

RESOURCE HIJACKING AS A BRICOLAGE TECHNIQUE

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ABSTRACT: *Entrepreneurs work in a resource-constrained environment. What is more, the resources controlled by new ventures are often much more limited compared to the resources controlled by existing competitors. In order to overcome the gap between needed and controlled resources, entrepreneurs use techniques such as financial bootstrapping (Ebben & Johnson, 2006) and bricolage (Philips & Tracey, 2007). This study extends the concept of entrepreneurial bricolage by introducing the concept of resource hijacking, which explains how entrepreneurs take advantage of resources controlled by others to extend their resource base and develop new ventures. Using an exploratory grounded theory approach, this study aims to: (1) conceptualize resource hijacking, (2) identify different dimensions and variants of resource hijacking, (3) provide empirical evidence of resource hijacking in practice, and (4) fit the emergent concept into the existing body of literature on bootstrapping and bricolage within the entrepreneurial process.*

Key words: *entrepreneurship, resource based theory, bricolage*

JEL classification: L26

INTRODUCTION

The concept of resource hijacking has emerged while doing in-depth case study research on the entrepreneurial process with a very successful internet telephony venture, Skype Technologies (Stritar, Drnovšek, & Zupan, 2008). We discovered that the entrepreneurs overcame the need for substantial investment in expensive infrastructure by using their users' computers to act as mini servers. By doing so they were able to expand the network with virtually no marginal cost for each new user, which represented a significant competitive advantage compared to other competitors as they were able to offer internet telephony for free.

The idea of "hijacking" resources as a technique entrepreneurs use to overcome gaps in available and required resources or to expand the resource base they have at hand motivated us to further develop the concept and seek other cases and dimensions. To strengthen the emergent concept, I first studied existing literature on how entrepre-

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neers deal with resource scarcity. Prior research shows that while resources are crucial for firm development (for example Bruton & Rubanik, 2002), the social construction of resource environments is equally important (Baker & Nelson, 2005; Kodithuwakku & Rosa, 2002). The ability of entrepreneurs to create ventures happen with what they have at hand and manage to outperform companies that are resource abundant is one of the most important entrepreneurial skills.

Using theoretical sampling (Draucker, Martsof, Ross, & Rusk, 2007), I looked for additional cases where resource hijacking can be identified to provide a basis for pattern matching and triangulation. These additional cases also provide new leads to further dimensions of resource hijacking.

THEORETICAL OVERVIEW: RESOURCE BASED THEORY, BRICOLAGE AND BOOTSTRAPPING

Resources play a key role in the entrepreneurial process. The resource-based approach adopted from management literature has two alternative orientations when used in a study of an entrepreneurial firm. First, as a strategic theory, the resource-based approach requires an analysis of the relationship between internal resources and firm performance. Second, following the firm paradigm theory, this perspective examines reasons for a firm's existence, along with the determinants of the size and scope of the firm (Green, 1999; Penrose, 1959). In an attempt to summarize various types of resources identified by previous researchers, Galbreath (2005) suggested that a firm has the following types of resources: (1) tangible resources which include (a) financial assets and (b) physical assets; (2) intangible resources such as (a) intellectual property assets, (b) organizational assets, and (c) reputational assets; and (3) intangible resources that are skills including capabilities. Research showed that when having access to a set of tangible resources, entrepreneurs develop different outcomes, which emphasizes the importance of intangible resources for venture success (Kodithuwakku & Rosa, 2002).

The resource base entrepreneurs can employ to establish their venture is usually scarcer than the resource base controlled by established ventures; however, they still oftentimes succeed in establishing and growing their ventures. Baker and Nelson (2005) defined the process of "making do" by applying combinations of the resources at hand to new problems and opportunities. The term bricolage was first introduced by Levi-Strauss (1967) and has since been applied to several research areas. The author described the "rules" of the bricoleur's "game" as to always make do with whatever is at hand. For an itinerant tinkerer, the materials at hand might be whatever he can carry around with him. For example, for a rainforest tribeswoman, the materials at hand may be whatever she knows how to scavenge within a half-day's walk (Philips & Tracey, 2007). Baker and Nelson (2005) further specified bricolage as: (1) "making do", that is engaging with problems instead of lingering over questions of whether a workable outcome can be created from what is at hand, (2) refusing to enact limitations, (3) combining resources for new purposes, and (4) building on resources at hand. Authors defined resources at hand as resources that are available

very cheaply or for free, often because others judge them to be useless or substandard. Not being able to access optimal resources can lead to less than optimal results; however, in some cases a creative bricolage approach can lead to brilliant unforeseen results (Baker & Nelson, 2005; Levi-Strauss, 1967). Baker (2005) proposed that the introduction of bricolage in the entrepreneurial process has at least two important theoretical implications. First, it suggests that the social construction of resource environments can be as influential in determining behaviors as the objective limitations of environments. Secondly, it further contributes to the idea that Penrose (1959) created when she noted that firms vary tremendously in their ability to extract services from physical inputs.

When tackling resource scarcity, entrepreneurs either try to increase the efficiency of the use of available resources or expand the resource base employed. One example of overcoming resource shortages is financial bootstrapping. Instead of looking for institutional financing, entrepreneurs seek alternative ways to acquire necessary financial resources for their business. Winborg and Landström (2000) identified: (1) owner financing, (2) minimization of accounts receivable, (3) sharing and borrowing resources, (4) delaying payments, (5) minimizing own capital invested in stock, and (6) obtaining subsidies from the government as methods entrepreneurs use to bootstrap finances. The reason why users/customers allow a venture to hijack some of their resources can be better understood when seen through the perspective of transaction costs theory. Transaction cost is a cost incurred in making an economic exchange on the market. Examples of these include search and information costs, bargaining costs, and policing and enforcement costs (Cheung, 1987). Users/customers try to minimize the cost of a product or service together with the cost of the transaction. Therefore, for companies to be able to hijack resources, the added value of the service offered has to be higher than the cost of the hijacked resource for the user.

METHODOLOGY

The study used a grounded theory methodology that consists of systematic yet flexible guidelines for collecting and analyzing qualitative data in order to construct theories grounded in the data itself (Charmaz, 2006). The method was conceived by Glaser and Strauss (1967) who conveyed a discontent with the dominant logico-deductive approach to research practices of their time. They introduced a grounded systematic approach to data analysis that leads to inductive discovery of theory. Grounded theory approach creates theory that is derived from data that has been systematically collected and analyzed using an iterative process of considering and comparing earlier literature, its data, and emerging theory (Mäkelä & Turcan, 2006). The result of grounded theory building is theory that derives directly from practice, therefore closing the gap between theory and practice that is often present with other methods (Graham & Thomas, 2008). This makes the method very suitable for the exploration of new research topics and development of new concepts (Charmaz, 2006).

I start my analysis by presenting the concept of resource hijacking grounded in the data of Skype Technologies. The case was chosen as it represents a unique example of internet

venture success in the era after the internet bubble burst in 2000. The company managed to attract 74,7 million users in two years with an investment of just \$20 million. Traditional telecommunication companies of the time or even competitive voice IP providers would spend several billion just to provide the necessary equipment to achieve that². What is more, the low marginal cost for each new user, made possible by using peer to peer network architecture, enabled the usage of a freemium business model (Compaine, 2008) where the basic service (talking over the internet) was free and the company only charged for premium services, thus bringing a very high added value to the users. This makes Skype one of the outstanding cases in internet history, which motivated the study of success factors. An in-depth study of the company is possible mostly because of the vast availability of reliable secondary sources of information on the venture. While studying the process of opportunity identification and venture development, the concept of resource hijacking emerged.

After identifying instances of resource hijacking within the Skype case, I used theoretical sampling (Charmaz, 2006; Strauss & Corbin, 2008) to look for additional cases that could provide data for further concept development and theoretical saturation. To identify additional cases that could provide interesting insight into the nature of different types of resource hijacking, we follow two patterns. First, while analyzing the data sources for the Skype case, several references to other internet ventures that employ resource hijacking were made. These leads were followed and analyzed to deepen the understanding of specific concepts. New cases provided new references that were also analyzed. Second, to achieve replication, further instances were sought using theoretical sampling, thus searching for additional cases that would have similar occurrences of resource hijacking. The search was done among most visible internet ventures that have strongly marked internet development.

With each identified dimension of resource hijacking, we identified at least two cases to provide sufficient theoretical saturation through replication. However, it is important to emphasize that the theoretical sampling was performed in a heuristic manner, not trying to find optimal cases, but ones that sufficiently illuminate different dimensions of resource hijacking. Each included company is briefly described and the key characteristics of the venture are emphasized.

As the nature of the study is exploratory, I looked for critical representative cases of the studied phenomena that could provide new insights and concepts for future research. Several secondary data sources exist that capture the process of development of most visible ventures. The data comes in formats of written articles, newsfeeds, audio and video interviews. The availability of different data sources makes it possible to triangulate the data on key events and concepts, thus increasing reliability of the findings (Yin, 2003).

I used a qualitative data analysis (QDA) software Atlas.ti to organize the data source and perform coding on the data, enabling us to track back quotations to their original source.

² In 2003 Vonage had to spend \$400 in equipment for each new user connected to the network

Nevertheless, identified concepts should be further tested and explored to achieve further theoretical saturation.

It is important to emphasize that the studied cases were all internet ventures. The conditions of doing business over the internet significantly differ from traditional ventures. First the nature of all software products made it possible to reproduce the products with little or no variable cost. In addition to that, the internet has made it possible to reach millions of customers worldwide with little or no cost. Taking into account the potential reach of internet services it is expected that novel business models and novel approaches are employed to tackle resource shortages. The selected cases therefore represent good exemplary cases for the study of resource hijacking. I do not however assume that resource hijacking is only limited to internet ventures. Future research should be done to analyze how resource hijacking takes place with traditional brick and mortar companies.

QUOTE 1

“We want to make as little money as possible per user. We don’t have any cost per user, but we want a lot of them.”

Niklas Zennström (Economist, 2005)

Based on the gathered data we further develop the concept of resource hijacking, providing an emergent definition of the term and defining different types of resources hijacked by entrepreneurs. The study is aimed at the identification of different dimensions of resource hijacking and not to provide any evidence on the positive effect of resource hijacking on firm performance, growth or survival rate. This should be further researched and developed.

EMERGENT CONCEPT: RESOURCE HIJACKING

To establish the concept of resource hijacking, I first turned to the case of Skype. The company employed a unique business model offering free calls and charging only for premium services such as voice mail and fixed lines phone calls. What made such an approach possible was the fact that Skype had virtually no cost for each new user added to the network. In comparison, the marginal cost for each new user with Vonage, the biggest VoIP provider at the time Skype was started, was \$400 (Rao, Angelov, & Nov, 2006). This was made possible by an underlying technology called peer-to-peer (see QUOTE 3,(Charny, 2003)). The Skype network separates users into two levels. The first level are ordinary users and the second the so called “supernodes”, which act as servers that maintain the network

QUOTE 2

“There’s no marketing because we don’t run marketing campaigns. It’s being spread virally by users.”

Niklas Zennström (McCullagh, 2003)

QUOTE 3

“Peer-to-peer is a widely used and abused term. Software is not peer-to-peer just because it establishes direct connection between two users; most Internet software does this to some extent. True peer-to-peer software creates a network through which all clients join together dynamically to help each other route traffic and store information. The power of the network grows with the number of users.” Janus Friis (Why VoIP is Music to KaZaa’s ear, 2003)

operational (Guha & Daswani, 2006). Skype users do not know whether their computer acts as a supernode or not. This way the network “hijacks” users’ computers and internet bandwidth and has no need to invest in expensive server farms. If Skype used the same service architecture as Vonage, the daily need for capital investment if they wanted to maintain their growth rate would exceed \$60 million.

When designing their venture, the entrepreneurs looked far beyond what they had at hand. By cleverly integrating the use of resources used and controlled by their potential service into their service design, they overcame the need to invest large amounts of capital in expensive server infrastructure and internet bandwidth. We identify equipment and infrastructure hijacking as the first component of the emergent concept.

However, infrastructure, that is physical resources, is just one type of resource a venture needs for its development. The Skype case pointed me towards another interesting example of resource hijacking that is common with internet ventures.

Using the users of the service to promote the service with other users, also known as viral marketing, has attracted a lot of attention in business literature (e.g., Phelps, Lewis, Mobilio, Perry, & Raman, 2004). By designing their services in such a way that the users of the service perform free advertising to other users, the companies hijack their users’ social networks, saving substantial amounts of money for advertising. In the case of Skype, the users were highly motivated to promote the service to others, as the value of the service increased with the number of friends using Skype. More users having Skype installed meant more free phone calls.

One of the key investors in the early stages of Skype development was Tim Draper. He is well known in the community of internet entrepreneurs, as he is closely connected with Hotmail and often thought of as the father of viral marketing. Founded in 1996, Hotmail was among the first email services that enabled people to open free email accounts. In 1997 it was sold to Microsoft for \$400 million. Hotmail serves as a fine example of resource hijacking, as at the bottom of each email there was a ‘get your own free Hotmail account’ link. This meant that with each email sent through Hotmail more promotion was done with no extra cost for the company. In this way each user became an involuntary salesperson, promoting the service within his social network (Juverston, 2000). Marketing and social network hijacking can be seen as the second component of resource hijacking.

The search for additional cases of viral marketing reveals YouTube, the leading internet video site and also one of the most successful internet ventures after the internet bubble burst. The service enables users to upload their own videos and easily share them with others. By sending links to their videos to friends, YouTube users also promote the service. The company offers more interesting leads to study resource hijacking.

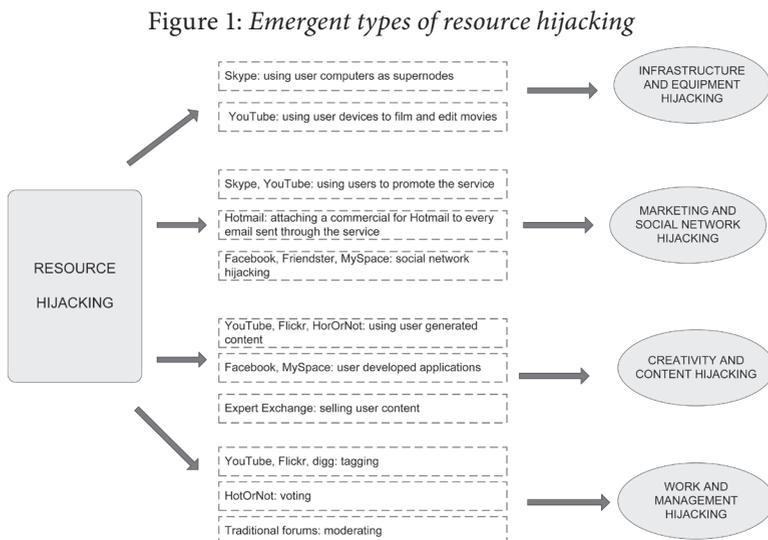
By enabling users to upload their video content online, the service gets free content when traditional news sites, in comparison, have to pay for content creation. In this way the service hijacks the user’s creativity, knowledge, and equipment (digital cameras and

mobile phones) used for content creation. Jaweed Karim (2006), one of the founders of YouTube, emphasized that YouTube was not the first company to utilize user generated service. In his speech on the hypergrowth of YouTube, he mentions blogging sites (for example Live-Journal in 1999), photo sites (for example Hot-or-not in 2000 and Flickr in 2004) and encyclopedia sites (for example Wikipedia in 2001), that were built by using user-generated content before YouTube. Activating users as the creators of content can be seen as another form of resource hijacking.

However, even with YouTube, users not only provide the content, but also play an important role in content management and editing. Managing large amounts of data and making it possible for users to easily find relevant content is a daunting and costly task. The so called “tagging” system that has been implemented with services such as YouTube, provides the users with the possibility of marking uploaded videos with keywords. Users act as organizers of the data by categorizing it and make it possible for others to find it. In this way the companies hijack the time and energy of the users.

Services such as digg.com enable users to easily express their like or dislike of content found on the internet. Based on millions of opinions, the content is then organized to rank the most relevant content first. Traditional forums also use some advanced users to act as moderators and debate organizers. Companies like Expert Exchange LLC offer solutions to technology based questions by engaging their users as experts and selling their solutions to other users. Last but not least, services like Facebook and MySpace made it possible for their users to easily develop new applications that work in the Facebook environment, thus adding millions of new applications to the social network.

Based on my research above we developed several possible types of resource hijacking as shown in Figure 1.



The four categories identified above are not a final list. More internet as well as brick and mortar companies should be analyzed to strengthen the above construct and to identify additional dimensions.

DISCUSSION

My analysis identified several different occurrences of resource hijacking with internet ventures, which shows it is an important bricolage technique used by entrepreneurs. Evidence suggests that entrepreneurs look beyond resources that are at hand, and creatively design services to employ other people's resources, as suggested by Baker et al. (2005). This provides solid evidence that internet entrepreneurs employ different types of resource hijacking in order to overcome the limits in the resources they control. Following analytical generalization replication logic (Yin, 2003), resource hijacking can therefore be seen as an important building block of the bricolage theory in entrepreneurship.

Resource hijacking is a bricolage technique used by entrepreneurs to broaden the resource base they have at hand when designing and growing their venture. It is however important to emphasize that resource hijacking should not only be seen as a means of decreasing the need for financial resources and thus increasing the return on investment. Broadening the scale of resources employed also enables entrepreneurs to develop superior services with higher added value and lower cost for the end user. This means that alternative business models can be developed that enable completely different scalability for the ventures. What is more, many successful internet ventures (for example Skype or YouTube) would not be possible without the use of resource hijacking. Resource hijacking reduces risk, increases scalability, and makes it possible to achieve much higher return on investment.

The internet makes for a perfect environment for resource hijacking, yet the concept should not remain limited to internet ventures. Entrepreneurs in traditional brick and mortar ventures also broaden their resource base with resource hijacking, such as hijacking social networks, marketing, etc.; however, more research should be done to better understand these processes.

Resource hijacking can be closely connected to financial bootstrapping, especially in terms of borrowing and sharing resources (Winborg & Landström, 2000). The key difference between the two concepts is that bootstrapping usually focuses only on decreasing the need for financial resources, while resource hijacking also enables the entrepreneurs to create novel and more attractive business models.

The term hijacking should not be taken literally. The term hijacking is usually associated with a forceful takeover of control of a resource to which the resource owner disagrees and the hijacker acts illegally. The relationship between the hijacker and the resource owner in the case of resource hijacking described above is more complex. In most cases the users cannot be forced into giving up control of their resources. Users selfishly seek

to maximize their benefits and are therefore only willing to let their resources be hijacked if the benefits for them are high enough. This has important implications for designing business models that employ resource hijacking as the added value for the users has to be very high. For example, with Skype and YouTube the basic service is free. As the number of users grows, lock-in mechanisms can occur, therefore increasing the power of the resource hijacker.

This research has pointed me towards several ways how companies can hijack resources controlled by users/customers. However, resource hijacking is not limited only to resources controlled by users/customers. To expand their resource base, companies can also hijack infrastructure or resources controlled by other ventures and government. Further research is needed to expand the concept to also include such types of resource hijacking.

CONCLUSIONS, LIMITATIONS AND IMPLICATIONS

Based on our analysis and literature review I see resource hijacking as a concept that fits well into resource based theory, especially the study of bricolage in the entrepreneurial process. It is especially well-suited to internet companies as the contextual specifics enable entrepreneurs to access user resources more easily than with traditional ventures; however, it is important not to overlook the effects of resource hijacking with traditional ventures.

The exploratory nature and the methodology used in this study lead to certain limitations. Analytical generalization (Yin, 2003) was used to generalize the findings. Future research should look for resource hijacking in bigger samples of random companies to achieve statistical generalization. The companies included in the study were chosen in a process of theoretical sampling, resulting in a biased sample. The results also do not imply that companies using resource hijacking are more successful. Further studies using different methodologies should therefore be used to test the concept and to study its correlation with venture success.

Despite these limitations, I believe that the emergent concept brings important implications. It brings a creative component into the resource based theory of entrepreneurship, giving entrepreneurs a tool to actively expand the set of resources with which to build their venture. In addition, it provides an intriguing concept for business developers that should look beyond their resource limitations and design ventures to engage resources that customers are willing to share in order to get a better service.

Future research should be done to further strengthen the constructs and to identify new areas and types of resource hijacking. The transactions between the hijacking company and its users should also be studied to a greater depth, to better understand the relationships between the involved parties and their dynamics.

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