



## User motivation for broadband: A rural Danish study

Jean-Paul Peronard<sup>a,\*</sup>, Flemming Just<sup>b,1</sup>

<sup>a</sup> Department of Marketing and Management, University of Southern Denmark, Campusvej 55, DK-5320 Odense, Denmark

<sup>b</sup> Danish Centre for Rural Research, Department of Environmental and Business Economics, University of Southern Denmark, Niels Bohrs Vej 9, DK-6700 Esbjerg, Denmark

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### ABSTRACT

The diffusion of broadband has gained much research attention, in particular in relation to the urban–rural divide. However, research has focused primarily on the supply side of broadband roll-out, while the demand side has been somewhat neglected. This article illustrates the complexity of broadband adoption and argues that a rural adoption approach needs to draw on existing social meaning systems. By focusing on the user motivation for broadband, this article presents findings from a qualitative study of rural residents. Means-end theory was used as a framework for understanding these motives. Furthermore, the article adapts the FCB grid as a tool for both public and private providers of broadband to examine effective rural promotion strategy.

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## 1. Introduction

Broadband is a promising technology for rural areas. Extensive research documents various benefits of broadband, including remote access to health care and education (Jenkins, 2003) as well as expanding the market potential for rural businesses (LaRose, Stover, Straubhaar, & Gregg, 2007). Other studies have shown both social and, in particular, economic benefits of a broadband infrastructure (Ford & Koutsk, 2005; Lee & Yongwoon, 2005; Varian, Litan, Elder, & Schultze, 2002), which provides the necessary backbone for the network of society (Castells, 2000). Furthermore, research in broadband adoption shows that those who benefit the most from broadband are not limited to previously heavy users but include those in the lowest quintile of usage (Hitt & Tamba, 2007). Despite the obvious benefits and increasing availability in rural areas, adoption among rural residents is still lagging behind that in urban areas (Dijk & Hacker, 2003; Parker, 2000; Peronard & Just, 2008a; Warren, 2007). Therefore, many national and international institutions are actively involved in the problem and have launched various programs to promote the inclusion of broadband in the countryside.

Studies have attempted to identify the reasons for the delay in bringing broadband to rural areas and found that it was caused by a number of factors, including not knowing that it can be accessed (Horrigan & Murray, 2006), the cost of switching from narrowband to broadband (Geroski, 2000), and the lack of relevant content (Wilhelm, 2003). In the latter case, encouraging innovative content services has long been argued to be the method for supporting the diffusion of broadband technology (Firth & Mellor, 2005; Papacharissi & Zaks, 2006; Preston, Cawley, & Metykova, 2007).

While many studies have dealt with the infrastructure of broadband in society, placing emphasis on either availability and policy matters or the supply-side issues of broadband (Gorp, Maitland, & Hanekop, 2006; Preston et al., 2007; Stover,

\* Corresponding author. Tel.: +45 65 50 27 47; fax: +45 65 50 41 97.

E-mail addresses: [jpp@sam.sdu.dk](mailto:jpp@sam.sdu.dk) (J.-P. Peronard), [fj@sam.sdu.dk](mailto:fj@sam.sdu.dk) (F. Just).

<sup>1</sup> Tel.: +45 65 50 42 20; fax: +45 65 50 10 91.

Chapman, & Waters, 2004), fewer have taken a user approach to the demand-side of broadband (Firth & Mellor, 2005; Gurstein, 2003; Peronard & Just, 2008b; Ramírez, 2001). Exceptions are the linking of broadband with demand-side determinants such as income, population density, and educational level (Frieden, 2005; Grubestic, 2008). However, such a generalized and instrumental perspective on demand-side issues, with its lack of emphasis on people's needs and wants, provides little knowledge of the motivations behind broadband adoption. As such, more attention should be paid to the use and significance of broadband diffusion, particularly in rural areas (LaRose et al., 2007; Tookey, Whalley, & Howick, 2006).

Arguably, the classical diffusion approach is too simple to account for all of the complexity that surrounds an innovation such as broadband (e.g., Leeuwis, 2004). In fact, research suggests that the penetration and diffusion of broadband is not a consequence of a single action or factor but of the interplay between different factors and approaches (Mahler & Rogers, 1999; Trkman, Jerman Blazic, & Turk, 2008). Thus, rather than seeing broadband as an instrument for accomplishing specific tasks, more focus should be given to the institutionalized meaning system that surrounds it (Castoriadis, 1984; Ramírez & Richardson, 2005). Such research needs to customize itself to the qualitative aspect of adoption. Only a few studies have taken a qualitative approach to understanding broadband adoption. For instance, Lawrence Wood studied deployment patterns among telecommunication providers and found that different types of broadband providers are influenced by unique regulations, competitiveness concerns, resource levels, and existing infrastructure conditions (Wood, 2008). In a seminal study of Netville, Berry Wellman researched high-speed connection among residents in a local U.S. community and found that broadband internet supports a variety of social ties (e.g., emotional). Furthermore, they found that local relationships are often sustained through a combination of on- and off-line interaction and that much of the online activity takes place between people who live or work near each other (Hampton & Wellman, 1999). In their comparative case study between South Korea and the United States, Lee and Chan-Olmsted (2004) found the main differences to be grounded in policy supporting technology and consumer demand. However, Wood's (2008) study is supply-side oriented, and the study of Netville involves observing techniques on civic involvement, internet use, and attitudes of residents in order to develop research questions for their survey (Hampton & Wellman, 1999, p. 484). Finally, in the case study, only desk materials of governmental publications, press reports, and online documents were examined (Lee & Chan-Olmsted, 2004).

Apparently, little is known about rural people's experience with and understanding of broadband. Consequently, research should examine more closely the qualitative aspects of decisions to adopt broadband to provide new knowledge because "good social marketing begins and ends with the target consumer—the person whose behavior is being influenced" (Andreasen, 1995, p. xii). This article will make people's decision to adopt broadband the primary concern of the study. The research question is as follows: What are the reasons or motivations for people in rural areas to adopt broadband? Because no research currently exists in the field, there is a need for an enriched theoretical approach aimed at empirically examining the relationship between broadband adoption and the interpretation of causes and effects. Furthermore, the attention to the significance of broadband – motivation and needs – is extremely relevant for providers and to some extent policy makers in rural development. Such an understanding provides valuable knowledge for planning how and with what means broadband adoption should be supported at the local level. A second research question is the following: How can knowledge about motivation and needs be utilized in an effort to promote rural broadband?

This article extends the existing knowledge by offering a systematic analysis of the user motivation behind the choice of broadband in rural areas. In contrast to previous research, this research aims to provide qualitative insight into peoples' choices through the use of personal interviews. By using this method, it is possible for the informants to articulate more detailed reasons for their choices. In the next section, the theoretical approach called means-end theory is outlined, and the methodological technique known as laddering is described.

## 2. Methodology and techniques

To understand how people think about broadband as a product and its consequences, the research approach is based on the means-end theory (Reynolds & Gutman, 1988). Because this theory focuses on meanings people associate with a given product or service, it is possible to explore user motivation for broadband beyond the mere functional aspects and look into the psychological aspect of consuming (Gutman, 1982). The basic principle behind the theory is that people buy products (and services) as means to reach some desired benefits or consequences, which in turn are determined by their personal values (ends). The means-end theory relates three levels of meaning abstraction: product-attributes, consequences of consumption, and personal values. Product attributes are relatively concrete aspects of the physical or observable characteristics of a product or service. For instance, broadband may be associated with price or access to e-commerce. Consequences exist on a higher abstraction level than attributes and can be both functional (e.g., ease of use) and more psychological (e.g., status) in nature. For instance, broadband is faster than traditional internet access and thus is a time-saver for conducting e-commerce. Personal values provide general guidance to our lives and are on the highest abstraction level. Personal values can be divided into both instrumental and terminal values. The latter are the ultimate goals we seek in life, and the former are the ways of behaving that lead to terminal values. For example, faster shopping on the Internet provides extra time to spend with the family. Altogether, the string of association from product attributes to consequences to personal values is called the means-end chain (Gutman, 1982).

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