SenseMaking Presentations: The effect of Storytelling and Knowledge Visualization in B2B Sales Situations on attitudes, knowledge acquisition, and purchase intention

1. Introduction

Making sense of the world is a universal human aspiration. In human history legends, myths and everyday wisdom was – and still is – transferred from one generation to the next using stories. In addition, visuals ranging from cave paintings to sculptures and art paintings supported this process. The result is a complex architecture of knowledge pieces, but it supports the cognitive structure of our human brains, and thus helps the learning process.

In today’s business environment stories are still being used, mostly at the corporate level (Woodside, Sood, & Miller, 2008). The company heroes (or archetypes) convey a lot about the culture and values inside the company. Storytelling is also used during business meetings, but the presentation tool PowerPoint often blurs the storyline and reduces the content to just a few bullet points. Boring business presentations are the result. The purpose of this research is to combine elements from storytelling and elements from knowledge visualization and merge it into one presentation to create a more appealing presentation format, which takes human knowledge structures into account. The effect of the resulting presentation on attitudes, knowledge acquisition, and purchase intention is subsequently tested in an experiment.

2. Background

This paper builds on dual-channel theory, cognitive load theory and mental schemas. These theories can be used to explain important aspects of transferring knowledge from a seller (often a sales person or a consultant) to a buyer (often a team of people from the buying company). Subsequently, knowledge visualization and storytelling are briefly introduced. They build the foundation of the story / presentation used in this experiment. And finally, the rationale for the use of PowerPoint in this experiment is provided.

The dual-channel theory stipulates that people have an auditory channel and a visual channel available for processing information (Paivio, 1991). When both channels are used, performance in terms of understanding, recall and engagement is enhanced. In addition, cognitive load theory postulates that both channels have a limited capacity (Cook, 2006; Sweller, Van Merrienboer, & Paas, 1998). Therefore, when either one or both of the channels are inundated with too much information, cognitive overload occurs, resulting in impaired recall of the material to be memorized. The complexity of the material itself is not the problem. It seems that there is no real limitation of human brains to deal with a complex architecture of knowledge pieces. The temporal axis restricts the amount (Sweller et al., 1998). Only a limited amount per time unit can enter human memory. Time and pacing are important. Since a sales presentation lasts only up to one hour (Moncrief & Marshall, 2005), the amount and the complexity of information will be quite restricted.

A mental schema is a cognitive framework that helps learners to organize and interpret the vast amount of information that is available in their environment. It also helps to connect more deeply and quicker to knowledge already stored (Paas, van Gog, & Sweller, 2010). A normal sentence is a good example of such a schema (copied from (Sweller et al., 1998)): “all of the words in a phrase” is understandable, while “in a phrase the words all of” can hardly be understood and
learned. Visual elements are a further example for schemas stored in our human brains and help us to store and to retrieve information.

In a B2B sales situation both sides, the seller as well as the buyer, both will strive to follow a rational decision making process (Bazerman & Moore, 2009; Moncrief & Marshall, 2005). Given that the amount of information is limited and that both sides feel the need to know more details, information overload is the consequence (Eppler & Mengis, 2004). Knowledge visualization may provide a solution to this problem. Visuals connect to schemas stored in our brains and they also tend to work on the implicit and unconscious level. This allows to transport more information per time unit (Eppler & Mengis, 2004).

Knowledge visualization is an emerging field (Pfister & Eppler, 2012; Tsai, Shen, & Fan, 2013). It helps in creating, sharing and storing of information (Bertschi et al., 2011). Of particular importance in a B2B sales situation are the following advantages and benefits. Knowledge visualization raises awareness, improves recall and energizes viewers of a presentation. The process of visualization also helps to further understand concepts explained during the presentation. For an in-depth discussion of those benefits see Eppler and Mengis (2004). Visual metaphors seem to be most suitable for the purpose of this study (Eppler, 2003; Lengler & Eppler, 2007).

Storytelling is a somewhat older field of research (Woodside, 2010). The best way to persuade somebody else is by telling a compelling story (McKee & Fryer, 2003). Stories and narratives are mental concepts for sense making (Peracchio & Escalas, 2008). A story puts events, facts and characters in a narrative form. Two elements in this process are central: chronology and causality (Escalas, 2004). A story sets events in a temporal order (chronology). In stories and in real life many things happen. The temporal frame prevents that everything happens at once. The human mind then constructs causality from the chronological order (Dahlstrom, 2010; Rapp & Gerrig, 2002).

Stories are organized following frames, schemas, plans und scripts (Busselle & Bilandzic, 2008). The context of a story activates frames that the reader uses in order to fill gaps that are not explicitly mentioned in the text. Schemata on the higher level and scripts on the lower level provide the message. Schemata represent the storyline and stereotypes (or archetypes) are good examples for such a schema. Scripts give the details of the story (e.g., theatre scripts). The plans finally provide the temporal sequence.

Good illustrations for stories are the archetypes present in many popular movies and also inside companies (for more details see (Megehee & Woodside, 2010; Woodside et al., 2008)). The hero - unconscious to the reader / listener - activates frames. The schemata provide the storyline and the scripts describe what is happening. These scripts or events are the challenges and adventures of the hero and include the spoken and nonverbal language. The plan provides the temporal sequence and at the end the hero goes through a feeling of catharsis. A story is always incomplete and the readers fill the gap The human mind constructs meaning through mental models and gives a cognitive structure to all the details and events. In the marketing context, this cognitive structure will guide the consumer to find a reason, why to buy a certain product or service.

Peracchio and Escalas (2008) provide a guideline for crafting a story following the principles of Freytag’s pyramid (dating back to 1863). A story is divided into five parts: exposition, rising action, climax, falling action, and denouement. First, the protagonist of a story is introduced and exposed to some challenge or conflict. Second, the action rises and a series of related incidents or
findings are introduced. These findings usually are inconsistencies. Third, the climax is the turning point, often requiring the protagonist to draw on hidden inner strengths. Fourth, during the falling action the conflict between the protagonist and the antagonist unravels with doubtful outcome. Perhaps, even new tensions arise. Fifth, during denouement all problems are resolved, tension and anxiety are released and things return to normality. This plot was subsequently used to craft the story/presentation for this experiment.

Storytelling and knowledge visualization in combination have been primarily considered on a phenomenological level. In a business context it is also inherently different from other types of visual storytelling, because of its complexity and scale of the content that needs to be communicated (Bertschi et al., 2011). Bertschi et al. (2011) forecast a shift from delivering simple facts and figures to conveying their meaning, emotions, interpretations, or consequences. They also criticise the lack of theory. The combination of storytelling and knowledge visualization is still largely rooted in business practice (and not theory) and abundant practical guidebooks exist.

Inside companies business presentations are routine activities. Because of its apparent simplicity, PowerPoint is the most ubiquitous tool used (Kernbach & Bresciani, 2013). PowerPoint has huge advantages. It helps business people organize their ideas very quickly and predefined styles support the ‘creative’ part of the work. Tufte (2003) then published an influential article in Wired magazine and blamed PowerPoint for degrading the quality of communication. And indeed it has many constraining qualities that need to be taken into account, when drafting business presentations (Kernbach & Bresciani, 2013). Most notably are abbreviating, fragmenting and templating (see the original publication for the full list). In this paper we take the view, that PowerPoint will still be used extensively and that presenters must consider the positive and negative sides of this tool. Doumont (2005) acknowledges that PowerPoint has a restraining cognitive style, but he also states in the title of his paper that not all slides are evil. In consequence, PowerPoint will be used in our experiment.

3. Methodology

As example for a B2B sales situation, the wood construction industry built the setting for this experiment. The focal company manufactures wood elements to be used in construction of buildings. For this experiment we disguised the real company name and it product names. New names and logos were used, to ensure neutrality (SmartWood hence forward). The target audience of SmartWood are construction planners. Those people have a good working knowledge of most materials used in construction (e.g. wood, concrete, steel). But they still need specialized knowledge for specific products to be used. SmartWood’s sales people normally use PowerPoint to transfer this specific knowledge and also to convince the planners of the benefits of pre-manufactured wood elements.

Following the methodology of Eppler (2007) two expert interviews and one workshop with people from SmartWood were conducted. The qualitative input resulted in trigger points and novel ideas for the development of the story to be used during the experiment. Woodside (2010) refers to these trigger points as “touchpoints” of a story. We developed the story following the framework of Eppler and Burkhard (2007), while having Freytag’s pyramid in mind. The original sales presentation (adapted with the above mentioned new logos and product names) served as control. Both, the original presentation and the experimental story were analyzed and compared using the knowledge types and the knowledge taxonomy of Alavi and Leidner (2001).
The experimental story followed the concept of a good story as described above. First, the two protagonists were introduced: the construction planner (the ‘good’ person) and the architect (the ‘bad’ person). The participants in the experimental condition (the readers of the story) should relate to the planner with empathy and sympathy. After the introduction a first complication arose. A conflict between planner and architect erupted. The conflict broke out over some issues of sustainability of different construction materials. New findings and new data were introduced followed by a proposed resolution. Several waves of conflict / resolution were built into the story. Two visual metaphors were also presented in the story. Here, an iceberg was used following suggestions from Lengler and Eppler (2007). Also great care was taken to replace words from the original presentation with more emotional words. The original company sales presentation served as control.

The following scales were used to measure the target concepts. Involvement with the presentation (Zaichkowsky, 1994), the liking of the presentation (Zheng, 2010), attitude towards the product (Escalas (2004) as modified by Zheng (2010)), purchase intention (Escalas and Luce (2003) as modified by Zheng (2010)). The knowledge of the participants right after the presentation was measured using the framework and suggestions by Mayer (2005). An expert in the field (not a salesperson of SmartWood) made both presentations to ensure neutrality. The attitude towards this presenter was measured using the likeableness-scale described in Reinhard, Messner, and Sporer (2006). Also the perceived competence of the presenter was assessed using salesperson's expertise-scale described in Stock and Hoyer (2005). And finally, we measured potential information overflow. Participants may experience a loss of control over the information provided resulting in stress, confusion and finally in cognitive strain. For this purpose we used the scale from Eppler and Mengis (2004).

The main hypotheses tested were as follows. Compared to the original presentation format, we expected the manipulated presentation format to lead to a more positive attitude towards the presentation and the product presented, to a higher intention to purchase the product presented as well as to an increased knowledge transfer, but to a decreased cognitive load.

The material to be used in the real experiment was pre-tested with a group of 35 potential participants. Some minor changes were made before the final experiment.

4. Results

Participants were recruited from a university having a field of study in wood construction in Switzerland (40 volunteers; mean age: 24.4; 36 males, 4 females). The 40 participants were randomly assigned to the control or the experimental condition. After completion the participants were debriefed, thanked for their support and they received a small gift. Only the important results are shown in the following paragraphs.

The 7-point scales used in this study all have a Cronbach's alpha of over 0.7 (most scales over 0.85) demonstrating a good internal consistency and high reliability. We also ran several tests using the presenter as a covariate (likeableness and competence), because the attitude towards the presenter was significantly different between the two groups ($M_{\text{story}} = 5.69$ vs. $M_{\text{control}} = 4.41$; ANOVA with F-value 30.9; $p \leq 0.05\%$).

We made several group comparisons (ANOVA) contrasting the experimental story and the control presentation. The involvement with the presentation ($M_{\text{story}} = 5.21$ vs. $M_{\text{control}} = 3.57$; F-value 23.4; $p \leq 0.1\%$) and the liking of the presentation (5.45 vs. 3.80; F-value 14.1; $p \leq 0.5\%$) were both was significantly higher in the experimental group. The participants also felt less
information overload during the experimental presentation (6.12 vs. 5.25; reversed scale!; p ≤ 5%). Product knowledge of the participants right after the presentation was higher in the experimental group (M_{story} = 0.66 vs. M_{control} = 0.49; range of value between 0 and 1; p ≤ 0.1%). Overall (both groups combined) there was a high correlation between involvement and purchase intention (r=0.448; p ≤ 0.05%).

The attitude towards the product was also higher in the experimental group (M_{story} = 5.63 vs. M_{control} = 5.03; p ≤ 5%) and also the purchase intention (M_{story} = 5.45 vs. M_{control} = 4.63; p ≤ 0.1%). However, when we built the attitudes towards the presenter into the model (ANCOVA), the latter two group differences disappeared.

5. Discussion

The results from this experimental study clearly demonstrate the positive effect of storytelling in a B2B sales situation. It increased all constructs measured in our study. This is in line with findings from the literature reviewed above (e.g. (Eppler & Burkhard, 2007)). It is surprising that even in a rational and cognitive situation (B2B) a story combined with visual metaphors can have such an impact.

The tricky part in storytelling / knowledge visualization is the story itself. We followed the methodology of Eppler (2007). Our experience shows that details count very much. Oversimplification, decreased credibility and lower trustworthiness may result. Also, making the content comparable to an original presentation is a challenge. The comparison using the knowledge types and the knowledge taxonomy of Alavi and Leidner (2001) proved useful. It is also advisable to not only use storytelling but also include visual metaphors (Eppler, 2007). The entire presentation must make sense to the listeners and also engage them (Megehee & Woodside, 2010). Fairy-tail style stories are not at all suitable. In consequence, we termed our step-by-step procedure “SenseMaking Presentation”. Like Bertschi et al. (2011) we also diagnose a lack of structure – derived from a sound theory - guiding B2B storytellers.

The benefits of SenseMaking presentations in complex B2B sales environments are noteworthy. It increases involvement with both, the product, as well as the presentation. It also transfers more knowledge from the presenter to the listeners. The experimental story obviously reduced the cognitive load and enabled participants to memorize more (Mayer, 2005; Mayer & Moreno, 2003). The SenseMaking presentation also increased the purchase intention, this being the most important outcome measure for a B2B sales person.

The SenseMaking presentations also seem to have a significant influence on the presenting person. The attitude towards the presenter was significantly better in the experimental group. The presenter was judged more likeable and more competent in the experimental situation. Since the present study is single-blind and great care was taken to ensure ceteris paribus conditions, this is somewhat surprising. Also the experimenter did not notice any difference in the person presenting. The participants, however, perceived the person to be one of the biggest differences in the present study. This finding is particularly relevant for businesses in the B2B context. The presenter or sales person is a crucial part of the branding process (Lynch & De Chernatony, 2007). This point warrants further research to elaborate on the relationship between the attitudes toward presenter, presentation and product and the relationship’s impact on purchase intention.

One final thought concerns argument strength. In an interesting study Chang (2009) found that participants failed to take argument strength into account when reading narrative magazine articles. When they read facts-based articles, they elaborated more and also took argument
strength into account. In a sales situation this could lead to unwarranted, or even unwanted, discussions about details of a product. This is in line with our findings. The involvement with the presentation and the purchase intention were significantly higher in the experimental group. We speculate that participants in the experimental group obviously did not mentally discuss the facts in-depth. This would be a major advantage in a B2B sales presentation and warrants further investigation.

In conclusion, storytelling and knowledge visualization in combination demonstrate to causally increase key measure for companies in B2B environment. Their combination increases customer involvement, several attitude measures and finally also results in a higher purchase intention.
6. Literature


