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BOOKTOWNS ON THE INTERNET: RURAL ENTERPRISES ENTER THE NETWORK SOCIETY

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Abstract

This paper reports on a project aimed at revitalizing small and old rural villages through establishing a network of bookshops, the BookTownNet. The project combined a research framework based on theories from information system research and regional economics in analyzing the development and diffusion of information and communication technology (ICT) to small, rural enterprises through that network. Our findings indicate that use of the Internet both locally and between the booktowns has strengthened the communication and collaboration between them, thus creating a better basis for the small bookshops to be competitive in the information society. Further, we have found that differences in local innovation systems to some extent have influenced the diffusion processes. Our data also show that the booktown network has been able to compensate for the lack of support in the regional innovation system, which makes the importance of the ICT-based virtual network spanning geographically distributed regions evident. This indicates that the booktown infrastructure and support system has been the most important factor in the bookshops' ability to implement and use the new technical solutions.

Keywords: Information systems, innovation, diffusion, infrastructure, virtual organizations, small rural organizations.

INTRODUCTION

The story behind this paper dates back to the early 1960s, when the young Richard Booth founded the worlds first Booktown in the small Walesian rural village Hay-on-Way, threatened by economic decline and migration. His idea was to turn this depression to revival by selling second-hand and antiquarian books. Initially, nobody had faith in the idea, but during the 40 years since he started, the idea has spread all over Europe, and a number of booktowns play a significant role in their local economies.

Today, however, the new economy based on information and communication technology (ICT) and in particular the Internet represents a new challenge for the old-fashioned bookshop. To face these challenges, the representatives of five booktowns took an initiative to create a project that would strengthen the bonds between the bookshops and booktowns, a *Booktown Network*. The aim was to establish an ICT infrastructure to support an organizational network between the booktowns, which allow both the bookshops and the booktowns to have a common communication channel between each other and also to the wider Internet audience.

This paper reports on that the work, and aims at explaining the key factors which have contributed to the rather successful development of the Booktown network. The specific objective of this study was to understand the role of the ICT infrastructure as part of the regional innovation systems and how they have supported the diffusion processes in the individual enterprises.

The structure of the paper is as follows. The following section describes the theoretical background. Our research framework and method are then presented. In the final section, we describe and analyze the empirical case.

THEORETICAL BACKGROUND

Our focus is on information and communication technology (ICT) systems and adoption in organizations, in particular in a regional and local context. This research approach requires that we combine theories from the fields of regional economics, innovation/diffusion theory, and information systems (IS) research. While the IS literature can help us understand how organizations are implementing and adapting ICT systems, theories from regional economics and innovation/diffusion theory may contribute the explanation of what characteristics of regional economies seem most important in explaining different diffusion patterns.

Regional Economies and Innovation Systems

It now seems widely accepted that the linear innovation and diffusion model, which dominated for a long time, is too simple (see Lundvall 1992; Malecki 1991; Rogers 1995). Various research has indicated that such processes are influenced by a number of factors, both at a micro and at more aggregate levels. The term *regional innovation systems* has thus been introduced to explain part of this complexity. The main characteristics of the regional innovation systems, as defined through evolutionary research in the field of regional economics (Morgan 1997) are learning and innovation, both individual and collective innovations. Collective innovations are seen as interactive processes where the firms' networks are important aspects of their collective innovative capability. This term captures the trend to build regional organizations and networks to strengthen the innovation capability of enterprises (Cooke 1998). It also includes collaboration of innovative activities (knowledge development and diffusion) between enterprises and knowledge organizations such as research institutes, colleges, libraries, and consulting companies in the region (Asheim and Isaksen 1997; Lundvall 1992; Smith 1997). Results from studies show that the innovative capabilities of enterprises are highly dependent on their ability to come in contact and cooperate with other actors, such as customers, suppliers, and research and development (R&D) organizations (Gregersen and Johnson 1997).

Technology has only recently been considered as a distinct factor in regional economics, as Storper (1997) observes. He explains an innovation system as a multi-layered structure including technologies, organizations, and territories. In this structure, technological change is recognized as one of the principal drivers in changing territorial patterns of economic development although in the social context, which is also emphasized by others (e.g., Asheim and Isaksen 1997; Smith 1997). The organizations are not only dependent on territorial contexts of physical and intangible inputs, but they have greater or lesser proximity to each other. The innovative activity is seen as partly a local and regional phenomenon that represents a new theoretical understanding of how the innovation processes occur. An understanding, concretized in the interactive innovation model (Asheim and Isaksen 1997; Isaksen 2000), defines innovations as interactive, non-linear knowledge development and transfer: technology and knowledge flows freely between R&D activities, the industry, and other stakeholders.

Healey et al. (1999) offer a framework based on the interaction between external pressure and local institutional capacities, knowledge, relational resources, and mobilization capability.

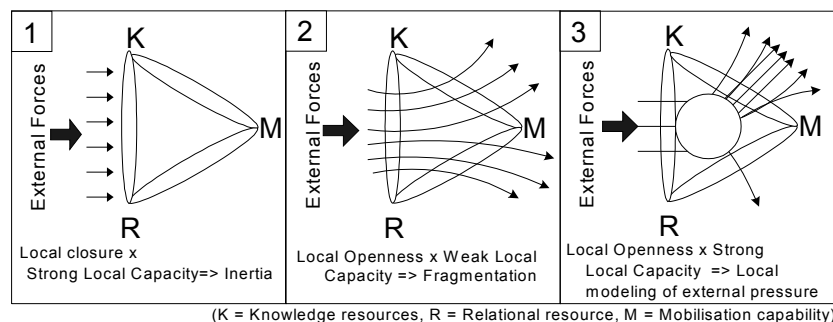


Figure 1. Three Alternative Scenarios Describing How External Challenges or Forces are Managed in a Community and How the Institutional Capital Influences the Outcome of the Modeling Process (Modified from Healey et al. 1999)

Healey et al examine the factors that enable a region to make a break from the earlier path-dependent trajectory. They suggest that when communities are facing new external challenges, there are three alternative scenarios. Institutional capital can be developed to enable regions to allow local initiatives to be “shaped by powerful external forces, can mobilize and transform inherited traditions and practices and thereby shape the futures of localities in ways which enhance quality of life, the business environment and environmental quality in socially-just and inclusive ways” (Healey et al. 1999, pg. 10). The communities can reject the challenge but with the risk of *inertia* (Figure 1.1), or the technology prone communities can start to use it with the risk of *fragmentation* (Figure 1.2), or the communities can mobilize their initiative to *model the external pressure* to suit their own needs (Figure 1.3). To be able to make a change in the path dependent trajectory, the three components—knowledge, relational resources, and mobilization capability—need to be strengthened.

IS Diffusion and Adoption

While the regional economics literature traditionally viewed technology as a generic factor, our focus is to study how the specific characteristic of distinct technical systems and infrastructures influence the implementation, adoption, and adaptation of ICT-based systems (IS) in organizations. Our point of departure is that the outcome of IS implementations is dependent upon both characteristics of the technical solutions as well as the system development processes and various organizational and contextual factors (see Damsgaard et al. 1994; Kraemer et al. 1989; Larsen and MacGuire 1998; Lyytinen and Damsgaard 1998). There are a number of studies on IS diffusion to small organizations that emphasize the characteristics of the software (e.g., Cooper and Zmud 1990; Gross and Ginzberg 1984; Kwon and Zmud 1987; Lees 1987), as well as the quality of the infrastructure and support systems (e.g Heikkilä et al. 1991; Janson and Subramanian 1996). This seems particularly important for IS diffusion in small, rural enterprises lacking the necessary competence and resources (Igarria et al. 1997; Jansen 1998a).

Traditionally, developing and using ICT infrastructures has been regarded as a predominantly technical endeavor. There is now an expanding body of literature addressing issues of a social, economic, or institutional nature. Recent research emphasizes the importance of understanding the infrastructures as multi-layered systems including technical, organizational, and human components and their ability to support various types of inter-organizational structures, both horizontal and vertical networks (Ciborra and Hanseth 1998; Monteiro and Hanseth 1995; Rolland and Monteiro 2001).

RESEARCH FRAMEWORK

To summarize the discussion, we see IS diffusion into organizations as innovations dependent on the technical solutions, the organizational characteristics, and the environment—that is, the existing innovation system along with the technological infrastructure.¹ In our particular perspective, we emphasize the quality of the technical and organizational infrastructure that may support the implementation, adaptation, and use of such an information system in the individual user organizations. Based on these assumptions, we have developed a research framework that has been applied in the analysis of some empirical cases (Grøtte et al. 2000; Jansen 1998b). Our framework distinguishes between (1) the external environment, (2) the regional innovation system,² and (3) the individual organizations where innovations take place. Furthermore, we include characteristics of the current technologies being diffused and used by regional organizations. Below is a short description of the different components:

- *The regional innovation system*, which we assume has different components, including:
 - *The regional/local ICT infrastructure*: the physical data and telecommunication network, and the organizational resources that support the operation and use of the technical elements. The regional infrastructure is partly integrated in the national infrastructure, but may also include additional regionally located facilities and services.
 - *Institutional capital*: the general ability to handle innovation and change, including knowledge, relational, and mobilization resources, entrepreneurship, norm's and attitudes in the region, etc.
- *Organizations*, where the information systems are being diffused and used, and which are supported by of the infrastructure. These may be public or private organizations, described by the internal characteristics and their inter-organizational relations.

¹The distinction between the regional innovation system and the ICT infrastructure may not be clear, as we define the infrastructure to include the parts of the innovation system that support the IS acquisition, adoption, and adaptation processes.

²In this paper, a region is defined as a distinct area, such as a village, town, or community.

The main focus is on factors that we assume are relevant for managing the technology, such as previous ICT experience and competence. The organizations may be linked together in organizational networks, where they exchange ideas, information, knowledge, norms, etc., and in that way stimulate innovative activities.

Outside the region or local community we assume that there is an external environment which influences regional innovation system through two important processes:

- *Economic and social change forces*: the external pressure that causes changes in local industries and related economic matters, including market relations.
- *Technical development and diffusion*: the development of distinct ICT systems and solutions, and the diffusion of such systems to regional or local organizations. These systems will be characterized by their functionality, technical qualities, usability, etc., related to the specific user domain.

These distinctions permit us to organize our work around a framework with an overall structure, illustrated in Figure 2.

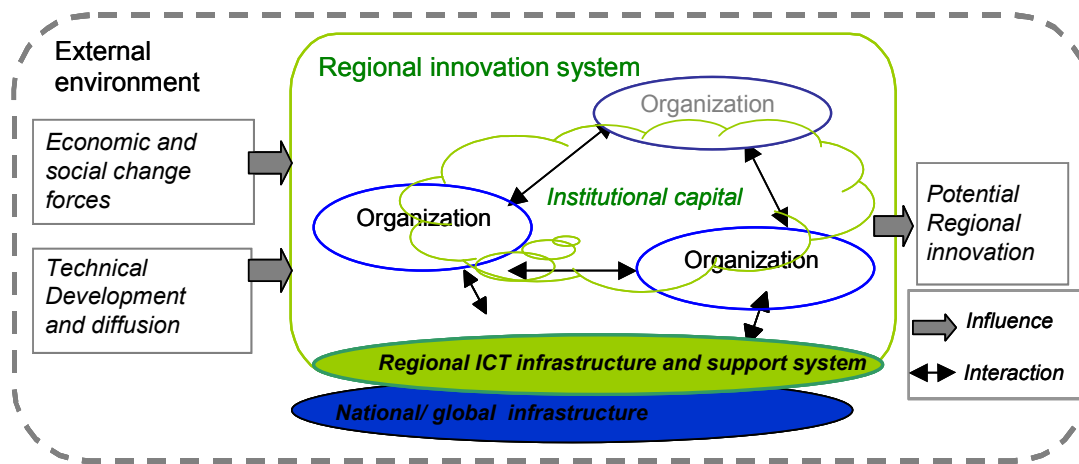


Figure 2. Research Framework

The intention behind this framework is to illustrate how external forces causes the diffusion of new technology into a local community, which may eventually result in a local innovation.

Research Issues

The general framework depicted above is rather open. Our specific aim is to examine how factors such as organizational and inter-organizational characteristics and the infrastructures affect the adoption and use of distinct ICT systems in small rural organizations. In particular, we will address the following issues:

- What type of diffusion patterns can be identified in the network?
- What type of support was required most from the innovation systems and the infrastructures?
- What has been the role of the technology in the establishment and growth of the organizational network, e.g. in changes in communication and collaboration activities?

RESEARCH METHOD

This research study is based on an analysis of five booktowns that were particularly involved in developing the ICT network and the organizational structure: the Booktown Network. This approach is situated within the interpretative strand of information systems research (Walsham 1995), with the aim of doing a more in-depth analysis of the history of the case. It is, furthermore,

a participatory action research, as one of the authors of this paper had an active role as project manager in the project part of the development. In that respect, the author has been involved in most aspects of the project.

The empirical data was collected over a five-year period, with two years being more active than normal because of the collaborative project between the five villages. Our unit of analysis is the 17 units comprising the 13 bookshops and four booktown associations that have been active in the collaborative project. The main methods for data collection have been project documentation along with semi-structured and free interviews and questionnaires that have been conducted during the analysis of user needs and as a part of the in-project evaluation. These have been conducted at regular intervals during the design, implementation, and testing of organizational and technical solutions supporting the network. In total, 61 interviews with about 30 different people have been carried out. About 200 Internet users have responded to surveys administered through the Internet. The results of these interviews and surveys have been documented in prior research (Alford and Seaton 1999; Seaton 1998; Seaton and Alford 2001; Skogseid and Seaton 1998).

CASE DESCRIPTION AND DISCUSSION

In this section, we will first give a description of the case and then discuss it with regard to the theoretical contributions.

BookTownNet: A Network between Five European Booktowns

The booktown phenomenon has developed from the establishment of the first booktown 1962 in Hay-on-Wye (Seaton 1996) on the border between England and Wales up to the present, where almost 30 booktowns have been established world-wide and several are under development. Most booktowns developed in villages of historic interest or of scenic beauty. This means conservation of the cultural heritage, as well as retaining the unique atmosphere. As the number of booktowns increased, the need for more and better communication between the villages also increased. In 1996, five of the villages decided to establish an organizational network. In addition to Hay-on-Wye, the four other villages are Bredevoort (NL), Fjærland (NO), Montolieu (FR), and Redu (BE). The villages have a population of between 300 and 1,600, between 12 and 36 bookshops, and up to 500,000 visitors in a year. In the individual villages, the relationship between the bookshops is characterized both by a high degree of collaboration in developing the village and attracting visitors and a high degree of competition in selling most books. This is also mirrored across the villages: they see the benefit of working together as a “global village” at the same time as they individually want to attract the most visitors. They have thus identified different communication needs:

- *Communication between bookshops:* The success of a booktown is first and foremost a question of successful book trade. Many bookshops recognize that the future success of their business requires international specialization and a closer communication between the individual bookshops independent of location.
- *Communication between booktowns:* Booktown associations³ and enterprises have individual strengths and weaknesses, and the participants in the BookTownNet were interested in improving booktown quality by effective communication of information and ideas between villages. The booktowns constituted a European-wide network with great potential for cultural inter-linkages, which would promote traffic between the villages.
- *Market communication:* Although the booktowns are different, they are characterized by a common atmosphere that the visitors find particularly attractive. Presenting information about the booktowns by way of a common IS were seen as important.

The Technical Solution

As more and more books are being sold on the Internet, the villages are facing a continued threat of marginalization. Developing an efficient ICT-based information and communication system between bookshops was seen as necessary. Five application areas were defined:

³A booktown association is a local business and community interest organization for the bookshops in each booktown.

- Wholesale of books between book selling enterprises within and between booktowns.
- The establishment of an international network (virtual booktown organization).
- Marketing the booktown network as a pan-European tourist trail.
- Specialized global marketing of high value book items.
- Information about activities in the booktowns to the global book-lovers community.

The application areas were divided in two distinct components: (1) a closed intranet for dialog and communication between users tied to the participating booktowns and (2) an open Internet for communication with worldwide Internet users. The intranet application was set up to facilitate communication and collaboration between bookshops within and between the different booktowns, and for maintaining the information on the Internet site.

The information presented on the Internet belongs to three categories: (1) general information about the booktown movement, (2) information about the individual booktowns, and (3) information about the individual bookshops. Initially other services were envisaged, but they were prioritized away and other services were tested and not found useful.

The Infrastructures and Innovation Systems

In terms of the research framework presented in Figure 2, the local innovation system comprises the bookshops, the booktown associations, public administration, local computer retailers, and other support organizations of various type and quality. In one village, the local public administration was counterproductive for the development of the booktown. In several of the booktowns, the only available local support system is the booktown association. In different villages, the booktown associations have different roles. In some villages, they are a more strategic, political organization. In other villages, they carry out a number of functions to the common good of the bookshops and have also been the impetus for introducing computers in the bookshops. However, our data show the booktown network has been able to compensate for the lack of support in the regional innovation system, which makes evident the importance of the ICT-based virtual network spanning geographically distributed regions.

The five different villages have been allowed to choose their own local diffusion strategy. In some villages, only the project partners were included. In other villages, other bookshops were offered access to the intranet services. It was a conscious choice on behalf of the project to let each village choose how they diffused the tool to potential users. The assumption was that the local partners know their colleagues best, e.g. same culture and language. In some of the booktowns (Fjærland, Montolieu, and Redu), all of the bookshops and other related organizations have been given access. In another villages (Bredevoort and Hay), they did not want to let other bookshops become users before the project phase had concluded.

These different strategies have, accordingly, implied that the number of users and usage patterns vary between the booktowns. So far it seems that the “open and including” strategy has been more successful than the other in that they involve more users in the villages and are introducing the Internet to more bookshops. In this way, they have a larger “testing community” and in general they have increased the ICT competence in the community. We find that, to some degree, these booktowns collectively correspond to the *local modeling scenario* as illustrated in Figure 1 in the way they have handled the information technology challenge. Those who chose an alternative, more excluding strategy argued that it would be more appropriate that a select group of more motivated and competent users test the prototypes before they are made generally available to the bookshops. However, so far they have not succeeded in spreading the technology. This seems to correspond to the *fragmentation* scenario.

During the project phase, the project organization developing the ICT applications was also an important part of the support system, although in a more virtual sense in that help and guidance was given electronically. The intranet makes up a common infrastructure independent of geographic location. The common ICT platform is, in this way, an infrastructure that supports three types of networks:

1. Network between local bookshops (within a village)
2. Network between booktowns (bookshops and associations)
3. Network between Internet users/customers and the bookshops

The actors in this case have been the bookshops and the booktown associations; they have both taken the initiative with the project and participated in the development of the infrastructure.

The in-project evaluations (Alford and Seaton 1999; Seaton and Alford 2001) show that the bookshop users gained confidence and knowledge in using the ICT-based tools, and that the use of ICT-based tools in the bookselling business increased. In particular, three activities showed a high score in the evaluation carried out at the end of the project. The internet part of the system seems to have been serving its function, while the Intranet part of the service has not yet fulfilled its purpose in the network. There are several reasons for this. First, the amount of communication is not sufficient in volume and regularity to make the users access the site, which is the typical problem of the critical mass of users: more users are needed to make the intranet interesting. Second, in the initial phases of the project, an additional e-mail service was established as the main communication channel, which many of the users felt was sufficient for communication, even after the intranet was made available. Furthermore, the usability of the intranet has been criticized for not being sufficiently tailored to the user requirements.

Organizations and Network

The booktowns and the bookshops in the villages are members of several networks; the networks partly overlap and have common nodes. In each village, we find an *intra-town* network, which then is linked together in the *inter-town* network. In addition there is the network established as a part of the project. These networks can also be seen as one, where parts of the actors in the network have started to change and increase in number, but that have not stabilized yet.

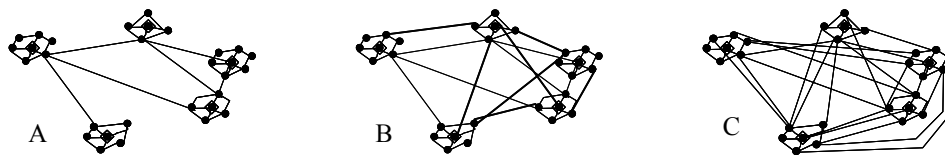


Figure 3. Pre- and Post-Situation for Communication In and Between the Villages.

The circles represent the intra-town networks and the lines the communication patterns.

The development from situation A to C represents an increase in number and communication links and frequency.

Establishing a bookshop in an existing booktown automatically makes you a member of the intra-town network, and if the village also has a connection to one of the other booktowns, then the bookshop can more easily hook up to the global network of booktowns (inter-town network). The communication channels used in these network are mainly the *traditional medium* such as face-to-face dialogs, telephone, and fax, from about 1996/1997 there was also some use of e-mail. Communication between the villages is primarily between a few individuals and is not very frequent. Between some of the villages the contacts were more frequent than between others. Figure 3.A is an illustration of this network. In terms of our research framework, this network is part of the local *innovation system* in each village. All of the booktowns have been developed based on the ideas gathered from the other villages and Hay-on-Wye. In this way, knowledge has been transferred from one village to another and the links between the villages have been established. Some links are stronger and more frequently used; others are not maintained and will eventually be lost.

Figure 3.B is an illustration of the second inter-town network that was the result of the project phase of the development, the BookTownNet project, and a result of the introduction of technology in the booktown setting. In this process the network has slowly been extended and is taking over from the “old” network. This has made communication easier and has made more open and interactive dialog between members in the network possible. Figure 3.C illustrates the development that has been taking place since the project ended. New members are joining the network, coming from the initial five villages but also extending outside this group, and an additional 11 booktowns have signed up to join the network, which is now managed by a new *International Organization of Booktowns*.

CONCLUSIONS

Our findings indicate that the use of Internet, both locally and between the booktowns, has strengthened the communication and collaboration between them, thus creating a better basis for the small booktowns to be competitive in the information society. Furthermore, our data show that the booktown network has been able to compensate for the lack of support in the regional

innovation system, which makes evident the importance of the ICT-based virtual network spanning geographically distributed regions. This indicates that the booktown infrastructure and support system has been one of the most important factors for the bookshops to implement and use the new technical solutions. We find that the analysis of the BookTownNet shows that our framework is applicable to cases that span distinct geographic regions.

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