a conjoint analysis, we now interpret the nine utility dimensions from the previous step as concrete product attributes of audiovisual media. Subsequently, we allocate several characteristics to each of these product attributes (attribute levels). For instance, we ascribe six gradations that range from "free" to "19.99 EUR" (other currencies could also be applied) to the "price" attribute. We adopt the same procedure for the other attributes. The gradations conform to both the prevalence in the market and the attribute characteristics that are intended to be available for the analysis. Table 2 shows the result of this intermediate step for this case.

The conjoint analysis is now conducted to determine the utility values that will be allocated to the individual attributes and their attribute levels. The utility values also form the basis of the utility profiling of the analyzed channels. For demonstrative purposes and to gather actual preference data, we created and distributed an online survey via email to 6,323 employees and students at our university. We used SSI Web 6.6.6 (Sawtooth Software, Inc., Orem, UT) to create the conjoint survey. Data analyses were conducted using SSI Web and SPSS Statistics 18.0.2 (IBM Corp., Armonk, NY). The data were collected over a period of 2 weeks in 2009. In total, 552 respondents (8.7% of 6,323) completed the questionnaire and thus constitute our sample for the following analyses. The convenience nature of the sample was sufficient for the illustrative purposes of this study. In total, 56.6% of the respondents are female, and the ages of the respondents range from 17 to 46 years (mean age of 23.7). The reported level of education is high (74.7% undergraduates and 25.3% graduates). Finally, the participants are movie aficionados; 63.1% of the respondents go to the cinema at least once a month, compared with 11.7% of the German population (AWA, 2011).

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TABLE 1 Relevant Channel Attributes Derived From Literature

Attribute	Example of a Correlation	Basic Theory or Concept	Exemplary Study
Price	The higher the price, the lower the benefit and demand in a certain channel	Microeconomic demand theory	Dewenter & Westermann, 2005
Advertising intensity	The more intense the advertisements, the lower the benefit	Uses & gratifications	LaRose & Atkin, 1991; Rothe, Harvey, & Michael, 1983
Starting-time delay	The longer the starting time delay, the lower the benefit	Discounted-utility framework, hyperbolic discounting	Mann, Ahrens, Benlian, & Hess, 2008
Rights of ownership and use	The more comprehensive the rights of ownership and exploitation, the higher the benefit	Utility theory	Bounie, Bourreau, & Waelbroeck, 2006; Hennig-Thurau, Henning, & Sattler, 2007
Copy protection	The lower copy protection, the higher the benefit	Utility theory	Hennig-Thurau, et al., 2007
Presentation medium/image size	The larger the image, the higher the benefit	Presence concept	Lombard, Reich, Grabe, Bracken, & Ditton, 2000
Image quality	The better the image quality, the higher the benefit	Presence concept	Knoche, McCarthy, & Sasse, 2005
Place of usage/mobility	Benefit varies depending on place of use*	Uses & gratifications	LaRose & Atkin, 1991; Mason, 2006
Starting-time sovereignty	The more freedom to choosing starting time, the higher the benefit*	Uses & gratifications	Rubin & Bantz, 1987

*Interdependency cannot be determined unambiguously from theory.

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TABLE 2 Attributes and Attribute Levels

Price	Advertising Intensity	Starting-Time Delay	Rights of Ownership/Use	Copy Protection
Free	No advertisement	None/to play immediately	Once	Unlimited copying and burning
1.99 EUR	Commercial break before movie (1 minure)	30 minutes	Playable 24 hours	Unlimited copying, burning possible once
3.99 EUR	Commercial break before movie (6 minutes)	1–2 hours	Playable 48 hours	Unlimited copying, burning not possible
5.99 EUR	Two commercial breaks during movie (2 × 30 seconds)	24 hours	Unlimited, but no saving/recording	Copying 5×, burning not possible
9.99 EUR	Two commercial breaks during movie (2 × 3 minutes)	1 week	Unlimited after saving/recording	Copying and burning not possible
19.99 EUR		1 month	Unlimited, as the movie is made available on data carrier	
		6 months		

Presentation Medium/Image Size	Image Quality	Place of Usage/Mobility	Starting-Time Sovereignty
Screen	Cinema quality (4096 × 2048 pixels)	Out at the cinema	Playing time is free to select
Television set	Full-HD quality (1920 × 1080 pixels)	At home or at friends' homes	Select from three predetermined playing times
Laptop/PC	Television quality (768 × 576 pixels)	Mobile anywhere	One predetermined playing time (e.g., 08.15 p.m.)
Mobile phone (e.g., iPhone or Blackberry)	Heavily compressed Internet quality (320 × 240 pixels)		

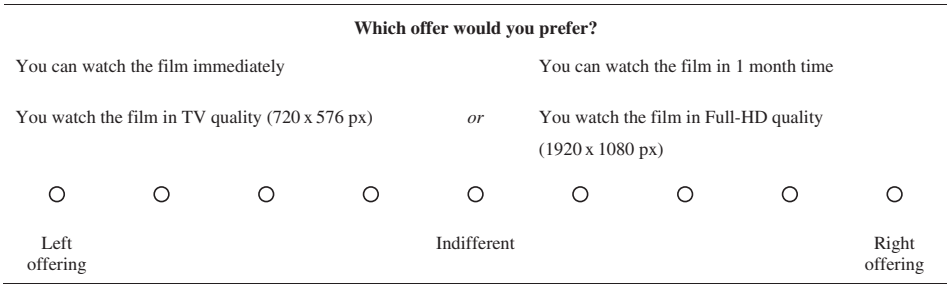

FIGURE 2 Typical ACA paired comparison task.

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Before the four steps of the adaptive conjoint analysis just outlined were performed in the survey, the participants were asked to choose their favorite movie from a defined catalogue of movies. A typical task that the respondents encountered in step 3 of the adaptive conjoint analysis (ACA) is shown in Figure 2.

Of critical importance, the ACA provides us with the "part-worth utilities" of each individual characteristic of the attributes. Part-worth utilities are calculated via the built-in ACA/HB Module in SSI Web using the suggested option "pairs only with constraints" (Sawtooth Software, 2006). The parameters are estimated by an iterative process. During this process, 10,000 preliminary iterations and 10,000 draws per respondent are used. As evidence of convergence, we obtained static values of pairs RMS (3.141) and average variance (2.943) during the iterative process after 4,000 iterations (Sawtooth Software, 2006). By summing these part-worth utilities, we can deduct the total benefits of the concrete offers and the utility contributions of the individual attributes. Table 3 displays the total utility (e.g., $U_{VOD} = 52.30$) of each of the three analyzed distribution channels—VOD, DVDs for sale and cinema—and the part-worth utilities that are relevant for its specification. For instance, the 1.99 EUR for the VOD offer ($u_p = 10.65$) exhibits a high part-worth utility compared with the 9.99 EUR for the DVDs for sale ($u_p = 2.94$).

A graphical illustration of the utility profiles of the three analyzed channels is provided in Figure 3. The two main elements in this figure are (a) the axes, which represent each of the nine attributes that were identified in the previous step of the guide (e.g., "price"), and (b) three lines connecting the utility values that the three channels (e.g., "VOD") reach in the relevant utility dimensions. For example, a typical VOD offer with its price of 1.99 EUR reaches a utility value of 10.65 in the "price" dimension and with the absence of advertising reaches a utility value of 11.57 in the corresponding dimension. The different lengths of the axes show that the range of utility values for each individual attribute varies. This variation implies that the attributes may not contribute equally to the total utility of the distribution channels.

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TABLE 3 Part-Worth Utilities and Total Utilities for Three Selected Distribution Channels

	Video on Demand		DVD for Sale		Cinema	
Attribute	Characteristic	ø Utility	Characteristic	ø Utility	Characteristic	ø Utility
Presentation medium/image size	Laptop/PC	7.43	Television set	9.94	Screen	13.05
Price	1.99 EUR	10.65	9.99 EUR	2.94	5.99 EUR	5.55
Image quality	Television quality	6.17	Television quality	6.17	Cinema quality	13.10
Advertising intensity	No advertisement	11.57	No advertisement	11.57	Commercial break before movie (6 mins.)	5.57
Starting-time delay	6 months	0.00	1 Month	1.82	1–2 hours	7.02
Rights of ownership/use	24 hours	1.36	Data carrier/unlimited	9.90	Once	1.32
Place of usage/mobility	At home or at friends'	6.95	At home or at friends'	6.95	Outside the home	7.91
Copy protection	No copying, no burning	0.00	Unlimited copying and burning	8.87	No copying, no burning	0.00
Starting-time sovereignty	Free to select	8.17	Free to select	8.17	3 pre-determined points of time	4.77
	U_{VoD} =	52.30	U_{DVDs} =	66.33	U_{cinema} =	58.29

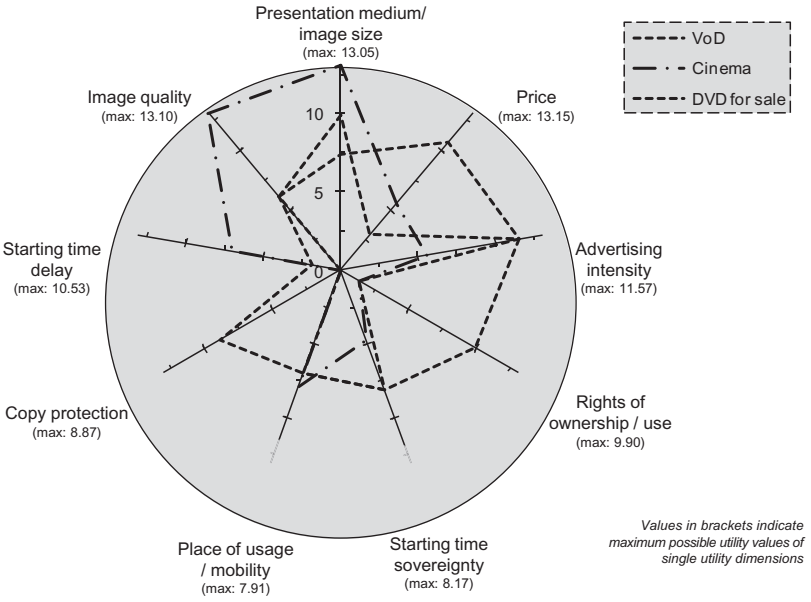

FIGURE 3 Utility profiles of three selected channels.

The variation can be attributed to the differences in the perceived importance of the individual attributes. For example, in an optimal scenario (free of cost), the channels can reach a much higher utility value with the "price" attribute than with the "copy protection" attribute (unlimited copying and recording).

Furthermore, for the individual movie distribution channels, the attribute that has the greatest potential for optimizing utility in this case becomes clear. If, for instance, the benefits of the VOD offers were to be increased, then the attribute "copy protection" would offer considerable potential for optimization. The provider could ease the copy protection, progress from the current situation ("neither copy nor burn"), and allow consumers to compile a restricted number of copies of the movie. Similarly, the attribute of starting-time delay also offers the potential for optimization.

With regard to the multidimensional utility profiles of the different offers, we can draw initial conclusions regarding their degree of differentiation and competitive relationships. For instance, we can immediately recognize that the offerings of VOD and DVDs for sale display the same characteristics with respect to image quality, advertising intensity, place of usage/mobility, and starting-time sovereignty. Therefore, these two channels are not sufficiently differentiated. In addition to this visual diagnosis, channel differentiation can be understood through quantitative analysis, as shown in the subsequent section.

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Step 4: Quantifying Intermedia Competition

The calculations reveal that VOD, with a niche breadth of B = 0.52, is the most specialized of the three channels that we examined, whereas DVD for sale, with a value of B = 0.66, covers the broadest range of utility dimensions. Cinema ranks between these two channels with a value of B = 0.58. The values are retraced in Figure 3. As shown in the figure, DVDs for sale cover the largest area (the area within the dashed line), whereas VOD covers a significantly smaller range (the area within the dotted line).

Table 4 contains the results of the calculations of niche overlap, which is represented by the inverse indicator O. The results of the calculation of difference measures in the individual utility dimensions for the three channels are also listed. As described earlier, the range of niche overlap O is derived from the utility values, which range from zero (complete overlap) to 11.24 (no overlap) in this case.

Based on the results that are reported, the niche overlap is lower between cinema and DVDs for sale (O = 5.20) than between VOD and DVDs for sale (O = 4.95) and VOD and cinema (O = 4.75). Despite the closeness of these O values in this case, one can anticipate the comparatively lowest competition between cinema and DVDs for sale. Because the O values are weighted averages of a set of multiple distance measures (see the equation for O shown earlier), they have a tendency to level off near the center of the relevant scale (here from 0 to 11.24). As a result, even small differences in O can be interpreted as valid.

A granular inspection of the difference measures at the level of the single utility attribute reveals that the higher degree of differentiation between

TABLE 4 Niche Overlap for Three Selected Channels

Difference Δ	VoD ⟷ DVD for Sale	VoD ⟷ Cinema	DVD for Sale ⟷ Cinema
Presentation medium/image size	2.51	5.62	3.11
Price	7.71	5.10	2.61
Image quality	0.00	6.93	6.93
Adverting intensity	0.00	6.00	6.00
Starting-time delay	1.82	7.02	5.20
Rights of ownership and use	8.54	0.04	8.58
Place of usage/mobility	0.00	0.96	0.96
Copy protection	8.87	0.00	8.87
Starting-time sovereignty	0.00	3.40	3.40
Niche overlap O	11.24 0.00 **4.95**	11.24 0.00 **4.75**	11.24 0.00 **5.20**

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DVDs for sale and cinema is attributable to the differences in copy protection ($\Delta = 8.87$), rights of possession and exploitation ($\Delta = 8.58$), and quality ($\Delta = 6.93$). The reasons for the greater overlap between VOD and cinema are the minor differences in rights of ownership and use ($\Delta = 0.04$), place of usage/mobility ($\Delta = 0.96$), and copy protection ($\Delta = 0.00$). When one compares VOD and DVDs for sale, the lack of differentiation in image quality ($\Delta = 0.00$), advertising intensity ($\Delta = 0.00$), place of usage/mobility ($\Delta = 0.00$), and starting time delay ($\Delta = 0.00$) is noticeable.

A third element for determining potential substitution, the pair of indicators $S_{i>j}$ and $S_{j>i}$, measures the bilateral but unidirectional overlap between two channels. In cases of high intensity of competition (low values for O), the channel with the significantly higher S value outperforms the other channel. According to the part-worth utilities of this study, DVDs for sale exhibit an average value of $S_{i>j} = 29.77$ compared with the average value for VOD for all respondents. However, when VOD is compared with DVDs for sale, a small value of $S_{j>i} = 11.61$ emerges (see Table 5). Because the difference is also statistically significant ($t = -55.48$; $p < .0001$), we can assume that the VOD offerings will not substitute for DVD sales in this specific configuration. On the contrary, we expect that the VOD offer will not be able to establish itself as a viable competitor to the DVD offer in the medium term. Cinema also outperforms VOD, with superiority figures of 42.29 compared with 34.59 for VOD ($t = -55.48$; $p < .0001$). Although we noted lower substitution competition between cinema and DVDs for sale ($O = 5.20$), we nevertheless identify significantly different superiority figures ($t = -5.17$; $p < .0001$), with 46.63 for cinema compared with 41.67 for DVDs for sale.

In summary, for the characteristic that was chosen for the three distribution channels (see Table 3), the highest level of competition prevails between VOD and DVDs for sale, as well as between VOD and cinema. Here, the risk of cannibalization exists. The intensity of competition between cinema and DVDs for sale is lower, and we can assume that this result is indicative of the complementarity among the distribution channels.

The analysis of superiority indices serves to clarify which of the two channels maintains the superior competitive position. Here, the VOD offer

TABLE 5 Bilateral Superiority of Three Chosen Movie Distribution Channels

Pair Comparisons	S	Difference	*t*	Significance (Two-Sided)
VoD → DVD for sale	11.61	−18.16	−55.48	.0001
DVD for sale → VoD	29.77			
VoD → Cinema	34.59	−7.70	−8.87	.0001
Cinema → VoD	42.29			
DVD for sale → Cinema	41.67	−4.76	−5.17	.0001
Cinema→ DVD for sale	46.43			

Note. Base: university students and employees ($n = 552$); test of significance: paired samples *t*-test.

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appears to be inferior to both DVDs for sale and cinema. As a result of the differentiated niche theoretical analysis in the present configuration, we can expect neither a cannibalization of DVDs nor a cannibalization of cinema by video-on-demand offerings. This result is consistent with findings from earlier studies that also found VOD to have a complementary effect on DVD sales (e.g., Smith & Telang 2009) and on movie theater attendance (e.g., Danaher, Dhanasobhon, Smith, & Telang, 2010; Hennig-Thurau, Henning, Sattler, Eggers, & Houston, 2007). However, in other studies, the opposite effect was found (e.g., Das, 2008).

Step 5: Managing Intermedia Effects Through Utility Differentiation and Feedback

We identified a comparatively high overlap between the Internet-based VOD offer and cinema in this case. Thus, we should begin to minimize competition. By consulting the difference measures per single utility dimension, we find particularly low differences concerning the rights of ownership and use ($\Delta = 0.04$), place of usage/mobility ($\Delta = 0.96$), and copy protection ($\Delta = 0.00$). With regard to the rights of ownership and use, a graphical analysis of the utility profiles (see Figure 3) reveals that the VOD offer and cinema are both on the lower scale of possible utility values in this dimension.

Given the results of the example case, media companies that want to decrease the overlap between Internet-based VOD and cinema could choose to provide VOD users with more concessions in terms of possessing and using digital movies and/or to relax copyright protections for VOD users. Any concessions/relaxations that are made would also increase consumer utility with Internet-based VOD. For place of usage, however, both channels are on the upper scale of possible utility values. The consumption of movies outside of the home appears to offer consumers approximately the same utility levels as the consumption of movies in their own living rooms.

After any changes to the distribution channel arrangement are implemented, such as additional concessions with respect to the possession and usage of digital movies, a media manager enters a control circuit: The selected channels are reevaluated according to step 3 ("Utility profiling of distribution channels"). Ideally, Internet-based VOD would then show higher utility values and lower competition measures vis-à-vis cinema. Otherwise, the control and feedback loop should be continued until the channels are sufficiently differentiated and intermedia competition has been steered to the desired level.

DISCUSSION AND CONCLUSION

The aim of this article is to contribute to the understanding and management of intermedia effects. With this knowledge, content providers

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can depart from merely *describing* cross-media effects and move toward *managing* cross-media, which is particularly relevant to all content industries. To achieve this goal, we present a five-step guide. In addition, we are able to demonstrate the application of our tool with a pilot study from the film industry. With a strong theoretical foundation, the procedure draws on the idea of competitive differentiation, which is also the core of the ecological theory of the niche. This methodologically innovative approach is combined with conjoint analysis for the first time as a method of data collection and analysis.

However, heuristics such as that presented here are subject to restrictions. In our case, two specific restrictions must be mentioned.

First, we neglected both negative and positive spillover effects, such as the word-of-mouth effect or the sampling effect. If we had chosen to examine these effects, the complexity of the guide would have increased considerably, and this complexity would have harmed the applicability of the guide.

Second, the adaptive conjoint analysis procedure also induces restrictions. The basic assumption of the additive utility model implies the independence of the examined attributes as a prerequisite to our study (Hair, 2010). On the contrary, we must anticipate the effects of the interaction between individual attributes. For example, image quality influences the utility of a presentation medium and vice versa. Furthermore, level effects (i.e., distorting effects that occur as a result of the determination of level values) can emerge. Although we were able to present real-life situations in an imaginable form during conjoint analysis, we can assume that media usage is habitualized (e.g., Rubin, 2002) and stimulus driven, which might cause events to occur differently in a real-life scenario than in the survey situation.

Furthermore, for the pilot study that is intended to demonstrate the application of our guide, we used a convenience sample of employees and students of a large university. This sample is not representative of the basic population of film consumers. Nonetheless, the examined section of reality can be considered indicative and serves its demonstrative purposes.

We identify three key areas for further research in connection with this work. First, as an immediate next step, it would be desirable to test the validity of the described guide in an actual case from within the content industry using data from a representative sample. The quantitative survey results should then be matched with observed substitution effects using logged usage data. Second, adding to step 2 of our guide ("Identifying competitive dimensions"), it would be of great value to establish robust attribute sets for various media channels that universally cover the most important utility dimensions for each channel. Third, our framework could be extended to also cover spillover effects between media channels to enhance scope and content validity. However, when attempting to study these effects,

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researchers should be wary of impairing the practical applicability of the five-step-guide that is presented in this article.

Despite the limitations and further research recommendations, we hope to offer a valuable contribution to media theory and the media industry. From a theoretical perspective, the main contribution lies in the integration of the theory of the niche with conjoint analysis. We hereby draft a superior method by which to measure consumer preferences in theoretical niche analyses and to reveal the normative power of the ecological theory of the niche. As a result, we reveal the need for further research that is not merely focused on *describing* but also focuses on *explaining* and *managing* intermedia effects. Finally, from a practical perspective, our approach provides media managers who are responsible for content distribution with a practical tool to model, measure, and manage cross-media effects among multiple distribution channels. Ultimately, this tool will lead to greater differentiation with regard to the satisfaction of consumer preferences and consequently to higher company revenues.

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NOTE

1. Pay TV includes cable-based video on demand distribution, which represents an important additional movie distribution network especially in the United States, as well as encrypted and subscription-based broadcast TV. However, our illustrative example case does not include cable-based VOD.

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