# The Swedish mobile Internet: A study of entrepreneurship during 1998-2005

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## Abstract

This paper addresses entrepreneurship in the emerging Swedish mobile Internet industry. Entrepreneurship is defined as the creation of a new venture. The unique data set underlying this work consists of 249 ventures that were active in the mobile Internet industry during 1998-2004. The entry/exit pattern and their performance in 2000-2004 were studied along with VC involvement in this industry.

On a population level, exits were surprisingly few, sales were growing and the number of employees was decreasing. Concerning profits, the population loses enormous amounts of money each year. Venture capital appears to have a rather negative impact on performance initially. However, the VC-backed ventures displayed strong performance improvements at the end of the investigated period.

Keywords: mobile Internet, country study, entrepreneurship, venture capital, Sweden, performance

## 1 Introduction

Following the success and rapid growth of mobile telephony and the Internet, the so-called mobile Internet industry was much hyped and experienced a boom around year 2000. The industry received much media attention and venture capital while being an area of much entrepreneurial activity and high expectations. There are indications that many opportunities of low quality and unviable business models were pursued as opportunistic entrepreneurs lacking prior knowledge entered the industry, partly due to the easy availability of venture capital (Sanz-Velasco, 2005). Eventually the hype was followed by a slump and venture capital pulled out and media became quiet.

Founding a new venture is a risky project under any conditions especially when entrepreneurs have few precedents in their field of business. Ventures founded in the formative years of a new industry are facing even harder conditions (Aldrich and Fiol, 1994). It can be argued that the mobile Internet industry is still in an early phase of development, with a lot of uncertainty regarding the roles of the actors in the value network, regarding business models and which services and applications customers will demand. Adding to this uncertainty is the general purpose nature (e.g. Lipsey et al. 1998) of the mobile Internet (Lindmark 2005) including (1) a large potential for rapid technological improvements, (2) a wide range of application space and potential uses, (3) strong innovation complementarities and possibly (4) wide use through-out the economy. The latter has not yet materialized however and indicates that there is still wide room for service innovation and new business development, but also still much uncertainty.

From an economic perspective, one way to handle such uncertainty is to ensure that many entrepreneurial experiments take place, probing into new technologies and applications, where many will fail and some will succeed, as learning takes place through the course of these experiments. Fostering more entrepreneurial activities has also been identified by industry analysts (Ariad, 2000; Northstream, 2003) as a crucial factor to achieve more growth.

As of today, not much is known about what happened to these mobile Internet ventures. The information in previous investigations of the Swedish mobile Internet (Ariad, 2000; Kviselius, 2001; Northstream, 2003) is no longer up to date, providing rather static snapshots of the industry. Thus, there is a need to provide a comprehensive and systematic mapping of entrepreneurship in the mobile Internet industry from year 2000 until today. This paper addresses this need by providing such a mapping.

In doing so, the remaining part of this paper is structured as follows. Section 2 defines the industry and divides it into sub-sectors, followed by section 3 which describes the methodology for data collection and the construction of a database. The empirical findings are thereafter presented in section 4. The paper is concluded with a discussion and interpretation of the findings.

## 2 Defining and delineating the Mobile Internet

Traditional industry definitions, e.g. Porter (1980), encompass the organizations that share a common method of generating profits and are involved in developing and selling products (or services) that can serve as substitutes for one another, implying a rather supply-oriented perspective. Mobile Internet does not appear to not fit into this perspective, since it is derived from converging technologies i.e. data communications and mobile telephony.

The distinguishing trait of mobile Internet, henceforth MI, compared to established technologies is that it enables mobility. The MI comprises the offerings that enable mobility to the end-user and can therefore conveniently be thought of as a function. There are two approaches that appear helpful to capture the industry with that in mind, namely the value network and the knowledge-base. The value-chain, as defined by Porter (1985), is a set of value-creating activities of a firm where different business processes are involved. With the value-chain as point of departure, there is the ‘actor system’ (e.g. Lindmark, 2002, p. 117); or value network approach (Christensen and Rosenbloom, 1995). The important actors that add value as the given product or service is produced towards the end-user are included.

Secondly, there is the knowledge approach, e.g. derived from evolutionary economics (Nelson and Winter, 1982). It portrays an industry as those organizations sharing the same competencies and knowledge base as a given product or service is produced towards the end-user. There are delimitation problems when defining the core knowledge, but an analogy of the firm’s core competence appears to be appropriate (Prahalad and Hamel, 1990). The critical and/or unique knowledge of the particular industry is the key. To exemplify, this excludes distributors of mobile terminals such as ThePhoneHouse (www.phonehouse.se) from our analysis since its competence is far from unique and can easily be exchanged. The advantage with this perspective is that we can exclude actors that are not critical to the emergence of the MI, even though they do contribute. A definition is now advanced based on the value network and knowledge perspectives presented.

*"The mobile Internet industry encompasses the organizations fulfilling two conditions: Firstly, they should be present in the value network that enables the function of the mobile Internet to end-users. The given value network is the base for the further classification of the organizations into categories and sub-categories. Secondly, they distinguish themselves from others through sharing a common base of competence and knowledge (complementary or substitutional)."*

### *2.1 Segmentation of the industry*

Influenced by this definition and previous attempts to classify the industry (e.g. Northstream, 2003; Hansson et al., 2005), the main categories of actors and their relations with each other are depicted in Figure 1. The main rationale for the chosen classification is that it renders rather broad segments, which is useful since the industry and its actors are still emerging.

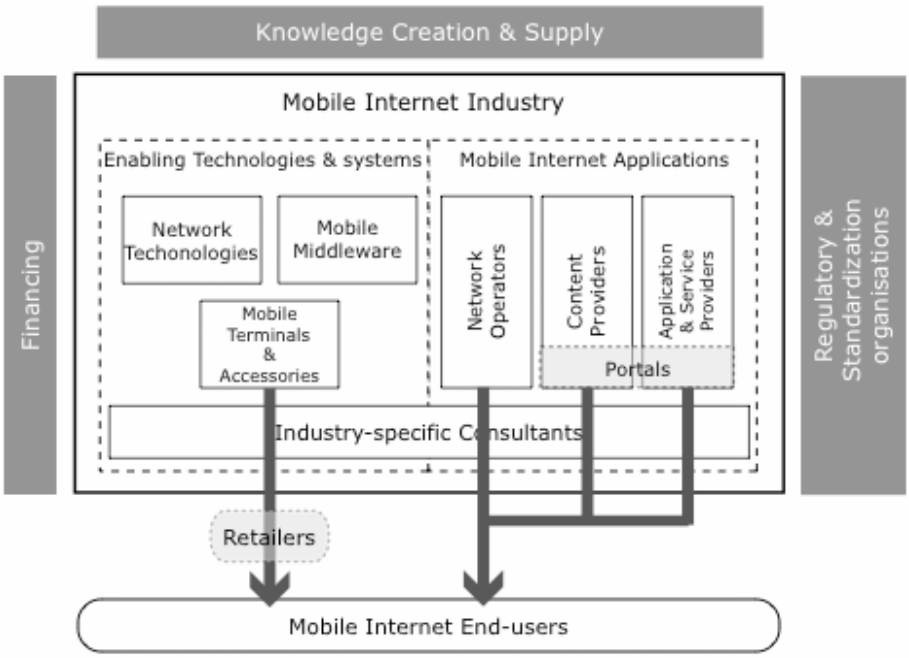


Figure 1. Main actors in the mobile Internet

The industry can broadly be divided into two main categories labelled 'Enabling Technologies and Systems' and 'Mobile Internet Applications', which correspond to the upstream and downstream from a value network perspective. **Enabling Technologies**, as the name implies, concerns those providing the foundation on which other segments are basing their offerings; thus 'enabling' the offering of the entire industry. These actors are further divided into the following sub-segments; 'Network Technologies (NT)', 'Mobile Middleware (MM)' and 'Mobile Terminals and Accessories (MT&A)'. **Mobile Internet Applications** comprises the actors whose offering is directly to be used by the end-users. The sub-segments grouped under this categorization are; 'Network Operators (NO)', 'Content Providers (CP)', 'Application and Service Providers (A&SP)' and 'Portals'. Surrounding the industry are other actors of more supportive roles in the value network. They are; Knowledge Creation and Supply, Financing, Retailers and Regulatory and Standardization Organizations.

## 3 The entrepreneurial ventures in mobile Internet

### *3.1 Identifying the entrepreneurial ventures*

To enable a rough overview of all the major actors in the industry, two industry reports were reviewed, followed by searching two industry-related journals, NyTeknik[1] and IDG[2]. Additional ventures were found by searching the keywords "mobile internet", "mobilt internet", "trådlöst internet" and "wireless internet". At this stage over 600 firms had been identified.

To capture the lion's share of entrepreneurship in the industry it was then attempted to identify all start-up ventures that had been active in the industry during the period (Gartner, 1988). Two criteria were used when examining whether a venture is entrepreneurial or not; the founding year and the ownership of each venture. If a venture was founded before 1998 or was owned by a larger organization to more than 50%, it is not considered to be entrepreneurial. A larger organization was defined as a company having either more than 250 employees or a market capitalization[3] of more than 100 million SEK. The resulting 249 firms are the entrepreneurial ventures of this study.

### *3.2 Venture Profile*

The following data for entrepreneurial ventures was collected[4]: organization number, location, company website, industry segment, a description of field of business, foundation year, current operation status[5], year of changing status and performance. Following an organizational ecology perspective (cf. Aldrich, 1990), entry/exit is defined as the birth (foundation) and death (see footnote 5) of an organization. According to Delmar (1997), the two most commonly used performance measures in empirical growth research are sales and employees. In addition to this, profitability was added. Thus performance was captured by outlining sales, the number of employees, and profit/loss for the fiscal years 2000-2004.

### *3.3 VC data*

The next step was to investigate which of the 249 ventures had received venture capital (VC) and what VC firms that have invested. Both theories and empirical research show that the amount of VC received by new ventures increases the rate of

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[1] Nyteknik is a Swedish newspaper that has a focus on IT and telecommunications. (www.nyteknik.se)

[2] International Data Group (IDG) is an international publisher of IT-related information. IDG has around 60 journalists following the development of the Swedish IT-industry. (www.idg.se)

[3] Often calculated as "current stock price times total outstanding shares"

[4] Source: Affärsdata. A weekly updated database containing financial data of Swedish companies for the five most recent years. (www.Affärsdata.se)

[5] Each firm has been given one of the following statuses; bankrupt (B), fusion (F), liquidated (L), operating (O) and purchased (P). All statuses but (O) are counted as an exit. If a venture has changed status, the year when the venture began the transition was chosen as the "Year of changing status".

employment and sales growth, reduces the likelihood of failure and increases the likelihood of achieving an initial public offering (Shane, 2003). The positive influence can partly be explained by the fact that venture capitalists share their strategic advice and information network with the entrepreneurs. The higher survival rate of VC-backed ventures can also been seen as a result of the rigor selection process and the expertise of the venture capitalists (Low & MacMillan, 1988). We follow this line of thinking and thus suspect a difference in performances between the VC-backed ventures and the non VC-backed ones.

To gather VC data, venture websites were studied in order to find investing VC firms and Affärsdata was used to find the venture board members; where VC representation was found it was assumed that this particular venture capitalist was an investor in the firm. Another path was to identify all VC firms active in Sweden[6] and their portfolios. A final investigation was performed by using a search engine employing keywords such as "venture capital" or "riskkapital" to ensure a complete coverage.

For the period 1999-2004 it was investigated in which ventures all the VC firms had invested, in terms of amount per year and venture. Also, the current statuses of the VC firms were checked as well as in which regions they are located. Share issue data[7], annual reports and press releases of the VC firms as well as the ventures were used as sources of information.

## 4 Venture population and performance

The population, consisting of 249 ventures, is approximately 40% of all the firms in the database. These ventures have all been founded between 1998 and 2005. The largest segments (See figure 2) are Application and Service Providers (88), Industry Specific Consultants (48), Network Technologies (39) and Mobile Middleware (40).

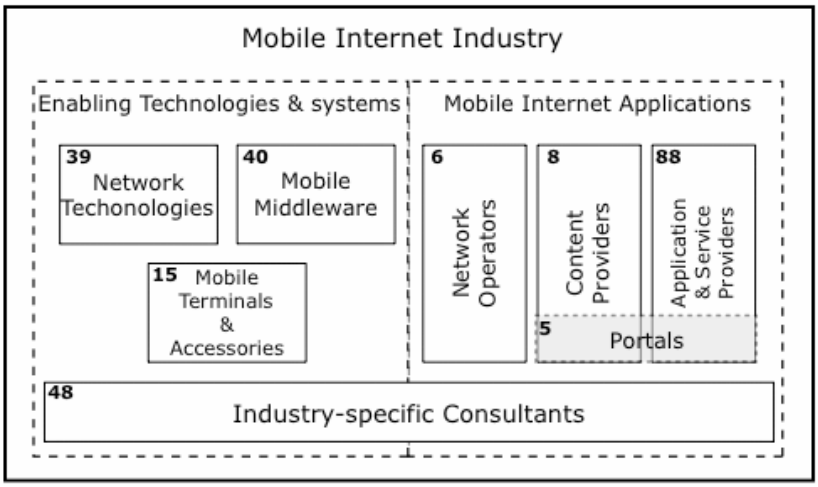


Figure 2. The number of entrepreneurial ventures in each MI segment

[6] This was done by reviewing the members of SVCA, the Swedish Private Equity & Venture Capital Association. (www.svca.se)

[7] Bolagsverket (the Swedish Companies Registration Office) www.bolagsverket.se

Figure 3 displays the geographical locations of the ventures, showing that 69 % are located in Stockholm. It indicates that the city has a substantial overrepresentation of ventures compared to its share of the nation's population.

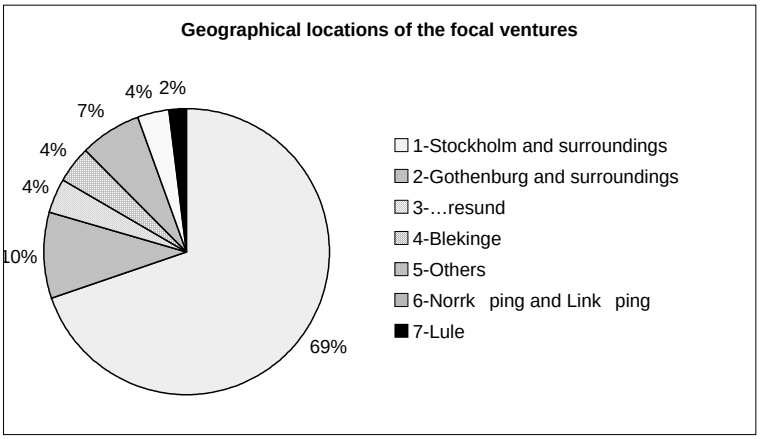


Figure 3. Geographical distribution of the focal ventures

### *4.1 Entry and Exit*

The venture population grew rapidly during 1998-2000, then the number of entries decreased dramatically in 2001. The first exits occurred in 2001, increased in 2002 and has been decreasing since 2003. The number of ventures has been around 190 since 2002. Entries as well as exits have decreased since 2002. In absolute numbers, most entries have occurred in *Application and Service Providers*. It should be noted that for *Application and Service Providers* the number of entries increased relatively to the rest of the population during 2002-2004. Concerning exits, the highest numbers are found in *Mobile Middleware* and *Application and Service Providers*. In *Industry-Specific Consultants*, very few ventures have exited the population.

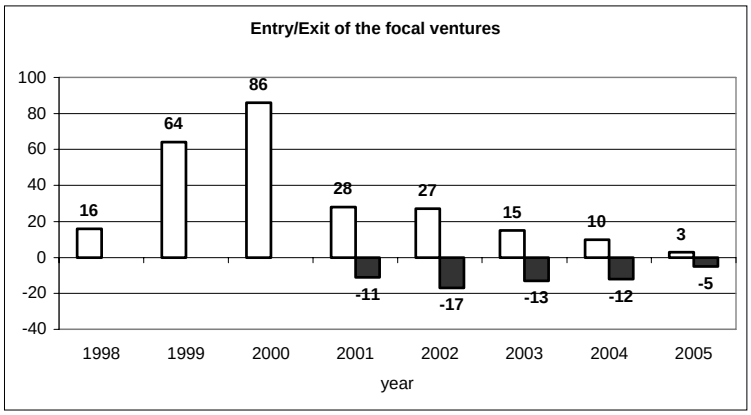


Figure 4. Entries and exits from 1998 to 2005[8].

The evolution of the venture population is presented in figure 4 and 5. The population experienced a remarkable growth from 1998 to 2000, thereafter the growth rate has decreased and the population has remained almost the same since 2002.

[8] The data representing the year 2005 only represent entries and exits until September.

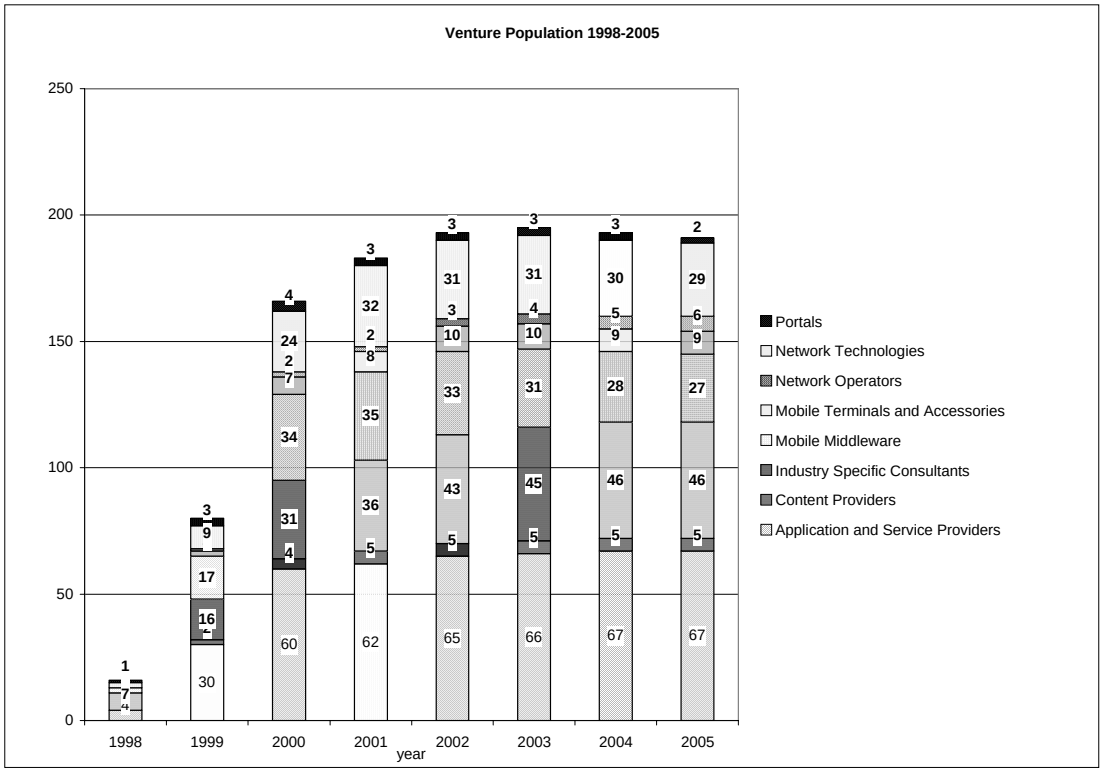


Figure 5. (Accumulative) venture population from 1998 to 2005

## *4.2 Performance Measures*

Three performance measures have been used for this analysis; employees, sales and profits. Data from 2000-2004 has been collected. On an aggregate level, the number of employees increased dramatically from 2000 to 2001 but has been decreasing since, with a huge drop from 2002 to 2003. Turnover shows a constant trend of growth during the entire period, from 2000 to 2004. As for the aggregate profits, the industry shows negative figures for all the years. Losses increased from 2000 to 2002 then decreased from 2002 to 2004. The ratio between profit-making ventures and non-profit-making ones has been increasing. The number of ventures making profits compared to the ventures making losses has also been increasing since 2002.

### *4.2.1 Employees*

In 2000 the ventures only employed 1405 people However, at the end of 2001 more than 2500 people were employed by these ventures and the number remained constant during 2002. Since 2002 the number of employees within the entrepreneurial ventures has been falling. Most employees are found in *Application and Service Providers, Mobile Middleware, Industry Specific Consultants* and *Network Technologies*. The results are presented in figure 6.

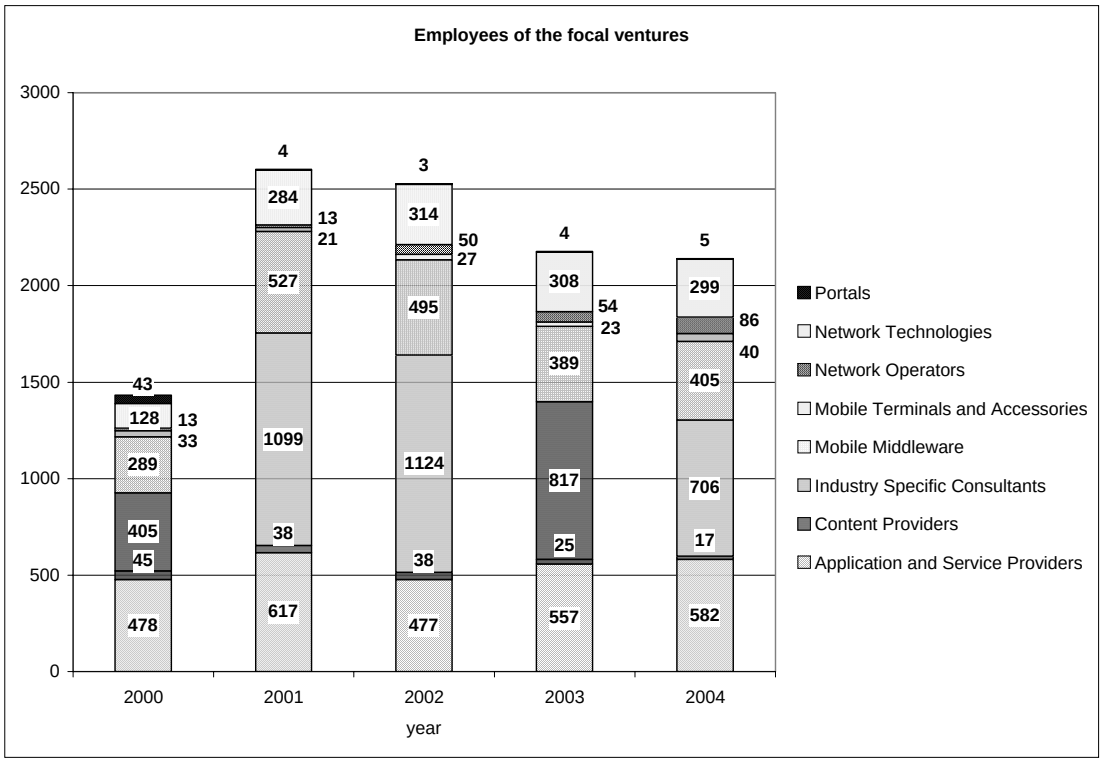


Figure 6. Number of employees of the focal ventures

*Application and Service Providers* has been fairly stable during the years. It has employed 20-30% of all the personnel hired by the ventures. As many of the other segments, A&SP experienced a peak in 2001 and a fall in 2002. Since 2002 the number of employees has been growing and in 2004 the segment had recovered from the slump in 2001.

The number of employees within *Mobile Middleware* rose sharply (+80%) from 2000 to 2001. It fell from 2001 to 2003 but increased slightly in 2004.

The other two large segments; *Network Technologies* and *Industry-Specific Consultants* more than doubled their number of employees from 2000 to 2001. However, their number of employees has slowly been decreasing since 2002 and 2001, respectively.

Finally, even though the aggregate number of employees has fallen since 2001 it is still considerably in 2004 than in 2000.

### *4.2.2 Turnover*

The aggregate turnover of the MI ventures increased continuously during 2000-2004. The four large segments concerning population are also the ones with the highest turnover. Sales grew with 93% in 2001, levelled off to 15% and 5% in 2002 and 2003 respectively. This trend was halted in 2004 when sales growth was 15% again. A graphical illustration is shown in figure 7.

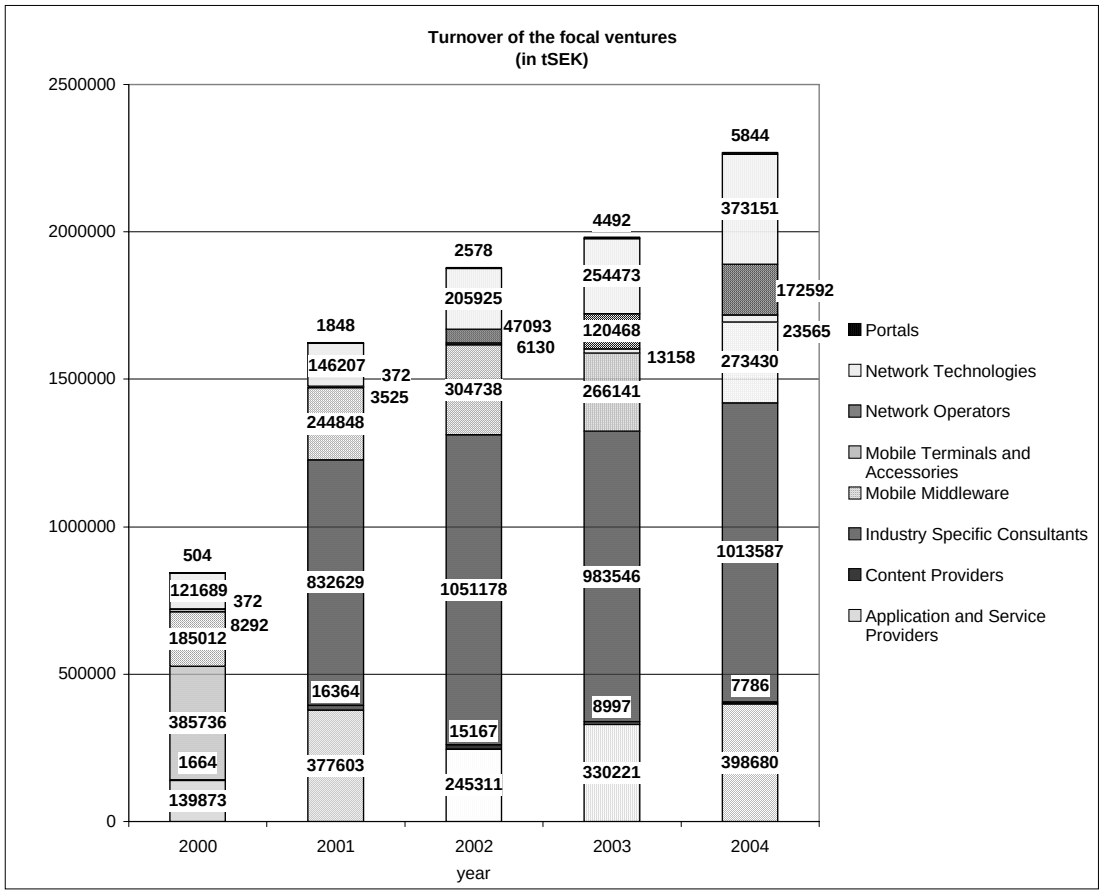


Figure 7. Turnover in tSEK of the focal ventures

The segments that drive growth are different in 2004 compared to 2001. In 2001, the Industry Specific Consultants accounted for more than 50% of the growth but this share has constantly been decreasing ever since. In 2004 it only accounted for around 10% of the sales growth. This time Application and Service Providers, Mobile Middleware and Network Technologies accounted for most of the growth.

### *4.2.3 Profits*

Profits will be illustrated by aggregating the results of all the ventures. The overall profit level of the focal ventures is negative. The losses are enormous compared to the industry turnover. The aggregate level of losses increased from 2000 to 2002 and started decreasing thereafter. Most of the larger segments (A&SP, ISC, NT, MM) as well as NO followed such a trend and the level of losses corresponds to the size of the segment. Except for *Industry-specific Consultants* who loses relatively less (in relation to its size) and is the only segment that has ever shown aggregate profits. One noticeable difference is that the segment of *Application and Service Provider* started with losing much in 2000 and the results improved in 2001 and then fell in 2002, since 2002 the profits have been improving again. The number of ventures making losses has decreased, yet the number of ventures making profits has not increased implying that some ventures have left the industry.

The losses for *Network Technologies* were increasing from 2000 to 2003. In 2004, there was a substantial improvement. In addition, *Network Operators* suffered dramatic losses in year 2002, around five times as much as the previous year. The aggregate profits for the other large segments all experienced a downturn from 2002

to 2003, in all the other years losses has been decreasing. In 2000 and 2004 the *Industry-Specific Consultants* were showing positive profits. ISC is the only segment that has shown profits throughout the period. It did so in 2000 and 2004.

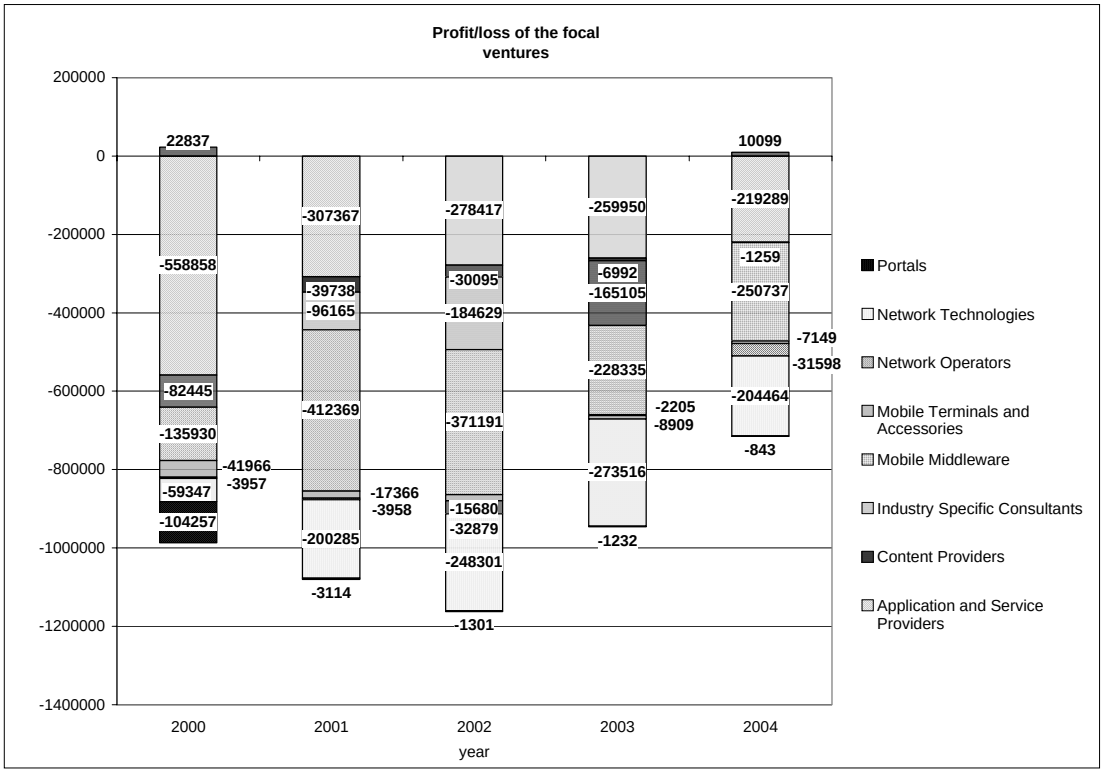


Figure 8. Aggregate profits of the focal ventures

### *4.2.4 Turnover per employee*

The turnover and the number of employees of the focal ventures have been described in 4.2.1 and 4.2.2. On an aggregate level, the number of employees was around 1400 in 2000, peaked in 2001 and 2002 to around 2500, then dropped to around 2100 in 2004. Turnover has been growing continuously throughout the investigated period, from around 0.8 billion SKr to 2 billion SKr. In general, the number of employees is decreasing while turnover is increasing. This led us to in turn look upon turnover per employee, with the hope of seeing positive implications for the entrepreneurial ventures: they are growing but not expanding blindly. The results are presented in table 1.

Table 1
Sales per employee of the focal ventures 2000-2004

| **Sales per employee (tKr)** | **2000** | **2001** | **2002** | **2003** | **2004** |
|---|---|---|---|---|---|
| Application and Service Providers | 293 | 612 | 514 | 593 | 685 |
| Content Providers | 37 | 431 | 399 | 360 | 458 |
| Industry Specific Consultants | 952 | 758 | 935 | 1204 | 1436 |
| Mobile Middleware | 640 | 465 | 616 | 684 | 675 |
| Mobile Terminals and Accessories | 251 | 168 | 227 | 572 | 589 |
| Network Operators | 29 | 29 | 942 | 2231 | 2007 |
| Network Technologies | 951 | 515 | 656 | 826 | 1248 |
| Portals | 12 | 462 | 859 | 1123 | 1169 |
| **Venture Total** | 588 | 624 | 743 | 910 | 1060 |

On an aggregate level, sales per employee has been growing steadily since 2000, from around 600 tSKr to 1,020 tSKr. Segment-wise speaking, most of the segments are following an identical trend: a decrease in 2001 or 2002 followed by recovery and growth. The exceptions are A&SP and Portals, who grew continuously throughout 2000 to 2004, and NO, who experienced a drop in 2004. An increase in sales per employee with a decreasing number of employees can be seen as an implication of increasing productivity.

### *4.3 Venture Capital and Performance*

A plausible explanation for the high average losses compared to the ventures' size is the high presence of venture capital. It is here attended to the amount of VC invested in the ventures and to potential performance differences between VC-backed and not VC-backed ventures.

In figure 9, we present the amounts of VC received by each segment from 1998 to 2004.

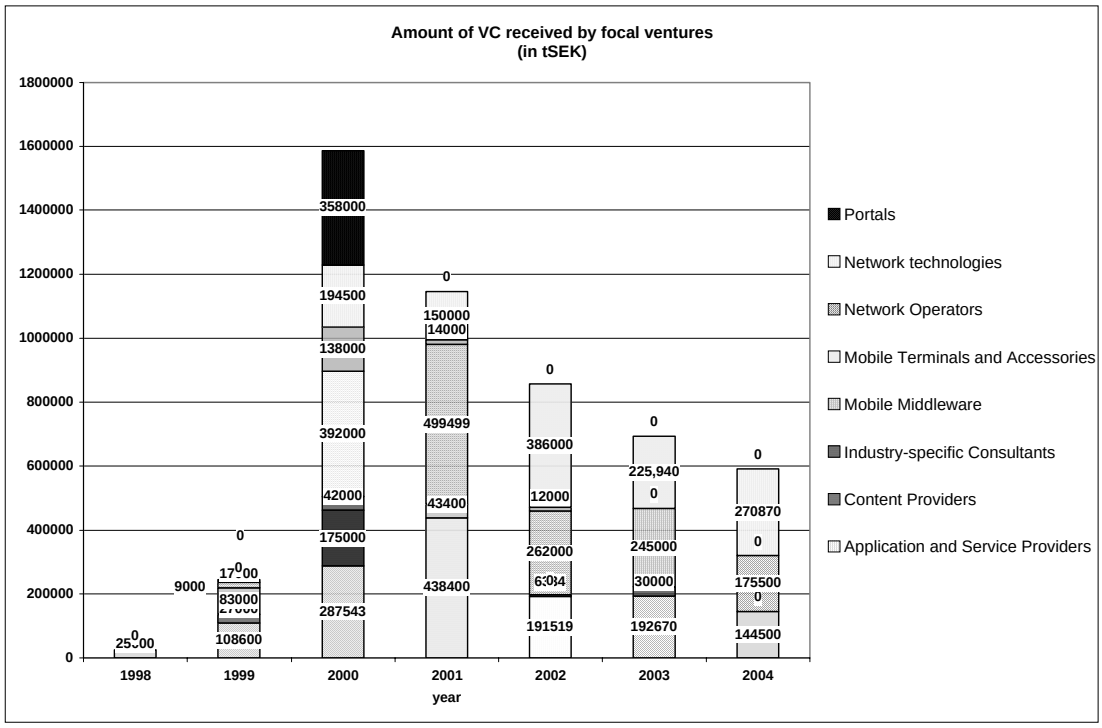


Figure 9. Amount of VC received by different segments of focal ventures

Among the 249 focal ventures, 79 have received VC at least once between 1998 and 2004. VC investments reached a peak in 2000 when 1.6 billion SKr was invested in the industry. In 2001 the investments decreased slightly compared to 2001. In absolute number the difference between 2000 and 2001 is caused by a portal that received 0.358 billion in 2000. An interesting observation is that in 2001 venture capital was less diversified between the segments. However, the annual investments have been decreasing since 2001. A&SP and MM are the two segments with the highest number of ventures receiving VC and also the most amount of VC investment being given to. The total amount of VC invested in the focal ventures during 1998 to 2004 is around 5.1 billion SKr.

Turning to VC and performance, ventures were divided into two categories; (1) VC-backed ventures, i.e. ventures receiving VC at least once during 1998-2004. (2) Non VC-backed ventures. The differences between these ventures will be discussed in terms of profits, turnover and employees.

The average profits of the non VC-backed ventures is better than the average profits of the VC-backed. There is also less variation in profits among the non VC-backed ventures. The average profits of the non VC-backed ventures has also been improving since 2001 whereas it is difficult to detect any trend among the VC-backed ventures. The following graph depicts the development from 2000 to 2004.

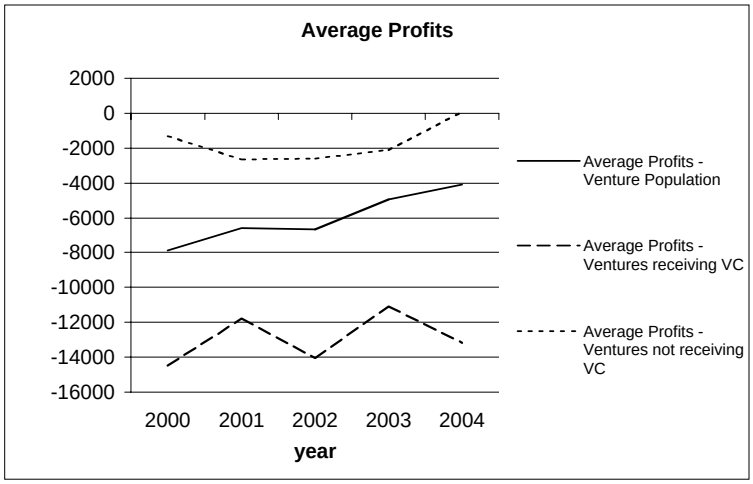


Figure 10. Differences in average profits

Concerning turnover, the average of the non VC-backed ventures has been higher than the VC-backed in all years but 2004. The average turnover of both segments has been growing throughout the whole period except from 2002 and 2003 when the average turnover of the non VC-backed ventures fell.

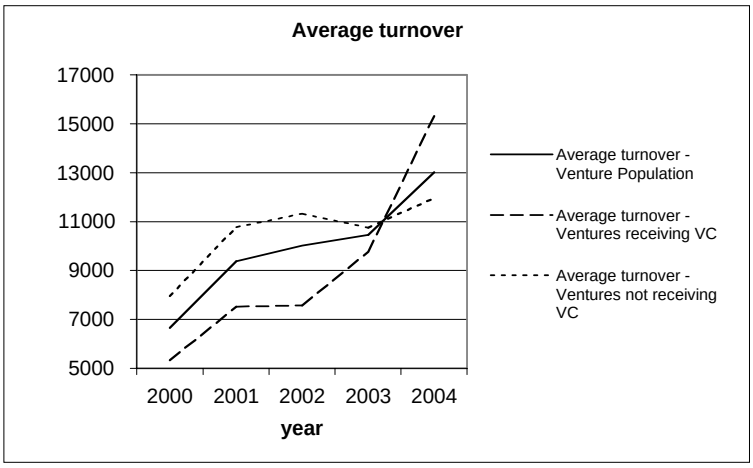


Figure 11. Differences in average turnover

Turning to the number of employees, the average of the VC-backed ventures is higher than the ones not receiving VC throughout the period. The average as well as the total number of employees of the ventures not receiving any VC has been decreasing since 2001. On the other hand, the ventures who have received VC show an increased average number in all periods but 2003. The total number employed by

VC-backed ventures was decreasing from 2001-2003 followed by a substantial increase in 2004. The differences in averages are shown in the graph below.

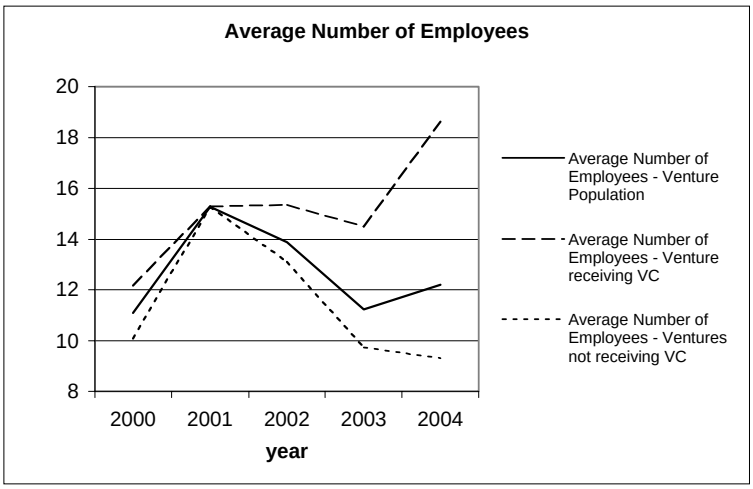


Figure 12. Differences in average number of employees

In this section we could see that there are differences between the ventures receiving VC and not receiving VC in terms of profits, employees and sales. The high losses of this population appear to be explained by the involvement of venture capitalists. The overall trend of a decreasing number of employees also appears to origin mainly from the ventures not receiving any VC.

## 5 Summary and discussion

In this paper we have explored the dynamics of Swedish mobile Internet start-up ventures along a few dimensions. In doing this a number of patterns have emerged, which calls for explanations. Here we will summarize those observations and discuss them thematically, starting with the population dynamics of the sector followed by growth and performance dynamics and their relation to the venture capital received.

Our data indicates that there has been and still is a large population of new ventures in the sector, largely concentrated to Stockholm and surroundings. There was a very rapid increase in entries from 1998 to 2000, followed by a sharp decrease in 2001. Since then, the rate of entries has continued to decline. Exits started in 2001, peaked in 2002, and then declined. The growth in the population of firms in 1998-2000 was fuelled by the Application and Service Providers and Mobile Middleware. In addition, the consultants and Network Technologies contributed substantially to growth and continued to do so also in 2001. Application and Service Providers account for most entries as well as exits throughout our time period.

Thus, the data shows that the applications and services and the mobile middleware segment are more volatile and dynamic than the others. A possible explanation is, as mentioned in the introduction, that rapid technological development of networks and terminals, and convergence of technologies opened up opportunities for innovation in the mobile Internet sector. In particular an opportunity space of new applications and services opened up, in addition to a need for middleware to support these applications and services. This provided incentives for start-ups to explore and exploit such opportunities. In addition, barriers to entry appear to have been rather low in these segments, both technologically and financially. The effort needed to develop new applications was modest, and an immature venture capital market provided an endless

stream of capital to start-up these ventures. These factors taken together help explaining the high rate of entries.

Concerning exits, the general dotcom crash and the reduced inflow of capital partly provide an explanation. But there were also factors essentially internal to the sector at play, which may explain the turbulence among service and application providers. First, given the large uncertainty concerning what applications and services customers would demand, many ventures were deemed to fail. Second, the systemic nature of technology required improvements in all parts of the value network in order for new applications to function properly. Such improvements failed to materialize in a timely manner. Partly this has to do with a lack of coordination of the value network and short-term profit maximization strategies of the operators, leading to small possibilities to appropriate value from their innovations. Relating to this, there has been an uncertainty regarding how the different actors should relate in order to appropriate a fair share of the total value created, a sort of "business model uncertainty." Such phenomena are likely to occur in industries where innovation complementarities (Bresnahan and Trajtenberg, 1995) are strong and may partly explain the entry and exit patterns in general and those of the Application and Service Providers in particular.

Another set of observations concerns the growth of the firms in terms of employees and sales. The number of employees increased rapidly until 2001, but has (as opposed to the population of firms) decreased since then. Most of this decline can be attributed to the consultants. In addition, the Application and Service Providers employees slumped in 2001 but have been growing recently. Revenues on the other hand have grown throughout the crisis. Most affected by the crisis were again Application and Service Providers, again recovering recently. The persistent growers however, has been ventures in network technologies, operators, and at lower levels terminals and portals. Worth noticing is that consultants accounted for the larger part of the growth in 2001 while in 2004 growth is mainly caused by applications and service providers and network technologies. Explanations for the growth in 2004 can be better performance of mobile terminals and the launching of 3G services in Sweden in 2003. These ventures may have benefited from the marketing activities of for example 3 Sweden (Huang and Sandström, 2006). Another possible explanation is that venture capital investments are starting to pay off.

These observations are related to the turnover per employee, where most segments experienced a slump as a result of crises, while operators and portals grew through the time-period. The general growth trend can of course be explained by the fact that sales has been going up and the number of employees has shrunk.

Venture capital invested in mobile Internet increased dramatically during 1998-2002 and has since then decreased sharply with no signs of recovery. During 2000, almost 1.6 BSEK was invested, fairly evenly distributed across the segments. In 2004, less than 600 MSEK was invested, exclusively received by NT, MM, and application and service providers. Also we noted a number of differences between the ventures receiving VC and not receiving VC in terms of profits, employees and sales. The high losses of total population appear to be explained by the involvement of venture capitalists. The overall trend of a decreasing number of employees appears to origin mainly from the ventures not receiving any VC.

The empirical and exploratory nature of this research opens up for a number areas that could be more thoroughly researched, such as the reasons for some companies receiving venture capital and some not. The business models of the ventures deserve further attention, as an explanatory factor for venture success. In addition,

investigating only start-ups in the mobile Internet paints an incomplete picture of the industry. Including also the influence of larger players, such the operators, has undoubtedly had an impact on the dynamics of the sector as a whole, which could be further investigated.

Speculating into the future, entrepreneurial opportunities in the mobile Internet industry should be far from exhausted. Since 2001 the Swedish population of entrepreneurial MI ventures has been stable around 190 ventures. The number of exits has been relatively low. Explanations are growing sales along with a decreasing number of employees and that VC investments is still being infused into parts of the population. Fuelled by innovation complementarities, such opportunities will continue to unfold at a rapid rate, in a systemic manner throughout the value network. Further, it seems likely that these opportunities will be the largest in service and application development and provision, but calls for innovation other enabling parts the network as well. National sectoral innovation systems that perform well in stimulating entrepreneurs to pursue such opportunities, are likely to reduce technological, demand and business model uncertainty more rapidly (see e.g. Sanz-Velasco 2005), and gain from some first mover advantages on an international market, and create new jobs in the long run.

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