Finding Direction When Developing New Media Products
An Empirical Study of Readers’ Preferences for Enhanced Fiction EBooks

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Abstract
In times of media convergence, media managers are under increased competitive pressure. New technologies result in a change of the customers’ preferences, which - if ignored by established market participants - attract players from other industries to satisfy their needs. Therefore, the investigation of the preferences of consumers in the context of new media channels is essential and can provide decisive competitive advantages. This study aims to elaborate on one of the methods to increase more appropriate knowledge about the customers’ needs, even in an early stage of the media product development process. Using the example of eBooks, a best-worst analysis concerning potential enhancement features was applied. Estimated utilities by the hierarchical Bayes model and customer segments by latent class analysis lead to clear profiles of two different benefit segments characterized by distinct patterns of utility profiles. The first segment consists of heavy readers of books, conservative and budget conscious in their attitudes. The second segment is characterized by a more sporadic reading style. These kinds of readers are highly multimedia affinitive and their willingness to pay for eBooks is higher than that of the first segment. Media managers should take advantage of the potential of such research to make better investment decisions and rely less on the pure intuition and/or internal views of creative media people.
The media world is challenged by media convergence driven by digitization. The technological development shifts the competition forces. Moreover, the media are now produced and consumed differently than before. To be precise, the diffusion of mobile devices transforms the consumer behavior, habits and needs. During this process, media companies influence consumer behavior by their new digital products and vice versa. Consumer habits have an impact on the innovations (Jenkins, 2006, p.16-20). However, it is the consumer who has the final power to decide about the success of innovations (Brown & Eisenhardt, 1995; Cooper & Kleinschmidt, 1987).

Thus, the media managers are forced to experiment with business models and media products to meet these modified needs – otherwise players from other industries might fill in the gap. Therefore, the spirit of innovation, openness to new products and flexibility are required for a successful line extension (Brunn & Blömeke, 2009, p.203).

Traditionally new media product concepts often arise predominantly out of the internal view and intuition of creative people. New media products are often driven by new tech features’ potential without properly exploring the actual needs of consumers in an early stage of product development before it enters the market. Thereby, product managers loose important competitive advantages (Kaulio, 1998). Investments in innovation are not allocated in an optimum way. Even if market research is applied – mostly it is carried out for the testing of beta-versions or at a launch stage (van Kleef, van Trijp & Luning, 2005, p.181). Indeed, market research in the later stages of development is important, but strong influence on success of consumer insight in the early stage has been increasingly recognized (Cooper, 1985, 1988, 1998; McGuiness & Conway, 1989).

Hence, this study aims to elaborate on one of the methods to increase more appropriate knowledge about customer needs at the early stages of product development. It results in quantitative estimates of the relative strength of consumer preferences towards the features of new media products. We choose the case of product features for enhanced fiction eBooks in Germany. In this research, the German fiction readers become involved in the innovation process by answering an online questionnaire concerning potential enhancement features.

In the next section, we explicate the theoretical background of the opportunities in terms of fiction eBooks and state the research questions to be answered in this paper. The then following section describes the experimental design of the applied research method, the sample and the data analysis, followed by empirical findings. In the final section, we discuss the results and implications of this research for the field of media management.

Theoretical background and research questions

EBooks had no significant status in the book industry for a long time. However, since the launch of eReaders using electronic ink, eBooks have become relevant competitors of printed books (Richter, 2011, p.109-111). eBooks can be offered as 1:1 translations of the printed editions or alternatively enhanced with additional benefits like multimedia
features or interactivity (Matrisch & Welsch, 2011, p.16, Damke, 2009, p.207, Weise, 2008, p.85). The development of multimedia technology allows to combine text, audio, video, photo and graphics in just one single medium (Haldemann, 2000, p.12). The following feature is one of the main scientifically discussed opportunities of fiction eBooks.

The enhancement of eBooks with additional digital features is under discussion. According to Damke (2009, p.207) and Weise (2008, p.85), consumers increasingly expect from eBooks to offer digital enrichment. For instance, they expect the text to be enriched by corresponding animations, sound effects or by hyperlinks leading to more background on the story (Richter, 2008, p.111; Matrisch & Welsch, 2011, p.16). Another possibility of enrichment comes from combining reading and gaming, making the experience similar to the one of video games (Korsemann Horne, 2012, p.18). Furthermore, social reading is one more focus of academic interest. The social reading has become a buzzword in the context of enhanced eBooks. It is the social networked reading with like-minded people. Marking and commenting features of modern reading devices allow one to discuss text passages in the social communities like Facebook (Matrisch & Welsch, 2011, p.17-19). These features simplify opinion-sharing on the books between readers.

Another point is, that in modern reality of diffused mobile devices consumers wish to have access to content wherever they are and whatever they do. They expect to have the possibility of switching between their smartphones, tablets and computers whenever they want. Gregg (2001, p.74) claims that for that reason, publishers should see themselves primarily as content providers and offer multi-channel access. Clement, Eggers and Prostka (2012, p.22) share the same opinion and argue that there is a significant need for hardware-independent access.

The question arises whether enhanced eBooks are still comparable to printed books. Huemer (2010, p.79) argues that eBooks are completely new media products. Riehm, Orwat and Wingert (2001, p.150) go one step further and assume that eBooks are the ‘revolution of reading’. Nevertheless, most book publishers remain careful and still don’t use the full range of innovation opportunities arising from the digitization of books (Clement, Blömeke & Sambeth, 2009, p.16). One reason for this is the dilemma that the eBook enhancement causes significant higher first-copy-costs (Huemer, 2010, p.79), while consumers predominately expect cheap prices (Sigarchian et al., 2013). It forces media managers to rethink their product strategies and pay attention to consumers’ willingness to pay and to the size of the target group. In this context, it should be noted that enhanced eBooks have the potential to attract sporadic readers. This group shows a high multimedia affinity, is interested in digital innovations and likes entertainment (Börsenverein des Deutschen Buchhandels, 2008). Schrape (2011) added that there is an additional market for enhanced fiction eBooks it’s a target group characterized by computer-savvy users having less interest in reading. (p.49)

There is a possibility to cope with the high first-copy costs of enriched eBooks through cross-financing by using commercials like advertisement or product placement within eBooks. For instance, the protagonist of a fiction could be described by wearing shoes...
of advertisement partners. But it is the question whether such business model is accepted. On the one hand, books are seen to be cultural goods (Karmasin & Winter, 2000, p.31), but on the other hand commercials are widely used in the digital media, so that an acceptance might already exist. Janello (2010, p.102-103) is convinced that cross-financing via commercials is going to play a significant role in the book industry in the future.

This theoretical background is enriched by the empirical research based on 13 explorative expert interviews with book publishers that are experienced in the digital field. Altogether it leads to the following research questions to be answered within this explorative study:

- Do heavy and light book readers have different preferences?
- Is there a market for 1:1 translations from print to digital and an additional market for the multimedia-rich content?
- Which enhanced features are important from a consumer’s point of view?
- What is the willingness to pay for enhanced eBooks compared to their print counterparts?
- How important are bundling offers of printed as well as digital editions?
- Are commercials like advertising or product placement within eBooks accepted by the readers?
- How important is the possibility to resell and lend out eBooks?
- Is there a demand for switching between the translated and original versions?
- Do readers desire to use corresponding audio books simultaneously?
- Is there a need for physical packaging for the bookshelf or give away eBooks?
- Are readers interested in social reading?
Research method

Experimental Design of Best-Worst

To answer the research questions, we chose best-worst scaling (or maximum difference scaling). It’s a multivariate analysis methodology for measuring preferences\(^1\). This approach is a multi-nominal expansion of pair comparisons (Thurstone, 1927) which has several advantages over traditional rating scales (Flynn et al., 2007; Lusk & Brigge
cman, 2009). Best-worst questionnaires are scale-free; inconsistent answers or low between-item differentiations are avoided by forcing the subjects to make a discriminating choice under the items shown within the experimental design (Wirth, 2008; Auger, Devinney & Louviere, 2007; Lee, Soutar & Louviere, 2007). Compared to ranking or rating tasks, respondents understand best-worst tasks rather intuitively (Lagerkvist, Okello, Karanja, 2012) - it is commonly easier to make choices than discriminate among items (Sawtooth Software, Inc., 2013). Furthermore, this methodology has been shown to be superior in predictive validity and test-retest reliability (Cohen, 2003; Chrzan, Golovashkina, 2006).

Figure 1 shows a typical best-worst choice task. Test persons are asked to rate product attributes as “best” or “worst” – in this study “most important” or “least important” – out of a set of items and repeat this task for a limited and systematically varied number of choice sets (Lee, Soutar & Louviere, 2007).

<table>
<thead>
<tr>
<th>Most important</th>
<th>Least important</th>
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<tbody>
<tr>
<td>Multimedia features (sound, video)</td>
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<tr>
<td>Cost-effective bundle with the printed edition included</td>
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<tr>
<td>Interactive codetermination of the story</td>
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<tr>
<td>Switching between the translated and the original version</td>
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1 Sawtooth Software was used to create the best-worst questionnaires and analyze the empirical data.
Each item is equally shown with all other items in varying positions so nearly orthogonality can be achieved and context effects are avoided. In addition, each item is shown an equal number of times on the left and on the right side to balance the positions (Sawtooth Software, Inc., 2013).

An underlying assumption of the best-worst scaling model is that respondents compare each possible pair within a choice set and then choose the pair with the maximum benefit difference. It isn’t possible to evaluate all items as best (or most important) or worst (or least important). Therefore, this approach forces trade-offs. The interval-scaled preference data can be derived from these nominal choice data. (Cohen, 2003, p.5-6).

**Relevant Product Attributes**

To identify the relevant product attributes of fiction eBooks for the choice sets, explorative qualitative interviews with 13 experts of the book industry were conducted according to Weiber & Mühlhaus (2009, p.49-50) and Gläser & Laudel (2009). These experts were two digital publishing managers, two authors of fiction eBooks, three booksellers, two service providers of publications, two lectors and the speaker of the working group on electronic publishing of the German book industry association.

The 14 items resulting of the expert interviews can be found in Table 1.

<table>
<thead>
<tr>
<th>Relevant product attributes for fiction eBooks</th>
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</thead>
<tbody>
<tr>
<td>Multimedia features (sound, video)</td>
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<tr>
<td>Integrated games/puzzles</td>
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<tr>
<td>Cost-effective bundle with the printed edition included</td>
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<tr>
<td>Hyperlinks for additional information about the story</td>
</tr>
<tr>
<td>3d-graphics</td>
</tr>
<tr>
<td>Publishing date not later than the printed edition</td>
</tr>
<tr>
<td>Cheaper than the printed edition</td>
</tr>
<tr>
<td>Corresponding audio book for (temporarily) reading aloud</td>
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<tr>
<td>No commercials within the eBook</td>
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<tr>
<td>Physical packaging for the bookshelf or to give away</td>
</tr>
<tr>
<td>Facebook-link for social exchange with another readers/the author</td>
</tr>
<tr>
<td>Resalable and loanable</td>
</tr>
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**Sample**

The sample was based on fiction readers in Germany. A survey was conducted online in July 2012 and distributed via snowballing in relevant social media. In addition, emails with a hyperlink to the survey were sent to several universities. Altogether, 618 questionnaires
were collected and after the database had been cleaned, 497 questionnaires were used for data analysis. The sample was not representative and dominated by 76.9% female respondents. However, in the year 2013 the female proportion of the German eBook readers was surprisingly 59%2 (Börsenverein des Deutschen Buchhandels, 2014). Furthermore, women significantly read more fiction books than men3 (IfD Allensbach, 2011). The majority of the sample consisted of students (83.9%) and 83.1% was in the age of 20 – 29 years. 79.2% were heavy readers of books (daily, several times a week or once a week).

Data Analysis

Based on the empirical data, the part-worth utilities of each item of each respondent were calculated. The pair comparisons among the choice sets are utility-maximizing decisions and can be modeled as a multi nominal logit (MNL). Therefore, the probability of valuating the ith item as best (or most important) out of choice set with i through j items is equal to:

\[ P_i = \frac{e^{U_i}}{\sum e^{U_j}} \]

Where:
- \( e^{U_i} \) = the antilog of the utility for item i
- \( e^{U_j} \) = the antilog of the utility for the items i through j

Corresponding, the probability of choosing the ith item as worst (or least important) is equal to:

\[ P_i = e^{-U_i} / \sum e^{-U_j} \]

Where:
- \( e^{-U_i} \) = the antilog of negative the utility for item i
- \( e^{-U_j} \) = the antilog of negative the utility for the items i through j


Each choice task was coded separately twice – once for the items chosen as best and once for the worsts. All elements of the design matrix valuated as “worst” were multiplied by the factor -1 (Sawtooth Software, 2013).

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2 Basis: German individuals aged 10 and over.
3 Basis: German individuals aged 16 and over.
For estimating the part-worth utilities, hierarchical Bayes coupled with Markov Chain Monte Carlo algorithm was used under the logit rule. For this procedure convergence was assumed after 20,000 iterations. The resulting raw scores of the estimations consisted of positive and negative values and are on an interval scale. These values were converted to ratio-scaled scores (rescaled scores) with solely positive values, summing up to 100.

Benefit segments were detected by latent class analysis estimating the relative probability of each respondent belonging to each group. As a result, 98.6% of test persons could be associated to one of the two groups with a probability of greater than 60%.

Results are presented in Figure 2 at aggregate level. Estimated preferences are based on the whole sample as well as on the level of benefit segments that result from the latent class analysis.

In addition, the relative willingness to pay for different eBook-offers was derived from the direct method (Simon, 1989, p.27). The test person was asked for the highest price at which he or she would be willing to buy an eBook given a specific price for the paper edition. Since the purpose of the study was not to analyze optimal pricing strategies but rather to compare different levels of the willingness to pay for different reader segments, the simple direct method seemed to be sufficient.

**Empirical Findings**

Surprisingly, the estimation of the part-worth utilities at the aggregated level showed that rather conservative fiction eBook features are preferred. There is only minor acceptance of commercials within eBooks. Furthermore, lower prices compared to the ones of the printed counterparts are regarded to be important. Accordingly, enhanced features surprisingly are more subordinated in the preference order.

However, the latent class analysis revealed two benefit segments (A and B) that differ systematically in their needs. The evaluation of the descriptive data, which were part of the questionnaire including the willingness to pay, led to valuable further information about these two segments. Segment A (68.2% of the sample) proved to have - at a 10% significance level - higher proportion of heavy readers of books (81.4%) than segment B (31.8% of the sample), which has a higher proportion of sporadic book readers and only 74.1% heavy readers. Segment B shows high multimedia affinity and its willingness to pay for eBooks is significantly higher than that in segment A, leading to an average willingness to pay which is between 4 and 11% higher for the various bundles they were exposed to. A comparison of the part-worth utilities (rescaled scores) between the aggregated level and the segments is provided in Figure 2 in descending order of the aggregated values.
Figure 2: Part-worth utilities (rescaled scores) of fiction eBooks attributes – comparison between the segments.
Source: Own illustration.

Part-Worth Utilities (Rescaled Scores) of Fiction EBook Attributes
- Comparison Between the Segments -

- No commercials within the eBook
- Cheaper than the printed edition
- Switching between the translated and the original version
- Publishing date not later than the printed edition
- Resalable and loanable
- Cost-effective bundle with the printed edition included
- Corresponding audio book for (temporarily) reading aloud
- Hyperlinks for additional information about the story
- Multimedia features (sound, video)
- Physical packaging for the bookshelf or to give away
- Interactive codetermination of the story
- Integrated games/puzzles
- Facebook-link for social exchange with other readers/the author
- 3d-graphics

Aggregated level (Fiction readers in Germany) n=497
Segment A n=339
Segment B n=158
The portfolio shown in Figure 3 emphasizes the similarities and the main differences between both groups. The x-axis represents the part-worth utilities (raw scores) of the eBook attributes of segment A. The y-axis represents the ones of the segment B. The middle axes of the portfolio are defined by the zero value of part-worth utilities. Quadrant I includes those product features that are important for both segments. Quadrant II shows the attributes that are important only for the segment B and not for the segment A. The features that are unimportant for both groups are shown in quadrant III. Quadrant IV includes those product features that are important only for the segment A and not for the segment B. It is interesting to observe that the range of part-worth utilities is wider for segment A than for segment B, indicating a stronger expression of preferences.

Figure 3: Portfolio of the segments’ preferences in terms of fiction eBooks. Part-worth utilities (raw scores).
Source: Own illustration.

II.: IMPORTANT ONLY FOR B
- Multimedia features (sound, video)
- Hyperlinks for additional information about the story
- Interactive codetermination of the story
- 3d-graphics
- Facebook-link for social exchange with other readers/the author

I.: IMPORTANT FOR A & B
- Switching between the translated and the original version
- No commercials within the eBook
- Cheaper than the printed edition
- Corresponding audio book for (temporarily) reading aloud
- Publishing date not later than the printed edition
- Resalable and loanable
- Cost-effective bundle with the printed edition included

A: conservative segment/ heavy readers

III.: UNIMPORTANT FOR A & B
- Integrated games/puzzles

IV.: IMPORTANT ONLY FOR A
- Physical packaging for the bookshelf or to give away
Members of Segment A want their e-book to be published on time. They have a high preference to be able to buy bundles of books and eBooks and would like to re-sell their eBooks to others. On the other hand, Segment B prefers all the entertainment-oriented multimedia features.

It is very important for both segments that fiction eBooks are free of commercials and that they are cheaper than the corresponding printed editions. They both also desire the possibilities of switching between the translated and the original versions and of using corresponding audio books simultaneously.

However, both groups regard social reading via Facebook, the possibility to purchase fiction eBooks in a physical package, 3d-graphics, integrated games and puzzles as unimportant.

We name segment A the conservative segment/ heavy readers and segment B multimedia excited segment/ sporadic readers.

**Conclusion**

In our study, we find clear benefit profiles of different consumer segments. It could be shown that there is a market segment for 1:1 translations from print to digital with budget-conscious and conservative consumers as target group and that there is an additional market for enhanced eBooks targeting entertainment-oriented multimedia-excited readers.

The findings are worth to be considered in the product development and communication strategies of eBook publishers. The study is not based on a representative sample. Thereby we cannot answer the question of how big the size of segment A and B are in the real world. Since segment A stronger represents the heavy readers, we can assume that these are core customers that stand for most of the sales of book publishers. Heavy investments in multimedia features are wasted efforts for them. It is the basic content in German and original language, to be read or to be heard, in print or as an eBook which matters – clearly a challenge to get the licenses for such bundle. It is also a challenge for traditional book distribution channels to sell bundles of books and eBooks, which turns out to be an opportunity here. Few but expensive multimedia featured eBooks should be offered to the readers of segment B that seldom read books. The results of our estimation also demonstrate that cross-financing via commercials within eBooks will not find acceptance. Also, the consumers’ need for social reading – at least via Facebook as we tested it - seems to be significantly overestimated.

This study may serve as an example of detecting consumer preferences by proper market research methods. Such research has the potential to better focus investments during product innovation and empower intuition and the internal view of creative media people with actual consumer insights. In addition to that, the quantitative method which we propose here leads to clearer and possibly more relevant and objective statements than pure qualitative methods like focus groups. The limitation is, that relevant product features should be properly identified and defined in advance. In our case, we studied existing research and interviewed industry experts for this purpose. To identify a relevant set of possible features, the involvement of consumers applying qualitative methods may also prove to be a relevant choice.
References


