

Communicative challenges with dematerialised products

Viktor Hiort af Ornäs^{1,2}; viktor.hjort@his.se

¹ University of Skövde, School of Technology and Society

² Chalmers University of Technology, Division of Design

ABSTRACT:

Increasing the service components of products may contribute towards sustainable consumption and enable customisation of products, but changes conditions for communication. In a study on functional sales, participants in two focus groups were presented with four hypothetical examples. The participants were found to question the motives and capabilities of the producer and were quite sceptical to the offers. This text explores if this may be explained by how the offers were presented and interpreted, and by inherent problems with communicative aspects of dematerialised products.

Dematerialisation changes the conditions for communication at different stages of the product usage lifecycle. A physical artefact may embody meaning which helps the user interpret the product and its consequences. In use it may enable sending messages to others. Over time products also become associated with personal meanings which may be important in long term use and attachment. Dematerialisation changes the conditions for all of these.

Dematerialisation and functional sales

The earth's limited resources are consumed at an increased pace and unemployment face western countries as production move to low wage countries. By increasing the utilisation level of goods and to some extent replacing it with services we could take a step towards sustainable consumption (Stahel, 1997). One concept in discussions on servicification and dematerialisation is "functional sales"- i.e. producers selling functions instead of products. As an example a producer may start selling holes instead of drill bits. Producers of such solutions may freely choose means to realise the functions, and while goods may be involved they are not necessarily specified in advance. In the ideal case customers pay for goal fulfilment instead of physical products which changes focus from point of sales to product usage, and increased producer - customer interaction is promoted as a potential benefit. As services are produced and consumed at the same time increasing the service component of products may make customisation easier. Functional sales have primarily been discussed in relation to business to business (B2B) markets (Lindhqvist & Mont, 2002), but could be interesting also from a consumer perspective. However there is a shortage of empirical material on this.

We have previously addressed functional sales in a case study on B2B energy services (Hiort af Ornäs & Rexfelt 2006 a) where buyer competency and trust were central for gaining acceptance. In (Rexfelt & Hiort af Ornäs 2006) we addressed it in relation to private consumers and in (Hiort af Ornäs & Rexfelt 2006 b) we argue that dematerialisation comes with many practical changes for consumers in terms of new ways of doing things, and new things to do. This text focuses on consequences of dematerialisation in relation to products communicative properties.

The examples

The empirical material comes from a study on private consumers' attitudes to functional sales in which we presented participants with four hypothetical offers concerning ownerless product service combinations regarding indoor temperature, TV-on demand, cars and clothing. The offers were described as colour printed ads. The full procedure is described in (Rexfelt & Hiort af Ornäs 2006).

Participants seem to associate the offers with "package deals" and assume some fine print. They questioned both the motives and competency of producers and were overall sceptical. One participant puts it "I am very distrustful and critical when someone take upon themselves to save money for me. That is something others are normally not interested in".

Challenges in communication

Even producers with legit motives may have trouble finding acceptance for product-service offers because of communicative problems. We can use the Shannon (1948)-Weaver model of communication described in figure 1 to illustrate how dematerialisation changes conditions for communicating the product to the consumer.

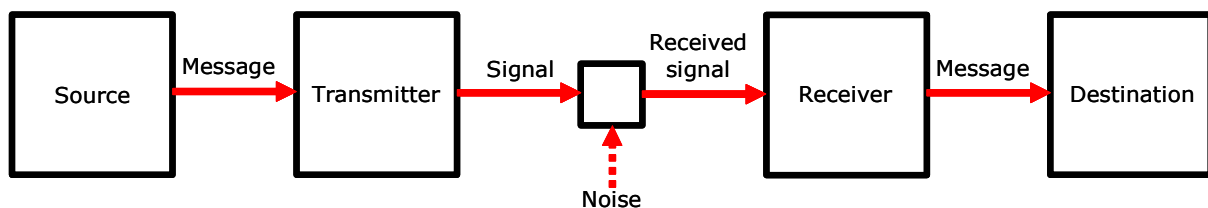
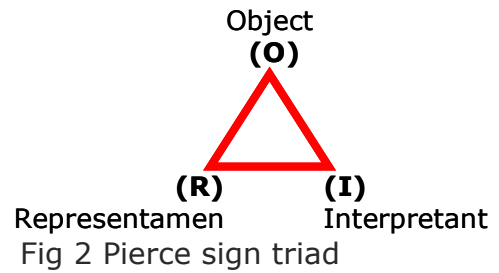



Figure 1. The Shannon(1948) -Weaver model of communication

A physical good may be seen as a vehicle for the producer to convey a message to the consumer (Coates, 2003; Monö 1997). If we replace it by a service the source remain the same but *the message changes* from describing the product to describing the intentions of the producer as not all aspects of dematerialised products will yet be specified. The increased service component may prove to be a Janus face of functional sales. It allows for customisation but the consumer faces uncertainty. *The "signal" changes* in the meaning it carries and also in its form. Goods may act as sign vehicles but services have to be described through some other means and producers must actively seek to communicate, i.e. *the conditions for transmitting the message changes*. Also *decoding the signal may become harder* because of more abstract signs and few experiences with similar offers. **Challenge 1 regards communicating the offer to the consumer.**

Problems with decoding the offers became evident when participants questioned whether promises would be fulfilled. While our descriptions denoted offers that participants could understand they also came with negative connotations. Participants state that it would be an interesting solution if it worked but question motives and ability of the producer and seem to assume fine print with hidden reservations. Some of this may potentially be explained through semiotics.

According to (Nöth 1990) Peirce described a sign as consisting of three constituents; representamen (the perceptible object), object (that which the object represents) and interpretant (the meaning/interpretation of the sign), see fig 2. By applying Peirce sign triad to comments made by participants we may find some potential explanations for participants' scepticism (See fig 3).






O: Other promises of saving money or making fast profits (that often fail to do so)

R: A promise to save money


I: This is too good to be true



O: Companies who do not reveal their identity are normally shady

R: Lack of contact information


I: This is somewhat shady



O: Spelling mistakes are made by incompetent people

R: Spelling mistakes

I: The producer suggesting this is incompetent



O: Other promises of saving money or making fast profits (that often fail to do so)

R: A promise to save money

I: This is too good to be true

Figure 3. Examples of potential explanations for participants' scepticism using Peirce sign triad

Peirce saw semiosis as unlimited. The interpretant is a new sign within the subject that may form a new representamen. The negative connotations may stem from several steps of semiosis, e.g. as described in figure 4. Peirce (1894/1998) also distinguished between three types of relations between representamen and object: index (physical connection), icons (connection by likeness), and symbols (connection by learnt association). Physical goods may act as indices to their behaviour in future situations but offers described in text are symbolic referring to promises made by the producer (whether this will come true or not). Appraising the consequences of a service offer includes judgements about the producers' motives and competency. **Challenge 2 regards building trust and avoiding associations with package deals**

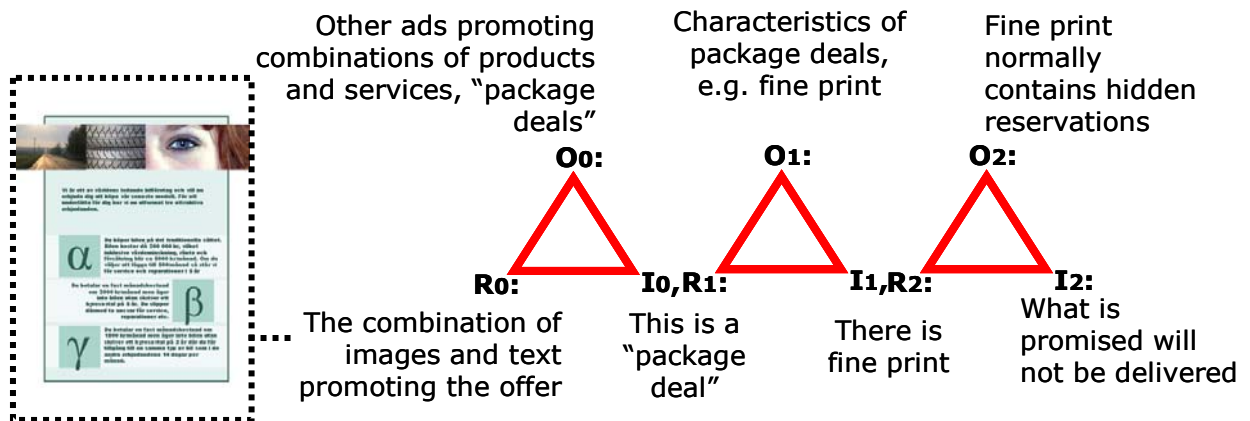


Figure 4. The meaning assigned to the offers may result from several steps of semiosis.

Communicative aspects of products are important also in use. In functional sales the producer is free to choose how to realise the function. Nevertheless the physical goods involved may act as sign vehicles. Products may help the user communicate individuality or group belongingness (Dittmar, 1992). Dematerialisation changes what signals will be sent and if physical products involved are not specified the consumer cannot predict what will be communicated. **Challenge 3 regards enabling the user to communicate what he/she wants to others**

The challenges above concerns meaning that can be designed into products, or representations of products, and then decoded which assumes some common conception of meaning in relation to certain signs within a group of people. Over time a user also comes to associate products with personal meanings and memories which play an important role for what possessions we value (Csikszentmihalyi & Rochberg-Halton 1981). These change with dematerialisation which may have impact also for long term attachment.

Communication may be central to building trust as in our B2B study where it was supported by personal contact between customers and producer. Consumer markets may require greater volumes which threaten to the producer-user dialogue. Without such contact and feedback mechanisms it may become harder to find acceptance for functional sales but also to appropriately adapt services. Benefits from customisation depend on the producer having a clear idea of user needs and there is a range of latent/implicit user requirements that must be addressed if a product is to be replaced by a service. **Challenge 4 regards enabling a user-producer dialogue and identifying an as full range of user requirements as possible**

CHALLENGES AND FUTURE RESEARCH

Communicative problems can partly explain the scepticism towards the offers. Some of these relate to how the offers were presented but there are also more generic problems with understanding the consequences of signing up for a product service system that is not yet available. Dematerialised products because change the conditions for the communication and challenges occur in:

1. Communicating the offer to the private consumer.
2. Communication of how this relates to what will in fact be delivered.

3. Enabling communication between users.
4. Enabling a user-producer dialogue and identifying an as full range of user requirements as possible

We hypothesise that the scepticism may partly be caused by associations to other abstract offers with complex terms and where promoted benefits don't always come true. Since the material comes from group discussions it is hard to identify the individuals reasoning. Future research include individual interviews that aim to capture how consumers reason when they are presented with functional sale-offers as well as the meanings assigned to dematerialised offers and the physical goods they replace.

ACKNOWLEDGEMENTS

The author wish to thank Oskar Rexfelt for contributing material and thoughts, and Li Wikström for commenting the initial idea for this text.

REFERENCES

Coates, D. (2003). *Watches tell more than time: product design, information, and the quest for elegance*. New York: McGraw-Hill.

Csikszentmihalyi, M., & Rochberg-Halton, E. (1981). *The meaning of things: domestic symbols and the self*. Cambridge: Cambridge Univ. Press.

Dittmar, H. (1992). *The social psychology of material possessions: to have is to be*. Hemel Hempstead: Harvester Weatsheaf.

Hiort af Ornäs, V., & Rexfelt, O. (2006a). *Kundkrav vid funktionsförsäljning - Teoriöversikt och erfarenheter från Göteborg Energi (9)*. Gothenburg: Chalmers University of Technology, Department of Product and Production Development, Design division.

Hiort af Ornäs, V., & Rexfelt, O. (2006b). Functional sales from a consumer perspective. Forthcoming.

Lindhqvist, T., & Mont, O. (2002). *Funktionsperspektiv på varor och tjänster (5225)*. Stockholm: Naturvårdsverket.

Monö, R. (1997). *Design for product understanding*. Stockholm: Liber AB.

Nöth, W. (1990). *Pierce, Handbook of Semiotics*. Bloomington: Indiana University Press.

Pierce, C. S. (1894/1998). What Is a Sign? In N. e. a. Houser (Ed.), *The Essential Pierce*. Bloomington, IN: Indiana University Press.

Rexfelt, O., & Hiort af Ornäs, V. (2006). *Funktionsförsäljning till privatkonsumenter -Resonemang kring fyra funktionserbjudandanden*. (rapport 10). Gothenburg: Chalmers University of Technology: Division of Design.

Shannon, C. E. (1948). A Mathematical Theory of Communication. *The Bell System Technical Journal*, 27, 379–423, 623–656.

Stahel, R. W. (1997). The Functional Economy: Cultural and Organizational Change. In D. J. Richards (Ed.), *The industrial green game: Implications for Environmental Design and Management* (pp. p. 91-100). Washington DC.: National Academy Press.