Abstract—The objective of this paper is to analyze the growth of a small software firm by examining the approach it has taken to resource development. We have carried out a qualitative study of a small firm and interviewed the entrepreneur and the key personnel adopting the critical incident technique. On the basis of interviews we identified 10 categories of incidents – internationalization, internal organization, expansion of offering, R&D, strategic alliance, change in operational environment, focusing of business, remote offices, public development cooperation, crisis in cooperation - that have had a significant (positive or negative) effect on the business activities of the firm. The development path of the firm mainly consisted of alternation of growth elements and arrangements made in a way the firm operates.

According to our results the growth path of the case company has indications of selective bricolage. There is evidence of both alertness to market opportunity and alertness to utilizing the accumulated knowledge to new area. There is also evidence that bricolage is more important as a tool of value creation than as a tool of value appropriation.

I. INTRODUCTION

Small firms are an important and integral part of every nation’s economy and have been long recognized as different from large businesses [21, p. 473]. Small firm growth is a research area that has attracted considerable attention in recent years. Despite substantial increase in research volume little is still known about the phenomenon. Wiklund and colleagues point out that conceptual development has been limited and the related literature is highly fragmented. Also the question of how to measure growth has no clear answer. Variety of different measures including for example, growth of sales, employees, assets, profit and equity is being used. Moreover, the time span, over which growth is analyzed in the literature, varies considerably, and ranges from one to several years. [24, p. 351, p. 358; 25]

Resources and how a firm is able to obtain them are important factors in firm growth and performance. The resource-based view of the firm (RBV) discusses how firms achieve and sustain competitive advantage. The focus of RBV is on the internal organization of firms. At the core of the RBV are the resources which are those specific physical, human and organizational assets that can be used to implement value-creating strategies. [6; 18]

According to Newbert [18, p. 748, pp. 761-762] firms need not necessarily possess rare resources and rare capabilities in order to attain a competitive advantage. Common resources can be as essential provided they are paired with other capabilities (or resources) in such a way that the resulting combination in which they are exploited is rare. Therefore firms may be able to build a competitive advantage from the resources and capabilities they already possess. Newbert points out that managers need not necessarily seek out novel resources but rather develop novel ways in which to combine those resources to which they do have access.

Baker & Nelson [3] introduced entrepreneurial bricolage as the process by which resource-constraint firms are able to render unique services by recombining elements at hand. Bricolage is defined as a process of resource use and development characterized by using resources at hand, recombining resources and making do [3; 20]. The model of entrepreneurial bricolage also helps to shed light on the processes by which firms generate heterogeneous value from ostensibly identical resources.

In a small firm the impact of the manager is important. Wiklund and colleagues [25] have studied the small business managers’ motivation to expand their firms. According to authors eight key areas - workload, work tasks, employee wellbeing/“atmosphere”, financial outcome, control, independence, crisis survival ability, quality of products and services - are important for small business managers and at the same time these are the areas that are likely to be affected by growth. In order to grow, small firms must evolve also their organization, incorporating changes to management structure and communication processes without impairing the firm’s competitive advantage. According to Street and Meister [21, p. 473] remarkably little is known about how an organization actually changes internally during the periods of growth.

This paper is based on a research project that aims at a better understanding of the growth path of small software firms. The research consortium consists of two research partners - Turku School of Economics at the University of Turku and Tampere University of Technology. The research has received funding from Teke (Finnish Funding Agency for Technology and Innovation). The focus of the paper is on analyzing the growth of a small software firm by examining the approach it has taken to resource development during the process. Our study was applied as a single case in which we have explored the concept of bricolage in the context of software firm. We seek to make two contributions. First our aim is to increase the understanding of critical incidents related to growth in a small firm operating in knowledge intensive business like software industry. We will also contribute to the discussion on resource development strategies in small firms. The research question we address is how does a growing software firm manage its resources?
The paper is organized as follows. Section 2 outlines the theoretical basis of the research. Section 3 is a description of the research methodology. Following section 4 deals with the critical incidents of growth in a small firm and section 5 presents analysis of resource development related to these incidents. Finally the section 6 concludes the study.

II. IN QUEST OF GROWTH – CHALLENGE OF MANAGING RESOURCES

A. Characteristics of small software firms

Small firms are an important and integral part of every nation’s economy and have been long recognized as different from large businesses. Street and Meister [21] point out, that defining a small firm is however a controversial topic. In this paper we adopt their definition: “a small business is independently owned and operated and not dominant in its field of operation” (Small Business Administration 2003 [21, pp. 473-475]). Small firms are typically characterized by a flat organizational hierarchy and close proximity to coworkers. The owner/manager of a small firm is often intimately involved in the daily operations, gathering and acting on information first-hand. For these firms an important source of competitive advantage is the ability to remain flexible and responsive to the business environment. [21, pp. 475-477]

In Finnish society software business is seen one of the remarkable business sectors. It is important itself, but also as a generic field of business producing components embedded in other products. The share of small (resource restricted) firms is dominating in the structure of Finnish software industry. According to the study of Tekes [22] 50 % of firms had revenue less than 1 Million EUR and employed less than 10 employees.

Both large and small software firms face challenges of managing and improving their software processes, dealing with rapid technology advances, maintaining their products and operating in a global software environment. However, they often require different approaches because availability of (financial and human) resources, process and management capability, organizational differences, market niche and size [24, p. 475]. The big share of young companies in the structure of this industry is evidence to other phenomena than steady and managed growth.

International standards and models can provide a basis for process development in small software firms. A recent standard from ISO/IEC, 29110 - Lifecycle profiles for Very Small Entities (VSEs), is aimed at very small - less than 25 persons - software firms to improve and ensure their process and product quality. This standard classifies VSE specific characteristics in four categories: Finance and Resources, Customer Interface, Internal Business Processes and Learning and Growth [14].

B. Bricolage – “more from less”

Baker & Nelson [3] introduced entrepreneurial bricolage as the process by which resource-constraint firms are able to render unique services by recombining elements at hand. This concept is concerned with the method or approach a firm takes to its resource development process. Authors defined bricolage as a process of resource use and development characterized by using resources at hand, recombining resources and making do.

According to Baker and Nelson [3, p. 353] when a firm faces new challenges, whether opportunities of problems, without providing new resources it has basically three alternatives; seek new resources, avoid new challenge or engage in bricolage. In their study they find that 9 case firms out of 25 exhibited no discernable evidence of bricolage. These firms for example didn’t undertake offered job opportunity if they weren’t confident of being able to do it “the right way”.

Bricolage is not simply a matter of firms passively not enacting limitations but, rather, requires substantial activity and effort. Making do implies a bias towards active engagement with problems or opportunities. According to Baker and Nelson [3, p. 334] bricolage typically appeared to involve a general awareness of existing practices and norms and a conscious willingness to abrogate them. By refusing to treat (and therefore see) the resources at hand as nothing calls upon and provides a context in which firms actively exercise their creative and combinatorial capabilities, their tolerance for ambiguity and messiness and setbacks, and their ability to improvise and take advantage of emerging resources and opportunities.

Firms engaging in bricolage tend to favor recombining existing elements rather than fabricating them from scratch. Resource recombination reflects activities of combination and reuse of resources for different applications than those for which they were originally intended or used. The resources at hand are defined to be resources that are available very cheap or for free. For example they can be previously learned skills, available materials and existing social network contacts. [3, pp. 335-336] According to Ardichvili and colleagues [1, p. 108] an opportunity may be the chance to meet a market need through a creative combination of resources to deliver superior value. It may appear as an “imprecisely-defined market need, or un- or under-employed resources or capabilities”. Baker and Nelson [3] have in their research utilized a definition by Stevenson and Jarillo (1990) of opportunity as “a future situation which is deemed desirable and feasible”. For the firms they observed bricolage shaped both of these dimensions. Authors point out that alertness to resources is as important as alertness to opportunities.

Baker and Nelson identified five domains in which something can be created from nothing: physical inputs, labor, skills, customers, and the institutional environment. They also identified two patterns of bricolage: parallel and selective. The first pattern is marked by multiple ongoing
projects relying on bricolage which according to them eventually will limit the growth of the firm. The second pattern "selective bricolage" appeared to support the firms to grow by allowing resources to go to areas that senior managers viewed as strategic. [3, pp. 344-351]

Bricolage capabilities may help firms explore and exploit new opportunities that might appear too expensive to pursue through other means. When firms use bricolage more narrowly or temporarily, first rejecting and then enacting environmental resource limitations, they appear to be more likely to grow. This also suggest that firms may differ systematically in their ability to apply bricolage skillfully [3, p. 334, p. 342, p. 357] According to Duymedjian & Rüling [9, p. 148] the distinctive competences of the manager-bricoleur include the capacity to sense (latent) connections, ability to get close to the reality of organized work, and dexterity in manipulating resources.

III. DATA AND METHODS

A. Critical Incident Technique (CIT)

The focus of the paper is on analyzing the growth of a small software firm by examining the approach it has taken to resource development during the process. To answer the research question, an empirical study using the critical incident technique has been carried out.

The critical incident technique is a form of qualitative research that was originally developed by Flanagan [12]. It has become a widely used research method which is utilized across number of diverse disciplines [7]. According to Fivars and Gosnell [11] critical incident can be an event or a situation which has remarkable effect in work project success. An incident refers to any observable activity that is sufficiently complete in itself to permit inferences and predictions to be made about the person or organization performing the act and in order to be critical the incident must occur in a situation where the purpose or the intent of the act seems fairly clear to the observer (see [12]). In this study critical incident refers to an event that has had a significant effect (positive or negative) to the business activities.

CIT is based on an idea that human being is capable to report about critical incident independently [16]. Interview is a good way to collect data when examining this kind of critical events. Both individual and group interviews are possible ways to collect the data [4; 7]. Using CIT deemphasizes the inclusion of general opinions about management and working procedures.

The advantage of the CIT is that it can capture both opportunities (potential success) and risks (potential failure factors) and it generates detail descriptions that can identify links between different processes [15, p. 196]. Further advantages of CIT are for example that it does not force the respondents into any given framework, it identifies even rare events that might be missed by other methods which only focus on common and everyday events. When looking at disadvantages the method relies on events being remembered by users and will also require the accurate and truthful reporting of them. The method also has a built-in bias towards incidents that happened recently, since these are easier to recall. [13; 17; 8; 19]

B. Data

Having the research focus on growth and on what kind of resource development strategies can be found “behind” this process, access to growth company was the first key point of the research. The potential case companies were identified with the help of industry experts from Finnish Funding Agency for Technology and Innovation. Software industry experts were asked to name companies that have grown and/or disrupted or created markets by which we refer to companies that do not follow the traditional innovation logics of their industries. The second phase of selection process was based on publicly available information about growth figures (personnel, turnover). As a result we formed a group of ten potential case companies, which had attained growth. The present study was applied as a single case in order to perform a detailed data analysis and understand the case context.

The case company is established in 1980’s and it operates in business-to-business niche market. After the global recession period the turnover was approximately 4 Million EUR in the year 2009. With revived economy the turnover returned to growth being 4.9 Million EUR in 2010. The firm consists of two divisions. One is focused on companies own products and the other more in consultant work and tailored products. During the interviews the company had 45 employees, eight of which work in an affiliate abroad. Number of personnel has grown since that. The organization is quite geographically scattered. Most of the personnel are located in headquarters but besides there exists four offices/remote work teams which are located in different places one being situated abroad. In addition to own personnel the firm has also a growing partner network abroad. This partner network consists mainly of sales personnel.

The empirical data consists of two pilot thematic interviews (Managing Director, Product Development Manager) done in June 2010 and five CIT based interviews conducted from September - November 2010. The latter ones consist of three individual interviews and two group interviews. The participants are listed in Table 1. Being a mature firm with long history some of the participants had over twenty years of work experience in the firm. The group interview was chosen as a method to help the memorizing of the shared past experiences and thus avoid the bias of reporting only recent incidents. The length of an interview varied between two and three hours. All interviews were tape recorded and later transcribed.
TABLE 1. CHARACTERISTICS OF THE DATA, INTERVIEWS AND PARTICIPANTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Period of employment</th>
<th>Number and type of interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing Director</td>
<td>Founder</td>
<td>2, individual</td>
</tr>
<tr>
<td>Product Development Manager</td>
<td>12</td>
<td>2, individual</td>
</tr>
<tr>
<td>Manager, Consulting Services</td>
<td>7</td>
<td>1, individual</td>
</tr>
<tr>
<td>Production Manager</td>
<td>20</td>
<td>1, group 1</td>
</tr>
<tr>
<td>Productization Manager</td>
<td>21</td>
<td>1, group 1</td>
</tr>
<tr>
<td>Technical Specialist, Project Manager</td>
<td>25</td>
<td>1, group 2</td>
</tr>
<tr>
<td>Technical Support &amp; Training</td>
<td>24</td>
<td>1, group 2</td>
</tr>
</tbody>
</table>

C. Analytic strategy
Our analytic strategy consists of three steps; identifying incidents, forming and analyzing categories. In analyzing the data we have mainly followed the protocol for credibility checks introduced by Butterfield and colleagues [7, pp. 486-490]. In the CIT study the sample size is not determined by the number of participants but by incidents reported [7, p. 479]. The point of exhaustiveness was achieved in the last interview when no new incidents were found. At the basis of interviews 70 incidents were identified. Identification was a process done by group of three researchers. After independently identifying the incidents, the agreement level was checked. From each interview differing opinions was found approximately on 2-4 incidents. Final consensus about the 70 incidents was formed after all material was analyzed.

By tape-recording and transcribing the interview the descriptive validity of the incidents was perceived. The checking procedure of the incidents meeting the criterion of inclusion in the study was done by checking the 1) antecedents information, 2) description of the experience itself and 3) the outcome of the incident (see [7]).

After comparative examination – done independently and confirmed by agreement check – incidents were grouped into 10 categories of critical turning points in growth path of a small firm. In analyzing the data further we focused on the processes and managerial decisions of how resources were utilized in these situations. At this stage an important set of coding involved if the firm possibly has engaged in bricolage and thus what elements of bricolage (making do, resource recombination, resources at hand) can be found.

IV. GROWTH PATH OF A SMALL SOFTWARE COMPANY
In tracking the growth path of our case firm we identified 10 categories of incidents – internationalization, internal organization, expansion of offering, R&D, strategic alliance, change in operational environment, focusing of business, remote offices, public development cooperation, crisis in cooperation - that have had a significant (positive or negative) effect to the business activities of the firm. This firm has focused to a certain niche market and due to that and the small size of the domestic market, growth has mainly occurred in a form of internationalization. As can be seen from the Picture 1, the development path of the firm mainly consists of alternation of growth elements (expansion of offering, internationalization) and arrangements made in a way the firm operates (internal organization of firm, strategic alliances, focusing).

Picture 1. The critical incidents in the growth path of the case company
Identifying and selecting right opportunities for new businesses are among the most important abilities of a successful entrepreneur [1, p. 105]. The managing director of the firm has shown capability in sensing the changes in operational environment and firm has mainly succeeded in being proactive in these situations. For example in the product development work the company has been visionary and changed the market. Pioneer R&D and technological pre-eminence together with successful networking have been significant cornerstones behind growth.

Being a mature firm with a long history we have restricted the more detailed analysis of growth to the last decade. The interconnectedness of the critical incidents, turnover and personnel during 2000’s can be seen from the Picture 2. From methodological point of view this bonding from its own part confirms CIT as being a workable method in capturing the major events in firm’s history.

Looking at critical incidents at the beginning of 2000’s there is sharp growth in sales in the period of 2004-2006 after establishing a foreign market position and finding new partners. Due to certain changes in business environment which ended up to crisis in cooperation with a major stakeholder in the industry the first implication is decline in turnover in following years. Due to this turbulence situation in industry one major competitor exit the market by acquisition. Case firm however managed to continue quite successfully in chosen path and few years later managed to revive also the strategic cooperation and nowadays parties have achieved win-win situation. Though decline in turnover and business profit in the period of 2007-2009 caused first by the aforementioned turbulence and thereafter by global recession the firm was however profitable and the personnel were growing.

![Picture 2. Turnover, personnel and major critical incidents in 2000’s](image-url)
V. OPPORTUNITIES, CHALLENGES AND RESOURCES – IS THERE A RECIPE FOR SUCCESS?

According to earlier literature on growth and resources [2], see also [18; 10], the research focus should not only be on the resources but rather on how they are utilized. In analyzing the critical growth incidents we have focused on the resource related managerial decisions and strategies the case company has adopted in these situations. More precisely: can implications of bricolage be found behind this success story?

According to Baker [2] the definition of bricolage implies that behaviors can be classified as “not bricolage” for several reasons. We have utilized this contrast between resource-seeking or bricolage way of action (see [2]) in our analysis which is based on Baker and Nelson’s definition of bricolage as consisting of elements of making do, resources at hand and resource recombination. Categorization of incidents in relation to these elements is presented in Table 2. This categorization should however be perceived as a means to outline a general picture of resource development. The value is not in attempt to categorize a behavior or transaction either to be or not be bricolage as such. We understand bricolage as being ideal-type and share the view that in ‘real world’ there is no such thing as ‘pure’ bricolage [9, pp. 138-139]. After analyzing the 70 identified critical incidents the answer to earlier research question is - yes. There is evidence of both alertness to opportunities and resources and this bricolage way of action has been at least one of the success factors behind this growth story.

Our results concerning identified bricolage elements are in line with Baker and Nelson’s [3] findings therein that we found each element of bricolage, but especially reliance on the resources at hand. The role of Managing Director was especially important with regard to social network contacts as resources and enablers of opportunities. Importance of entrepreneurs' networks to opportunity recognition and development is supported also by earlier literature [1, p. 115]. By creating network, travelling a lot, doing marketing, making international contacts and being very open minded when company has started for example new international projects managing director has been one key factor behind growth. The importance of managing director’s role was mentioned by each employee as one of the most important resources.

“The most important thing is managing director as a person. He has inexhaustible energy to develop things further. And he is also a really good seller. It is absolutely the single most important thing. And in the course of time he has been able to push the right buttons, knew what to do and to which market to enter. His eye for the game has probably been the most valuable thing.”

Another important element of resources at hand was the skills that employees had beyond their formal education. As Baker and Nelson [3, p. 357] point out it has long been noted that employees bring with them a variety of skills and resources, along with the willingness and desire to make use of a greater range of their capabilities than their jobs require. By encouraging and permitting employees to make use of a variety of amateur skills enabled the firm to achieve solutions that would otherwise be unlikely to elicit. This represents a theoretically and practically important case of refusing to enact limitations and creating something from nothing in the specific domain of available skills. Example of creative utilization of personnel’s skills is foreign employee’s contribution to translations and customer service work for their home country customers.

“We have had people in our staff and partners who have been able to handle things well enough, that we have had no use for doing business with translation offices.”

<table>
<thead>
<tr>
<th>Categories of incidents</th>
<th>Number of incidents</th>
<th>RH</th>
<th>RR</th>
<th>MD</th>
<th>RH + RR</th>
<th>RH + MD</th>
<th>RR + MD</th>
<th>RH + RR + MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internationalization</td>
<td>13</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal organization</td>
<td>10</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expansion of offering</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research and development</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Strategic alliance</td>
<td>7</td>
<td>5</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in operational environment</td>
<td>7</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focusing of business</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remote office/work</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public development cooperation</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crisis in cooperation</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Starting the business</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RH=Resources at Hand, RR=Resource Recombination, MD=Making Do
Also the phenomenon of bricolage combining all three elements was identified, though like in Baker & Nelson’s [3] study, it occurred much less frequently. In this case the results of these R&D incidents were products that changed the market. The firm has succeeded in doing this both in 1990’s and 2000’s proving an ability to interpret the signs from the business environment and rising to the challenge. According to Baker and Nelson [3] it is the presence of all three elements simultaneously that allows firms to enact idiosyncratic resource environments and render them unique. The next session provides a more detailed analysis of the growth related incidents – expansion of offering, R&D, internationalization - and the identified evolution of the internal organization during this process.

A. Expansion of offering and R&D

Sensitivity to market needs in addition to ability to spot suboptimal deployment of resources may help an entrepreneur begin to develop an opportunity. In essence the purpose of products and services is to create and deliver value for stakeholders [1]. The case firm hasn’t settled for serving just certain type of stakeholders of the industry. Firm has managed to create a situation where development work done with one stakeholder also increases the value of the whole offering and turns into a resource in co-operation with other stakeholders.

“We just kind of an early stage started export business and this way started to understand the importance of communication. That you really have to be able to interpret the messages the opposite firm is sending, and to understand that things aren’t necessarily as they say. We also have reached an understanding that this line of business consists of many stakeholders. We have to scan the market throughout. It has forced to think quite diverse about things.”

“At the moment they (stakeholder group A) are interested in x-software because at least in some cases they want to enter to market where our z-software is already in use (by stakeholder group B)... We have reached quite a good situation in this”

In R&D work the managing director has encouraged employees to try out their skills in untested areas. This has been important because as [5, p. 475] point out inventors usually keep improving technology in a context of use until given a new context. Authors suggest that certain conditions - less bureaucracy and less fully formed and constraining job descriptions - within firms can foster inventor bricolage.

In many significant development projects all the three elements of bricolage were present. In 2000’s the firm created a new product for new customer segment that traditionally didn’t belong to a domestic target group of firm operating in this niche market. When starting the development work there were only few employees involved with no special formal training on that particular field of expertise. By utilizing both the accumulated knowledge of market - needs of different types of customers and other stakeholders of industry – and more general inside house knowledge that employees had beyond their special formal education, the company created together with a lead user customer the first version of new product which proved to be a success. Later on the company has recruited specialists of this particular expertise and developed the product further.

“Our managing director get as urged on that we can get this (new software) included in and we will be in business ... We just come along boldly. Thought that it couldn’t be so hard. ... Now when we have reached the level, that we have got the application to market and we have more demanding customers we get to know that it isn’t just so easy, but one should know more. Now we have few fellows that have (x) as education.”

This example reflects well selective bricolage as a pattern in which businesses are started or radically changed by using bricolage, but it is rejected after the business is established or the transition completed (see [3]).

B. Internationalization

Internationalization has remarkable role in case firm’s growth path. In Finland software market is very limited especially in this kind of niche market which this organization operates. In practice it is very challenging to grow after certain point if organization has business only in domestic market. At the times of financial depression in Finland in the beginning of 1990’s the case firm entered to Sweden and increased sales in there. Though national market sales dropped the case company was able to avoid financial decline due to business deals in Sweden.

Case organization's internationalization has many signs of bricolage way of action especially in the beginning of internationalization. Managing director has been alert to opportunities in international market and has leaped to opportunities although in the beginning the company personnel had very few experience and knowledge of internationalization including language skills. Despite of that case company just started doing activities that lead to many successful international businesses.

In many cases small and medium size firms don’t necessary have enough resources to internationalization on their own. Finding good partners has been an important factor in internationalization of the case firm due to the fact that it is very challenging to start business activities without local partner who knows the market, customer demands, language etc. By using international contacts and partners case company has been able to start business in different countries and also increase sales in these locations. Many of the partner deals has started spontaneously and some also with help of other stakeholder. Without good partner in market area internationalization results has not been so good.

“We found the partner in x-market through our partner in y-market which had a lot of sales to a client in x-
market and we broke into that market. When being there one local firm, a dealer, that sold different kind of software and knew our business and had knowledge especially from our line of business, get interested. It spread like a chain reaction. We didn’t do any market analysis or use consultants but we expanded through networking.”

Some of the internationalization projects has started from personnel’s suggestion and included strongly making do and the resources at hand principles. In two cases employees from different countries wanted to return migrate to their country of origin but continue working in the case firm. In first situation the course of events proceeded in case firm recruiting more local programmers to do program work for the case company. End result being that case company got reliable and affordable workforce through social networks. Another example from remigration proceeded from one person doing preliminary marketing analysis to recruiting more personnel and trying to establish market position there.

C. Internal organization

The earlier findings showed that the growth path of the case firm consisted of alternation of growth elements and changes in internal organization. This phenomenon is an important issue because according to earlier literature small firm managers should prepare organizational structures for the larger organization before this is absolutely necessary (see Street & Meister 2004). A positive characteristic of small firms is the tight communication and coordination within the organization. These firms operate under constraints with respect to capital, managerial time, and expertise. At times of growth these social structures come under pressure and this may lead to challenging situation concerning for example communication. In software firm knowledge is an important resource and without requisite communication that enables also the recombination of knowledge-based resources achievement of growth might be more difficult later on.

The challenge for a small firm manager is to make the necessary changes to management and communication structures without impairing the firm’s competitive advantage which typically is based on the ability to remain flexible and responsive to the business environment. When growth occurs a typical result is manager(s) becoming less involved with daily matters and beginning to receive information indirectly from many sources [21]. This phenomenon created challenges also in this case and the concern of sustaining the earlier competitive edge had to be taken care of.

“Earlier I participated very intensively (in R&D) especially when developing x-software, I knew what was happening. ....Then I understood that I was some kind of a director that I don’t have to know all ....I would still have enthusiasm to it but don’t have enough time to it. Then it easily happens so that you get detached and end up crashing to the ground and notice that you didn’t understand what to do. You still have to know your products and services well enough.”

Street and Meister [21, p. 497] have studied small firm growth and introduced a concept of internal transparency which they define to be an outcome of communication behaviors within an organization that reflects the degree to which employees have access to the information requisite for their responsibilities. They point out that communication practices within a successful small firm normally provide the required levels of internal transparency during stable periods. A decrease in internal transparency is often caused by decreases in the cross-functional communication that are caused by increased managerial pressures. Also this point is supported by our results. In the 1990’s the firm faced a situation when the offering was getting so wide that the information flow has to be controlled somehow. The result was a “creation” of organization structure and being quite proactive and preparing to act in bigger scale. This unfortunately had also unanticipated and long-lasting consequences to cooperation and communication inside the firm which have complicated also resource recombination afterwards. This highlights that the concern of not losing the good communication related to flat organization isn’t gratuitous.

“I think it happened so that we thought people just can’t and they don’t have to assimilate all things. Then we started to separate it so that the consulting team was separate and we didn’t have shared meetings anymore. We knowingly tried to separate it and also managed to do so. But then there was also setbacks when the information that would have been good to share between the departments wasn’t communicated.”

Recent organizational challenges relate to growing partner networks. An example which on the one hand reflects the sensitivity and observation of the managing director and on the other hand a situation when bricolage should have been abandoned earlier is the management of created partner network. When reflecting critical incidents of growth it was evident to managing director that the actions concerning the network management should have been more proactive. By investing earlier to complementary resources and making changes to managerial structures instead of continuing with was at hand the growth rate would have been better.

“We should have paid more attention to business development two or three years ago. It was a mistake. We should have hired someone or bought consultant services or whatever would have worked best in that situation so that we would have got our partners to function better and get new partners. It is probably the most significant resource shortfall. When you have too much to do you can’t get all things done well enough.”
VI. CONCLUSIONS

The objective of this paper was to analyze the growth of a small software firm by examining the approach it has taken to resource development during the process by looking at critical incidents. Due to our interest in growth, in this study a critical incident refers to an event that has had a significant (positive or negative) effect to the business activities. According to our results the growth path of the case company has indications of selective bricolage. There is evidence of both alertness to market opportunity and alertness to utilizing the accumulated knowledge to new area.

According to earlier literature selective bricolage supports or even promotes firm growth. Instead of doing bricolage consistently and repeatedly across multiple domains, bricolage is then utilized more narrowly and maybe abandoned in some or even in all domains after the desired outcome is achieved (see [3]). Though the firm (and especially managing director) has shown bricolage capability there is also evidence that in some situations a more fruitful line of actions would have been achieved by abandoning bricolage a little bit earlier. An example of the sensitivity and observation of the Managing Director is that when reflecting these past situations he articulated this phenomenon that by allocating resources differently in certain critical points the growth rate would have been better. Though this was evident to him in incident level, the pattern of relying on inside house engineering knowledge and prolonging the investment in complementary resources still existed – and had continued to slow down the growth. This supports the earlier findings that bricolage is much more important as a tool of value creation than as a tool of value appropriation [3, p. 362].

Earlier literature [21] has shown that as small firms undergo changes related to growth, a differentiating factor between successful and unsuccessful firms is that successful firms act in “anticipation of bigness”. These firms proactively lay the foundation for the bigger firm and thereby manage to avoid one barrier to growth - reactive management. This can be seen also in our study. Though the case firm’s growth path is without a doubt a success story and firm has made also proactive moves concerning internal organization the way of action concerning these issues has mostly been reactive. And the result of this – slower growth – was evident also to managers. This maybe is the challenge that still needs a creative answer after which the growth path can continue maybe even better.

According to Baker [2] the activities of making do with the resources at hand are for some reason usually viewed simply as coping or survival mechanisms in contemporary approaches to business. Because of this some form of bias against bricolage way of conducting business it may be hard for entrepreneurs to recognize and exploit the value of it. This invisibility of attributing success to bricolage makes it more difficult to learn from such designs and be skilled in its use. We argue that the managerial implication of this might be that since organizations tend move towards formalization, they should pay attention to bricolage way of action by identifying and valuing employee’s skills and networks, providing opportunities also for learning from trial and error and providing organizational visibility and legitimacy to this activity.

From methodological point of view CIT proved to be a workable method in capturing the major events in case firm’s history which supports earlier findings that CIT could provide a true picture of success factors (see [23]). The validity of findings is checked by following the protocol for credibility checks introduced by Butterfield and colleagues [7]. When thinking about the usability and generalizability of the results the major weakness is the execution of the study as a single case. Concerning this our research has similarities to bricolage study also conducted as a single case by Baker [2] where author utilized a method of learning from samples of one or fewer. This meaning that the story presented is thought to be most useful if treated not as unique but rather as one of a class of similar stories that could be told about other organizations which share some common characteristics. In our case these characteristics would relate to small firms operating in a knowledge intensive business in niche market and/or having a small domestic market.

REFERENCES