

# Real estate business model innovation and the impact of ego network structure

Åsa Yderfält

*Department of Economics and Law, Mid Sweden University,  
Sundsvall, Sweden, and*

Tommy Roxenhall

*Department of Social Sciences, Mid Sweden University, Sundsvall, Sweden*

## Abstract

**Purpose** – This paper aims to analyze how a real estate business model innovation developed in a real estate network, with a special focus on the relationship between ego network structure and the innovative development of the business model.

**Design/methodology/approach** – The paper is a single case study of a Swedish real estate network of 38 actors. The data were collected at the individual actor level using multiple sources: 12 semi-structured in-depth interviews, 94 min of meetings and 28 written contracts. The empirical findings resulted in four propositions.

**Findings** – This study demonstrates that it was primarily the building user who was behind the innovative development of the real estate business model innovation, whereas the real estate company acted as a network hub and network resource coordinator. The ego network structures significantly affected the outcome.

**Practical implications** – Real estate companies should act as hubs, coordinating all the network actor resources the building user needs in the value-creation process. To be effective hubs, the representatives of real estate companies must create extensive personal and open ego networks to acquire central network positions.

**Originality/value** – Few studies examine business model innovation, particularly in the real estate context. Though large real estate businesses usually operate in the networks of various actors, analyses based on the network perspective are also lacking. This case study builds a valuable understanding of how network processes in real estate networks can be used as tools to foster real estate business model innovation, which in turn can lead to more competitive real estate companies and building users.

**Keywords** Business model innovation, Real estate, Ego network structure, Network centrality, Network density, Network size

**Paper type** Research paper

## 1. Introduction

Previous studies of real estate companies have found that business related to residential buildings was considered a pure management task, whereas dealing with commercial buildings involved active work with building users, for example, by adapting premises to user specifications. Real estate business concerning commercial buildings, therefore, consisted largely of marketing activities, as the aim was to develop the facilities in active cooperation with building users. This implied focusing on local services and on change

The authors thank J. Gust. Richert foundation for financial support. They also thank their colleagues at the Centre of Research on Economic Relations at Mid Sweden University and the anonymous reviewers for comments on this manuscript.



processes rather than considering the premises as goods to be sold. This approach was assumed to increase the attractiveness of real estate companies as landlords, which was ultimately expected to secure long-term contracts with building users. These observations indicate a shift from the past, when the real estate business was considered a special case with close connections to non-business spheres such as local and national politics. The new trend is to envisage real estate management becoming an “industry like any other where the focus is on customers, markets, employees, production, and ultimately even the brand” (Lind and Lundström, 2009). In summary, the value-creation processes in the real estate business are shifting from pure building and construction production to a greater emphasis on services.

This shift can be regarded as a business model innovation (Teece, 2010; Velu, 2015) and seems to be based on both new business practices and new views of the role of politics in society. This new innovative approach means that real estate companies now develop and produce efficient, effective, functional and environmentally sustainable workplaces in close cooperation with their building users. In other words, real estate companies are trying to develop buildings and workplaces that match the building users’ core business needs and demands by increasing the involvement of their building users’ employees to improve efficiency and effectiveness through a process of co-creation (Edvardsson *et al.*, 2011). Creating functional workplaces entails complex processes in which real estate companies, their building users and multiple specialists interact, cooperate and exchange resources with one another. New workplaces, in other words, result from these network processes. To enable us to understand this shift, we need to understand how real estate companies, their building users and specialists pursue innovative network cooperation. In addition, because the building user is no longer passive but is deemed an important actor, interaction between real estate companies and building users may promote the development of new or changed real estate business models. A real estate business model is the value proposition that real estate companies present to their building users in a way that meets users’ needs and expectations. The focus is therefore always on the building user and the value creation depends on how involved the user is in the process and how well their needs are fulfilled.

Earlier studies in this area have examined networks in traditional industry rather than real estate networks. As there is a great need to understand how network processes in real estate networks can be used to foster real estate business model innovation, in turn leading to more competitive companies, it is important to study the network structure in a real estate context. This paper seeks to improve our understanding of how network structure affects real estate business model innovation in real estate networks. The next section reviews the concept of business model innovation and network structure and the relationship between them. This theoretical argument is then applied in a case study of real estate business model innovation in a Swedish real estate network resulting in four propositions.

## 2. Conceptualizing real estate business model innovation and network structure

### 2.1 Business model innovation

It is often the users who initiate and inspire innovations. Studies demonstrate that over half of all commercialized and profitable innovations are initiated by users (Von Hippel, 2007). An innovation is therefore a novelty that reaches the user. A novelty that is not put to use is no innovation, even if it is patented, and an innovation must also be perceived as valuable to the user (Edvardsson *et al.*, 2011). More recently, researchers are increasingly interested in studying business model innovation (Chesbrough, 2010; Teece, 2010; Baden-Fuller and Haefliger, 2013; Velu, 2015).

A business model is usually described in terms of value proposition, value creation and value capture. These factors concern what the values are, how the user will benefit and how revenue is generated (Chesbrough, 2010; Teece, 2010; Baden-Fuller and Haefliger, 2013). In a real estate context, value proposition and value creation bolster users' effectiveness and efficiency. A common definition is that effectiveness is doing the right things while efficiency is doing things right (Sorescu *et al.*, 2011). Effectiveness in real estate, therefore, entails providing things that create value for the building users' customers and stakeholders; efficiency entails using the building users' own and others' resources in the best way to create value, i.e. the relationship between inputs and what is produced (Ostroff and Schmitt, 1993; Mouzas, 2006). A high degree of building user satisfaction is a sign of high effectiveness, whereas doing something in a quick, economical and convenient way is a hallmark of efficiency.

Important aspects of value creation are that the value of the offer (i.e. value proposition) corresponds to the building user's needs and wants and that the user is involved in this process and contributes to the value creation. The focus is therefore on what the building user needs, not what the real estate company produces. A significant part of the value-adding process is performed, in other words, by the building users themselves. Participating in the value-creation process not only is necessary in many cases but also enhances the user's experience of it. It has recently become increasingly popular to go to a restaurant and cook a good dinner with the chef, not simply to sit down and let the chef do the job. The users then pay for the experience they have performed themselves (Kristensson *et al.*, 2014).

Value-added processes are always created in cooperation between the real estate company, other actors and the building user based on the user's experience. Because the value is created through the use, real estate companies must adjust their thinking and actions early on during the development process to develop business models that create value. Shifting from the offering to facilitating value-creation processes is a change in perspective from that of the real estate company to that of the building user and reflects the resources that support the processes that the building user is interested in exploiting. Creating new real estate business models, for example, requires that a real estate company transition from charging per square meter to charging for the value-creating processes that the building user is actually exploiting. The US aircraft engine manufacturer General Electric (GE) does not charge for aircraft engines, but, for the time, they are in use. GE's success is thus based on the user's value-creation process, which occurs only when the aircraft is in the air, so that is what GE is charging for. The user perceives GE as an important partner that will help the user achieve the desired results (Kristensson *et al.*, 2014). Another example of a changed business model is that of newspapers that charge for online articles or companies that use the "freemium" (i.e. free and premium) payment model (e.g. Spotify and Flickr): they not only offer a free version, which usually includes advertising but also offer a premium version for a nominal cost that is more advanced and has no advertising. A third example of an innovative business model is that developed by Southwest Airlines, one of the most profitable airlines in the USA. Southwest has targeted those who do not normally fly but prefer to travel by car, offering a travel mode that is as fast as aviation but as flexible and inexpensive as the car. Southwest assumed that these people wanted direct access, flexibility, low cost, punctuality and good service but no frills. The airline skipped the hub model and excluded the middlemen (e.g. baggage handlers and travel agencies). All sales are made directly online and only Boeing 737s are used, allowing for greater efficiency, maintenance flexibility and lower costs. Similarly, the Australian vintner Casella Wines, when launching its low-cost yellow tail product line in the US market, targeted those who did not traditionally like wine. Southwest and Casella developed

---

innovative business models combining a low-cost differentiation strategy that is often called a “blue ocean strategy” (Kim and Mauborgne, 2005).

## 2.2 Network structure

In this study, we analyze real estate network structure in terms of network size, network density and actor centrality or position. The research literature usually examines network structures from a hub perspective. The problem is that this perspective gives a picture only of how networks are structured: a more accurate depiction would incorporate the perspectives of several or all network actors (Roxenhall, 2011). Each network actor has unique relationships with other actors in the network: it is as though each actor in a real estate network has his or her own private network within the network, a so-called “ego network”.

Real estate business model innovation does not arise in real estate companies but rather between them and the building users and other network actors. A real estate business model innovation cannot be regarded as the product of a real estate company or building user acting alone but as the product of interaction between two or more actors in a network (Håkansson, 1985; Frenz and Ietto-Gillies, 2009; cf. open innovation as discussed by Chesbrough and Crowther, 2006). New knowledge generally develops where different areas of knowledge intersect. In exchange situations, various types of knowledge that can lead to real estate business model innovation meet and are combined or confront each other. One solution developed by a network actor in a particular area may be usable by another network actor in another area. New ideas can thus be developed by combining the experience of various network actors. In the special case of exchanges between a building user and a real estate company, during the interaction, the building user’s needs confront the real estate company’s knowledge of possible technical solutions. Such exchanges present an opportunity for both parties to refine and redefine both the needs and solutions and to find new ideas and opportunities (Håkansson, 1985).

Real estate business model innovation in real estate networks requires that various forms of knowledge be combined or confronted with one another. Knowledge may be more or less complex, codified or non-codified. Knowledge that is less complex can usually be codified or documented in manuals, books, articles and computer files, and then it can be disseminated and transferred from one network actor to another without their meeting. Knowledge that is more complex can rarely be codified or documented. Such non-codified knowledge is tacit knowledge (i.e. knowledge for which we have no words), such as “knowhow” and is more or less attached to particular network actors. Tacit knowledge can only be disseminated or transferred when the network actors involved meet and interact, though even in that case it is still difficult to transfer (Zander and Kogut, 1995; Hansen, 1999; Ahuja, 2000; Mcadam *et al.*, 2007).

Several studies demonstrate that the number of ego network relationships affects firm performance (Powell *et al.*, 1996; Walker *et al.*, 1997; Roxenhall, 2011, 2013). A network comprising few relationships between an actor’s partners gives the actor control over the partners (Cook and Emerson, 1978; Hallén *et al.*, 2009), whereas a network comprising many relationships between an actor’s partners gives the actor less control but fosters trust and cooperation instead (Powell *et al.*, 1996; Podolny and Baron, 1997; Walker *et al.*, 1997).

Shan *et al.* (1994) demonstrated that the number of relationships in a biotechnology network positively affected the innovation results, whereas Ahuja (2000) found that a paucity of relationships in a chemical industry network negatively affected the innovation results. Furthermore, Roxenhall (2013) demonstrated that, in a fiber technology network, those actors who took part in innovation work had three times as many relationships as did

those who did not participate in this work, and [Olsén and Roxenhall \(2015\)](#) found that in three strategic innovation networks, ego network size was positively related to innovation. For the value-creation process to be perceived as valuable, the building user needs relationships not only with the real estate company but also with specialists in various areas. The real estate company, on the other hand, needs relationships with the building user and with various specialists to fulfill the building user's wishes and needs in the value-creation process and to develop novel value-capture models. Studies further identify a nonlinear relationship in which the positive effect appears to diminish once the number of relationships becomes too great ([Vanhaverbeke et al., 2001](#); [Mcfadyen and Cannella, 2004](#)). One possible explanation for this is that maintaining a large number of relationships is complicated and resource intensive. In sum, we argue that large ego networks in a real estate network result in a more innovative real estate business model than do smaller ones but that this positive effect diminishes if the ego networks become too large.

The ego network density concerns the extent to which ego network actors have relationships with other real estate network actors. The extent of actors' relationships with each other determines how much knowledge (and other resources) can be mobilized and transferred in a real estate network. Dense networks facilitate the transfer of knowledge and dissemination of information, increasing the actors' knowledge of each other ([Hansen, 1999](#)). In other words, actors in such networks are more aware of other network actors' potentials and resources ([Grund, 2012](#)). In networks comprising few relationships, it is difficult to transfer knowledge because there are no established relationships. Dense networks and strong relationships strengthen trust and mutual dependence while discouraging opportunism, which in turn leads to increased interaction ([Granovetter, 1985](#); [Gulati, 1995](#); [Powell et al., 1996](#); [Sparrowe et al., 2001](#)). Opportunistic behavior occurs when actors do not want to transfer their knowledge to other network actors, so that they can increase their own competitiveness. Furthermore, dense networks enhance the abilities of the constituent actors to absorb knowledge ([Gilsing et al., 2008](#)).

It has been demonstrated that network density positively affects innovation ([Ahuja, 2000](#); [Obsfeld, 2005](#); [Roxenhall, 2013](#)). There are also some disadvantages to dense networks, particularly given that it is not cost free to create and maintain many network relationships simultaneously ([Provan et al., 2007](#)); however, when it is a question of creating real estate business model innovations, these costs are reasonable relative to the accruing benefits ([Gilsing et al., 2008](#)). In networks in which everyone has relationships with one another, all stakeholders tend to share the same skills, which can inhibit the development of real estate business model innovation ([Gilsing et al., 2008](#); [Grund, 2012](#)). Dense networks also tend to be more or less closed, meaning that it is more difficult for new information to penetrate than in open networks. In studying the German automotive industry, [Rost \(2011\)](#) demonstrated that the network actors who had strong relationships with one another in loosely structured networks produced the most creative innovations. It is, therefore, more difficult to develop radical real estate business model innovations in dense networks, though dense networks favor the development of incremental real estate business model innovations based on network actors' existing explicit and tacit knowledge ([March, 1991](#); [Rowley et al., 2000](#); [Kane and Alavi, 2007](#); [Gilsing et al., 2011](#)). Moreover, although [Olsén and Roxenhall \(2015\)](#) expected a positive relationship between density and innovation, their results instead indicate a negative relationship. Some recent studies find an inverse U-shaped relationship between density and performance ([Wise, 2014](#)). Research results are obviously inconsistent.

Few studies have analyzed the network position, or centrality, of the network actor ([Zheng, 2010](#)). The number of network actors determines the upper limit on how many relationships an actor can have, though few networks reach the upper limit. It is therefore

useful to examine how real estate network actors are related to each other because their relationships say a lot about the network structure. Centrally placed network actors have the advantage of being able to control the flow of information in a real estate network: they have many contacts with other actors who can contribute explicit and tacit knowledge as well as other resources (Mehra *et al.*, 2006). Tsai and Ghoshal (1998) found a relationship between an actor's degree of centralization and innovations mediated through trust. Ibarra (1993) found that the actor's degree of centralization has a positive impact on administrative but not technical innovations. Roxenhall (2013) found that actors involved in the innovation and creation of scientific production had three or four times as strong a network position as did those not involved. This does not mean that the most prominent actors always have the greatest power in the network (Sinclair, 2009). It seems logical to assume, however, that centrally positioned real estate network actors having many relationships with other actors have more way to access valuable knowledge and resources necessary for real estate business model innovation. Centrally placed network actors are also less dependent on actors other than those positioned peripherally in the real estate network. In other words, strong real estate network positions favor strongly positioned actors.

### 3. Methodology

#### 3.1 Context and method

The general aim of this study was to gain a deeper understanding of how network structure affects real estate business model innovation in real estate networks. The empirical context of the study is therefore the real estate business, specifically, an analysis of a real estate network located in central Sweden.

In early 2006, the building user (a state agency) contacted the real estate company because it needed more efficient office space for its business. The building user had located its operations in several locations in the city, which meant that operations were difficult to coordinate, contributing to declining productivity. On June 9, 2006, the building user and the real estate company reached an agreement set forth in a letter of intent to build a new office building matching the building user's needs. On October 5, 2006, the parties signed a written contract. On March 30, 2007, the real estate company and the building user, building contractor, management and project consultants, architects and installation constructors signed an agreement to work together in a network to design and build the office building. This real estate network consisted of 38 actors. The network composition, i.e. the actors, their lines of business, their network roles, and number of employees, is described in Table I. On November 17, 2008, the user moved into the new office building.

The real estate and construction industries are traditional in their working methods, though the real estate industry has started to adopt a more customer-oriented mode of operation. How well a real estate company provides a building user with sufficiently valuable resources in the value-creation process depends on the function and structure of the real estate network. To capture the function and structure of the selected real estate network, how the network actors were interrelated was of interest. This was examined through a case study because this approach allows one to obtain detailed information and better understand a specific context (Yin, 2003).

#### 3.2 Sample and data collection

We used a data triangulation approach to gathering facts. The data were collected at the individual actor level through multiple sources such as interviews and documentation study; 12 semi-structured in-depth interviews were conducted in 2011 and 2012. The first interviews were conducted in 2011 with the real estate company's project leader, focusing on

MRR  
40,6

**654**

| Actor no. <sup>a</sup> | Actor                            | Line of business               | Network role                           | No. of employee |
|------------------------|----------------------------------|--------------------------------|--|-----------------|
| 1                      | Project leader                   | Real estate                    | Supplier (real estate company)         | 92              |
| 2                      | Area sales manager               | Real estate                    | Supplier (real estate company)         |                 |
| 3                      | Regional manager                 | Building contractor            | Main contractor                        | 7,168           |
| 4                      | Project manager                  |                                |  |                 |
| 5                      | Interim project manager          |                                |  |                 |
| 6                      | Production manager               |                                |  |                 |
| 7                      | Environmental coordinator        |                                |  |                 |
| 8                      | Projection manager               |                                |  |                 |
| 9                      | Building construction consultant | Management consulting          | Consult to supplier                    | 221             |
| 10                     | Geotechnical consultant          | Projection consulting          | Consultant to main contractor          | 612             |
| 11                     | Construction consultant          |                                |  | 232             |
| 12                     | Construction consultant          |                                |  |                 |
| 13                     | VS consultant                    |                                |  | 441             |
| 14                     | VS consultant                    | Projection consulting          |  |                 |
| 15                     | Consultant                       | Projection consulting          |  | 460             |
| 16                     | Consultant, architect            | Architect office               | Consultant to supplier                 | 11              |
| 17                     | Consultant, assistant architect  |                                |  |                 |
| 18                     | Electrical consultant            | Electrical consulting          | Subcontractor to electrical contractor |                 |
| 19                     | Head installer                   | Heat and sanitation contractor | Subcontractor to building contractor   | 4,149           |
| 20                     | Project leader                   | Hat and sanitation contractor  | Supplier to building contractor        | 4,149           |
| 21                     | Project leader                   | Electrical contractor          |  | 519             |
| 22                     | Project leader                   | Ventilation contractor         |  | 13              |
| 23                     | Project leader                   | Public authority               | Building user                          | 526             |
| 24                     | Representative                   |                                |  |                 |
| 25                     | Representative                   |                                |  |                 |
| 26                     | Representative                   |                                |  |                 |
| 27                     | Representative                   |                                |  |                 |
| 28                     | Consultant                       | Work environment               | Consultant to building user            | 838             |
| 29                     | Representative                   | Public authority               | Building user                          | 526             |
| 30                     | Representative                   |                                |  |                 |
| 31                     | Representative                   |                                |  |                 |
| 32                     | Representative                   |                                |  |                 |
| 33                     | Representative                   |                                |  |                 |
| 34                     | Representative                   |                                |  |                 |
| 35                     | Part-time project leader         | IT consulting                  | Consultant to building user            |                 |
| 36                     | Representative                   | Public authority               | Building user                          | 526             |
| 37                     | Representative                   |                                |  |                 |
| 38                     | Representative                   |                                |  |                 |

**Table I.**

Network composition Notes: <sup>a</sup>See Figure 1

the structure of the building project, the actor network and how the actors collaborated. During 2012, 11 interviews were conducted with actors playing different roles in different parts of the network to gain broad data coverage. The interviewed actions had central roles either in the whole network or in the specific part of the network focusing on the building user. Respondents with central roles in the whole network were the real estate company's project leader and area sales manager, the management consultant and the architects. Respondents with central roles in the specific part of the network were the regional manager, building contractor and building user's project leader. The interview guide for these interviews contained themes regarding value proposition, value creation, creativity in the network, communication, interaction, relationships, knowledge exchange, trust, commitment and control between the network actors.

In 2015, two follow-up interviews were conducted with the building user's head of registry and project leader. The purpose of these additional interviews was to collect data on the building user's production outcomes in terms of effectiveness and efficiency over the past 10 years. The interview guide for these two additional interviews therefore focused on the perceived value of the new office premises to the building user.

Between 2011 and 2015, a total of 14 interviews (four by telephone and ten in person) were conducted with nine actors in the network. They lasted 45-140 min each, the average length being 97 min (Table II).

The documentation examined consisted of 94 min of meetings and 28 contracts, for a total of 122 documents. The minutes of meetings contained abundant and detailed information about the coordination and control of construction processes, technical discussions of construction and production, relationships between the actors in the network, discussions of value-creation processes and the user's needs and preferences (Table III).

### 3.3 Data analysis

The interviews were recorded and transcribed; 1 h of recorded interview took about 8 h to transcribe. During the time required to transcribe an interview, a second interpretation was conducted (the first interpretation was conducted during the interview). We analyzed the data by taking apart a sentence or a paragraph and each isolated episode, idea or event. We did not

| Actor                   | Line of business               | Interview length (minutes) | Interview type | Interview date    |
|-------------------------|--------------------------------|----------------------------|----------------|-------------------|
| Project leader          | Real estate (supplier)         | 120                        | In person      | June 28, 2011     |
| Production manager      | Building contractor            | 60                         | Phone          | March 27, 2012    |
| Production manager      | Building contractor            | 45                         | Phone          | March 28, 2012    |
| Project leader          | State agency (building user)   | 127                        | In person      | April 2, 2012     |
| Consultant              | Heat and sanitation consulting | 73                         | In person      | April 4, 2012     |
| Regional manager        | Building contractor            | 93                         | In person      | April 12, 2012    |
| Project leader          | Real estate (supplier)         | 140                        | In person      | May 2, 2012       |
| Sales representative    | Real estate (supplier)         | 73                         | In person      | May 3, 2012       |
| Consultant (architect)  | Architect office               | 107                        | Phone          | May 4, 2012       |
| Interim project manager | Building contractor            | 113                        | In person      | May 14, 2012      |
| Consultant              | Management consulting          | 136                        | In person      | May 14, 2012      |
| Project leader          | Real estate (supplier)         | 140                        | In person      | July 5, 2012      |
| Head of Registry        | State agency (building user)   | 84                         | In person      | February 26, 2015 |
| Project leader          | State agency (building user)   | 52                         | Phone          | March 6, 2015     |

**Table II.**  
Respondent and interview characteristics

**Table III.**  
Documentation  
characteristics

| Type and main contents                            | No. ( <i>n</i> = 122) | (%)  | Year      |
|---|-----------------------|------|-----------|
| <i>Minutes of meetings</i>                        |                       |      |           |
| Coordination meetings                             | 42                    | 34.4 | 2008-2008 |
| Construction meetings                             | 15                    | 12.4 | 2006-2008 |
| Production meetings                               | 4                     | 30.3 | 2006-2008 |
| Network meetings                                  | 7                     | 50.7 | 2007-2009 |
| Steering committee meetings                       | 4                     | 30.3 | 2007-2008 |
| Building user requirements specification meetings | 22                    | 18.1 | 2006-2008 |
| <i>Written contracts</i>                          |                       |      |           |
| Easement  | 1                     | 00.8 | 2008      |
| Energy  | 1                     | 00.8 | 2007      |
| Exploration                                       | 1                     | 00.8 | 2007      |
| Lease of land                                     | 1                     | 00.8 | 2007      |
| Networking  | 1                     | 00.8 | 2007      |
| Procurement of consultants                        | 6                     | 40.9 | 2006-2008 |
| Procurement of subcontractors                     | 17                    | 13.9 | 2007-2008 |

strictly or literally interpret the interviews; rather, we went behind the statements and tried to decipher and interpret their content, meaning and significance. Then interpretations were compared with each other and we looked for similarities, differences and patterns (Yin, 2003).

The main sources of information were the interviews and the minutes of meetings, and the latter can be said to have supplemented and verified the former. The minutes of meetings and written contracts were analyzed in the same way as were the recorded interviews. We interpreted and reinterpreted words, phrases and larger textual units in light of the study's research questions.

To obtain an overview of how the network relationships were structured, the minutes of meetings were analyzed. The minutes indicate which actors attended each meeting and which constellations they were part of. The network's 38 actors interacted with one another at 157 meetings (Table IV). To ascertain how the actors were interrelated, we conducted a social network analysis, which meant analyzing the relationships between the network actors (Cross *et al.*, 2002; Annen, 2003; Sandström, 2008). We constructed a matrix consisting of 38 × 38 cells (one for each network actor). In each cell, we noted whether or not a relationship existed using a value of 1 or 0. The matrix was then exported to the UCINET 6 analytical program, in which the network relationships could be subjected to a large variety of processing operations addressing, for example, ego network size, ego network density and actor centrality. Network size can be measured by the number of actors or relationships in a network. Of course, the two measurement methods are strongly related, so we use them interchangeably. The network was then visualized using the Netdraw program (Cross *et al.*, 2002). Density is the degree of relationships in the network, i.e. the number of existing relationships divided by the number of possible relationships (Marsden, 1990). If networks A and B have 10 actors each, each can have a maximum of 45 relationships. If network A has 25 relationships and network B has 12 relationships; network A is regarded as denser than network B. Finally, we used the eigenvector approach to find the most central actors in the whole network using UCINET 6 software.

#### 4. Findings

The real estate network included 38 actors from the building user, real estate company and suppliers, working together to produce a new office building. The common goal was that the

|                          | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Cases handled            | 362,829 | 346,129 | 372,696 | 407,346 | 854,863 | 939,352 | 883,383 | 842,955 | 876,373 | 881,512 | 914,784 |
| Total operating expenses | 136,666 | 299,868 | 332,344 | 337,805 | 399,639 | 376,476 | 370,420 | 433,881 | 501,755 | 455,773 | 462,769 |
| Person-years             | 428     | 434     | 470     | 493     | 491     | 483     | 467     | 476     | 497     | 507     | 519     |
| Productivity             | 848     | 798     | 793     | 826     | 1741    | 1,945   | 1,892   | 1,771   | 1,763   | 1,739   | 1,763   |
| Cost per case            | 377     | 866     | 891     | 829     | 467     | 400     | 419     | 515     | 572     | 517     | 505     |

**Notes:** Productivity: cases handled/person-year; Cost per case: total operating expenses/cases handled

**Table IV.**  
Building user  
efficiency, 2004-2014

office space should be designed in a way that added extra value to the building user's business by better supporting the user's customers while being an economical and easily administered office building for the real estate company.

The building user's intention in taking part in the real estate network was to create an attractive workplace for its employees, whereas the real estate company's intention was to create an efficient, effective and appealing workplace for the building user. Over 30 months, the building user and real estate company cooperated during the building process with a large number of suppliers (e.g. turnkey contractors, architects, builders and their subcontractors) to create and develop innovative workplaces that matched the building user's specific needs. The total investment was approximately €22m for a total of 11,000 m<sup>2</sup> of workplace space.

To help building users with their workplace adjustment, the real estate company had developed a working concept from its earlier project experience. Workplace adjustment is nothing new in the real estate business but marketing it as a concept is uncommon. The real estate company claimed not to know of any other companies that marketed workplace adjustment as a distinct concept, using an approach similar to theirs. The concept was called "the modern office". The real estate company marketed the concept by featuring a package of options from which building users could choose when renting existing facilities or planning new ones, though awareness of the building process and its logistical steps was incorporated in the latter case. The real estate company primarily wanted to change the building user's approach by not focusing solely on price, floor area and the size and location of the workrooms when discussing office solutions. The focus would instead be on what solution would confer the greatest business advantage in terms of job satisfaction, wellbeing, flexibility, inspiration, communication, economic performance and workflow for the building user's organization. From experience, the real estate company also had a strong belief that the concept worked and that an optimal workplace constituted an increasingly important competitive success factor for building users. If building users' workers liked and understood the use of their workplace, they also did better work. Working with the building users also allowed the real estate company to hasten the building process while forging better relationships with building users. The real estate company's goal was therefore to ensure that the workplaces it rented out would support the building users' operations and effectively accommodate their future needs. As the informant saw it, the concept helped the real estate company fulfill its building users' needs through the exchange of experience.

#### *4.1 Value proposition*

The real estate company proposed a concept in which workplaces would be created according to the working practices the building users required to carry out their assignments. The real estate company wanted to take account of user culture and values and help in establishing processes and routines. The real estate company additionally proposed that the workplaces should be designed, decorated and laid out so that they conveyed the user's brand. There was also a desire to create a functional and flexible environment with functional furniture as well as portable telephones and computers that would make it easier for personnel to change workplaces without needing to refurnish in the event of new projects or changes of personnel. Good air quality, acoustic conditions and lighting were other important factors that enabled employees to feel content and well. Ergonomically designed desks and chairs would also improve job satisfaction and productivity. The real estate company suggested that it could help the building user through the whole process from analyzing tasks and working practices to planning the design of the workplace and moving in. An offer was made to help the building user with organizational

---

issues and analysis and with implementing new working practices and change processes. The idea underlying the concept was that the user's new workplace should be a good investment for the user that yielded a direct return in the form of better communication and knowledge dissemination, more efficient workflows, a stronger sense for workers of being part of a team and greater productivity.

The building user did not buy the whole concept but decided early on to designate a person to work full-time on planning and moving to the new workplace. This person was also responsible for planning with regard to furniture, photocopying rooms and mail handling. The real estate company suggested that for the move to be as smooth as possible, the user should, in addition to the person already designated, also engage a process manager, and suggested a consultant it had worked with previously. The building user thought that this was a good idea but engaged a different process manager than the one recommended by the real estate company.

On the other hand, the concept of very high flexibility appealed to the building user. The real estate company suggested various workplace designs, but the user had decided early on in favor of a particular design solution that suited its organizational form. The user was an organization with many employees, which meant that an open-plan office was seen as the only possible solution, as this had been found to work well in a previous workplace. The employees should easily be able to switch workplaces with one another by simply taking their personal belongings with them, instead of the user, as previously, needing to have a full-time employee who dealt solely with workplace moving. The building users visited several of the real estate company's reference objects to obtain further inspiration and opted for the solution the real estate company had chosen for its own premises. As the building user had its own resources, the real estate company saw its task as reminding the user of things it needed to consider later in the planning, for example, the location of telephone switchboards. The real estate company was also responsible for providing information about how the building work was progressing at several of the user's internal meetings.

In short, the real estate company offered to share its experience and contacts with the building user to help it develop the best possible, and most effective, office solution for its operations. The real estate company summarized the value proposition in three key words: *use*, *entirety* and *development*. Embedded in *use* was the real estate company's desire that the project should proceed from the building user's operational goals and that discussions between the two actors should emphasize how to work in line with these goals instead of talking about how they used to work or wanted to work. The reason for this was a belief that a focus on use should lead to long-term rational decisions, particularly in cases in which workers and leaders work together and take common responsibility for the entirety outcome. *Entirety* therefore relates to the connection between business goals (or mission), work methods and work tools (i.e. the workplace and its content). For this reason, the sales pitch emphasized the advantages of a developed workplace/office, how to create such a facility, what results to expect and what problems would have to be solved to obtain the desired results. The real estate company wanted to create a broadened understanding of office space as an investment that could lead to development and wellbeing for the business and its workers if seen as a forum instead of a workplace. Also untapped was the potential to use the office to mediate the building user's fundamental business values and expose its brand both externally and internally, creating a common identity. Earlier experience of successful workplaces led to interest in the exchange of ideas and experience, rapid decision processes and case management, integrity and safety, change opportunities and profiling the user's brand.

---

#### 4.2 Value creation

The need for a new office had its origins in organizational expansion. The building user had outgrown its existing office space when changing its working routines, so its existing premises were now ill suited to its growing project-based operations. Desire for office space that better supported the way the user addressed its core processes and that could accommodate all its workers were the main reasons for moving. Besides the board of the building user, a main project leader responsible for relocating and shaping the workers' workspaces was also involved in the process. A second sub-project leader, a consultant, was responsible for the technical aspects, such as phones and data communication. The real estate company contributed to the process a project leader, the worker who signed the rental agreement and architectural and building construction consultants. The main issue for the user was that its workers should agree to change from private offices to an open-plan office solution that management was convinced would better fit future needs.

The starting point for the discussions was the user's detailed specification of how many workers the office had to accommodate. The building user had requirements concerning the numbers and sound levels in the meeting rooms, office spaces and workplaces needed. Other requirements were standardized and understood by the real estate owner, such as how many restrooms and toilets for disabled were needed. The municipality determined the exterior design of the office building. Acting on a proposal from the real estate company, the user established hierarchical workgroups that analyzed the user's work environment needs in terms of sound, lighting, indoor climate, allergens, radiation and ergonomics. This approach was appreciated by the user:

They [i.e. the real estate company] owned and built the real estate, and it was really a privilege for us to be allowed to participate [ . . . ] we got a lot of good advice from their experience (from the interview with the building user's project leader).

Furthermore, the workgroups discussed the need for collective resources such as archives, a library, printers and separate rooms for group and individual work. Regarding designing the work station tables and storage, the workgroups got help from two network actors, consultants in interior design and ergonomics. Parallel with the user's internal inventory, both these actors met regularly to discuss the internally identified needs, the discussion between them treating construction issues arising when the real estate company and its architect presented different solutions. The user's project leader described the situation as follows:

Our and the architect's vision of the real estate was not the same, and the layout drafts were often very impractical. Luckily, we did not give in (from the interview with the building user's project leader).

In addition to the expertise of its own project leader, the real estate company supplied the exchange with knowledge gained from its subcontractors. This helped the company in its efforts to meet the user's needs.

Still, the main question facing the building user was fostering internal acceptance of the planned changes in the work environment. To that end, the work group also discussed risks, expectations and opportunities and how moving to a new office with a new physical configuration could mentally affect the workers. In this, the real estate company provided support, helping the user inform its workers by presenting 3D models at gatherings about the progress of the new office building development. Before that, however, the real estate company had designed different workplace/office solutions that test worker groups from the user worked in for several months. To ease the relocation to an open office solution, the real

estate company hired a consultant to try to ease some of the workers' resistance. The real estate company had a few suggestions regarding appropriate consultants, but the building user finally selected a different one. The arrangement with the implementation consultant did not work as the project leader had hoped, and it took a long time to change the minds of the few workers who opposed working in an open-plan office.

What finally had an effect on the workers' acceptance of the new workspace was the fact that the change would affect workers at all hierarchical levels: everyone without exception was to be seated in the open-plan office solution. The board made this decision after consulting with the core business sections that had provided groups to test working in various open-plan office solutions. Also, increasing acceptance was the fact that workers moved at the same time, facilitated by one of the real estate company's subcontractors.

*4.2.1 Closer relationships between workers.* When settled in the new office, the building users perceived changes in the organization's efficiency that they assumed were connected to the new office solution allowing more interaction between workers.

The biggest problem the building users experienced when working in an open-plan office solution was linked to one of the solution's benefits, i.e. the level of noise arising when workers talk to each other. A related problem under discussion was how to handle noise from private cellphone and visiting-related conversations. Such environmental issues had not existed when workers each had separate offices. Working in an open-plan office solution facilitated communication between workers. Instead of visiting colleagues in their offices, workers were now seated near each other, leading to more interaction and forging closer relationships. In addition, the former "we versus they" dynamic was eliminated, and workers found it easier to help each other. Now the workers did not have to seek specific individuals for assistance but could ask for anyone who was available. This closeness appeared to be extraordinarily effective when acclimatizing new workers: by sitting near more experienced colleagues, they obtained direct knowledge transfer by listening in on others' customer phone calls. The feeling of the manager of the handling section was that because of the new office space, they now functioned as a unified organization: "It feels like we are closer and there is more of a 'we' feeling than before" (from an interview with the user's handling section manager).

This quicker knowledge exchange also had an effect on more experienced workers working on phone support. They now listened to how others answered calls and adopted the ways others behaved and replied to customer questions. As a result, they became more effective because they had more general knowledge and could answer more types of questions, which led to faster and simpler handling of problems because the customers who phoned for support could get help with both new and existing cases.

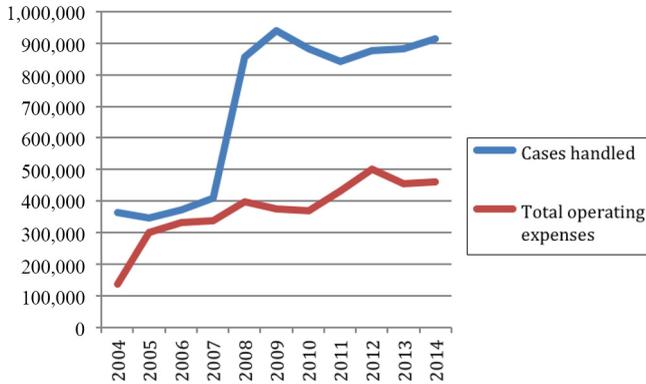
*4.2.2 Quicker and simpler handling.* In summary, the building user's core business embraced three types of customer: single individuals who wanted to start a company, representatives who wanted to start a company of their clients or individuals selling a product or service. The user had no reorganization plans before the move, but an expanding amount of e-handling and a demand for greater cost-effectiveness resulted in the registration section being reorganized several times, which was easier to do in the open-plan office solution. Changes in the service offerings were customer-driven; the amount of e-handling had expanded over the years, and the user put considerable effort into digitalizing various services.

The user measured productivity by counting handled cases compared with the number of employees; however, the work buildup always happened at the same time every year. The open-plan office solution gave the user more flexibility to relocate workers within phone support according to the problems that customers needed most help with because the same

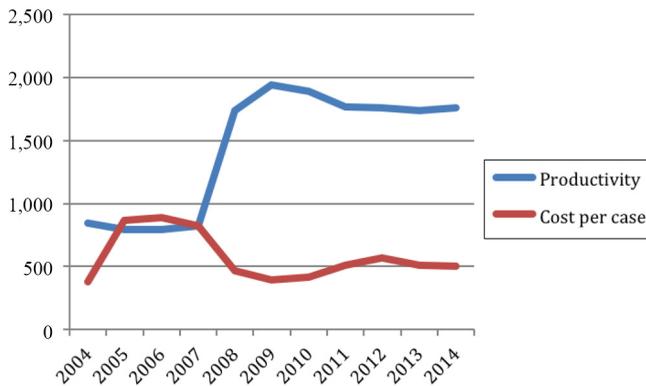
administrator could handle various customer questions. The user also changed how it followed up on the number of cases handled every day. To gain an overview of this, management started to use whiteboards and held regular follow-up discussion meetings with each workgroup.

During the 2004-2014 period, the number of handled cases increased by 252 per cent from 362,829 to 914,784. Most of this increase, from 407,346 to 939,452 cases, took place between 2007 and 2009. The volume then stabilized at around 900,000 cases per year (Table IV and Figure 1). The number of employees remained approximately the same during these years, whereas operating expenses increased by 137 per cent from SEK 337,805bn in 2007 to SEK 462,769bn in 2014. Productivity, i.e. cases handled/person-year, approximately doubled, increasing 213 per cent from 2007 to 2014, whereas cost per case handled decreased from SEK 829 in 2007 to SEK 400 in 2009 (Table IV and Figure 2).

*4.2.3 Increased monitoring or control of the organization.* Because the building user's managers were also seated in the open-plan office space, they could see their workers in a different way than before. As the one responsible for the employees, the handling manager said that this plan permitted greater social control:



**Figure 1.**  
Cases handled and  
total operating  
expenses, 2004-2014



**Figure 2.**  
Productivity and cost  
per case, 2004-2014

**Notes:** Productivity: cases handled/person-year; Cost per case: total operating expenses/cases handled

Now our managers have better control, just because we can communicate with everyone and see everything. Earlier, when people had their own offices, it could sometimes take two days before anyone noticed that they were missing. (from the interview with the building user's handling section manager)

Because the building user moved its operations into the new building, there have been many worker relocations, which are easier and faster to do in the new office space. Some technical problems with computers and telephone installations remained but those resulted from using different telephone systems for the handling section. Besides the handling section, one other section, the development section, fully used the adaptability of working in an open-plan office solution. The ability to make rapid changes before initiating new projects was needed in their project-based way of work with its mixture of employees and temporary consultants:

We have a whole different overview of the work desks and can therefore optimize their use. (from the interview with the building user's project leader).

This is a type of adaptability that the previous workspace environment had lacked. The handling section, however, which did not use temporary consultants who need temporary project workplaces, was not exploiting the flexibility in the same way as was the development section. The manager of the handling section said that one of the most common workers' questions about the reorganization was where they should sit not who their new manager would be.

*4.2.4 Value capture.* The value-creation process led to the building user's needs and wants being met, but what value was created for the real estate company? It signed an indexed lease contract of 20 years based on a price per square meter used, i.e. the user pays traditional office rent for the area used. The lease contains no element of variable pricing, such as profit and risk sharing, performance-based rent or a freemium-based payment model. It was, in other words, an ordinary rental arrangement that was not particularly innovative. Alongside the rental income, the business deal led to increased revenues, improved cash flow, reduced costs and less risk for the real estate company, so even the effects of the lease are traditional in character. However, this business should also lead to the real estate company receiving a lot of soft values for many years to come. Such soft values arise from building and investing in a strong business relationship with a stable, innovative and efficiency-minded building user. These relationships can allow the real estate company gradually to develop its business model, build loyalty and extend the lease agreement to connect to new businesses and new building users.

#### 4.3 Network structure

Figure 3 illustrates that the network contained three dense areas. The first, on the left, whose actors are indicated in blue, comprises consultants, architects and other suppliers to the real estate company. The second, on the right, whose actors are indicated in green, comprises representatives of the building user and the blue-colored actor hired by the user. The third area appears in the center of the figure: two actors indicated in red who represent the real estate company and two actors in blue who were suppliers to that company. It is obvious that the actors in central dense area (i.e. Actors 1, 2, 9 and 16) connect the other two dense parts of the network with each other. This demonstrates that the real estate company actors play the role of network hub.

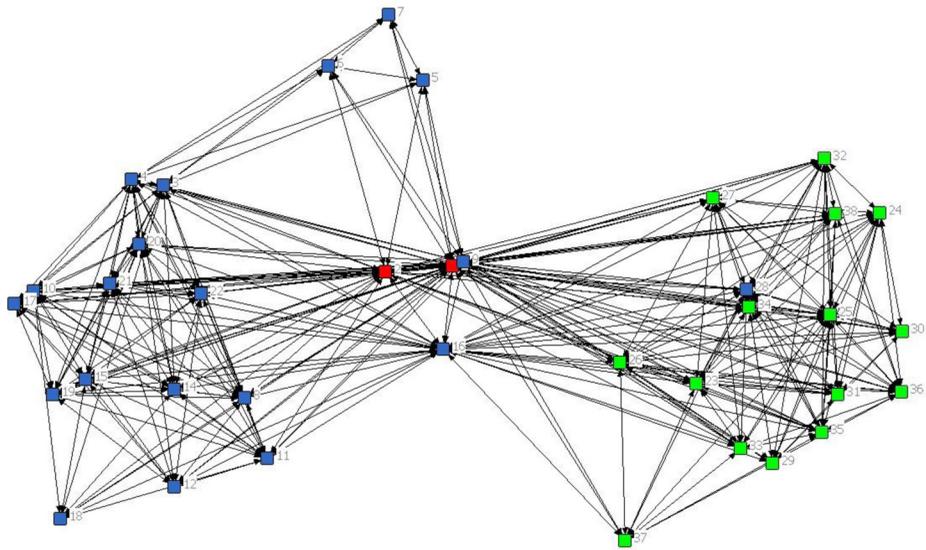
The largest ego networks (Actors 1, 9, and 16) in terms of number of actors also have the most relationships and are relatively low in density. This is because it is easier to create relationships with many actors in a small than a large network. What also characterizes the ego actors in the major networks is that they have more central positions than do other ego

---

MRR  
40,6

664

---



**Figure 3.**  
The network  
structure

---

actors and vice versa. A smaller network with fewer relationships is usually higher in density, and its ego actor occupies a less prominent position in the network. However, there are some exceptions: ego Actors 23, 26 and 28 have medium and dense networks, with relatively central positions (Table V).

The average size of the ego networks was 17 actors with 279 relationships, a density of 87 per cent and a centrality of 11 per cent. The two ego networks representing the real estate company (Actors 1 and 2) had an average of 33 actors and 499 relationships each. Their number of relationships and 31 per cent centrality strengthen the argument that the real estate company acted as the network hub and coordinator between different network actors to coordinate resources and gain control over various sub-processes (Figure 3). This means that the real estate company had control over the network, but this does not mean that it had control over, or was involved in, the development and innovative work. Despite the real estate company's central network role and position, its ego network had a fairly low density of 48 per cent (Table VI).

In total, 15 actors represented the building user, and their ego networks averaged 15 actors and 189 relationships each. Unlike the real estate company's ego networks, the building user's ego networks, on average, had a high density of 88 per cent and a peripheral position in the network with a centrality of only 11 per cent (Table VI). The high density of the building user's ego networks, however, suggests the possibility of transferring tacit knowledge and consequently of increasing innovative capability. The number of relationships with other actors in the network, on the other hand, was low.

## 5. Discussion of findings

This study demonstrates that the real estate business model innovation was created through frequent and deep interactions between the real estate company and the building user. A real estate company's business model is a product of such interactions, a finding in line with previous research (Kristensson *et al.*, 2014). Without interactions, there is no business model that works in practice. The real estate company offered the

| Actor | Size  | Relationships | Pairs    | Density | Centrality |
|-------|-------|---------------|----------|---------|------------|
| 1     | 37.00 | 577.00        | 1,332.00 | 0.43    | 0.40       |
| 2     | 29.00 | 422.00        | 812.00   | 0.52    | 0.20       |
| 3     | 20.00 | 286.00        | 380.00   | 0.75    | 0.09       |
| 4     | 20.00 | 292.00        | 380.00   | 0.77    | 0.12       |
| 5     | 7.00  | 40.00         | 42.00    | 0.95    | 0.11       |
| 6     | 7.00  | 40.00         | 42.00    | 0.95    | 0.09       |
| 7     | 6.00  | 30.00         | 30.00    | 1.00    | 0.02       |
| 8     | 18.00 | 282.00        | 306.00   | 0.92    | 0.04       |
| 9     | 36.00 | 559.00        | 1,260.00 | 0.44    | 0.39       |
| 10    | 18.00 | 282.00        | 306.00   | 0.92    | 0.03       |
| 11    | 18.00 | 282.00        | 306.00   | 0.92    | 0.04       |
| 12    | 13.00 | 156.00        | 156.00   | 1.00    | 0.01       |
| 13    | 18.00 | 282.00        | 306.00   | 0.92    | 0.04       |
| 14    | 17.00 | 258.00        | 272.00   | 0.95    | 0.03       |
| 15    | 18.00 | 282.00        | 306.00   | 0.92    | 0.04       |
| 16    | 34.00 | 549.00        | 1,122.00 | 0.49    | 0.35       |
| 17    | 17.00 | 264.00        | 272.00   | 0.97    | 0.02       |
| 18    | 10.00 | 90.00         | 90.00    | 1.00    | 0.01       |
| 19    | 17.00 | 264.00        | 272.00   | 0.97    | 0.02       |
| 20    | 16.00 | 240.00        | 240.00   | 1.00    | 0.01       |
| 21    | 17.00 | 264.00        | 272.00   | 0.97    | 0.02       |
| 22    | 17.00 | 264.00        | 272.00   | 0.97    | 0.02       |
| 23    | 19.00 | 273.00        | 342.00   | 0.80    | 0.32       |
| 24    | 17.00 | 234.00        | 272.00   | 0.86    | 0.25       |
| 25    | 19.00 | 273.00        | 342.00   | 0.80    | 0.23       |
| 26    | 19.00 | 273.00        | 342.00   | 0.80    | 0.28       |
| 27    | 16.00 | 214.00        | 240.00   | 0.89    | 0.25       |
| 28    | 19.00 | 273.00        | 342.00   | 0.80    | 0.28       |
| 29    | 12.00 | 128.00        | 132.00   | 0.97    | 0.03       |
| 30    | 11.00 | 106.00        | 110.00   | 0.96    | 0.07       |
| 31    | 12.00 | 128.00        | 132.00   | 0.97    | 0.03       |
| 32    | 16.00 | 214.00        | 240.00   | 0.89    | 0.10       |
| 33    | 13.00 | 148.00        | 156.00   | 0.95    | 0.07       |
| 34    | 16.00 | 214.00        | 240.00   | 0.89    | 0.05       |
| 35    | 16.00 | 215.00        | 240.00   | 0.90    | 0.07       |
| 36    | 15.00 | 191.00        | 210.00   | 0.91    | 0.05       |
| 37    | 10.00 | 90.00         | 90.00    | 1.00    | 0.02       |
| 38    | 12.00 | 132.00        | 132.00   | 1.00    | 0.02       |

Ego network structure

**Table V.**  
Ego network structure

**Notes:** Size: size of ego networks; relationships: number of directed relationships; pairs: number of possible relationships; density: ties divided by pairs; centrality: eigenvector

building user a fairly traditional approach, but it was rejected. The building user had more profound needs than those addressed by the real estate company's offer. There is no doubt that it was the building user that took the initiative to develop the business model. The other network actors contributed advice and technical expertise, but they were not directly involved in the innovation process. For the transfer of knowledge within the network, this means that incompletely realized interactive relationships between all network actors impeded knowledge transfer within the network. In sum, this study demonstrates that it was primarily the building user that was behind the innovative development of the workplace and of the real estate business model,

whereas the real estate company played a network hub and coordinating role. Moreover, the building user controlled and steered the value-creation process, the outcome of which led to increased productivity for the building user. We accordingly formulate following propositions:

- P1. The building user takes the initiative during real estate business model innovation and controls the value-creation process, whereas the real estate company coordinates the network resource mobilization for the value-creation process.

For real estate business model innovations to arise, network actors need relationships with one another so that the knowledge can be contrasted and combined. It was therefore assumed that the size of the ego network or the number of relationships would affect real estate business model innovation, as ego networks with many relationships were assumed to have a greater ability to generate innovative business models. This assumption cannot be confirmed in this study, which instead finds the opposite. The actors with the largest ego networks in terms of the number of relationships were the least involved in the innovation processes, whereas the actors with the smallest ego networks were the most involved in these processes. This result may be attributable to the fact that the studied real estate network includes many more relationships than does, for example, the network studied by [Roxenhall \(2011\)](#). This leads to the following proposition:

- P2. Ego network size is negatively related to real estate business model innovation.

Those network actors who took part in the innovative processes had significantly higher-density ego networks than did those who did not take part. Strong and trusting relationships facilitate the mediation and transformation of knowledge. High density means that the focal ego actor does not have full oversight of his or her partners ([Cook and Emerson, 1978](#); [Burkhardt and Brass, 1990](#)), as they have their own direct mutual relationships, though the interactions, knowledge exchanges and innovative ideas that arise among them nevertheless benefit the focal ego actor. [Ahuja's \(2000\)](#) finding that structural holes negatively affect innovation and [Obsfeld's \(2005\)](#) finding that high density positively affects innovation also apply to this case. Thus, the following proposition is formulated:

- P3. Ego network density is positively related to real estate business model innovation.

It was further assumed that real estate network actors participating in innovation development would occupy more central network positions than would non-participants. In this study, the real estate company had the most central position in the network. However, this was because the real estate company had the role of coordinating various network resources, such as skills and information. It would seem logical to assume that centrally placed actors having numerous relationships with other network actors would enjoy more alternative ways to access the

|                          | Real estate company | Building user | Whole network |
|--------------------------|---------------------|---------------|---------------|
| Number of ego networks   | 2                   | 15            | 38            |
| Size                     | 33.00               | 14.90         | 17.16         |
| Relationships            | 499.50              | 188.90        | 279.36        |
| Ego network density      | 0.48                | 0.88          | 0.87          |
| Centrality (Eigenvector) | 0.31                | 0.11          | 0.11          |

**Table VI.**  
Network structure

**Notes:** Mean values are shown; size: number of actors in ego networks; relationships: number of relationships; pairs: number of possible relationships; density: ties divided by pairs; centrality: eigenvector

---

resources needed to coordinate the network. Centrally placed actors are also less dependent on other network actors than are those positioned peripherally in networks. The building user had a relatively central position in a dense part of the network, and it should further be noted that centrally positioned actors with high-density ego networks have a greater ability to produce innovative ideas than do those who are more peripherally positioned with low-density networks (Roxenhall, 2013). This leads to the following proposition:

- P4.* Ego network centrality is positively related to real estate network resource mobilization. Ego network centrality and ego network density are positively related to real estate business model innovation.

## 6. Conclusions and implications

This study demonstrated that innovative development occurred only in the value-creation part of the business model. The other two elements of the business model were traditional in character. This is in contrast to previous research findings in other areas. The value-creation part of the real estate business model led to increased efficiency for the building user by creating efficient premises that led to the creation of close relationships between employees, promoted faster and easier workflow management and gave management better oversight of and control over its production and organization. The building user initiated and directed the innovative value-creation part, whereas the real estate company played the role of network hub and network resource coordinator. This finding should be regarded as a theoretical contribution.

The network structure in the case is positively related to the innovative value-creation part of the business model. We assumed that the larger ego networks would have greater impact than the smaller networks, but the case indicates the reverse, which should be regarded as an important theoretical contribution. Furthermore, we assumed that denser networks would have greater significance than less dense networks, which is confirmed in this study. Results of previous studies in other areas indicate that both denser and less dense networks are important for innovative achievements. Finally, we assumed that ego actors with central positions in the network would have a greater impact on the business models than would those with more peripheral positions, but this study finds the opposite. The more centrally placed actors did not have as much impact on the innovative value-creation part of the business model as did those with less central positions. The latter initiated, directed and controlled the innovative developments, a finding that may be regarded as a theoretical contribution. The study suggested four propositions, three of which should be considered theoretical contributions, though limited to the study's specific context, namely, real estate networks.

This study's results also have some important practical implications. Real estate companies should carefully analyze their building users' needs and wants, not just those explicitly expressed, but the tacit ones as well. The value proposition should emphasize the effects of using the building that are aligned with the user's needs, wants and preferences. Real estate companies should further be considered hubs that coordinate all the network actor resources the user needs to create value in terms of increased efficiency. To create effective hubs, it is necessary that the representatives of real estate companies develop personal and open networks, so as to acquire central network positions. Moreover, a real estate company must ensure that the building user has several representatives who create less dense personal networks that focus on the value-creation process. To promote real estate business model innovation, real estate companies must also develop their value-capture models: instead of charging per square meter, payment should be linked to the values created by using the building.

**References**

- Ahuja, G. (2000), "Collaboration networks, structural holes, and innovation: a longitudinal study", *Administrative Science Quarterly*, Vol. 45 No. 3, pp. 425-455.
- Annen, K. (2003), "Social capital, inclusive networks, and economic performance", *Journal of Economic Behaviour & Organization*, Vol. 50 No. 4, pp. 449-463.
- Baden-Fuller, C. and Haefliger, S. (2013), "Business models and technological innovation", *Long Rang Planning*, Vol. 46 No. 6, pp. 419-426.
- Burkhardt, M.E. and Brass, D.J. (1990), "Changing patterns or patterns of change: the effects of a change in technology on social network structure and power", *Administrative Science Quarterly*, Vol. 35 No. 1, pp. 104-127.
- Chesbrough, H. (2010), "Business model innovation: opportunities and barriers", *Long Rang Planning*, Vol. 43 Nos 2/3, pp. 354-363.
- Chesbrough, H. and Crowther, A.K. (2006), "Beyond high tech: early adopters of open innovation in other industries", *R&D Management*, Vol. 36 No. 3, pp. 229-236.
- Cook, K. and Emerson, R.M. (1978), "Power, equity, and commitment in exchange networks", *American Sociological Review*, Vol. 43 No. 5, pp. 721-739.
- Cross, R., Borgatti, S.P. and Parker, A. (2002), "Making invisible work visible: using social network analysis to support strategic collaboration", *California Management Review*, Vol. 44 No. 2, pp. 25-46.
- Edvardsson, B., Tronvoll, B. and Gruber, T. (2011), "Expanding understanding of service exchange and value co-creation: a social construction approach", *Journal of the Academy of Marketing Science*, Vol. 39 No. 2, pp. 327-339.
- Frenz, M. and Ietto-Gillies, G. (2009), "The impact on innovation performance of different sources of knowledge: evidence from the UK community innovation survey", *Research Policy*, Vol. 38 No. 7, pp. 1125-1135.
- Gilsing, V., Bekkers, R., Bodas Freitas, I.M. and Van Der Steen, M. (2011), "Differences in technology transfer between science-based and development-based industries: transfer mechanisms and barriers", *Technovation*, Vol. 31 No. 12, pp. 638-647.
- Gilsing, V., Nooteboom, B., Vanhaverbeke, W., Duysters, G. and Van Den Oord, A. (2008), "Network embeddedness and the exploration of novel technologies: technological distance, betweenness centrality and density", *Research Policy*, Vol. 37 No. 10, pp. 1717-1731.
- Granovetter, M. (1985), "Economic action and social structure: the problem of embeddedness", *American Journal of Sociology*, Vol. 91 No. 3, pp. 481-510.
- Grund, T.U. (2012), "Network structure and team performance: the case of English Premier League Soccer Teams", *Social Networks*, Vol. 34 No. 4, pp. 682-690.
- Gulati, R. (1995), "Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances", *Academy of Management Journal*, Vol. 38 No. 1, pp. 85-112.
- Hallén, L., Johanson, M. and Roxenhall, T. (Eds) (2009), *Regionala Strategiska Nätverk I Praktiken*, Studentlitteratur, Lund.
- Hansen, M.T. (1999), "The search-transfer problem: the role of weak ties in sharing knowledge across organization subunits", *Administrative Science Quarterly*, Vol. 44 No. 1, pp. 82-111.
- Håkansson, H. (1985), *Industrial Technological Development. A Network Approach*, Croom Helmt, London.
- Ibarra, H. (1993), "Network centrality, power, and innovation involvement: determinants of technical and administrative roles", *Academy of Management Journal*, Vol. 36 No. 3, pp. 471-501.
- Kane, G.C. and Alavi, M. (2007), "Information technology and organizational learning: an investigation of exploration and exploitation processes", *Organization Science*, Vol. 18 No. 5, pp. 796-812.

- 
- Kim, W.C. and Mauborgne, R. (2005), "Blue ocean strategy: from theory to practice", *California Management Review*, Vol. 47 No. 3, pp. 105-121.
- Kristensson, P., Gustafsson, A. and Witell, L. (2014), *Tjänsteinnovation*, Studentlitteratur, Lund.
- Lind, H. and Lundström, S. (2009), *Kommersiella Fastigheter I Samhällsbyggandet (Commercial Real Estate in Community Building)*, SNS Förlag, Stockholm.
- McAdam, R., Mason, B. and Mccrory, J. (2007), "Exploring the dichotomies within the tacit knowledge literature: towards a process of tacit knowing in organizations", *Journal of Knowledge Management*, Vol. 11 No. 2, pp. 43-59.
- Mcfadyen, M.A. and Cannella, A.A. Jr (2004), "Social capital and knowledge creation: diminishing returns of the number and strength of exchange relationships", *Academy of Management Journal*, Vol. 47 No. 5, pp. 735-746.
- March, J. (1991), "Exploration and exploitation in organizational learning", *Organization Science*, Vol. 2 No. 1, pp. 71-87.
- Marsden, P.V. (1990), "Network data and measurement", *Annual Review of Sociology*, Vol. 16, pp. 435-463.
- Mehra, A., Dixon, A.L., Brass, D.J. and Robertson, B. (2006), "The social network ties of group leaders: implications for group performance and leader reputation", *Organization Science*, Vol. 17 No. 1, pp. 64-79.
- Mouzas, S. (2006), "Efficiency versus effectiveness in business networks", *Journal of Business Research*, Vol. 59 Nos 10/11, pp. 1124-1132.
- Obsfeld, D. (2005), "Social networks, the Tertius Lungen orientation and involvement in innovation", *Administrative Science Quarterly*, Vol. 50 No. 1, pp. 100-130.
- Olsén, H. and Roxenhall, T. (2015), "The relationships between network commitment, antecedents, and innovation in strategic innovation networks", *International Journal of Innovation Management*, Vol. 21 No. 4 (May), p. 1750037-1-36.
- Ostroff, C. and Schmitt, N. (1993), "Configurations of organizational-effectiveness and efficiency", *Academy of Management Journal*, Vol. 36 No. 6, pp. 1345-1361.
- Podolny, J.M. and Baron, J.N. (1997), "Resources and relationships: social networks and mobility in the workplace", *American Sociological Review*, Vol. 62 No. 5, pp. 673-693.
- Powell, W.W., Koput, K.W. and Smith-Doerr, L. (1996), "Interorganizational collaboration and the locus of innovation: networks of learning in biotechnology", *Administrative Science Quarterly*, Vol. 41 No. 1, pp. 116-145.
- Provan, K.G., Fish, A. and Sydow, J. (2007), "Interorganizational networks at the network level: a review of the empirical literature on whole networks", *Journal of Management*, Vol. 33, pp. 479-516.
- Rost, K. (2011), "The strength of strong ties in the creation of innovation", *Research Policy*, Vol. 40 No. 4, pp. 588-604.
- Rowley, T., Behrens, D. and Krackhardt, D. (2000), "Redundant governance structures: an analysis of structural and relational embeddedness in the steel and semiconductor industries", *Strategic Management Journal*, Vol. 21 No. 3, pp. 369-386.
- Roxenhall, T. (2011), "Network structure and network commitment in innovation networks", *World Journal of Management*, Vol. 3 No. 1, pp. 60-74.
- Roxenhall, T. (2013), "Network structure and innovation in strategic innovation networks", *International Journal of Innovation Management*, Vol. 17 No. 2.
- Sandström, A. (2008), *Policy Networks: The Relation between Structure and Performance*. Luleå University of Technology.
- Shan, W., Walker, G. and Kogut, B. (1994), "Interfirm cooperation and startup innovation in the biotechnology industry", *Strategic Management Journal*, Vol. 15 No. 5, pp. 387-394.

- Sinclair, P.A. (2009), "Network centralization with the Gil Schmidt power centrality index", *Social Networks*, Vol. 31, pp. 214-219.
- Sorescu, A., Frambach, R.T., Singh, J., Rangaswamy, A. and Bridges, C. (2011), "Innovations in retail business models", *Journal of Retailing*, Vol. 87, pp. 3-16.
- Sparrowe, R.T., Liden, R.C., Wayne, S.J. and Kraimer, M.L. (2001), "Social networks and the performance of individuals and groups", *Academy of Management Journal*, Vol. 44 No. 2, pp. 316-325.
- Teece, D.J. (2010), "Business models, business strategy and innovation", *Long Range Planning*, Vol. 43 Nos 2/3, pp. 172-194.
- Tsai, W. and Ghoshal, S. (1998), "Social capital and value creation: the role of intrafirm networks", *Academy of Management Journal*, Vol. 41 No. 4, pp. 464-476.
- Vanhaverbeke, W., Duysters, G. and Beerkens, B. (2001), *Technological Capability Building through Networking Strategies within High-Tech Industries*, Eindhoven Centre for Innovation Studies, Eindhoven.
- Velu, C. (2015), "Business model innovation and third-party alliance on the survival of new firms", *Technovation*, Vol. 35, pp. 1-11.
- Von Hippel, E. (2007), "Horizontal innovation networks - by and for users", *Industrial and Corporate Change*, Vol. 16, pp. 293-315.
- Walker, G., Kogut, B. and Shan, W. (1997), "Social capital, structural holes and the formation of an industry network", *Organization Science*, Vol. 8 No. 2, pp. 109-125.
- Wise, S. (2014), "Can a team have too much cohesion? The dark side to network density", *European Management Journal*, Vol. 32 No. 5, pp. 703-711.
- Yin, R.K. (2003), *Case Study Research. Design and Methods*, Sage Publications, San Francisco, CA.
- Zander, U. and Kogut, B. (1995), "Knowledge and the speed of the transfer and imitation of organizational capabilities: an empirical test", *Organization Science*, Vol. 6 No. 1, pp. 76-92.
- Zheng, W. (2010), "A social capital perspective of innovation from individuals to nations: where is empirical literature directing us?", *International Journal of Management Reviews*, Vol. 12 No. 2, pp. 151-183.

**Corresponding author**

Tommy Roxenhall can be contacted at: [tommy.roxenhall@miun.se](mailto:tommy.roxenhall@miun.se)