

# Fast Born Globals

An analysis of International Entrepreneurship in the Mobile Applications Industry

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## Abstract

The introduction of smartphones caused a disruptive change in the mobile telecommunications industry. Digital distribution platforms demounted market entry barriers and allow software firms to easily distribute their products on a global scale. This paper examines whether the Born Global theory is applicable to these recently founded and globally active mobile software development firms.

In a first step a quantitative analysis is exerted in order to determine if Born Globals are a prevalent phenomenon in the mobile application industry. In a second step the comparative case study method is applied to compare the characteristics and behavioural patterns of selected cases to Born Globals in other industries.

It is found that companies qualifying as Born Globals are numerous in the mobile application industry. However, the applicability of Born Global theory to these firms in terms of determinant characteristics is limited and is found to depend on the companies' business model. Developers monetizing their applications through digital distribution platforms show significant differences in important characteristics compared to Born Globals in other industries. On the contrary, for companies monetizing their applications through other channels and hence using the platforms solely for distribution purposes, comparability to Born Globals in other industries is given.

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**Authors:** Kristina Böhm (40073) and Benjamin Tschauner (40069)

**Supervisor:** Mikael Samuelsson, Assistant Professor, Dep. of Management and Organization

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# 1. Introduction

## 1.1.Preface

“An internationally experienced person who can attract a moderate amount of capital can conduct business anywhere in the time it takes to press the buttons of a telephone”. As a result, the ability to conduct international business activities is no longer limited to large corporations (Oviatt & McDougall 1994).

Big multinational enterprises increasingly encounter competition from small companies located all over the world. A growing number of small companies successfully compete from inception against large, established players internationally. This trend contradicts the theory of economies of scale and indicates that a reversal has taken place (Rennie 1993). Reason for the rise of small companies is the “dynamic interrelationships between changing consumer preferences, changing manufacturing and information technology, and changing competitive conditions” (Rennie 1993). With consumers demanding specialized and customized products, niche markets offer opportunities to small companies. With technological development at increasing speed, small companies are empowered to compete with large players on cost and quality. Improved communications technology furthermore enables firms of any size “to extend beyond their own boundaries” and access information about international markets (Rennie 1993).

This opening statement presents a collection of quotes made over 15 years ago. If they were true for the 1990s, how much more relevant must they be today after the advent of new technologies such as the internet and new high technology industries? “Internationalization and international entrepreneurship among small and medium-sized enterprises is a topic of considerable relevance, principally owing to the observed growth effects of cross-border venturing, and the demonstrated capacity of SMEs to drive economic development at national, regional, and global levels” (OECD 2009). One manifestation of international entrepreneurial start-ups are Born Globals, a company type that internationalizes from inception (Burgel & Murray 2000). Born Globals are “emerging in significant number worldwide” (Knight et al. 2004) and present the proof that the borderless world has reached small companies. They are “one chapter in a bigger story about a fundamental shift in the primary unit of economic activity” (Rennie 1993). Born Globals constitute a research field in International Entrepreneurship that emerged in 1993 and has received growing research attention.

Facing rapid development of new technologies however, even a young research field such as Born Globals needs to continuously evolve to keep pace. Especially since the term Born Global stands for the most extreme type (in terms of speed) of internationalization, it needs to be assessed against the fastest growing industries.

One industry subject to disruptive technological advancements is the mobile telecommunications industry. The introduction of smartphones, especially the iPhone in 2008, has changed the entire market mechanism from supply side economies of scale to demand side economies of scale, dispossessing former global market leaders like Nokia in less than half a decade and creating tremendous business opportunities for software firms. Digital distribution platforms like the Apple App Store have created global market places that are very fertile grounds for new ventures. In only 3 years the App Store reached the mark of 500,000 available applications that were created by more than 50.000 developers, among which 10.000 were newly founded ventures (Mashable 2010). According to Flurry (2010) these figures translate into 58 new companies launching applications on the App Store every day. These impressive growth figures indicate that the mobile applications industry represents a very attractive market to entrepreneurs. Combined with the international extension of the digital distribution platforms and their global character the mobile software development industry represents a very suitable target industry for research in the field of international entrepreneurship. In conclusion, the mobile applications industry as an evolving and growing industry of the 21<sup>st</sup> century is an appropriate industry to assess the applicability of existing Born Global theory, which was started in 1993. The results aim to indicate, whether Born Global theory is still applicable to rapidly internationalizing firms today.

## **1.2.Problem definition**

The research field of Born Globals aims to apply to young companies internationalizing quickly after inception. In the field of International Entrepreneurship, Born Globals received considerable recognition in the past years.

Nevertheless, emerging technologies such as new trends in telecommunications might have created new market conditions, leading to internationalization behaviour contradicting current Born Global theory.

In consequence, the problem identified in this paper is that Born Global theory might be outdated and hence not applicable to companies emerging due to the latest technological advancements.

In order to assess whether current Born Global theory is suitable to describe the internationalization patterns of mobile application developers, this paper conducts both a quantitative and a qualitative analysis in order to examine the topic from different, complementing angles.

## **1.3.Research question**

The problem identified in this paper is that current Born Global research might not be able to describe new ventures in emerging technologies such as telecommunications.



The research question therefore is whether Born Globals among mobile application developers follow the same internationalization patterns and characteristics as traditional Born Globals. This question however is composed of two independent questions, namely (1) whether there are any mobile application developers who classify as Born Globals by definition and (2) whether these Born Globals among mobile application developers show the same factor characteristics as described in Born Global literature.

The resulting hypotheses are the following:

H1: The existing theories of Born Globals can be applied to mobile software developers.

H1.1: Born Globals exist in the mobile application industry

H1.2: The behaviour of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research.

#### **1.4.Goals and target audiences**

With this paper's research question, which can be assigned to the field of International Entrepreneurship, this paper hopes to gain attention from two separate audiences.

First and foremost, this paper aims to provide new insight for Born Global researchers and International Entrepreneurship in general. The answer of the hypotheses through the research design will either result in a confirmation of current Born Global research or will uncover a research gap, which might then serve as an impulse for future Born Global research. In case that mobile application developers show internationalization patterns conflicting fundamentally with current Born Global research, this paper might even set the foundations for a new research field within International Entrepreneurship. Irrespective of the research result, this paper aims to contribute to Born Global research.

The second target group of this paper are mobile application developers and other practitioners in the mobile telecommunications industry. This paper provides a comprehensive industry overview and furthermore conducts both a quantitative and a qualitative analysis of samples from the mobile application developer group. Developers can gain a better understanding of the industry they operate in as well as discover industry trends and learn from the five case studies presenting developers who successfully managed to internationalize. Executives from other firms within the mobile telecommunications ecosystem might gain insights that might help facilitate the cooperation with mobile application developers. In conclusion, this paper is relevant for both developers who not yet internationalized as well as international developers aiming to gain a better understanding of their industry.

## **1.5. Structure**

In the following, the structure of this thesis will be explained. (1) The first point opens the thesis by giving an introduction, problem definition, research question and structure overview. (2) The second point presents a review of theoretical foundations relevant for Born Globals. It addresses the Internationalization Theory, Resource Based View of the Firm, Uppsala Model of Internationalization and Network Theory. Next comes (3) an overview on Born Global theory, presenting the history, absence of universal definition, key attributes of Born Globals and finally this paper's definition of Born Globals. (4) The fourth part presents determinants of Born Globals, categorized into organizational, strategic and environmental determinants. Next comes (5) a short review of the Born Again Global theory. It follows (6) an industry overview on the mobile application industry. Afterwards, (7) the Methodology of this paper is presented, explaining the research design, goal and population. The first method presented is (8) the quantitative data analysis of 300 mobile application developers, to assess whether the Born Global phenomenon exists among mobile application developers. The second method presented is (9) the qualitative case study analysis of five mobile application developers. It follows the analysis of the case studies, before (10) the conclusion of the quantitative and qualitative analysis will be presented. The paper closes with (11) limitations and (12) the future outlook.

## **2. Theoretical Foundations**

### **2.1.Introduction**

This part aims to provide the knowledge foundation necessary to understand the occurrence of the Born Global phenomenon. Three theories are considered relevant for Born Globals, since each of them provided one research aspect considered in Born Global research. These three theories are the Resource Based View of the Firm, the Uppsala Model of Internationalization and the Network theory. Furthermore, since Born Global theory is centred on the topic of internationalization, a brief overview on internationalization modes and definitions is provided. The part starts with the overview on internationalization and afterwards presents the three theories contributing to Born Global theory.

### **2.2.Definition Internationalization**

While the term ‘internationalization’ is widely spread and commonly used, its definition is controversial and complex. There is no commonly accepted definition of internationalization (Bell 1998, cited in Westhead et al. 2007). Internationalization can be divided into two components, namely inward and outward international activities. Inward internationalization describes processes such as imports, licensees and franchisees and has received less research attention than outward internationalization such as exports, licensing and franchising. McDougall & Oviatt (2002, cited in Westhead et al. 2007) define international entrepreneurship as “a combination of innovative, proactive and risk-seeking behaviour that crosses national borders and is intended to create value in organizations”. Most theory available on internationalization is based on, and targets, big companies. Internationalization theory available for SMEs often fails to account for the variety of characteristics of different SMEs (Westhead et al. 2007). These two facts pose a challenge to the development of one universal definition of internationalization in the context of entrepreneurship.

This paper defines internationalization as the generation of revenues outside a company’s home country through the offer of products and services to international markets. Furthermore, international activities need to have a long-term scope; internationalization is not achieved by simply entering a market but rather through the continuous generation of international revenues.

### **2.3.Internationalization theory**

Hill et al. (1990) developed a unified framework containing the most important entry mode decisions alongside relevant considerations. The researchers argue that the entry mode decision depends on the strategic relationship between operations in different countries, which is why country entry mode decisions cannot be regarded in isolation. The unified ‘eclectic framework’

is presented, which includes the three entry modes licensing, joint venture and wholly owned subsidiary. Each entry mode is evaluated on the three criteria control, resource commitment and dissemination risk, which are identified as the three most important considerations for choosing an entry mode. Hill et al. (1990) state that the typical preference of a company is to have high control, low resource investment and low dissemination risk. Furthermore, Hill et al. (1990) state that these three considerations are influenced by strategic, environmental and transaction variables.

In the following, each entry mode will be presented with regards to the three considerations of the eclectic theory: control, resource commitment, dissemination risk. In order to adapt the framework to this paper's focus on mobile application developers, joint ventures will not be presented and are replaced by exports. The three modes export, licensing and direct investment will be presented according to the resource commitment they require, starting with the mode requiring least resources according to Barber & Darder (2006).

A license contract exists between the owner of a transferable right and another firm, which authorizes the latter to use that right under determined circumstances. Normally, these rights consist of intangible assets such as registered brands, patents, specific know-how or technological processes. This mode tries to combine the competitive advantage of the multinational firm (licenser) concerning technology, management or marketing abilities etc. with the licensee's knowledge of the foreign market (Barber & Darder 2006). Hill et al. (1990) characterize it as an entry mode with low control and low resource investment. A drawback is seen in the high risk of dissemination that results from externalizing international activities.

Export stands for the selling of goods and services produced in the home country to international markets. Export is the most common form of foreign investment to penetrate a foreign market and can be classified into direct and indirect export. Indirect export involves an intermediary, often referred to as distributor, which distributes the product of a local company abroad. Direct export implies that a company directly sells its products or services to foreign markets. Direct relations with foreign clients need to be established. Export requires low resource commitment and provides a low level of control. Risk of dissemination is relatively high (Barber & Darder 2006).

Direct foreign investment refers to the opening of subsidiaries in foreign countries. In comparison to the other forms of internationalization, which are described above, direct investment binds the company's resources and assets in a foreign country. Consequently, this mode requires high resource commitment, offers a high level of control and shows low risk of dissemination (Barber & Darder 2006).

As stated earlier, the choice of entry mode depends on a company's strategy and the circumstances in form of factors, which influence the three main considerations of resource commitment, control and risk.

After having presented general theory about internationalization, the following part aims to present the three preceding theories, which most influenced Born Global-research. After a short summary of the theories, their relevance for Born Globals will be discussed and limitations identified.

## **2.4.Resource Based View of the firm**

### **2.4.1. Theory overview**

The resource based view (RBV), first mentioned by Wernerfeldt in 1984, regards the bundle of resources available to a firm as its main source of competitive advantage. According to Barney (1991), resources include "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991). The RBV is used as a business management tool to assess the strategic resources of a firm. Barney (1991) developed criteria against which any resource can be evaluated in order to assess whether it presents a competitive advantage. Barney's criteria served as the base for the VRIO model by Barney in 1996, which comprises the four criteria value, rarity, inimitability and organizational support. If all four criteria of the VRIO model are fulfilled, a resource or capability becomes a core competency and hence a source of sustainable competitive advantage (Pock, 2010).

The first criterion 'value' assesses whether a resource or capability enables the company to exploit an opportunity or neutralize an external threat and is linked to the SWOT-analysis tool (Barney 1991). The second criterion 'rarity' demands that only few companies have access to a resource (Barney, 1991). The third criterion 'inimitability' demands from any potential critical resource or capability to not be easily imitable and hence to make it costly for other companies to obtain, develop or duplicate the resource or capability (Barney 1991). The fourth criterion 'organizational support' requires that a company is organized, ready and able to exploit a resource or capability that might potentially provide a sustainable competitive advantage. This implies that a company possesses the necessary structures, business processes, management and control system, compensation policies and complementary resources necessary (Barney 1996, cited in Pock 2010).

#### **2.4.2. Assessment of the Resource Based View for Born Globals**

According to the RBV, a company's success depends on its internal resources. External factors are not covered. While the exclusive focus on internal capabilities is undoubtedly limited, it nevertheless provides valuable insight to Born Global-theory in two aspects.

First, possessing the right resources is critical for Born Globals since their resources are known to be limited due to their short time in the market. By offering a framework against which resources can be evaluated, critical Born Global-resources can be identified objectively with the help of the VRIO model. Furthermore, Knight et al. (2004) state that especially intangible capabilities, such as technology-knowledge and prior international experience, are critical for Born Globals, which is also suggested by the RBV.

Second, by focusing exclusively on resources as a source of competitive advantage, the RBV suggests that their different resources can explain the difference between Born Globals and other company types. This approach helps structure the research on Born Globals (Preece et al 1999, cited in Pock 2010).

### **2.5.Uppsala Model of Internationalization**

#### **2.5.1. Theory overview**

The Uppsala Model of Internationalization was developed by Johanson & Vahlne (1977) and states that internationalization is a gradual, evolutionary process.

The model aims to provide theoretical explanation for previously observed gradual internationalization as well as classification of the different steps. The model consists of two patterns that are influenced by two aspects. The patterns are (1) the steps of internationalization a company typically goes through and (2) the choice of foreign markets. These two patterns are described as interrelated and influenced by (1) state aspects and (2) change aspects.

The first pattern 'internationalization steps', claims that companies internationalize along the 'establishment chain', which enables them to increase knowledge, experience and information access over time. The four steps of the establishment chain are (1) no regular export, (2) independent representative (agent), (3) sales subsidiary, (4) production (Johanson & Vahlne 1977).

The second pattern 'choice of foreign market', states that internationalization typically starts into countries of close 'psychological distance' in respect to culture, political system and language since they present a familiar environment (Johanson & Vahlne 1977).

The state aspect influencing the two patterns described above consists of the two blocks 'market commitment' and 'market knowledge', which together represent a company's resources for international activities. Market commitment represents resources invested in a foreign market

such as marketing, human resources and organization. With increased resources, market exit becomes more difficult as resources present exit barriers. Market knowledge stands for the information a company possesses about the market and activities in a certain market. Market knowledge and market commitment are directly related since increased market knowledge leads to increased commitment and vice versa (Johanson & Vahlne 1977).

The change aspect represents a company's decisions and performance and consists of the two parts 'commitment decisions' and 'current activities'. Commitment decisions are decisions about resource allocation in foreign markets and taken gradually. Current activities and the results attained can only be monitored in retrospective because activity and result are delayed (Johanson & Vahlne 1977).

After the overview on the state aspect (broken down into Market Knowledge and Market Commitment) and the change aspect (broken down into Commitment Decisions and Current Activities), the interplay between these two aspects will be explained and hence the dynamic of the model described.

The two state aspects market knowledge and market commitment influence the two change aspects commitment decisions and current activities as well as the other way round. Current Activities lead to increased market knowledge and hence more market commitment. On the other hand, market knowledge influences commitment decisions which ultimately again increase market commitment. This interdependence creates a dynamic internationalization process. One decision leads to a chain reaction and thus ultimately influences the next decision. Throughout this dynamic process, initial internationalization barriers are gradually removed and perceived risk decreases (Johanson & Vahlne 1977).

### **2.5.2. Assessment of the Uppsala Model**

The Uppsala Model has a high degree of complexity. As presented, it includes internationalization modes, choice of foreign market entry, market commitment, market knowledge, commitment decisions and activities, each of which points is further divided. As a result, the model offers various points to which Born Global-theory can connect and build on.

One aspect holding true for Born Globals as described by Pock (2010) and others is the gradual internationalization process. Although Born Globals internationalize fast, they nevertheless often start with a less resource-intensive mode such as indirect export (Chetty & Campbell-Hunt 2004).

Another aspect suggested by the Uppsala model which holds true for Born Globals is the importance of market knowledge, as it influences market commitment. This furthermore leads to the applicability of psychological distance, since market knowledge increases the familiarity with a foreign environment (Chetty & Campbell-Hunt 2004).

Although the Uppsala-model provides important implications for Born Global theory, not all insights are transferrable. Born Globals pass through the different stages of internationalization faster than other company types (Autio et al. 2000, cited in Pock 2010) and do not attain market knowledge step by step (Aspelud & Moen 2011, cited in Pock 2010) but rather through networks or previous experience. The last point of criticism comes from Johanson & Vahlne themselves (1990, cited in Coviello & Munro 1997). They state that their incremental model of internationalization should be extended to also examine surrounding processes such as the “the interplay between actors”.

## **2.6.Network Theory of Internationalization**

### **2.6.1. Theory overview**

The internationalization process of small firms can be better understood when integrating the Uppsala-model with a network perspective (Coviello & Munro 1997). Network theory claims that internationalization is influenced by a company's current and potential network connections. Networks are ‘sets of two or more connected exchange relationships (Axelsson & Easton 1992, cited in Coviello & Munro 1997). Markets are “a system of relationships among a number of players including customers, suppliers, competitors and private and public support agencies” (Coviello et al 1995). Networks are particularly critical for smaller organizations, since these depend more on relationships with others because of their limited resources and experience. Both the entry modes as well as the country choice are influenced by the interests of other players in the companies' networks (Coviello et al. 1995). Within the network, companies are assigned different roles in terms of work distribution, which creates dependence and leads to coordination of activities. Key element is the company's position within a network since it determines future development opportunities as well as boundaries. A company's network position can hence be regarded as an immaterial market asset, which takes time and resources to establish. The network position is influenced by the network structure, since the structure determines the dependence of the different network members on each other (Johanson & Mattson 1988, cited in Pock 2010).

Networks prove to be even more important for international success than the chosen market and its cultural characteristic (Johanson & Mattsson 1986, cited in Coviello et al. 1995). While networks offer opportunities by identifying attractive markets, they simultaneously constrain the scope and nature of international activities (Coviello et al. 1995).

### **2.6.2. Assessment of the network theory**

The network theory claims to be a further development of the incremental Uppsala-model. It complements the model by adding an external perspective and is therefore more complex than the previously discussed Uppsala-model.



Especially small software firms that internationalize quickly proof to depend on their networks as these provide access to resources such as market knowledge or marketing capabilities (Coviello et al. 1995). The research target of Coviello et al. (1995) is not identical, but fairly close to Born Globals, which allows the conclusion that their discovered importance of networks also applies to Born Globals. With the network theory being dynamic like the Uppsala model, it fits well to the fast-changing activities of Born Globals.

One limitation of the model's applicability to the Born Global phenomenon is its ignorance of the importance of the management team (Chetty & Holm 2000, cited in Pock 2010).

Pock (2010) reviews two studies that also conclude that the network theory is a valuable contribution to internationalization strategies. His analysis shows that network theory is especially relevant for explaining the initial process of establishing relations outside the home market.

One criticism of the network theory is that it neglects the influence of the characteristics of the founding team on the assessment of market opportunities and internationalization (Chetty & Holm 2000).

## **2.7.Conclusion**

The theoretical foundations supporting and facilitating the evolution of Born Globals as a research field from 1993 onwards consist of three theories. While no single theory can be identified as a clear predecessor, these three theories contributed to Born Global research by bringing to attention different attributes, influencing factors and behavioural patterns. The Resource Based View theory particularly contributed the focus on a company's internal resources and capabilities. The Uppsala model offers a complex framework and hence presents various impulses for further research. The most relevant for Born Globals is the model explaining gradual internationalization. The network theory adds the focus on the importance of a company's external environment.

With the preceding part focusing on the theories providing input for Born Global research, the following part now presents the current state of research on Born Globals.

### **3. Definition and Foundations**

#### **3.1.Introduction**

After having provided solid background knowledge on preceding theories relevant for the emergence of the research field of Born Globals, this part now presents the results of two decades of research on Born Globals. The section (1) starts with a short summary of the research history on Born Globals, then (2) explains the absence of a universal Born Global definition, before (3) presenting the most common attributes assigned to Born Globals and then finally (4) stating this paper's definition on Born Globals.

#### **3.2.History**

The term Born Global was established by Rennie, who first used it in 1993 in order to describe the phenomenon of young companies that internationalize quickly after inception.

Other scholars researched in the same area but used different terms to describe this type of company. Among these alternative terms for Born Globals were 'International New Ventures' and 'Global Start-Ups', introduced by Oviatt & McDougall (1995). Yet another term for the same phenomenon is 'Born Internationals', developed by Kandaswami in 1998 (Pock 2010).

Among these different terms, only two gained general acceptance: Born Globals and 'International New Ventures', whereby the term Born Globals enjoys even wider recognition (Pock, 2010).

There exist various different definitions for Born Globals, among the definition of Oviatt & McDougall (1994) and the definition of Knight & Cavusgil (1996) enjoy most recognition.

#### **3.3.Absence of Universal Definition**

Next to using different terms for the phenomenon of companies with a high pace of internationalization, researchers also define the phenomenon of Born Globals differently (Gabrielsson 2005). The lack of one universal definition is a critical point for research, because it leads to a small common denominator shared by all papers and hence to few, imprecise criteria that can be used in studies that aim to apply to the current state of research. A lack of universally agreed upon criteria furthermore hinders the comparison of studies which are based on different Born Global-definitions and makes the distinction from other company-types difficult (Pock, 2010).

The common denominator for all 'Born-Global'-definitions are the share of international revenue in total revenue, pace of internationalization and the amount and geographical location of foreign markets in which the company is active (Pla-Barber & Escriba-Esteve 2006).

### **3.4.Common Born Global Attributes**

#### **3.4.1. International revenue**

International revenue is regarded as one of the central elements of Born Globals (Pock 2010).

Various existing definitions of Born Globals require that shortly after inception a considerable share of revenue is generated outside the home country. In concrete terms, the definitions use both absolute as well as relative figures, the latter one meaning that a minimum share of international revenue on the total revenue is required. 25% of revenue to be generated abroad is one of the most mentioned relative figures (Kuivalainen et al 2007).

Next to relative revenue-figures, some authors also mention certain absolute revenue thresholds (Pock, 2010). As most studies use relative figures when addressing the important element of revenue in the Born Global definition, this research paper will also focus on relative terms. The most used criteria of 25 % of revenues to be generated outside the home country will be used in this paper in order to enable comparison with other research papers.

#### **3.4.2. Time of internationalization**

Time is another commonly used element in the various existing definitions of Born Globals as this element helps to clearly distinguish Born Globals from other types of companies. Most relevant for the definition of Born Globals is the time period between inception and the first international activity (Kuivalainen et al 2007). Nevertheless, the term 'inception' remains controversial, since there exist various definitions on when a venture can be regarded as formed (Oviatt & McDougall 1997).

Existing attempts to specify the time between inception and first international operations range from two to six years. (Pock, 2010). In order to align with existing definitions of Born Globals, this paper will set the criteria of a time period of 3 years between inception and first international activities.

#### **3.4.3. Amount of foreign markets**

The amount of foreign markets in which the company operates in enjoys less importance than the elements of turnover and time (Pock, 2010). Nevertheless this criterion is part of various existing definitions and hence shall not be neglected. The opinion regarding the minimum amount of foreign markets to operate in differs widely: Oviatt & McDougall (1994) demand operations in more than one country, Coviello & Munro (1997) state a number of at least 7 foreign markets. In order to enable comparison with an existing study made by Pock (2010), this paper sets the minimum amount of foreign markets that a company should operate in to five.

#### **3.4.4. Number of employees**

In general, Born Globals exist mainly in the field of SMEs. Reason for the concentration of Born Globals within SMEs is that Born Globals are usually young companies which possess the capabilities to internationalize quickly (Pock 2010). Many authors therefore set a limit to the maximum number of employees a company can have in order to classify as a Born Global.

This paper will not define a maximum amount of employees, as almost all respective companies in the examined industry are considerably smaller than the numbers stated in other definitions.

#### **3.4.5. Independence**

Another possible element is the independence of the company in order to classify as a Born Global. This means that restructured or merged companies cannot be considered as Born Global, since their drive to internationalize might come from previous activities not linked to the current company (Bell et al. 2004, cited in Block 2010)

In this paper, independence of a company as defined above is used as a criterion for Born Globals.

#### **3.4.6. Founding year**

Another intuitive criterion for Born Globals is the age of the company. In order to stay consistent with existing research on Born Globals, studies should focus on companies founded after 1993 (Pock 2010), a suggestion which is followed by this paper.

### **3.5. Born Global Definition for this paper**

This section, as a consequent conclusion of the previous summary of relevant Born Global attributes, provides the definition of Born Globals that will constantly be referred to in this paper.

In this paper, Born Globals are defined as independent companies that, from inception, try to gain considerable competitive advantage from the use of resources and sale of products and services in more than one country. Within three years after their inception, respective companies generate at least 25 per cent of their turnover in five or more international markets. Hence, the criteria that have to be fulfilled in order to classify as a Born Global according to this paper's definition are: independence, activities in more than five international markets, 25% of turnover generated abroad within 3 years after inception.

## **4. Determinants of Born Globals**

### **4.1.Introduction**

This paper so far presented (1) the theoretical foundations supporting the emergence of the Born Global research field, which lead to (2) the overview and definition of Born Globals. The following part aims to provide an overview of determinants that support the creation of Born Global firms and thereby intends to explain some of their main characteristics. These determinants generally apply to Born Globals. Already in 1997, Oviatt & McDougall mentioned several determinants for Born Globals. This company type "appear(s) to require some highly valuable resources at the least cost possible wherever in the world that resource is, to employ a strategy of serving globalizing niche markets with unique products and services, to be founded by internationally experienced entrepreneurs with very aggressive growth goals, and to have tightly coordinated organizational processes" (Oviatt & McDougall 1997). In order to further structure the assessment of different determinants and ensure a holistic approach, this paper uses the criteria of the 'integrated model of international entrepreneurship' by Zarah & George (2002), thereby following the same approach as Pock (2010). The model by Zarah & George (2002) offers three categories of factors influencing international entrepreneurship, namely 'organization', 'environment' and 'strategy'. The factor 'organization' contains the four subparts 'top management', 'firm resources', 'network' and 'reputation'. The factor 'environment' is broken down into ten components, including intensity of international competition and type of industry. The third factor 'strategy' is divided into generic, functional and entry strategy (Zarah & George 2002). In the following, each category and its sub-categories will be examined by presenting the latest insights of Born Global research.

### **4.2.Organizational Determinants**

#### **4.2.1. International Entrepreneurship Team**

In the definition of Born Globals, quick internationalization is the core element. This ambitious attitude toward internationalization is one of the central characteristics of the founding team of Born Globals according to Andersson & Wictor (2003, cited in Pock 2010). Also the founder of the term Born Globals, Rennie (1993), states that constellation of the founding team plays a central strategic role for internationalization as it influences all decisions to be made (Rennie, 1993).

#### **4.2.2. Global vision of the founding team**

A global vision means to see the world as one big market place. In order to fully leverage the global vision, it has to be communicated to all stakeholders, as it can only be successful if it is

understood and incorporated by all stakeholders (Saarenketo 2003, cited by Pock 2010). Born Global Management teams typically possess a global vision from inception (Pock 2010).

#### **4.2.3. International experience of the founding team**

Since Born Globals are by definition young companies, their main source of experience is not derived from previous business operations but more from the international experience of the founding team (Shrader et al. 2000). The main advantage of international experience is that it decreases the psychological distance of foreign markets. Countries are more and more seen as one international market rather than separated by borders (Madsen & Servais 1997, cited in Pock 2010). In his paper, Pock (2010) proves that various studies on Born Globals identified international experience as a key success factor.

#### **4.2.4. Global Entrepreneurial Orientation**

Entrepreneurial orientation refers to "the processes, practices, and decision-making activities that lead to new entry". It contains the five dimensions autonomy, innovativeness, risk taking, pro activeness and competitive aggressiveness. Entrepreneurial orientation shows, how internationalization is undertaken (Lumpkin & Dess, 1996).

A Global Entrepreneurial Orientation enables the founding team to identify international opportunities quicker (Knight & Cavusgil 2004).

#### **4.2.5. R&D intensity**

Born Globals can often be found in high technology industries. As a result, activities in these industries require high R&D investments on a continuous basis (Burgel & Murray 2000). It can be observed that there is a link between R&D investment and success (Pock 2010).

#### **4.2.6. Knowledge intensity**

As previously mentioned in the review of the Resource Based View, the long term competitive advantage of a product depends on inimitability, meaning that the product is hard or impossible to copy by competitors. One way to secure this long-term competitive advantage is to create knowledge intensive products (Knight & Cavusgil 2004).

### **4.3.Strategic Determinants**

#### **4.3.1. Global Niche Strategy**

Rennie (1993) states that market opportunities can mainly be found in niche markets. As mentioned before, Born Globals possess a special skill to identify international opportunities. In logical conclusion of these two statements, Born Globals often pursue a global niche strategy (Pock 2010). Aspelund & Moen (2001, cited in Pock 2010) claim that Born Globals often start in

a global niche strategy but switch into broader markets as soon as they have reached a critical size in order to decrease risk.

#### **4.3.2. Goals of the Product Strategy**

In order to compete sustainably in the international competitive environment, Born Globals need to possess a competitive advantage with their products (Oviatt & McDougall 1995). According to the RBV, a competitive advantage can be reached if the product possesses a unique feature.

#### **4.3.3. Innovative Product Character**

High quality innovation is a key characteristic of Born Globals (McDougall et al 2003). As already stated, Born Globals often position themselves in niche markets and hence require innovative products as differentiator toward competitors (Knight et al. 2004).

#### **4.3.4. Product range**

Shrader et al. (2000) give three reasons for the limited product range of Born Globals: First, limited resources of Born Globals do not allow for a bigger product range. Second, a limited product range helps to manage the wide geographical coverage of the product. Third, a limited product range also keeps complexity manageable.

#### **4.3.5. Product Life Cycle**

Due to the often highly technical characteristics of Born Global products, their life cycle remains relatively short with continuous need for improvement of the product. This short product life cycle combined with a small amount of customers in each market and the need for continuous innovation further pushes Born Globals toward internationalization (Saarenketo 2003, cited in Pock 2010).

#### **4.3.6. Product Quality**

Born Globals typically show “innovative processes that drive the development of superior, unique products (...) important to born-global success”. The unique products are the result of the Born Globals capability to adapt quickly to new demands (Knight & Cavusgil 2004).

#### **4.3.7. Standardization of Products**

Since Born Globals internationalize quickly their aim is to keep local product adaptations to a minimum. Another motive in favour of standardization lies in the costs connected to product adaptations. The need to adapt a product can often be seen as an entry barrier (Burgel et al. 2004, cited in Pock 2010).

#### **4.3.8. Customer Service**

Customer service can be a differentiation tool of Born Globals in order to gain a competitive advantage in comparison to local companies. Furthermore, customer service can also help to overcome initial reputation barriers (McDougall et al. 2003).

#### **4.3.9. International Value Chain Activities**

Coviello & Munro (1997) prove in their paper that some Born Globals internationalize parts of their value chain activities at an early stage. Marketing is often the first activity to be transferred to another country in order to improve the competitive positions.

Internationalization of Value Chain Activities shortens the time needed to adapt to local customer needs and is hence important for Born Globals.

### **4.4.Environmental Determinants**

#### **4.4.1. Client Structure**

Gabrielsson (2005) distinguishes between three client profiles that Born Globals target. These three different possible profiles are (1) B2B, (2) B2C and (3) B2C and B2B simultaneously.

The first possible client group, B2B, is by far the most common for Born Globals. The businesses, which are customers of Born Globals, are generally either large, multinational companies or public administrations and organizations. Saarenketo & Sundqvist (2002, cited by Pock 2010) offer an explanation for the Born Globals' preference for B2B relations. They state that business customers are more reliable, also because there generally are few customers per market, which provides predictability. The two other client groups, B2C and a combination of B2B and B2C are, as already mentioned, less common. If Born Globals target end clients, it is usually with a product targeted to global needs such as housing, leisure and other desires. If Born Globals have both B2B and B2C customers it is usually by offering interior, mobile, or software products (Gabrielsson 2005).

#### **4.4.2. Industries**

Born Globals often exist in high technology industries (Knight & Cavusgil 2004). Such industries have the advantage that structures are not yet as established.

#### **4.4.3. Competitiveness of the Industry**

As previously mentioned, Born Globals try to avoid direct competition from big multinational companies by offering differentiated products and serving a niche market. However, Rennie (1993) states that Born Globals often face a high level of competition. This might be due to the fact that big companies offer similar but standardized products.



A high level of competition nevertheless has no effect on the pace of internationalization of Born Globals, as they have a global vision and hence do not concentrate on the situation of a particular market too much (Saarenketo 2003, cited in Pock 2010).

#### **4.4.4. Technology Intensity of the Industry**

As already mentioned before, Born Globals often offer high technology products and hence typically operate in high technology industries (Knight & Cavusgil 2004).

#### **4.4.5. Importance of Home Market**

The home-market is generally less important for Born Globals than for traditional company types. Reason for this is the limited amount of customers to be found in the home-market if the Born Global operates in a niche market (Knight et al. 2004).

### **4.5. Summary**

This part presented determinants of Born Globals in the three categories of strategic, operational and environmental factors. The analysis of the organizational factors has shown that the founding team is a key element and is usually highly qualified and open to collaborations with networks. The members of the founding team often have a global vision from inception and possess the ability to look beyond borders to view other countries as one big international market. This international orientation is often due to previous international experience, gained while working or studying on other countries. Previous experience helps the founding team to identify international opportunities and overcome the barriers of foreign market entry by decreasing the psychological distance. The focus of Born Globals lies on continuous R&D and knowledge intensive products. The need for R&D can be explained with the high degree of technology typically involved in the products of Born Globals. The focus on knowledge intensive products enables Born Globals to maintain a competitive advantage in the long run against their competitors by making it hard to copy their products. The examination of Strategic Determinants also revealed insight: Born Globals typically deploy a global niche strategy in the beginning. The products offered by Born Globals are usually differentiated from the products of competitors and involve new innovation. The product range is typically narrow, with short product life cycles making continuous improvement essential. The products are of high quality and generally offer little adaption to local needs, hence focusing on a standardized product strategy. The value chain of Born Globals is often internationalized with Marketing being the first function to be handled by external partners. Important environmental determinants of Born Globals can also be found. Born Globals typically operate in B2B markets with one reason being the reduced complexity inherent in this decision. Born Globals can often be found in high technology industries facing fierce competition. The home-market is less important for Born Globals than for other company types.

## 5. 'Born Again Global' Theory

The research field of Born Globals was founded less than 20 years ago. The preceding parts presented the theoretical foundations, definition and determinants of Born Globals. This part now constitutes the final element of Born Global theory relevant to cover before the industry overview and methodology are presented. While the research field of Born Globals is still developing, the Born Global concept already served as the base for a further development called 'Born Again Global' and first mentioned by Bell et al. (2001). This altered concept shares all characteristics with traditional Born Global theory except the starting point of international operations. "Born Again Global"-companies are well established in their home-market before they suddenly internationalize at high speed. This further development of the Born Global-concept will in the following be presented as it becomes relevant for one of the case studies covered in the methodology-part of this paper. Bell et al. offer several reasons for the abrupt change of geographical focus, which they derive from a qualitative analysis of secondary case study data. These reasons are classified as 'critical incidents'. Their research offers 3 different incidents, which can change a company's geographical scope: (1) change in ownership or management, (2) acquisition, (3) client followership. A change of ownership can be caused by a management buyout, takeover by another firm or acquisition by one of the former administrators. If an acquisition triggers the sudden internationalization, the acquisition targets are other firms, new technology or distribution rights. If client followership causes a company to become a "Born Again Global", it is either because a domestic client internationalizes or because a foreign client enters the company's home market. Particularly relevant for the methodology-part of this paper are "Born Again Global" companies who internationalize suddenly due to acquisition of new technology and distribution rights. Bell's paper states that new technology triggers innovation because of the company's need to recover high investment costs. Distribution rights furthermore push internationalization because they provide a stimulus to internationalize. Bell et al. (2001) conclude, that the rationale of Born Global firms does not only apply to start-ups and that Born Globals should not be seen as an organizational form but as a strategy to improve firm value, which can also be pursued by other organizational forms apart from start-ups.

## **6. Target Industry**

### **6.1.Introduction**

This paper examines the Born Global phenomenon in the mobile application development industry, which forms part of the mobile telecommunications industry.

This section explains why the mobile telecommunications industry in general and the mobile software development industry in particular have been chosen for this research project. It also provides an industry overview as well as a description of the different actors in the industry and the interplay between them.

### **6.2.Reason for Industry Choice**

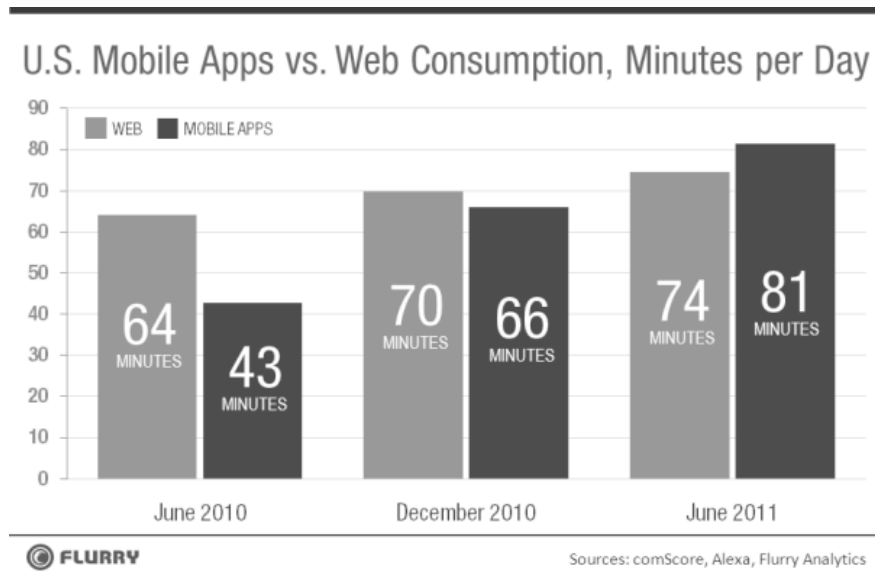
The mobile application development industry has been chosen for two reasons that will be described below: First, the industry is growing and gains increasing importance. Second, the industry is for several reasons particularly suitable for research in the field of international entrepreneurship, which the Born Global-theory forms part of.

#### **6.2.1. Importance of the industry**

The mobile application development industry has been chosen as research target in this paper for several reasons:

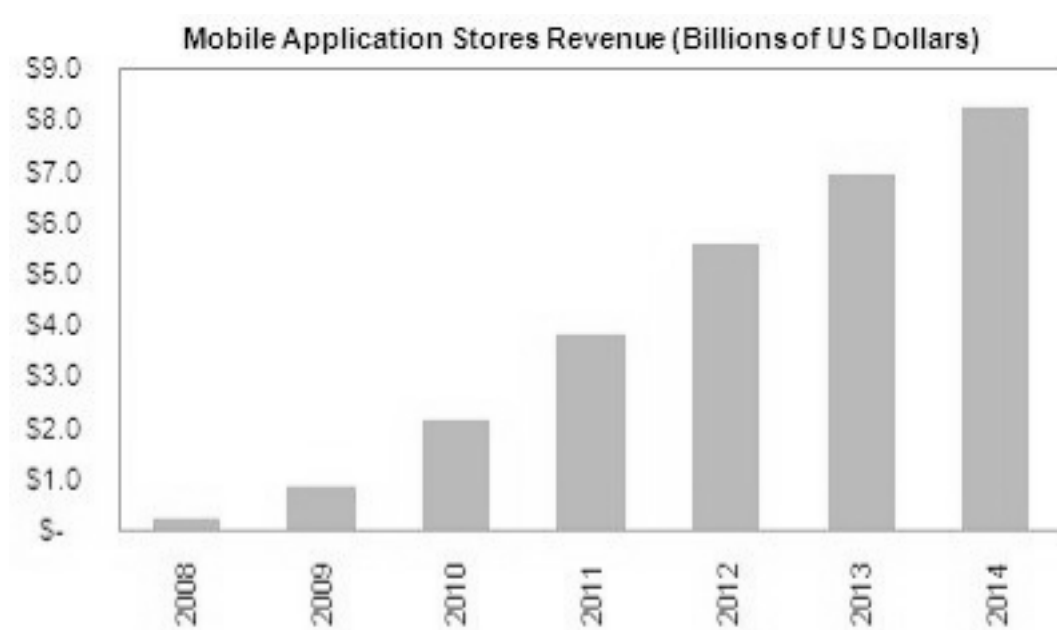
First of all the mobile telecommunications industry underwent substantial changes in the past few years which gives reason for increased research focus in this area in order to analyse and explain these changes.

Second, the importance of mobile applications as digital platform is increasing. Flurry (2011), as seen in graph 1 states that Mobile Application-consumption has outpaced internet consumption in June 2011 in the USA, which is regarded as the most important mobile application market in terms of size. The per capita time of mobile apps consumption has risen from 43 minutes per day in June 2010 to 81 minutes in June 2011, whereas web consumption has only risen from 64 minutes to 74 minutes during the same period.



**Graph 1 Flurry (2010): 'U.S. Mobile Apps vs. Web Consumption, Minutes per Day'. comScore**

This increase in engagement is also mirrored in the extreme revenue growth of the mobile applications market, as shown in graph 2. The revenues generated through mobile application stores are expected to rise from less than one billion US \$ in 2008 to over 8 billion US\$ in 2014.



**Graph 2 IHS Screen Digest Research (2011): 'Mobile Application Stores Revenue (Billions of US Dollars)'.**

### **6.2.2. Suitability for research in international entrepreneurship and Born Globals**

The second reason for choosing the mobile software development industry lies in its particular suitability for international entrepreneurship research. This suitability can be explained by the three arguments stated below.

First of all, a high-technology sector has been chosen because Born Globals are most likely to exist in this sector as stated by several authors including Bürgel et al (2004, cited in Pock 2010).

Engagement in high technology sectors forces companies to internationalize quickly in order to regain the high expenses made for research and development of technology intensive products. The pressure to internationalize is further enhanced through short product life cycles and convergence of demand patterns across nations.

Second, a Business to Consumer industry has been chosen, although Born Globals are more likely to exist among B2B businesses, as described by Pock (2010) and Madsen et al (2009). One of the reasons for lower presence of Born Globals in B2C businesses lies in the higher costs of product introduction, marketing and distribution in this market type. These disadvantages nevertheless do not apply to the mobile application industry since the different digital distribution platforms nearly eliminate the cost for international product introduction and distribution. Furthermore, digital distribution platforms lower the cost of marketing significantly. Everiss (2009) summarizes the advantages of digital distribution platforms in his blog: “The App Store gives you instant global distribution. 77 countries can download your app the instant it is available“. Since digital distribution platforms significantly lower the typical B2C internationalization barriers, this paper claims and examines whether Born Globals are an existing phenomenon in this industry.

Third, the mobile application industry is characterized by an extremely high degree of innovation and hence provides fertile grounds for new ventures. Flurry (2010) states that in the period between the launch of the Apple App Store in 2008 and February 2010, 35.000 unique companies launched mobile applications, which translates to 58 new companies launching mobile applications every day. In addition Flurry (2010) analyses that 20% of the applications launched in 2010 were developed by native iPhone developers i.e. by companies that were founded to produce iPhone applications. Flurry (2010) concludes, “despite the fact that the App Store is now maturing (...) the barrier to entry is still low enough for start-ups to enter and innovation to flourish“. Therefore the industry can be regarded as highly attractive for international entrepreneurship research.

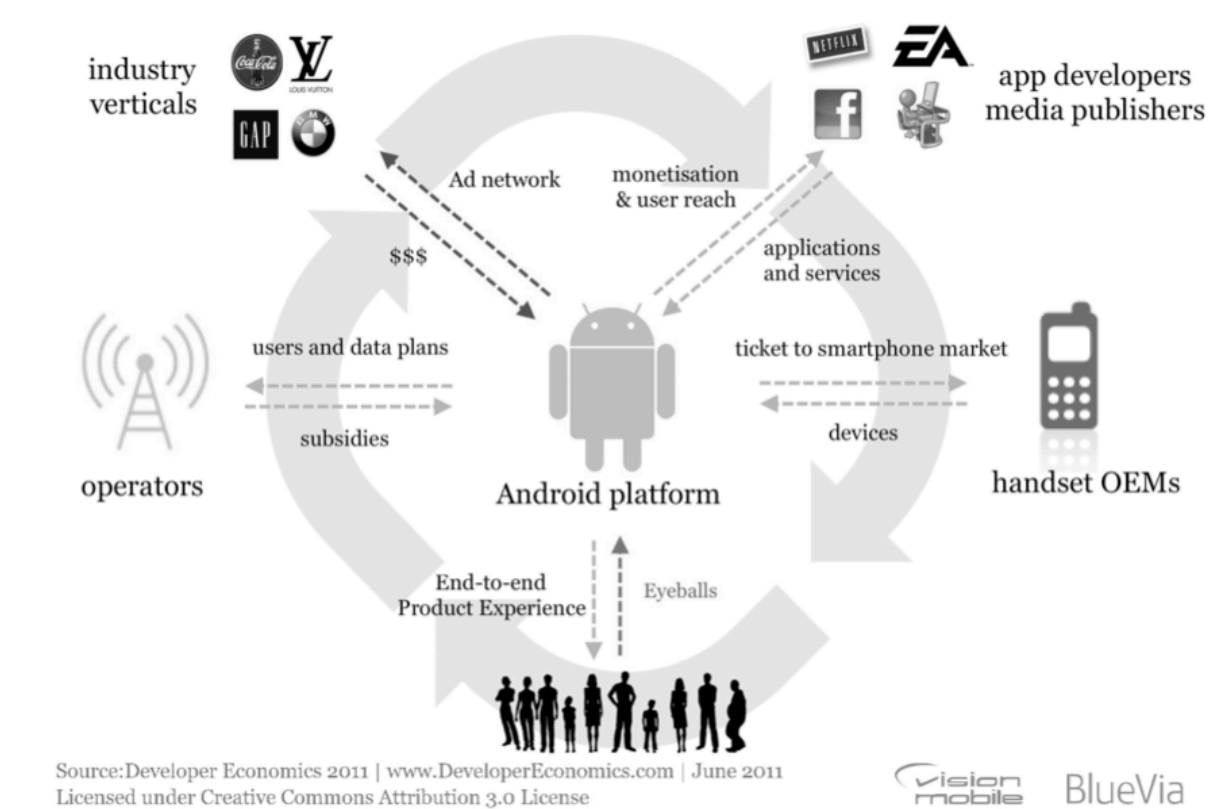
## **6.3.Mobile Telecommunication Industry**

### **6.3.1. Introduction**

This chapter describes the mobile telecommunications industry as a whole as well as each of the relevant elements in this industry. It aims to provide a general overview of the mobile telecommunications industry and describe the circumstances causing a possible surge of Born Globals in the mobile application industry.

The mobile telecommunications industry underwent substantial changes in the past years. These changes were mainly caused by the introduction of smartphones and the increasing importance of software in the industry, also referred to as “the impact of software economics” by

Visionmobile (2011c). The main beneficiaries of this described trend are software firms which provide operating systems for mobile devices and independent software development firms which provide software applications for the operating systems / platforms. As a result, the constellation of the mobile telecommunications industry in the post-‘dumb’-phone era i.e. the smartphone era is the starting point of the following industry analysis. Visionmobile (2011c) provides an overview of the constellation for the Android platform, as shown in graph 3.



**Graph 3 visionmobile (2011):' The 5-sided network forming around the Android platform, illustrating network effects'.**

It can be observed that in June 2011 the ecosystem of the mobile industry consists of six different and intertwined players: Handset original equipment manufacturers (OEMs), mobile application developers, mobile network operators, industry verticals, users and the different digital distribution platforms.

Handset OEMs like Nokia or LG produce mobile phones and sell them to consumers. Software firms like Google or Microsoft provide Operating Systems (OS) for mobile devices, like Android or Windows Phone, and hence enable OEMs to operate in the smartphone market. Mobile network operators like Vodafone or Telefónica possess radio spectrum licenses issued by the government as well as a radio transmitter networks that enables them to provide services to mobile phone subscribers in form of subscriptions. Industry verticals make use of the reach of the ad networks of platforms as a marketing vehicle to address their target audience through an additional channel and pay for the reach of the platform.

Mobile application developers and media publishers offer digital products and services through the platforms and fill them with content. They use the platforms to reach their audience and to monetize their mobile applications.

Some of the companies active in the telecommunications industry have integrated several of the functions under their roof. Most prominently Apple manufactures phones (the iPhone), provides a mobile platform (iOS) and develops mobile applications for its own platform. The trend towards increasing vertical integration can also be observed in the cases of Nokia's strategic partnership with Microsoft and Google's acquisition of Motorola Mobile in 2011.

In the following the three most relevant players of the mobile telecommunications ecosystem for this work are going to be described in detail, namely handset OEMs, mobile operating systems and mobile application developers.

### **6.3.2. Handset OEMs**

This part describes the market of manufacturers of mobile devices (OEMs). Traditionally the original equipment market was highly concentrated with few global players distributing their products on a global scale. However, the handset manufacturer's market underwent disruptive changes during the past years and is becoming increasingly fragmented. The market share of the top-five OEMs dropped from 80% in 2008 to 61% in Q3 2010 with two new entrants in the top-5 spots being RIM, producer of the Blackberry, and Apple, producer of the iPhone (VisionMobile 2011a). This reflects the increasing importance of smartphones in the market. Although smartphones only account for 20% of the 780 million Handsets that were shipped worldwide in the second half of 2010, they are rapidly gaining in adoption, which can be seen by the fact that smartphone shipment has increased by 25% over the first half of 2010 (VisionMobile 2011b). The trend toward smartphones is further supported by Olswang's (2011) Convergence Survey, which states that 36% of UK consumers already own a Smartphone. In the age group 25-34, the smart phone rate is even 53%.

The change from so called 'dumb' phones and feature phones to smartphones leads to a shift from supply side economies of scale to demand side economies of scale (VisionMobile 2011c).

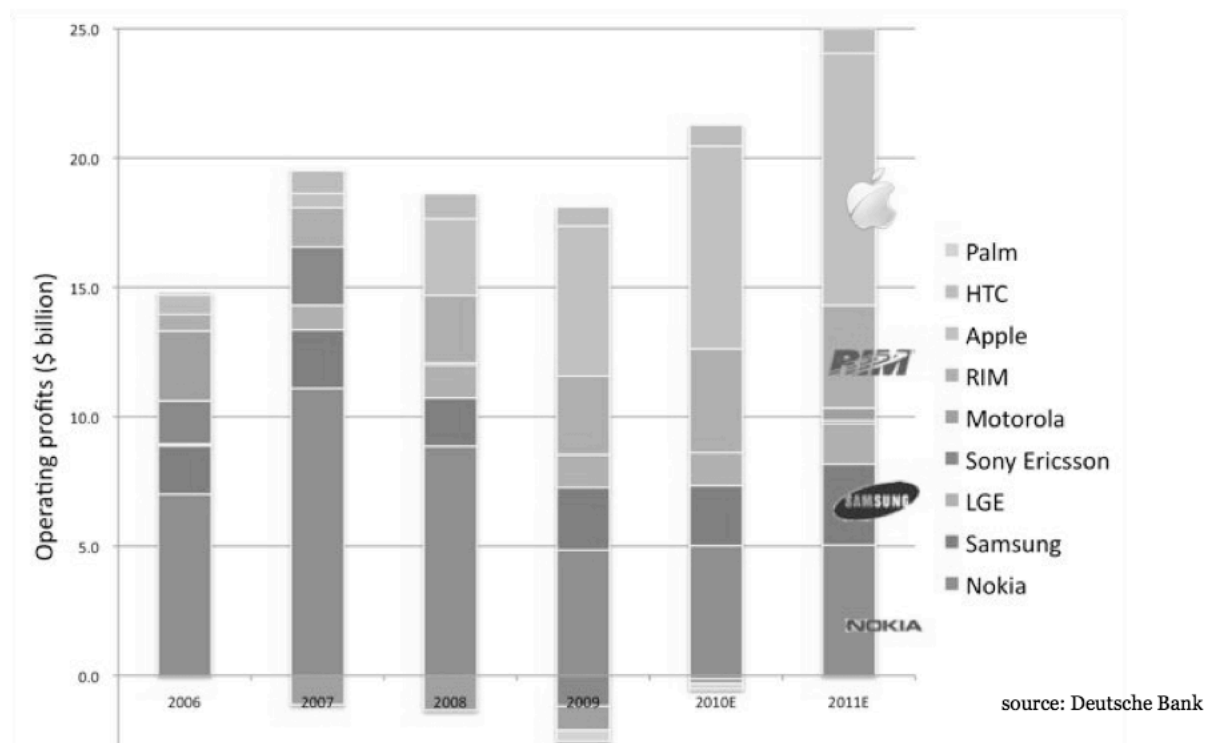
Traditionally the industry was characterized by supply side economies of scale that were best exploited by large OEMs. High initial investments into big production facilities allowed driving up the number of produced units while driving down the costs per unit. This principle enabled Nokia to dominate the emerging markets through a low cost strategy for years.

Due to the increasing convergence of smartphones, this principal has changed to demand side economies of scale, also known as network effects. Smartphones opened new opportunities for software firms. The utility of a device is now dependent on the number of applications available for the device's platform. This leads to a circular function: The more applications exist for a certain platform, the more devices operating with this platform are sold, the more users the

platform has, the more attractive the platform becomes for developers, the more applications are developed for this platform and the more devices are sold.

Hence the competitive advantage of a device is no longer determined by the hardware but by the software i.e. the operating system it uses and the applications that are available for this platform. Future business opportunities therefore can mainly be found in software rather than hardware development (Visionmobile 2011c).

The strategic shift toward software is reflected in the profit situation and the competitive landscape in the market of handset manufacturers visible in graph 4.



**Graph 4 Deutsche Bank (2011):' The competitive landscape on the market of handset manufacturers'.**

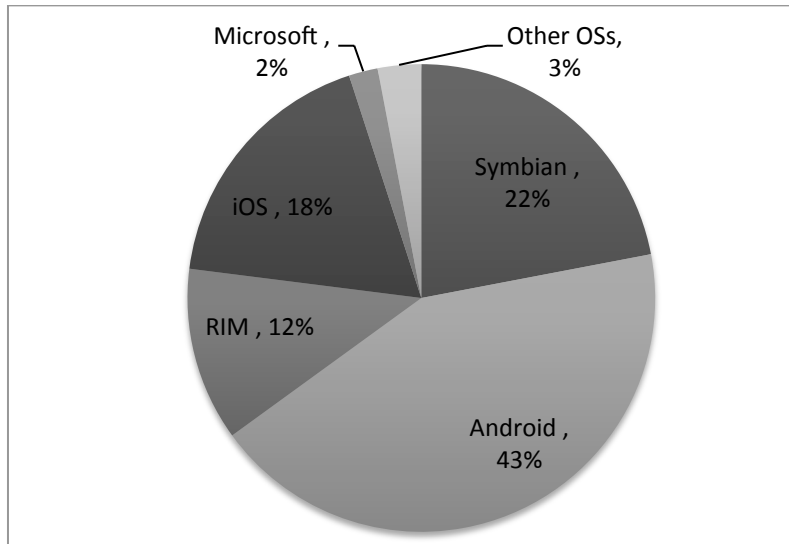
It can be observed that with the introduction of the first Blackberry smartphone in 2003 and especially with the iPhone in 2007 the profits move away from the old top-5 OEMs (Nokia, Samsung, Motorola, LG and Sony Ericsson) toward Apple and RIM. Apple and RIM both provide integrated mobile devices, meaning that they produce the hardware as well as the software for their devices. This trend has been recognized by the old top-5 OEMs, which are trying to regain their competitive advantage. Their strategy is to further integrate with software firms e.g. Nokia's decision to abandon the Symbian operating system and replace it through a strategic partnership with Microsoft as well as Motorola's decision to sell its Mobile business to Google in July 2011.

### 6.3.3. Mobile Operating Systems

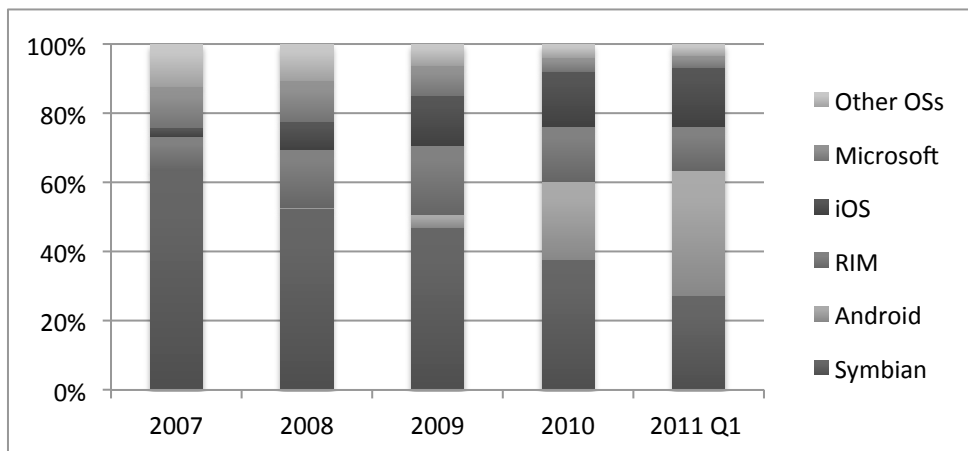
A mobile operating system (mobile OS) is a software system that controls mobile devices such as smartphones. In June 2011 there were five major operating systems competing in the market,



which are Symbian, Android (Google), RIM, iOS (Apple) and Windows Phone (Microsoft). The graphs 5 and 6 below display the worldwide end-user-sales share of smartphones by operating system in Q2 2011 (Gartner 2011) as well as the historical development of these figures based on Gartner (2009-2011).

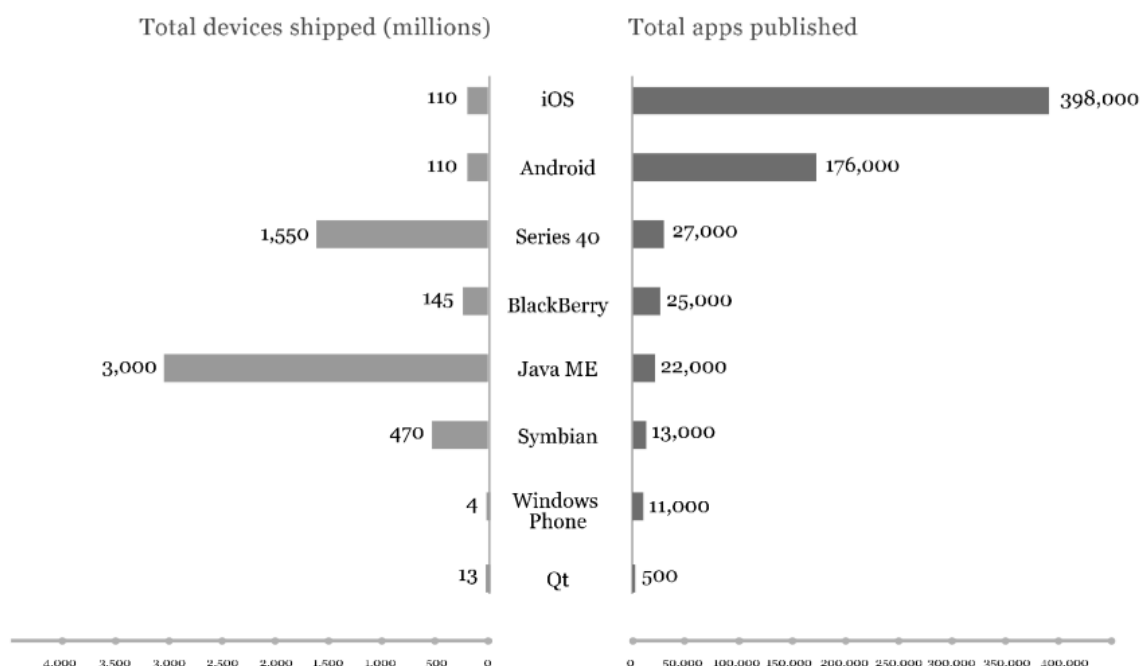


**Graph 5 Gartner (2011): 'Worldwide end-user-sales share of smartphones by operating system in Q2 2011'.**



**Graph 6 Gartner (2011): 'Historical development of worldwide end-user-sales share of smartphones by operating system from 2009-2011'.**

It can be observed that Symbian has faced a downward trend and lost its dominant position of over 60% in 2007 mainly to Android but also to iOS and RIM and today accounts for only 22% of the market. This is due to the fact that many of the big OEMs have switched to the open platform Android that is developed by Google. It can be suspected that this trend will continue since also Nokia abandoned the Symbian platform in 2010 and is now using Microsoft's OS. This is supported by the figures on the number of applications published for each platform, which represents the demand side economies of scale of the different platforms and is shown in graph 7.



Source: Developer Economics 2011 | www.DeveloperEconomics.com | June 2011  
 Licensed under Creative Commons Attribution 3.0 License



**Graph 7 Visionmobile (2011): 'The mobile platform race'.**

It can be observed that iOS and Android account for most Applications published by platform. In consequence, iOS and Android present the biggest utility for end-users, a trend that is expected to continue for the next years (Visionmobile 2011c).

## 6.3.4. Mobile Application Developers & Media Publishers

### 6.3.4.1. Introduction

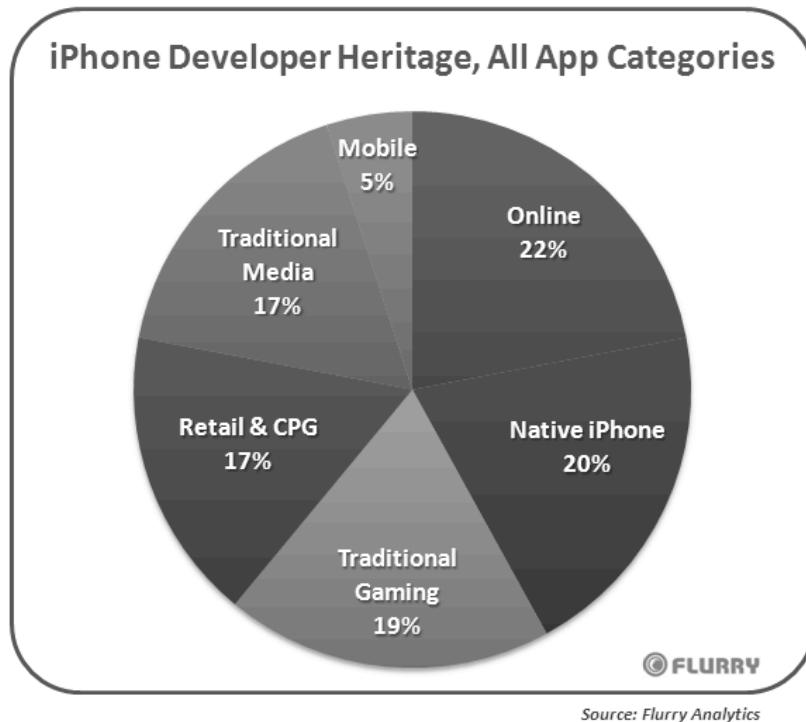
This section describes the main research subject of this thesis, the developers of mobile applications. A mobile application represents software for mobile devices that is designed to help the user perform a specific task. Most of the applications belong to one of the following categories: Games, Productivity, Entertainment, Music, Navigation, Books, Business, Utilities, Education or Photography.

### 6.3.4.2. Market composition

Mobile application developers are firms or individuals that programme and distribute mobile applications. The total number of mobile application developers worldwide is difficult to estimate and constantly growing. Mashable (2010) estimates the total number of developers publishing mobile applications on the most popular digital distribution platforms (Apple App

store and the Android market) at 43.000 and 10.000 respectively in July 2010. Due to the already mentioned growth trend, this number is expected to grow significantly.

Mobile application developers can be grouped by their origin, which refers to the industry they were operating in before the opening of digital distribution platforms and is presented in graph 8 (Flurry Analytics 2011).



**Graph 8 Flurry (2011): 'iPhone Developer Heritage, All App Categories'.**

It can be observed that native application developers create 20% of all mobile applications. The remaining 80% of Applications are created by mobile application developers who started their Business before the introduction of the iPhone in 2008 and worked in industries such as media or traditional video gaming. In conclusion of these figures, one fifth of all mobile application developers work in ventures that were founded after the introduction of the iPhone in 2008 and hence in 2011 were in the business for three years or less.

#### **6.3.4.3. Business Models**

Woodridge (2010) distinguishes between nine different ways to generate revenues for mobile businesses. Two of these business models are predominant among native application developers. These two dominant business models are 'pay-per-download' and 'Freemium'.

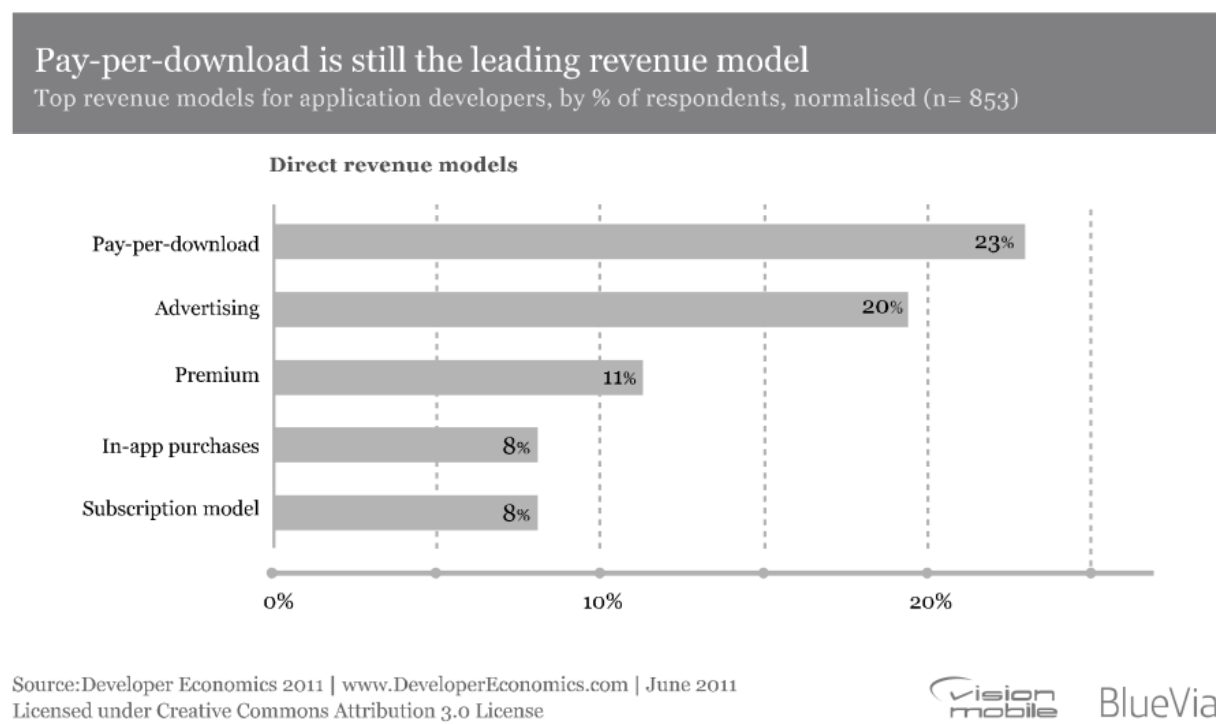
In the pay-per-download-model the developer charges a fee for each download per user. In most cases the mobile application is purchased through a digital distribution platform and the revenues are shared at a predetermined ratio between the operator of the platform (e.g. Apple or Google) and the application developer. The predetermined ratio in the Android Market and Apple App Store is 70% for the application developer and 30% for the operator of the digital distribution platform.

In the Freemium-business model the download of the basic mobile application is free of charge. Revenues are generated through other means such as advertising, in-app-purchases or the purchase of a premium version of the application.

In the in-app-purchase business model the user can use the basic version of the application for free, but can buy digital goods for real money or skip a level for a certain price.

In the advertising business model the download of the application is free, but a certain space on the display is sold through an advertising network. When the application is used, advertisement is displayed. The revenue for the developer is determined by the total number of page impressions when the application is used. In the premium model, the basic version of the Mobile Application is free, but special features are charged with a price. In the last Freemium-model, which is called subscription model, users pay a monthly fee for unlimited access to all content. This model is popular among media applications.

The importance of each of the different business models in terms of adaption by developers is shown in graph 9 below (VisionMobile, 2011).



**Graph 9 Visionmobile (2011):' Pay-per-download is still the leading revenue model'.**

It can be observed that the Pay-per-download-model is the prevailing source of revenues for developers, followed by the advertising and premium models. The future trend according to VisionMobile (2011) is a shift toward In-App-Purchases, especially in Mobile Games. Flurry (2011) estimates that 65% of the revenues of the top 100 games in the Apple App Store are generated through Freemium-business models, mostly in-app-purchases. Since Games represent

the most important mobile application category in the Apple App store generating 45% of revenues (VisionMobile, 2011), this is certainly an important trend.

### **6.3.5. Digital distribution platforms**

#### **6.3.5.1. Introduction**

A digital distribution platform for mobile devices is a software platform that enables the purchase and/or the download of software applications for mobile devices. A distinction has to be made between native and third party platforms. Platforms that are native to a particular operating system are operated by the provider of the operating system, whereas the other type of platforms is operated by third parties.

#### **6.3.5.2. Operating system native platforms**

There are six major OS native platforms that are still operating in August 2011. The six different platforms with their respective installed base and available applications are displayed in graph 6 above. These are the Ovi Store (by Nokia, covering Symbian, Java, Series40), the App Store (by Apple), the Android Market (by Google), the App World (by RIM) and the two smallest players Windows Phone and Palm/HP's App Catalog.

It can be seen that Nokia's Ovi Store, covering Symbian, Java and Series40, is by far the biggest platform according to its installed base, followed by Apple's App Store and Google's Android Market. However, according to the number of available apps, the Apple App Store is the biggest, followed by the Android Market. RIM's App World, Microsoft's Windows Phone Market Place and Palm/HP's App Catalog play a minor role according to both metrics. In the following, a short overview of the different platforms will be provided, followed by a comparison between them.

Nokia created the brand Ovi to gather all its internet services under one brand in 2007. The Ovi Store was launched in 2009 to offer applications for mobile devices for multiple platforms, including Symbian, Java, MeeGo and Maemo. As most other digital distribution platforms the Ovi store allows third party developers to sell their apps through the store with a 70% cut per sale for the developer. In June 2011 the Ovi Store has reached a total amount of 1.8 billion downloads, the daily number of downloads reached nine million in August 2011 (Symbian-freak, 2011). Although Nokia has decided to switch its primary operating system to Microsoft's Windows Phone 7 the Ovi Store will remain in operation for users of older and current phones. However, it can be foreseen, that the importance of the Ovi Store diminishes which is already reflected in the relatively small amount of apps available in the store today.

Apple launched the App Store through an update of its music software iTunes in July 2008. In addition to the previously offered music in the iTunes store, the users were now able to download applications for their mobile devices, the iPhone and the iPod Touch. In the beginning, the store contained 500 apps, by November 2009 there were more than 100,000 apps

and in October 2011 the App Store reached the mark of 500,000 available apps. The number of downloads from the store rose with the same speed: After the first weekend 10 million apps were downloaded, in April 2009 the mark of one billion downloaded apps was reached and by October 2011 more than 18 billion apps were downloaded. Commercially the App Store is by far the most successful digital distribution platform: With total revenues of 1,782\$ million in 2010 it generated more than ten times the revenues of the second most successful, the Blackberry App World with 165\$ million (Appleinsider 2011).

Google started the Android Market in October 2008 with 167 apps, initially without support for paid apps. The number of available apps increased to over 100,000 in September 2010 and cracked the mark of half a million available apps in September 2011.

### 6.3.5.3. Comparison

Graph10 below provided by Visionmobile (2011) shows key attributes of the four biggest digital distribution platforms by Google, Apple, Nokia and Blackberry (RIM) and how developers perceive these platforms.



Source: Developer Economics 2011 | [www.DeveloperEconomics.com](http://www.DeveloperEconomics.com) | June 2011  
Licensed under Creative Commons Attribution 3.0 License

Vision mobile BlueVia

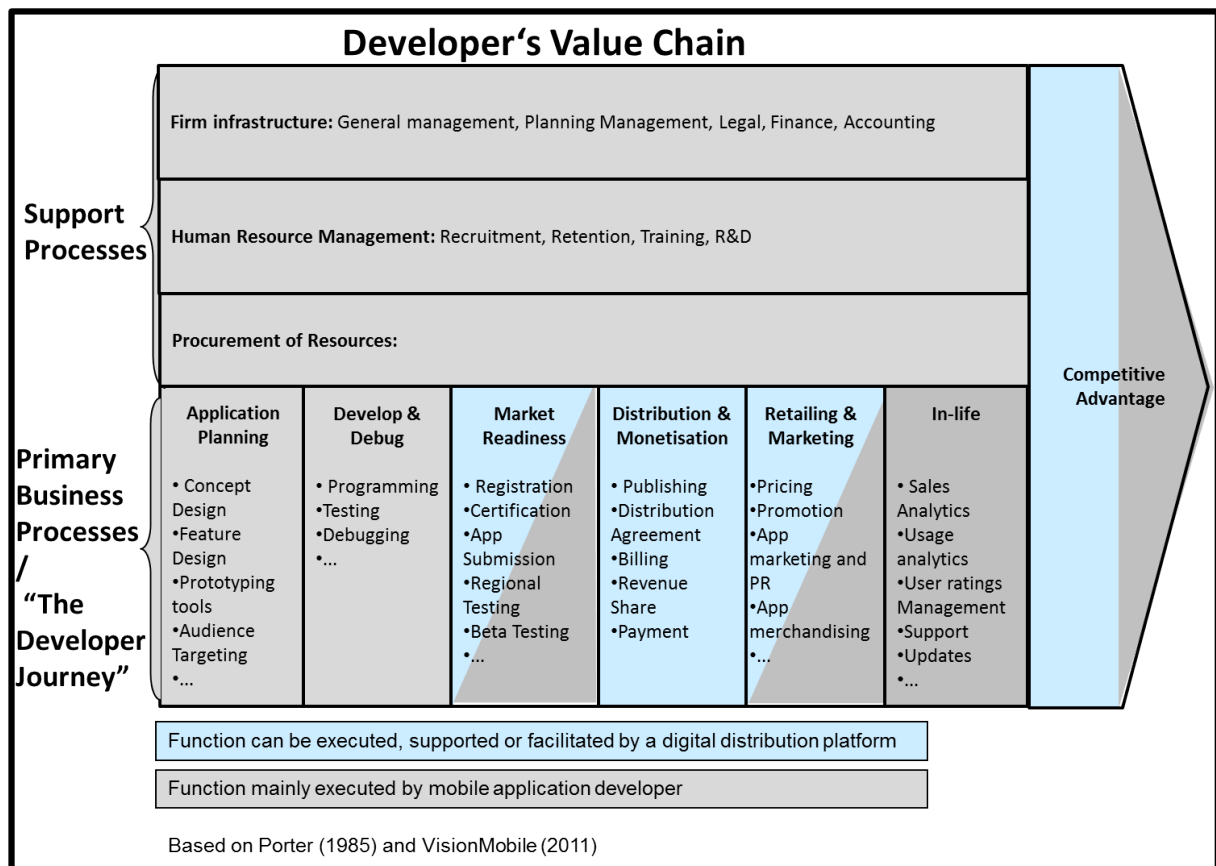
**Graph 10 Visionmobile (2011): 'Not all app-stores are created equally'.**

It can be observed that the Android Market has received a positive rating for the fast and uncomplicated submission process, the certification cost and process and the application update process. The Apple App Store has received a below average rating from more than 25% of respondents for the submission process and the promotion options. Developers often criticize that the submission process is not transparent and often takes too much time (Visionmobile

2011). On the other hand the Apple App Store offers good pricing options, the highest revenue potential and a good application update process. The Ova Store is perceived positively with regards to its certification cost and process and the pricing options that are available but negatively with regards to the application update process.

#### 6.4. Internationalization through Digital Distribution Platforms

In the following, the internationalization via digital distribution platforms will be described and classified. The paper thereby intends to draw a connection between the different internationalization modes described in chapter 2.3. and the actual international sales and distribution of mobile application developers. The goal is to determine the internationalization mode represented by selling applications through digital distribution platforms. Understanding the considerations and characteristics of this particular internationalization opportunity is a prerequisite for this paper's quantitative and qualitative analysis.



Graph 11 own creation (2011): 'The Developer's value chain', based on Porter (1985) and Visionmobile (2011).

Graph 11 above displays the typical mobile developer's value chain. It summarizes two concepts: (1) the activities of a mobile software development firm based on the 'developers journey' as described by Visionmobile (2011), and (2) the value chain as described by Porter (1985). The activities are presented in two colours, with activities in blue representing the activities that can be facilitated, supported or executed by digital distribution platforms and activities in grey

marking those that are executed by the developers. All activities that can be managed jointly are marked in grey-blue.

It can be observed that the support processes are executed solely by the mobile application development firm and include general management, planning, finance, human resources and procurement. The primary business processes, divided here into six stages in reference to the 'developer journey' (Visionmobile 2010), show different patterns and require a closer analysis. The application-planning phase includes processes such as the conceptualizing of the design and the features, prototyping and selecting a target audience. It is followed by the developing and debugging phase where the programming, the testing and the problem fixing takes place. This phase could be described as the 'production' of the application. It is followed by the third phase, called market readiness, where the mobile development firm gets in touch with the digital distribution platform for the first time. It includes processes such as registration at the platform (in case it is a new developer), certification, and submission of the application, regional testing and local adaption as well as beta testing with a limited number of users. During this stage the developer also has to decide in which countries to publish the app. After this phase follow distribution and monetization. This process is mostly managed by the digital distribution platform and includes the publishing and distribution, which consists of making the application available for download, as well as billing and payment. During the process of submitting and publishing of the application, the developer also agrees to the terms and conditions of the distribution platform defining the revenue and conditions of payment, mostly on a monthly basis. Once the application is available for download, the developer has reached the next phase called retailing and marketing. It consists of processes like pricing, promoting and advertising the application. Both developer and platform can jointly manage this phase. The distribution platform offers app-store marketing such as featuring the application in a certain category. Developers furthermore can complement these activities by investing in online marketing or traditional media. When the application is up and running, the in-life phase has been reached, during which the sales are monitored and analysed, user ratings are managed, support is provided to users and updates are published in order to fix bugs or adjust the applications to the changing customer needs. These processes are mostly executed by the developer through the infrastructure provided by the distribution platforms. To conclude, the joint effort of developer and distribution platform determine the success of an application, to which the developer contributes the internal processes and the digital distribution platform its global reach.

As described above, the most important role of the digital distribution platform in the developers' value chain is to distribute and monetize applications. The platforms handle this process for the mobile applications in the developer's home market as well as in all international



markets selected by the developer. Therefore the mobile application developers export their products with the help of international distributors, the digital distribution platforms.

This international market entry mode can be classified as indirect export, with mobile applications being distributed through intermediaries in form of digital distribution platforms. Hence, the typical characteristics summarized in the eclectic framework by Hill et al. (1990) apply: Digital distribution platforms offer internationalization which requires low resource commitment of developers and leads to low level of control and a high risk of dissemination. However, the risk of dissemination is lowered through licensing agreements that grant the developers the ownership and intellectual property rights in their applications. The iPhone developer program license agreement for example states: "The parties acknowledge that this Agreement does not give Apple any ownership interest in Your Applications." (Apple 2011).

## **6.5.Conclusion**

The telecommunications industry is undergoing significant changes. With the introduction of smartphones, the competitive advantage in the telecommunications universe is moving from OEMs and telecommunications operators to software firms in form of developers of mobile operating systems and mobile applications. The growing business opportunity for mobile application developers leads to high market growth and hence a significant number of new ventures in this field.

The entrepreneurial environment of the mobile application industry makes it interesting for research in entrepreneurship. Low market entry barriers, non-existing distribution costs and access to global digital distribution platforms make the industry particularly interesting for Born Global research. Digital distribution platforms offer developers the opportunity to internationalize through indirect export. This entry mode is characterized by low resource commitment, low control and high dissemination risk. Nevertheless, developers are still in control of marketing and technology development. Furthermore, depending on the chosen monetization model, developers can also stay in control of the revenue generation.

## **7. Methodology**

### **7.1.Introduction**

This paper engages in a mixed method approach by having both a quantitative and a qualitative analysis method. Reasons for the mixed method approach are the complementary characteristics of these two methods, which fit the complex research topic of this paper. A quantitative analysis is suited to analyse extensive data sets and hence offers results, which in many cases can be generalized for an underlying research population. Rather than providing ground-breaking, in-depth insights, quantitative analysis is typically suitable to test objectively defined hypotheses. This is exactly the case for H1.1: Born Globals exist among mobile application developers. A qualitative analysis however complements the generalizability of the quantitative method by enabling in-depth research on contexts and complex relationships. The samples are smaller and typically lead to exploratory rather than generalizable results. In consequence, the qualitative method is suitable to explore H1.2: The behaviour of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research.

As a result of the mixed method approach, the methodology section is divided into two parts: quantitative and qualitative methodology. In order to maintain an intuitive structure, the quantitative and qualitative methods will each be presented in separate parts. Even though both methods are relevant for this paper's research design, the qualitative analysis constitutes the main contribution of this paper. As a result, the analysis of the qualitative research is handled as a separate point. Before the presentation of the respective part, the research design and research population will first be presented, as these parts apply to both methods.

### **7.2.Research Design**

In the following the research design of this paper is presented. It explains how the research questions are approached and answered. As already stated, the research question consists of two hypotheses, namely H1.1: Born Globals exist in the mobile application industry and H1.2: The behaviour of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research.

Quantitative and Qualitative data analysis are used to answer the research question.

The secondary data for the quantitative analysis is provided by the mobile application research company xyologic and contains information about the 150 most successful mobile applications for Android and Apple's iOs for July 2011 in the USA. The quantitative analysis of the secondary data is conducted in order to answer hypothesis one which states that the Born Global phenomenon exists among mobile application developers.

The primary data for the qualitative case study is collected from multiple sources. In four of the five cases, semi-structured telephone interviews took place. Additionally, research articles and company material like the respective homepage were studied. For the fifth case study of Rovio, prior interviews, research articles and online resources served as source of information. The qualitative case study analysis is designed to answer the second hypothesis about the internationalization patterns of mobile application developers who also classify as Born Globals according to definition.

### **7.3. Research Population**

The aim of this paper is to answer the two hypotheses mentioned above. The population targeted comprises all native mobile application developers. As stated earlier in this paper, there existed at least 43.000 mobile application developers (number of developers for the Apple app store) in July 2010. 20% of these developers are native application developers, meaning that they started their business with the goal to produce primarily mobile applications. Taking these figures, the research target of native app developers consists of at least 8600 mobile application developers worldwide. Due to constraints in time and complexity, this paper limits its research to a small sample of the total population. Implications for the reliability, validity and generalizability of this approach will be discussed in the respective method-sections.

## 8. Quantitative Data Analysis

### 8.1. Method Choice Explanation and Sample description

A quantitative analysis of secondary data is used in order to analyse and answer the first research hypothesis.

The first hypothesis states that Born Globals exist in the mobile application industry. Therefore the quantitative analysis analyses two data sets to determine, whether or not some of the developers represented in the data set classify as Born Globals. The necessary characteristics included in this paper's Born Global definition as presented earlier are: (1) independence, (2) activities in more than five international markets, (3) more than 25% of turnover generated abroad (4) within three years after inception.

The secondary data set provided by xyologic consists of data on the 150 most downloaded paid mobile applications for Android and Apple's iOs in the USA in July 2011. The data set can be classified as multiple source secondary data, meaning that it combines information originally derived from different sources. Xyologic regularly publishes reports analysing the mobile application market in a certain country, differentiating between the Apple App Store and the Android Market.

The data set analysed consists of two tables of the 150 most downloaded paid mobile applications for Android and iOs. The original tables contained the following information: Application type (Game or other), Category (such as productivity, social, weather, media), number of applications published by the same developer, monetization (paid or unpaid), price in euro, free period (whether the application was ever offered for free), localization (whether 50% of the application are downloaded in one country) and number of downloads.

The original data set described above was further extended by the following information: founding year, independence and availability in more than five countries. This information was gathered from publically available resources such as the companies' websites. The tables with the original data sets can be found in the Appendix.

The reason for choosing the data set as opposed to a random sample or a sample representing another country can be explained by five arguments:

First, mobile application developers who created one of the 150 most successful applications in a country are expected to be generally more successful than other developers and are thus expected to have a higher probability of meeting the "Born Globals" criteria. This conclusion is intuitive and not backed up by data. Second, the USA represents the biggest market for mobile applications in the world. 34.4% of all iPhone app-downloads and even 42.3% of all Android application downloads in September 2011 took place in the USA, representing the biggest application market worldwide. Third, Android and iOs together represent the two biggest digital

distribution platforms worldwide (xyologic 2011d). Fourth, paid-apps have been chosen because this business model guarantees revenue streams and because it makes revenue a point of comparison since the revenue sources are identical (downloads). Fifth, July was chosen as time of reference because it is the most up-to-date information available and hence represents best current developments. In conclusion, it can be said that the described sample is more relevant for the research question than other samples.

## **8.2.Discussion**

In the following, the reliability and validity will be discussed. Reliability refers to the extent to which the data shows consistent findings that are repeatable. Reliability is reached when the measure leads the same result on other occasion, observations would be similar by other observers and the interpretation process of the raw data is transparent. Reliability can further be divided into an internal and external component. External reliability is reached when others can replicate the research. Internal reliability is reached if the entire research team interprets the data in the same way (Saunders et al. 2007).

It can be argued that external reliability is reached, as the data is provided by a research company aiming at providing reliable data. In conclusion, the same table could be replicated by others, as all criteria are objective and derived from data which is publically available. Internal reliability is also reached, since the different criteria are all defined objectively and the findings supported by facts, which leaves no room for individual interpretation.

Validity refers to whether findings can be generalized to the entire research population (Saunders et al. 2007).

In this particular case, validity refers to whether the data is representative and hence is suitable to answer hypothesis one. An explanation regarding the suitability of the Android and iOS market, particularly in the USA, has already been stated above. Nevertheless, the data only comprises the 150 most successful applications in one month, whereas the entire research population consists of 8600 developers. As a result, the derived results are valid in the sense that they serve to indicate whether or not the Born Global phenomenon exists among mobile application developers. The exact share of Born Globals among the application developers of the underlying sample however cannot be generalized to apply to the entire research population.

## **8.3.Research approach**

In order determine whether the application developers of the data set can be classified as Born Globals, they need to fulfil four criteria: (1) independence, (2) presence in more than 5 countries, (3) generating more than 25% of revenues abroad, (4) within three years after inception.

The first criterion, 'independence', means that the publisher of a certain app operates mainly in the mobile software business and the published app is not only an extension of another core business activity. Examples for app developers that are not classified as independent are Electronic Arts or the NHL. The information regarding independence was added to the original data set by researching about the respective mobile application developer online. Most common sources for the information formed the homepage of the developer or other publicly available sites such as linkedin or xing.

The second criterion of 'international presence in at least five countries' was added to the original data set. The data was derived by checking whether the applications had downloads in at least five countries. Countries controlled include USA, Germany, Canada, UK, France, and Japan.

The third criterion of 25% of revenues generated abroad was already included in the original data set. The criterion in the data set is even stricter, as it demands for 50% of revenues generated outside a country. Due to restrictions in information, the original classification of the data set will be used even though it limits the amount of suitable companies.

The fourth criterion, demanding for internationalization within three years was added to the original data set by including the criterion 'founding year'. Only companies founded in 2008 or later were considered as potential Born Globals. This criterion is valid, but very strict, as it excludes companies founded before 2008 which are nevertheless able to fulfil the criteria. Reason for the strict selection is information constraint regarding international activities and revenues for business years other than 2011.

In conclusion, the criteria examined are objective and rely on data which is publically available. It has to be stated however that due to the design of the original data set, the final criteria are even stricter than the ones inherent in the definition of Born Globals in this paper. As a result, it can be argued that the share of Born Globals among the mobile application developers in the underlying sample might still be higher.

## **8.4. Analysis results and conclusion**

The analysis of the data set leads to the following results: The 150 most downloaded paid applications the USA in July 2011 were developed by 135 different mobile application developers in the Android Market and 110 different mobile application developers in the Apple App Store. For these mobile application developers, the additional data required to complete the data set was available for 73 (54%) in the Android Market and 68 (61%) for the Apple App Store. Out of these developers, 35 (48%) in the Android market were founded in 2008 or after and 31 (46%) in the Apple App Store. Out of these developers who founded their business in or after 2008, 23 (66%) in the Android and 29 (94%) in the Apple App Store can be classified as

Born Globals. In summary, out of all examined mobile application developers, 32% in the Android Market and 43% in the Apple App Store are Born Globals.

It can be concluded that first hypothesis (H1.1.) is confirmed with the result of this quantitative analysis, Born Global” exist in the mobile applications industry. In the sample, an average of 37.5% of examined mobile application developers can be classified as Born Globals.

## **9. Qualitative Analysis of five Case Studies**

### **9.1. Method Choice Explanation and Sample description**

A qualitative analysis in form of five case studies aims to address and answer H1.2: The behaviour of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research.

Case studies present a suitable research method to examine contexts and understand complex interrelation. Case studies involve empirical investigations of a phenomenon within its real life context. The ability to explore and understand is not as limited as with a survey. Data sources for case studies can be interviews, questionnaires or documents. The use of more than one source of data increases validity and reliability. Multiple case studies are preferable, if the research population cannot be represented by one case (Saunders et al. 2007).

In order to compare the internationalization pattern of Born Globals among mobile application developers with the pattern of regular Born Globals, the case studies are analysed in regard of the determinants of Born Globals presented earlier in this paper. Since the usual characteristics of Born Globals along these determinants are available (Pock 2010), the case study analysis results can hence be compared to regular Born Globals. As explained earlier, the Born Global determinants can be split into the three groups of organizational, strategic and environmental determinants and will be explained in more detail in 9.5. This paper presents and analyses five case studies in order to answer the second hypothesis. Reason for the choice of multiple case studies in this paper is the complex and diverse internationalization process of mobile application developers. Furthermore, the choice of a multiple case study design allows the presentation of several typical developer profiles.

The mobile application developers presented in the case studies come from different geographical regions namely USA (2x), Spain, Germany and Finland. Due to physical distance, telephone interviews were used as means to gather most of the information presented in four of the five case studies. The fifth case study is based on secondary data due to limited access to company contacts. The telephone interviews were semi-structured and based on a guide of 20-30 questions which can be found in the appendix. The interviews were conducted in English or German, no linguistic difficulties were experienced. The duration of the interviews lasted from 45 minutes to 90 minutes. In order to overcome the lack of personal contact and hence to guarantee that the participants trusted the interviewers, prior correspondence via email was used, during which each participant was provided a confidentiality agreement and background information about the aim and methodology of this paper. The order of questions varied depending on the flow of the conversation and the person interviewed. The fifth case study is based on secondary data in form of interviews available online, articles and internet-pages.



## 9.2.Discussion

The choice of multiple semi-structured interviews is controversial. The advantage of using a semi-structured approach is that depth and significance can be added because the interviewee is able to ask clarifying questions and gets the chance to answer questions that are more open and hence ensure that no relevant information is neglected. The drawback of semi-structured interviews for multiple case studies can be data quality issues. A lack of standardization among the case studies may lead to a lack of reliability (Saunders et al. 2007). However, the general aim of case studies is not to offer exactly replicable results but to provide insights into specific cases. The goal of the case study analysis is, as already stated, to examine whether the internationalization process of mobile application developers who classify as Born Globals follows the same determinants as typical Born Globals covered in research. This hypothesis is qualitative and does not request a statistical result but an assessment whether a difference in the internationalization process exists at all. Therefore, multiple case studies based on semi-structured interviews can be concluded to be suitable for the research aim. In conclusion, the chosen qualitative research method possesses limited reliability. Validity is reached to the extent that the results are experiential and indicate a specific direction for the classification of mobile application developers rather than a fully-approved model.

## 9.3.Research approach

The case studies will first be presented in form of two-page-company profiles. In a next step, the five case studies will then be analysed according to the key determinants of Born Globals stated earlier.

## 9.4.Case Study Presentation

### 9.4.1. Rovigo Case Study

**Business Model.** Rovio is an “entertainment media company” (Rovio 2011), founded in Finland in 2003. Rovio is known for being the creator of the globally successful mobile application *Angry Birds*. Before publishing *Angry Birds* in 2009, Rovio developed several successful games for large, international game publishers on different platforms (Rovio 2011). Rovio is not a native iPhone Developer, but as shown has worked in the digital gaming industry before. The monetization model of the *Angry Birds* mobile application on the dominant distribution Platforms is either ‘pay per download’ (Apple App Store) or ‘ad-supported’ (Android). Rovio claims that the target group of the *Angry Birds*-game covers multiple segments and shows to geographical differences (juancarlosanezfermin 2001).

**Revenues.** In 2010, Rovio generated revenue of USD 50 mio. to USD 70 mio which came from the two sources app-sales and franchising (Business Insider 2011). Rovio’s home market

Finland accounted for 0.75 % of worldwide Angry Birds downloads on the iPhone (xyologic 2011), which allows to conclude that Rovio generates revenues mainly in foreign markets.

**Organization.** Rovio, which started with 12 employees in 2003, plans to have 200 employees at the end of 2011 which are all based in Rovio's sole office in Espoo, Finland (Zeitgeistminds 2011).

**History.** Rovio describes itself as an "overnight success that took a couple of years to build" (Zeitgeistminds 2011). In 2003, the company was founded after the later CEO and CTO had won a game competition, which was partly organized by the later CMO. It operated first under the name Relude, but was changed to Rovio Mobile in 2004. From 2003 until 2008, the company mainly developed games for international publishers such as EA and Real Networks. At the end of 2006, Rovio was almost bankrupt and cut down staff from 50 to 12. The turning point came when the iPhone was released. Rovio continued working for big game publishers, but in parallel invested in creating mobile games for the iPhone. In March 2009, Rovio first had the idea for its application Angry Birds, and developed the application for eight month until publishing it in December 2009. The application only reached a big audience after being promoted on the front page of the App Store. Three days after, Angry Birds was the most downloaded App. Angry Birds has become the most downloaded iPhone Application in 68 countries. In March 2011, Rovio raised 42 million USD from investors to enter new markets and build the brand. Also, it changed its name from Rovio Mobile to Rovio Entertainment. Rovio's game is to reach one billion downloads by the end of 2012 (Perloth 2011).

**Products.** Rovio so far has released three Mobile Applications, which all fit to the Angry Birds brand: Angry Birds, Angry Birds Rio, Angry Birds Seasons (Rovio 2011). Rovio states that the focus on one successful app and its full exploitation is different to other game developers, who publish multiple, independent games (Perloth 2011). Publishing first the Angry Birds-application in the digital platforms of Apple and Android, Rovio now adopted a Tetris Strategy, expanding across multiple platforms. Angry birds hence is no longer just a mobile game. The strategy is to grow the Angry Birds brand further across all platforms in order to create new revenue sources. Angry Birds still makes most money from app sales, but the revenues from merchandise and advertising are growing and soon will contribute equally (Olson 2011). As a result, Rovio defines its market as "entertainment", not mobile gaming (HPStartupCentral 2011). Rovio furthermore does not localize its mobile applications; the design is purposely light on text and language and focuses on characters and graphics. The total number of downloads until November 2011 accounted for 29.700.000 (xyologic 2011). Rovio does not have a specific target groups. It claims that games can expand in markets and target users of all ages (juancarlosanezfermin 2011).

**Competition.** In March 2011, Rovio competed with 574.000 applications on the two biggest platforms alone (Apple, Android) until March 2011 (visionmobile 2011). Rovio describes the situation especially in the Apple app store as very competitive (Motorolamotodev 2011).

**Marketing.** Rovio does not invest in standard advertisement. It relies on word of mouth and hence has the number one goal to retain its users (Motorolamotodev 2011). Rovio states that one difference toward its competitors is that it engages more in direct dialogue with its users (Zeitgeistminds 2011). Rovio defines its main goal to generate fans and build the brand. Money-making is not seen as critical in the short-term, as long as audience is built around its brands (next video 2011).

**Management Team.** Rovio's founding team, as mentioned earlier, consists of Mikael Hed, CEO, Niklas Hed, COO and Peter Vesterbakka, CMO. Nobody in the team predicted the success to be so immense, but already during development the team had a feeling that Angry Birds would be more successful than previous games (Zeitgeistminds 2011). The leadership in Rovio has not changed because of Rovio's success. It is about 'getting stuff done', 'don't think, do'. Rovio believes that innovation happens when people do things they are not supposed to do (GoogleMobileAds 2011).

The management team sees the success of Angry Birds until 2011 only as the start, it has much higher ambition (GoogleMobileAds 2011).

**R&D.** Rovio tries to eliminate the luck-component for success in its games by building high quality games through a long R&D-process. All employees are gamers and assess the success of an idea by whether they themselves want to play it (HPStartupCentral 2011). Rovio spends more time on testing than on developing and hence can incorporate the feedback from users all over the world into its product (Motorolamotodev 2011). During the development and testing of the application, Rovio encourages the users of Angry Birds to give feedback.. The dialogue with the Rovio community is described as a key to success. Rovio claims that they still read every email, tweet and comment. In the Android store, Rovio even launched Angry Birds as a Beta-version first in order to improve it according to user-feedback (Motorolamotodev 2011).

**Networks.** Rovio intends to manage its whole value-chain internally. Initially, Rovio relied on the application distributor *Chillingo* for selling Angry Birds in the Apple App Store, but withdrew from this corporation in early 2010 (techcrunch 2010). In order to stay independent, Rovio also purchased a Finish animation studio in order to produce animations and a movie for Angry Birds (EUstartups 2011). Nevertheless, Rovio values networking and sees it as a long term investment, where initial contribution might only pay off after several years and in sometimes unpredicted ways (Aalto EE's profile magazine 2011).

**Role of Digital Distribution Platforms.** Before the opening of the Apple app store, Rovio found it difficult to develop successful games. In the absence of distribution platforms, developers had

to work with big game publishers and could not target their users directly. Rovio states that now with the emergence of App-stores, developers can gain instant access to distribution and hence interact directly with the user (t3nMagazin 2011).

**Born-Again-Global.** From its inception, Rovio has developed games for international clients and can hence be defined as Born Global. Nevertheless, Rovio itself postulates that the release of the first iPhone can be seen as a turning point for its company strategy. Only after the introduction of the iPhone did Rovio strive to create independent applications under its own name. This abrupt turning point due to the release of the iPhone fits the case of acquisition of technology and distribution rights in the Born-Again-Global-theory. Therefore, this paper's approach to regard Rovio as a native app developer can be regarded as valid in light of the Born-Again-Global-theory.

#### 9.4.2. LogMeIn Case Study

**Business Model.** LogMeIn is a US-based Software as a Service (SaaS) company, founded in 2003 in Hungary, which offers services such as remote access, data-backup and administration via the internet for devices such as PCs, Macs and Smartphones. Users pay for the download of the software that enables them to connect their devices via remote access without physically having to be at the same place as their device. Before the emergence of smartphones, LogMeIn offered its software excluding the option to access a device via smartphone.

**Revenues.** In 2010, LogMeIn generated revenues of USD 100 million, of which 70% are generated in North America and 30% stem from all other countries.

**Organization.** LogMeIn was founded by five people, eight years later in 2011 it employs 420 people in five offices, out of which 170 are based in Hungary, 120 in the USA and the remaining 150 are split between the three other office locations Amsterdam, London and Sydney.

**Company History.** LogMeIn was founded in 2003 in Hungary by the current CTO and CEO plus several engineers. The company emerged out of a research project in which the feasibility of a new remote connectivity technology was explored. The technology had been developed by the CTO in his freetime and should then be tested for its potential. After the successful research project, the CEO and CTO decided to set up a business, which was initially based in Hungary. In 2004, LogMeIn moved its headquarter close to Boston, USA and now regards the US as its home-market due to its leading role in technology development. In 2005, LogMeIn opened an office in Amsterdam to better be able to penetrate the European market. In 2007, the fourth office in Sydney was opened with the same rationale, e.g. to better be able to penetrate and serve the Asian market. Also in 2007, the fifth office was opened in London, because LogMeIn had many customers from the UK. LogMeIn is currently looking into opening a sixth office in Japan.

**Products.** LogMeIn targets business-as well as private customers. For each group of customers, LogMeIn offers 5 different software packages. The products differ in the amount of devices

which can be accessed; furthermore LogMeIn offers backup software and a solution via which IT-workers can access other devices to repair them. The customers need to pay an annual fee in order to use the software, for a limited period they can download a free trial version. One basic version of the software is permanently available for free. Out of the 14 different products, two involve smartphones: LogMeIn Ignition and LogMeIn Join.me.

**Competition.** LogMeIn differentiates between direct and indirect competition, with direct competition being other providers of remote access. The competitive situation among remote access providers is fierce, however also the indirect competition is growing, for example in form of cloud computing.

**Marketing.** LogMeIn is an online company, and therefore mostly invests in online marketing to enter and gain awareness in new countries. The basic free software and the possibility to test each software package is based on the rationale to attract new users. The mobile application LogMeIn ignition is also regarded as a tool to increase the customer base, since it is a low-price and high-volume product.

**R&D.** LogMeIn has centered all R&D activities in its R&D division in Hungary. LogMeIn continuously invests in R&D in order to provide its customers software updates and to stay ahead of trends. LogMeIn postulates to offer the most advanced remote software worldwide.

**Networks.** LogMeIn claims interest in improving its international network. With 420 employees in five countries, most activities in the value chain are kept in-house. Corporations with other companies mainly take place in the field of marketing. LogMeIn has agreements with the vendors of devices so that LogMeIn is preinstalled on some of them. Furthermore, LogMeIn corporates with national advertising firms when promoting new products.

**Role of Digital Distribution Platforms.** Smartphones, for which the software is distributed via Distribution Platforms, play a strategic role which is growing in importance. An increased percentage of customers get to know the products of LogMeIn through its mobile application. LogMeIn ignition has been downloaded 1.130.000 times until November 2011, for an average price of USD 29.99. LogMeIn states that the distribution platforms are a great opportunity to access a broader customer base with the goal to permanently retain them. In relation to total revenues, LogMeIn regards its mobile applications as significant and growing value contributor. In August 2011, less than 50% of total revenues were generated via mobile applications. The contribution of mobile applications is rising in 2011, with a growth rate of 20% (xyologic 2011b). LogMeIn is convinced that digital distribution platforms make it easier to internationalize. It regards the distribution platforms as ecommerce engines that facilitate worldwide distribution. LogMeIn mainly regards distribution platforms as an opportunity, mentions however that the handling of internationalization via such a platform has the disadvantage of lost control over price and operations.

#### 9.4.3. Yuilop Case Study

**Business Model.** The core product that yuilop offers is a mobile application for iOS and Android that enables users to send messages for free. It integrates all different kinds of text messaging systems such as cell phone text messages, chats, facebook mails etc. into one app. The competitive advantage with regards to similar services such as Whatsapp is that text messages can also be sent to regular phones, i.e. the application is not required to receive the text messages. The app is for free and the monetization is achieved through in-app-advertisement. The ad-space is sold through mobile add networks as well as to direct business clients. The billing works in a similar way to web advertisement: customers are billed based on the number of page impressions in the app.

**Revenues.** The revenues in the founding year 2010 were zero since the company was only founded in November and are expected to reach 1 million € in 2011.

**Organization.** The 18 employees of the company are located in two different offices. In the headquarter in Barcelona all business related activities such as general management, marketing, sales, customer support, community management etc. are located. A second office in Valencia congregates all the R&D activities and is hence responsible for the technical aspects.

**History.** Jochen Doppelhammer, Antonio Brusola and Julian Moreno Beltran founded Yuilop in Barcelona in November 2010. The first application for the Android platform was launched in Germany in spring 2011 followed by a version for iOS during the summer. According to Techcrunch (2011) the enterprise received 1 million € seed funding from venture capitalist Nauta Capital in March 2011.

**Internationalization Process.** The internationalization began with the launch of the first application in the German market. Several months after that the application was launched on the yuilop's home market Spain. The international rollout is planned to be executed through a twofold strategy.

One is the successive rollout of applications country-by-country with the full service. The countries to enter first are chosen based on two criteria. The first criterion is the business opportunity that the market represents, which depends on things like the size of the country, the smart phone penetration rate and the mobile advertising market. The second criterion is the regulatory circumstances with regards to the telecommunications industry. Since the national telecommunications markets are often highly regulated the laws and regulations represent significant entry barriers. Based on these criteria Germany, the UK and France are the most important markets in Europe, and the two missing ones are planned to be entered in 2012 along with at least three other European countries.

The second strategy is the launch of a global version of the application that includes limited functionality and only very limited local adaption. It is going to be launched in the end of 2011.

The goal of the internationalization process is not necessarily to be present in as many countries as possible but rather to be market leader in the countries that were chosen.

**Products.** Yuilop only offers the one mobile messaging application described earlier.

**Competition.** In the broadest definition yuilop's competition can be defined as all companies that offer mobile messaging products. In a more narrow definition it would be mobile communication applications that integrate different platforms into one messaging system and allows users to send messages for free. This segment is currently being developed by numerous new ventures such as GroupMe, FastSociety, Rabbly or most successfully Whatsapp as described by Techcrunch (2011). However none of these products include free text messages to regular phones, which can be regarded as yuilop's unique selling proposition. And although one American competitor with a similar business model has entered the German market recently the competition can be regarded as low.

**Marketing.** Yuilop uses several channels in order to market its apps. However, as a start-up with limited financial resources a focus is placed on online marketing as well as social media marketing. It is estimated that with every user that is "bought" through mobile- or online-advertisement one is acquired virally, a ratio that yuilop intends to raise to 1 to 5. Additionally, in-app-store search engine optimization is a growing trend that needs to be invested in in the future in order to distinguish the own app among the thousands of other applications available and acquire users.

**Management Team.** Jochen Doppelhammer is co-founder and CEO of yuilop. Before starting yuilop in 2010 he had worked for management consulting firms as well as telecommunications companies for 14 years and had gathered extensive international experience. His co-founders Antonio Brusola and Julian Moreno Beltran are both from Spain and have gathered a lot of experience in the Telecommunications industry prior to starting yuilop as well.

**R&D.** Research and Development plays a very important role in the yuilop's business. Because of the short product lifecycle in the fast moving software and telecommunications industry it is regarded as important that the R&D department is in close contact with marketing and other business related functions and will therefore not be outsourced or moved to a cheaper location.

**Networks.** Yuilop is embedded into a strong international network, which is the result of the founders' prior business activities. The international network is regarded as highly important, especially for attracting potential investors, international top talent and advisors. Contacts in other international companies are valuable and are used to acquire expertise, test business models and deal structures and open up business opportunities. In this context the founders regard the weak links in the network as especially important. The proactive growth of the network is very important to the managers, especially into regions and functions that are not covered by the founders' own expertise e.g. mobile advertising.

**Role of Digital Distribution Platforms.** According to yuilop the digital distribution platforms facilitate the distribution of the application but a lot of additional effort has to be undertaken in order to make it successful, since the application is not monetized through the platforms.

#### **9.4.4. Coupies Case Study**

**Business Model.** Coupies' central product is a location based service application for mobile couponing that replaces the traditional sheet of paper (coupon) with a smartphone. It is available for Android, iOS, Java, Blackberry and Windows mobile. Users of the application can see what kind of offers is available close to their current location, search for particular items or browse through lists of coupons organized in categories. Businesses can use the application to reach their local target audience and promote their products. For redemption in store the coupon is either read on the screen of a smartphone or scanned.

The business model is a B2B concept where the advertisers pay either when a coupon is redeemed, through a pay-per-click model, a fixed monthly rate or a hybrid version between these forms. The download of the app for users is for free.

**Revenues.** Since coupies is a privately held company and is currently engaging in negotiations with potential investors, revenues are not public.

**Organization.** All operations are centralized at the headquarter in Cologne. The licensees abroad run their operations independently in their respective markets.

**History.** The idea for Coupies was the result of a university project of one of the founders. A team of three entrepreneurs founded the company in 2009 in Cologne, Germany. During the first year the team was complemented with two additional founders. One Business Angel provided an initial funding.

**Internationalization Process.** In the beginning the business idea was focused on the German market but the international perspective was added when the founder team was completed. Business contacts in Asia were interested in licensing the software so that Hong Kong, Macao and Indonesia were entered through licensing agreements. In the same way Spain and Switzerland were entered afterwards. Since the international operations just started revenues from outside Germany are still below 10% of total revenues. So far the markets were selected based on an opportunistic approach: Since the limited funds of the start-up do not allow organic growth into the most attractive markets, licensing agreements were chosen when coupies was approached by entrepreneurs in other countries. Adaption of the application to local demands is kept to a minimal level and usually consists of translation of the language only. One exception is China where a different brand name and colours are chosen to avoid negative local connotations.

**Competition.** In the broadest sense all kind of couponing products have to be regarded as competition, including traditional paper coupons and web-based coupons. In this case the competition would be relatively high. However, in a more narrow definition only mobile



couponing solutions would be regarded as competition. In this area only very few firms exist so far. In Germany for example the only real competitor is a company called “getting” that is supported by the mobile operator E-Plus.

**Management Team.** The coupies founding team consists of the five entrepreneurs Felix Schul, Felix Gillen, Thomas Engel, Frank Schleimer and Marc Eisleben (coupies 2011). Felix Schul and Felix Gillen have a degree in business informatics and started the company after finishing university. Felix Schul is responsible for the development of systems and processes and Felix Gillen is responsible for operations and business development. Thomas Engel has extensive experience in the fields of public relations and communications and has consulted several big companies with regards to their communications strategy before joining coupies. He is responsible for Marketing and Public relations. Frank Schleimer has been working for 12 years for a management consulting firm and has gathered a lot of international business experience during that time. He is now responsible for investor relations, business development and key account sales. Mark Eisleben is an experienced software developer and is responsible for the systems- and server development at coupies.

**R&D.** R&D and product responsibility remain local in Cologne.

**Networks.** The personal networks of the management team play a very important role for coupies, especially with regards to internationalization. The first license agreements in Asia were established through contacts of the founders and would not have been possible without the network.

**Role of Digital Distribution Platforms.** Digital distribution platforms play an important role for internationalization offer good steering opportunities and easy distribution. The application can be launched in other countries with one click and no additional infrastructure is required.

#### 9.4.5. Teslacoil Case Study

**Business Model.** Teslacoil Software develops mobile apps for the Android platform and commercializes them through the Android market, the Amazon app store as well as the own homepage. Three of the five apps are monetized through a pay-per-download model and two of the apps operate with in-app-advertisement.

**Revenues.** The exact revenue figures are not published. Xyologic (2011) estimates that the revenues generated with paid apps amounted to 8,000€ in August 2011. Since the revenues are mainly generated with paid apps it can be estimated that the annual revenues amount to ca. 100,000€ in 2011. The international split of revenues is displayed in the graph below.

**Organization.** The founder Kevin runs Teslacoil Software on his own, and develops all the products himself.

**History.** Kevin was interested in computers and programming ever since high school. After finishing his bachelor’s degree in Electrical Engineering he graduated from University with a

Master in Computer Engineering. His first job was to program web based software where he learned a lot but he claimed that the product was not interesting to him. In the evenings he started playing around with Android and started generating revenues with his applications. At first he saw it as a hobby and did not expect it to be his primary job. But when he started making enough money he decided to make it his fulltime job.

**Internationalization Process.** Teslcoil Software launches all of its applications globally at the same time. The most important market is the USA with 42% of all downloads, followed by Japan (9.3%), South Korea (5.2%), United Kingdom (4.9%) and Germany (4.3%). Local adaption is only made through a translation of the apps and the description in the app store into about twenty different languages.

**Products.** Teslcoil Software has developed four main applications. WidgetLocker is the most successful app that accounts for the major part of the revenues. The app consists of a highly customizable lock screen replacement that allows users to place widgets, application shortcuts, and custom sliders on their lock screen. QuickSSHd is an easily useable SSH server for the Android platform. It allows a computer to connect to an Android device for remote access or file transfer. TeslaLED is an LED flashlight app and widget that allows users to use the camera flash as a flashlight. HomeSmack is constructed to enable the user to easily switch between his home apps or the long-press-search apps and adjust a new default setting.

**Marketing.** The target audience of most of the applications is described as smartphone “power-users”, users that pay a lot of attention to their smartphones and that are very knowledgeable about them. Kevin states that he designs products that address issues he perceives himself so that the users of his applications are like himself.

**Networks.** Teslcoil Software is not really integrated into an international network except for contacts through and interaction with users, that also help with local adaption of the products.

**Role of Digital Distribution Platforms.** Digital distribution platforms play a very important role for Teslcoil Software. They provide access to a very broad audience that would not be accessible for the company through other channels. It also handles the payment processes so that payment and billing is facilitated a lot.

## **9.5.Case Study Analysis**

### **9.5.1. Introduction**

The following chapter consists of a qualitative analysis of the five case studies presented above. As stated in the methodology, the analysis aims to examine H1.2: The behavior of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research.

An analysis tool based on the earlier described determinants of Born Globals will be applied in order to ensure a holistic analysis of the five cases. Based on the determinants of Born Globals presented earlier, 16 factors are selected to serve as a guideline for the qualitative analysis.

As presented earlier, the determinants supporting the emergence of “Born Globals” can be divided into the three categories organization, strategy and environment. These three categories together with their sub-categories form the basis of analysis for the five case studies. While already having been presented earlier, the complete list of determinants is in the following stated again. Organizational determinants used for analysis are (1) international entrepreneurial team, (2) global vision of founding team, (3) international experience of founding team, (4) global entrepreneurial orientation, (5) R&D intensity and (6) knowledge intensity. Strategic determinants considered in the upcoming analysis are (1) global strategy, and (2) product strategy, which is further split up into (i) differentiation, (ii) innovation, (iii) product life cycle, (iv) localization, (v) customer service and (vi) international value chain. Environmental determinants considered are (1) the client structure, (2) industry characteristics, (3) technology intensity and (4) importance of the home market. An overview of these determinants, together with the typical Born Global characteristics and the characteristics in each category and for each case study participant can be seen in graph 12.

#### **9.5.2. Overview of Case study result**

Among the 16 factors analysed, seven showed similar characteristics in all five cases: All five companies offer products that are R&D-as well as and knowledge-intensive. All companies offer products with a differentiating factor, a limited product range and have technology-intensive products. All companies define themselves as technology leaders in their respective industry; however, none of the five case studies follows a global niche strategy.

It can further be observed that Teslacoil Software and Rovio show different results than most other three companies for seven of the 16 factors. These factors are international entrepreneurship team, global vision of founding team, and international experience of founding team, product life cycle, monetization (client structure), competition and importance of home market. This leads to the conclusion that the five cases studies have to be divided in two different segments in order to gain further insights and answer hypothesis h1.2.

Determinants		Born Global characteristics		Case Study Results				
				Logmein	yuilop	coupies	Teslacoil	Rovio
Organizational	International Entrepreneurship Team	exists	+	+	+	-		
	Global vision of founding team	exists	+	+	+	+		+
	International Experience of founding	exists	+	+	+	+		
	Global Entrepreneurial Orientation	exists	+		+	+	-	+
	R&D Intensity	exists	+	+	+	+	+	+
Strategic	Knowledge Intensity	exists	+	+	+	+	+	+
	Global Niche strategy	exists	+					
	Product Strategy		+	+	+	+	+	+
	Product focus	exists						
	Product Character	innovative	+	+	+	+	+	-
	product range	limited	+	+	+	+	+	+
	Product life	short	+	+	-	-	+	+
	Product Quality	superior	+	+	+-	+-	+-	+-
	Product standardization	exists	+	+	+-	+	+	+
	Customer service	possible	+	+	-	-	-	-
Environmental	International Value Chain Activities	exists	+	+	-	-	-	-
	Client Structure	B2B	+	+	+-	+-		+
	Industry	high technology	+	+	+	+	+	+
	Competition in industry	low	+	+	+	+		
	Technology Intensity	high	+	+	+	+	+	+
	Role of home market	less important	+	-	+	-	+	+

Graph 12 own creation (2011): 'Born Global Determinants, overview on typical results and case study characteristics'.

### 9.5.3. Detailed Case Study result by criterion

#### 9.5.3.1. Organizational Determinants

##### (1) International Entrepreneurship Team & International Experience

Two of the five cases studied have an international entrepreneurial team. The founders of LogMeIn come from Hungary and the USA, the founders of yuilop come from Germany and Spain. Among the three remaining cases, all founders are from the same country: Coupies from Germany, Teslacoil Software from the USA and Rovio from Finland. In three of the five cases (yuilop, LogMeIn and Coupies) at least one of the founding members had gathered extensive international experience prior to the foundation of the case company. In the cases of Teslacoil Software and Rovio the founders had very little or no prior international experience.

##### (2) Global Vision

A global business vision from start was prevalent in the case of the four companies LogMeIn, yuilop, coupies and rovio. As rovio is regarded as a Born Again Global in this paper, its inception starts with the introduction of the iPhone, which was also the founding time of its global vision. Teslacoil in contrast only developed its global vision as a result of its products' success and the internationally converged consumer needs.

##### (3) Global entrepreneurial orientation

Global entrepreneurial orientation resembles the attitude of the founding team toward internationalization and is comprised of the five factors autonomy, innovation, risk affinity, proactivity and competitiveness. It can be argued that the five case studies examined all show

entrepreneurial orientation. All five companies are independent, offer an innovative product, entered the market without market research indication that their products would be successful and did not choose a niche strategy to avoid competition.

#### (4) Research & Development and Knowledge intensity

In all five cases research and development play a very important role. Furthermore, all products can be described as highly knowledge intensive. Both results can be explained with the primary product of all five cases being software applications, as software generally requires a high degree of R&D and is knowledge intensity. LogMeIn has its global research function based in Hungary, Rovio is constantly hiring new developers and has a very dedicated approach to R&D.

#### **9.5.3.2. Strategic Determinants**

#### (5) Global Strategy

In contrast to the findings of Pock (2010), none of the five cases follow a global niche strategy. It could be argued that the two companies Teslacoil and LogMeIn have a selected target group, since they offer software with a specific purpose that is only appealing to a certain kind of users. Teslacoil Software targets smartphone-‘powerusers’, i.e. an audience that is very knowledgeable about the technical specifics of their devices. LogMeIn targets businesses as well as private customers interested in remote access to their devices. Despite the limited size of the two target groups in question, they nevertheless comprise several million customers worldwide and hence do not classify as niche-players. Yuilop mainly targets young people as it intends to reach cost conscious users as well so called digital natives that want to be “always connected”. Despite the presented concentration on a certain target group in three cases, all five companies nevertheless apply a strategy that aims at a broad audience.

One possible explanation might be the fact, that mobile applications are a high volume, low price product. In order to generate high revenues, the applications therefore need to appeal to a relatively big target group. The respective prices of the five companies presented range from zero in the case of Coupies and yuilop and 0.79 Euro for Angry Birds to 23.99 Euro in the case of LogMeIn. In conclusion, the strategy applying to the five cases can be classified as a global mass-market strategy.

#### (6) Product Strategy

All companies except Rovio focus exclusively on their digital product as the main source of income. No additional services are offered to generate revenues. Rovio also started with this strategy, expanded it later as a result of its global success and now defines its industry as ‘entertainment’ rather than ‘mobile applications’.

#### (7) Innovative Product Character

All companies except Rovio offer products with an innovative character. The four respective cases provide unique solutions that are differentiated from the products of their competitors. It can be argued that also Rovio offers mobile applications with a unique game-play and design; however the purpose and category of the application as 'Game' suggest that there exist many other applications serving the same purpose.

#### (8) Limited Product Range

All five enterprises studied have a limited product range. Yuilop and coupies only offer one application. Rovio offers three mobile applications, which all promote the Angry Birds brand. With its repositioning in 2011 as an entertainment company, Rovio is expected to extend its product range in the future and is already offering several merchandise articles. LogMeIn is offering fourteen software packages, which nevertheless are all built around the same technology, namely remote access. Teslacoil Software offers five different mobile applications, however only one application (widgetlocker) generates substantial revenues.

#### (9) Product Life Cycle

Product life cycle stands for the four stages (introduction, growth, saturation, decline) products evolve through from their development until replacement by a more advanced product version. A product's position in the life cycle has strategic implications, as each stage presents distinct conditions. As there are various dimensions along which a product can change, one important discussion among researchers is the level of change, which constitutes the beginning of a new life cycle (Day 1981). A change starting a new life cycle for mobile applications according to this paper is given, if there is a new update available for the application that changes a substantial function or element or if a new application is available that replaces the old one.

It can be argued that the mobile applications industry changes so rapidly that only very few applications manage to stay on top of the ranking of the most downloaded applications for a longer period of time. Hence most of the applications have a short product lifecycle. One of the few applications that have managed to stay on top of the ranking for over a year is Rovio's Angry Birds. However, Rovio releases new updates containing new game levels each month that can be regarded as new products, which in turn have very short lifecycles. Therefore it can be argued that the products in all five cases have short product lifecycles.

#### (10) Superior Product Quality

Product quality has a specific meaning in different product segments; the term lacks a universal definition. Knight & Cavusgil (2004) define superior product quality for Born Globals as the meeting or exceeding of customer expectations. This definition nevertheless does not represent an objectively assessable criterion, since it is impossible to ask a representative group of

customers for each case about their experience with the application. In order to make this determinant observable, this paper defines superior product quality as given if the respective application shows a user-ranking equal-or higher than three out of five stars in the Apple App Store (Android Market for Teslacoil Software), since the average rating in the Apple App Store is three out of five stars (Macstories 2010).

To assess the product quality according to this paper's definition (star-rating in Apple app-store), data from the mobile application research company xyologic was used as it shows the average ranking of the developer's most successful applications worldwide. Xyologic data shows that Angry Birds has got a ranking of five stars, LogMeIn received 4.2 stars, Teslacoil software 4.1 stars in the android market, yuilop 3.2 stars and coupies 2 stars. In conclusion, four of the five companies manage to receive ratings higher than three out of five, and therefore fulfil this paper's definition of superior product quality.

#### (11) High Degree of Standardization

The degree of standardization among products is high in all five cases. Rovio's Angry Birds-application was the most downloaded application in 68 countries without any kind of localization. Teslacoil Software only localizes the language of its mobile applications. Coupies follows a similar approach with the exception of China, where it had to change its name and logo color to avoid negative associations (color is blue, name is mobilefox). LogMeIn localizes the language and commands (adaption to different keyboards) of its software. Yuilop's application has identical surfaces in all countries except for the language, but the technology has to be adapted to local requirements of the telecommunications jurisdictions and systems. Hence all cases show a relatively high degree of product standardization.

#### (12) Customer service

LogMeIn is the only case which regards customer service as critical to success, which can be explained by its B2B customer segment and the especially high technology intensity. In the other cases extensive resources are also invested into customer feedback and community management, however these activities rather classify as strategic marketing and do not directly contribute to revenue creation.

#### (13) International Value Chain Activities

Four of the five cases do not show any international value chain activities except for the distribution through digital distribution platforms. Three of the five cases studied, namely yuilop, Teslacoil Software and Rovio operate exclusively from offices located in their respective home countries. Coupies works with licensees that operate from local offices in some countries such as China and Spain. However, all the internal value adding processes are located in its home country Germany. LogMeIn is the only case where the value chain can be described as

international: The R&D-department is located in Hungary, whereas headquarter is located in the USA. The internationalization of the value chain however took place before mobile applications were added to the product portfolio. It would therefore be wrong to conclude that the engagement in mobile applications has triggered the internationalization of its value chain.

#### **9.5.3.3. Environmental Determinants**

##### **(14) Client Structure**

All five cases examined offer mobile applications that are purchased and / or downloaded by consumers through digital distribution platforms. In conclusion, all five cases could be classified as Business-to-Consumer (B2C) businesses. However, the five companies show different monetization models: Three of the five companies (Teslacoil Software, LogMeIn and Rovio) operate mainly with a pay-per-download model and generate their revenues directly through the download of their applications. Although Teslacoil and Rovio also offer free applications with in-app advertisement or in-app purchases in the case of Rovio the majority of revenues is generated through downloads.

Yuilop generates revenues exclusively through in-app-advertisement; its revenues therefore depend on the total number of page impressions in the mobile application. Coupies bills its customers when coupons are redeemed or based on page impressions.

In conclusion, yuilop and coupies with their advertisement based monetization model generate their revenues only indirectly through the download of their application, as they receive money from advertising networks and not the end-user. The business model of these two companies is therefore classified as a mix between B2B and B2C models.

##### **(15) High Technology industry**

All five companies are active in a high technology industry, namely the mobile application industry. Since this industry is the research target of this paper, this result was expected and does not offer any additional insight.

##### **(16) Competition in industry**

In order to correctly determine direct competitors, the industry in which the five companies are active needs to be identified first. If the industry is defined as the mobile software development industry, competition undoubtedly is high in all cases, since more than 1.200.000 mobile applications were launched on the two biggest Platforms alone until June 2011. However, if the industry is defined as narrower, comprising only applications serving a similar purpose, the competitive situation looks different. Rovio, active in the 'Mobile Games' industry, nevertheless faces fierce competition since games are the most popular category on all digital distribution platforms with thousands of mobile game development studios around the world. Yuilop,



LogMeIn and Coupies only face few direct competitors, which nevertheless engage in tough competition. Teslacoil Software's main product is relatively unique and hence does not face significant direct competition.

#### (17) Importance of Home Market

Two of the five studied companies regard their home market as important. LogMeIn, which was founded in Hungary but nevertheless regards the USA as its home market, generates more than 50% of revenues in the USA. Coupies also generates a significant share of revenues in its home market Germany. The other three companies do not regard their home markets as very important. Yuilop, based in Spain, generates most revenues in the German market and even only started to operate in its home market one year after inception. Teslacoil Software, based in the USA explains the importance of its home market with its characteristic of being the biggest market for mobile applications in the world. If Teslacoil Software was based in another country, the USA would still be the most important market. Nevertheless, revenues generated abroad are growing.

#### **9.5.4. Comparison mobile application developers – Born Globals**

So far the analysis examined the characteristics of Born Globals in the cases of five selected mobile application developers along 16 factors. These factors are the most important determinants of Born Globals in accordance with the current state of research.

In order to answer H1.2: The behavior of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research, this paper's analysis results of the 16 criteria have to be compared to the general characteristics that Born Globals typically show in these criteria.

In six of the 16 factors, all five case studies follow the same pattern as regular Born Globals according to Pock (2010). All five companies have a high degree of R&D and knowledge intensity. The business strategy is in all cases constructed around a product rather than a service. All companies furthermore offer a limited product range and also operate in high technology industries. They can be regarded as technology leaders in their specific fields.

In two of the 16 factors, all examined case studies contradict the classification presented by Pock (2010) at least partly.

While five of the sixteen determinants examined offer similar results as current Born Global-research suggests, the opposite case can also be examined. In two determinants, the characteristics of mobile application developers classifying as Born Globals contradict the typical factor characteristics.

The first significant difference between mobile application developers and typical Born Globals occurs in the market strategy. While the current state of research suggests that Born Globals

typically follow a global niche strategy, all five cases in this paper engage in a global mass-market strategy. One possible explanation for this alternative strategy among mobile application developers might be that they operate in a high volume-low price sector. Mobile applications need to appeal to a wide target group, if significant revenues are to be generated.

The second significant difference between the case studies and typical Born Globals becomes apparent in the client structure. Pock (2010) states that Born Globals mostly operate in B2B businesses due to the smaller risk and uncertainty associated with this customer group. Gabrielsson (2005) added the insight that Born Globals operate in B2C when offering products of universal appeal, related to housing or leisure. The analysis of the five mobile application developers however revealed that the developers are all at least partly active in B2C market. The developers offer their application via digital distribution platforms to end-users. It has to be noted however, that only in the pay-per-download model revenues are generated via the download of the application and hence generated from end-users directly. If developers offer advertisement-supported applications, they generate their revenues through payments from advertising networks or direct advertisement clients.

With regards to the other remaining factors the cases studied shows controversial patterns. Rovio and Telascoil show several contradicting patterns whereas the other three companies display similar patterns to other Born Globals. The preceding analysis result suggests that the monetization mode presents a segmenting factor for the case studies presented. Therefore, the following part will analyze the implications of different monetization modes in more detail before the final result of the analysis will be presented.

#### **9.5.5. Segmentation of the Case Study population**

##### **9.5.5.1. Introduction**

Rovio and Telascoil Software show contradicting characteristics in comparison to typical Born Globals in four factors. Born Globals, according to the current state of research, normally have few direct competitors, operate in a B2B market, have a global vision of the founding team and show an international entrepreneurship team. In contrast, Rovio and Telascoil Software operate in the B2C market, have very short product lifecycles, did not have an international vision from inception and furthermore do not possess an international entrepreneurship team.

When comparing the characteristics of Rovio and Telascoil software with the ones of the three other companies analyzed, one clear point of differentiation is the business model of these two groups. Telascoil software and Rovio generate the majority of their total revenues directly through the amount of downloads of their applications through a pay-per-download model. They do not only distribute the applications to end-user through digital distribution platforms

but they also monetize the application through this channel. Yuilop, and Coupies on the other hand use the digital distribution platforms only to distribute the applications and to create a reach that is later monetized through advertisement.

It has been previously stated that LogMeIn as well operates through a pay-per-download-model. Nevertheless, the specific company characteristics suggest that LogMeIn should not be evaluated on this point, since the majority of company revenues are generated by products other than applications.

Among the different monetization models available on digital distribution platforms, the pay-per-download model is undoubtedly the one that requires the least involvement and resource investment of the mobile application developer. One could also say that the pay-per-download model leverages the function of the distribution platform most extensively. Based on this insight, this paper in the following offers a first draft of segmentation of mobile application developers. It aims to provide impulse for further research in this area and shall not be regarded as an attempt to generalize findings for the entire research population of native application developers.

Based on the business model, application developers can be segmented into *Fast Born Globals* (pay-per-download monetization) and *Slow Born Globals*, with the latter segment sharing many characteristics with typical Born Globals. In the following, each segment shall be described.

#### **9.5.5.2. Segment I: Fast Born Globals**

Rovio and Teslacoil Software follow a pay-per-download model to monetize their mobile applications. All aspects of their value chain are organized nationally. The digital distribution platforms create the international reach of the applications and enable the firms to offer the products on a global scale to all important markets worldwide. Internationalization of their products is initiated by them ticking the international box when releasing an application in the distribution platform. All further aspects of distribution and revenue generation are handled by the platform; management does not need to develop a global strategy in order to ensure revenues from international operations. This particular low demand for resource investment and continuous engagement can be seen as the decisive difference between Fast Born Globals and traditional Born Globals described by Pock (2010). In the pay-per-download-model, international success does not require an international founding team, prior international experience or a global vision. The distributors, the digital distribution platforms, handle all the international aspects of their business. These mobile application developers operate exclusively in the B2C industry and compete with a huge amount of similar applications fulfilling the same purpose. Both studied companies were surprised by their international success; it was not anticipated or planned for at inception. It can be suspected that the global success is facilitated by the global convergence in society, taste and systems. The internet, mobile web and digital

distribution platforms have created one world – one market - where market entry barriers do no longer exist. The internationalization process of mobile application developers consists of ticking a country symbol in a respective distribution platform. If a product is successful in one country, the probability of global success is high, given that customer needs are becoming more homogeneous worldwide and the competitive situation is similar in all markets thanks to the distribution platforms.

In conclusion, H1.2: The behavior of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research, is refuted. Fast Born Globals do show substantial differences to Born Globals as described in current research in several key factors and the Born Global theory can therefore be applied only partly to these kind of companies.

#### **9.5.5.3. *Segment II: Slow Born Globals***

The typical Born Globals described by Pock (2010) as well as the cases of the second case study segment yuilop, LogMeIn and Coupies show different internationalization patterns than Fast Born Globals. Internationalization takes place quickly and shortly after inception. Nevertheless internationalization among this traditional type of Born Globals still happens in phases, in accordance with the Uppsala model of internationalization. Their business model is more complex, such as advertisement based- monetization. International success in terms of revenues generated is not guaranteed with the release of their application on a distribution platform, these developers need to be active in international advertisement networks and build business contacts. International success requires a global roll-out of their business activities. This is reflected in several determinants. The founding team has international business experience and a global vision from the company's inception. Management selects industries with limited competition and generates revenues at least partly from business clients. In conclusion, this segment of mobile application developers shares many characteristics with typical Born Globals. Hypothesis H1.2: The behavior of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research hence holds true for these companies.

#### **9.5.6. Conclusion Comparison result**

The answer to H1.2: The behavior of Born Globals among mobile application developers is determined by the same factor characteristics as described in current Born Global research gains relevance when being discussed for each segment separately.

Companies from segment II in this research proved to differ from typical Born Globals according to theory in only two aspects: global strategy and client structure. However, these differences can be linked to big extend to the industry choice of this paper: The market of mobile

applications can generally be regarded as a mass-market and therefore B2C businesses are in majority. Therefore it can be concluded that hypothesis h1.2. holds true for this segment.

Companies in Segment I in this research show significantly different characteristics than traditional Born Globals. Next to the already mentioned global strategy and customer structure, the internationalization process of Fast Born Globals starts from inception and reaches global coverage without intermediary steps. Localization is minimized. The case study analysis suggests that these differing characteristics are mainly linked to the pay-per-download model of the application developers. Hypothesis h1.2. hence does not hold true for this segment.

As discussed in the methodology, a case study sample of five mobile application developers does not allow conclusions applicable to the whole research population of native application developers. Nevertheless it gives a strong indication of characteristics of application developers that contradict the current state of Born Global research at least for one segment of the research sample.

It can therefore be concluded that the applicability of the Born Global theory to the mobile application development industry is limited to companies that do not operate with a pay-per-download business model. However, further and more extensive research in the field of mobile application developers and Born Globals is needed to substantiate the case studies' findings.

## 10. Conclusion

The research design of this paper followed a mixed method approach, including both a quantitative as well as a qualitative analysis. The choice of method can be explained by the nature of the research topic, asking both for generalizability (H1.1, answered by the quantitative method) and in-depth-insight (H1.2, answered by the qualitative method). The result of the analysis shows, that a considerable part of mobile application developers fits this paper's definition of Born Globals and hence can be classified as a Born Global. The quantitative analysis of successful applications in the two biggest digital distribution platforms Android and Apple App store shows that on average 37.5% of developers are Born Globals. Therefore, H1.1 can be accepted.

In a second step, the qualitative case study analysis of five mobile application developers revealed, that although mobile application developers follow the Born Global-definition, they show different determinant characteristics. This result becomes more precise when segmenting mobile application developers according to their monetization model into the two segments fast-and slow Born Globals. Fast Born Globals among mobile application developers engage in a pay-per-download model, which enables them to internationalize at increased speed by leveraging digital distribution platforms most efficiently.

It can be concluded that the theory of Born Globals is applicable to the mobile software development industry only for firms that do not generate revenues directly through digital distribution platforms, i.e. it is applicable only to Slow Born Globals in this industry.

Some possible reasons for as well as implications of these results were already mentioned in the analysis.

Digital distribution platforms have created common market places that make national borders in most cases obsolete and demount almost all international market entry barriers. Once the market has been entered successfully no further effort has to be undertaken in order to sell products in other countries. Therefore the prerequisites of quick internationalization that are characteristic for Born Globals, i.e. the determinants of Born Globals, are not necessary in order to achieve global success.

However, this accounts only for applications that (1) are not specific to a certain country and (2) generate revenues directly through digital distribution platforms. Examples for applications that are specific to one or several countries are "9 Innings Pro Baseball 2011" by Com2uS Inc. in the USA, a baseball game, or "clever-tanken.de" by Mobile Software AG in Germany, an application that helps you find the cheapest gas station in reach. These applications satisfy needs of a particular, locally limited target group that does not expand across borders. Therefore they are downloaded mainly in their target country and do not achieve international success.

Companies that do not generate revenues directly through digital distribution networks often need to replicate their business processes in other countries. The internationalization of their businesses is hence not achieved by activating the application in other countries on the digital distribution platform but rather requires a substantial amount of time, effort and resources in order to pass the classic international market entry barriers. The prerequisites for their global success can be seen to a large extent in the factors that are described as the determinants for Born Globals.

It can therefore be concluded that H1.2. holds only true for one segment of the sample that are described as Slow Born Globals. For Fast Born Globals the hypothesis has to be rejected. Since the hypothesis was formulated in general terms and did not account for a segmentation, H1.2. has to be rejected. Therefore hypothesis h1 also has to be rejected.

## 11. Limitations

This paper focused on Born Globals in the mobile application development industry. Existing theory in the Born Global field was tested on an emerging high technology industry with the result, that one segment of mobile application developers shows different determinant characteristics than postulated by Born Global research so far. These results are intended to provide impulse for future Born Global research. The chosen research design of both quantitative and qualitative analysis proofed effective in answering the research question. Nevertheless, the research design as well as data can be regarded controversially and challenged on seven points. Criticism mainly targets the areas research question, research design, data collection, research sample, simplification and background of the researchers.

The first limitation concerning the research question is its qualitative nature. The question raised was *whether* Born Globals exist among mobile application developers and *if* these developers show the same determinant characteristics. In conclusion, the results presented are of qualitative, exploratory nature and do not provide any universal model. This work can be regarded as the foundation for future research in the same area, but in itself fails to offer a universal truth.

The second limitation deals with the research design. Especially the qualitative multiple case study analysis is not representative for the entire research population, which limits the reliability of the results. One counter-argument is the exploratory nature of case studies, which intends to provide insight into specific cases by examining complex relationships. Nevertheless, a case study of a non-representative sample is insufficient to draw general conclusions and hence connects to the prior point of this paper's character as foundation triggering future research.

The third limitation can be found in the data collection approach. Especially the mobile application industry overview is based on numerous sources. As a result, the data reflects different points in time, ranging from March 2010 to September 2011. In consequence, the overview provided by this paper is not accurately representing one period in time, which makes data pieces not directly comparable. Nevertheless, the dimension and relation between different factors such as the relative size of the different distribution platforms or the amount of total applications among platforms is represented accurately. In defence, it can be said that the overview provided has been collected with the highest level of accuracy possible. Due to the mobile applications immature and fast growing nature, literature and research in the field is still limited.

A fourth point of criticism is concerned with this paper's focus on only the biggest two distribution platforms, namely Android and Apple. Even though these two platforms offer more



than 90% of all applications worldwide, the characteristics of developers for these platforms might not represent the characteristics of the other platform developers. While this point of criticism is true, the time constraints of this research would not have allowed for any other research design. Since this paper was written with the motivation to provide new research impulses, it was intended to represent the most important industry players.

A fifth point of criticism is the simplified perspective on the monetization models of the application developers studied. The definition criteria of 25% of revenue generated abroad was solely examined along the criterion of application downloads. In consequence, other monetization models such as advertisement-based applications or in-app-purchases were neglected. This limitation again can be explained with the time and data access constraint of this paper. Downloads turned out to be the only criteria which was available for all developers studied, both in the quantitative as well as the qualitative method. But despite the necessity of this simplification, the demand in future research is to overcome this limitation and provide results which are based on the total revenues of developers.

A sixth point of criticism can be found in the heterogeneity of information available on mobile application developers. The iPhone release in 2008 marked the beginning of this industry, resulting in the fact that the industry as well as the research around it had only three years to develop. In consequence, the research field is still heterogeneous, with reports from different sources contradicting each other. This created a challenge for the industry overview presented in this paper. While the researchers could not avoid relying on external data, they consulted industry experts in order to obtain information about the most reliable data sources. Furthermore, the amount of different information sources was minimized. This fact would usually indicate that the level of research was not profound; however in this case it was the only way to ensure profound research.

A seventh limitation lies in the background of the researchers writing this paper. The researchers have a business background and hence lack the technical knowledge to understand the industry profoundly. Such a limited profile might cause putting emphasis on the wrong aspects, explaining relations insufficiently or even the disregard of important information. This point of criticism cannot be offset completely. However, the qualitative research sample to a large extent received and read the paper prior to submission. Several flaws in the argumentation were revealed, the final version now incorporates all feedback. Since the case study participants clearly have a technical background, their feedback helped to reduce the impact of the this last limitation.

In summary, this paper is subject to several limitations. Main reason for these limitations was the time and resource constraint subject to this paper. Regardless of the criticism listed, this

paper fulfills its aim to serve as a starting point and source of impulse for future research. This point is further amplified by the qualitative nature of the research question.

## **12. Future outlook**

The mobile application industry is likely to maintain high growth rates in the upcoming years due to the continued convergence of smartphones. In short term, new developers are expected to enter the market due to low entry barriers and the attractiveness of the market, which will result in increased competition. In the long run, with digital distribution platforms maturing, big players might emerge and new ventures might experience increased difficulty in entering the market.

The rapid emergence of the mobile application industry throughout the last three years and the dynamic development make this industry an interesting field for future studies in International Entrepreneurship and Born Globals, especially in the near future.

This paper has taken a first step in exploring the behavioural patterns of companies in the industry. As already covered in the limitations, this paper's contribution nevertheless can only be regarded as the start of future research, with this paper's purpose mainly being to offer impulse and uncover research gap that should be subject to further investigations.

One implication for future research is to regard mobile application developers not as a homogeneous group but rather to follow this paper's first draft of a possible segmentation and explore the differentiating factors in more detail. Monetization has already been identified as an important differentiator, which hopefully triggers more detailed research in this area.

Another demand on future research is to apply the research design to a bigger research target, especially in terms of case studies. With case studies offering exploratory results, the validity of this paper's results should be tested against a bigger sample. The limitations of this paper's research design which are caused by the time and resource constraint experienced, can hopefully be overcome in future research.

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## I. Contact E-mail

*Dear xy,*

*My name is Kristina, I am a 24 year old student at Stockholm School of Economics in Sweden. Together with my research partner Benjamin, I am currently writing my Master Thesis about Entrepreneurship and how Digital Distribution Platforms changed the Internationalization Process of Entrepreneurs.*

*The thesis in a nutshell: The goal is to proof that Digital Distribution Platforms are such a disruptive technology that existing Entrepreneurship theories (especially Born Globals) no longer apply, which makes App-Developers a new generation of Entrepreneurs.*

*xy is a perfect example for this new generation. In order to support our thesis empirically we need to conduct 20-minute interviews with successful App-Developers. Topic would be the Internationalization process, no critical figures like total downloads or turnover would be asked.*

*We would be very happy to get the chance to take xy as a Case example for the new generation of Entrepreneurs. In exchange of the 20 minutes you would need to invest for the interview we would offer you access to all our research results and (if you are interested), the explicit mentioning of xy in the thesis, which we plan to submit to an Innovation competition.*

*Please let me know what you think and if you are open for having a 20 minute Skype conversation. I would really appreciate your help, xy is just such a great example for the new Entrepreneurship generation.*

*Kind regards,*

*Kristina Böhm & Benjamin Tschauner*

## II. Confidentiality Agreement



To whom it may concern

I, Mikael Samuelsson, Assistant Professor at the Department of Management and Organization at Stockholm School of Economics, am the thesis advisor of Kristina Boehm and Benjamin Tschauner. I will support them during their research on Digital Distribution Platforms and their impact on internationalization processes of Born Globals.

I hereby confirm that a Non-Disclosure agreement will apply to all sensitive data collected during the research of Kristina and Benjamin. This means that data will be strictly confidential and will only be published to the extent to which it does not go against company interest. In detail this means that companies will not be named explicitly, nor total revenue numbers stated.

On behalf of Kristina and Benjamin I thank all respondents who take part in their study and help to create insight into the role of Digital Distribution Platforms.

If you have any questions please contact me.

Kind regards,

A handwritten signature in black ink, appearing to read "Mikael Samuelsson", is displayed on a light gray rectangular background.

Mikael Samuelsson

### III. Quantitative research sample I: 150 Most Downloaded paid Apps Android Market USA July 2011

App title	Publisher	Local	Downloads in k	Founding year	Independent company
SwiftKey X (Phone)	TouchType Ltd	No	42,8	2008	Yes
Cut the Rope	ZeptoLab	No	31,7	2009	Yes
ROM Manager	ClockworkMod	No	22,6	NA	Yes
Wordfeud	hbwares	Yes	21,5	NA	Yes
Tapatalk Forum App	Quoord Systems Limited Apps	No	20,5	2009	Yes
JuiceDefender Ultimate	Latedroid	No	19,4	2010	Yes
SPB Shell 3D	Paragon Software	No	15,5	1994	No
Battleheart	Mika Mobile	No	13,5	2009	Yes
FriendCaster Pro for	OneLouder Apps	No	12	2011	No
Gallery Lock Pro	Morrison Smart	No	10,4	NA	Yes
WeatherBug Elite	WeatherBug by Earth	Yes	10,3	1993	No
Fruit Ninja	Halfbrick Studios	No	10,1	2001	Yes
Hide Pictures in Stocks	Theron Rogers	Yes	9,9	NA	Individual Developer
Robot Unicorn Attack	[adult swim] games	Yes	9,7	NA	No
Trial Xtreme	Galapagos	No	9,6	NA	Yes
Samurai II: Vengeance	MADFINGER Games	No	9,5	2009	Yes
PowerAMP Full Version	Max MP (MSR Limited)	No	9,4	NA	Yes
Captain America	Marvel Entertainment	No	9,3	NA	No
Beautiful Widgets	LevelUp Studio	No	8,5	2009	Yes
Myth Defense LF	Smartpix Games	No	8,1	NA	Yes
SlideIT Keyboard	Dasur Ltd.	No	7,8	NA	No
UberMusic	Federico Carnales.	No	7,8	NA	Individual Developer
Robo Defense	Lupis Labs Software	No	7,5	NA	Yes
Apparatus	Bithack	No	7,5	2010	Yes
PlayerPro Music Player	BlastOn LLC	No	7	NA	Yes
No Root Screenshot It	Edward Kim	Yes	6,4	2009	Individual Developer
Titanium Backup PRO	Titanium Track	No	6,2	NA	Yes
Doodle Jump	GameHouse	No	6,1	1998	Yes
Air Control	Four Pixels	No	5,8	NA	Yes
Pocket God	ngmoco LLC	No	5,8	2008	Yes
Game Dev Story	Kairosoft Co.Ltd	No	5,6	1998	Yes
RomFetcher: Playstation	Primastar Applications	Yes	5,4	NA	Yes
Camera ZOOM FX	androidslide	Yes	5,3	NA	Yes
Slot Machine +	Apostek Software	Yes	5,3	2008	Yes
WidgetLocker	TeslaCoil Software	No	5,3	NA	Yes
X Construction	CrossConstruct	No	5,3	NA	Yes
ESPN Radio (Official	AirKast Inc.	Yes	5,2	2006	Yes
ADWLancher EX	AnderWeb	No	5,2	NA	Yes
Need for Speed Shift	Electronic Arts Inc.	Yes	5,1	1982	No
My Beach HD	DualBoot Games	No	5,1	NA	Yes
Hanging With Friends G.	N & T Apps	Yes	5	NA	Yes

MLB.com At Bat 11	MLB Advanced Media	Yes	4,8	NA	No
iMissal - #1 Catholic App	Cantcha Inc	Yes	4,7	2008	Yes
Pro Evolution Soccer	Konami Digital	Yes	4,6	1969	No
Torque Pro (OBD2 &	Ian Hawkins	No	4,5	NA	Individual Developer
Smart Keyboard PRO	Dexilog LLC	No	4,4	2010	Yes
Fieldrunners HD	Subatomic Studios LLC	No	4,3	2008	Yes
Talking Tom Cat	Outfit7	No	4,3	2009	Yes
Root Explorer (File	Speed Software	No	4,3	NA	Yes
Moon Phase Pro	Udell Enterprises Inc	No	4,2	1999	Yes
MyBackup Pro	Rerware LLC	No	4,2	NA	Yes
Grow	Epic Pixel LLC	No	4,2	2011	Yes
TuneIn Radio Pro	TuneIn	No	4,1	2002	Yes
Caller ID Plus	Caller ID Plus	Yes	4,1	NA	Yes
They Need To Be Fed	YoYo Games Ltd	No	4	2007	Yes
Doodle God	JoyBits Co. Ltd.	No	4	2002	Yes
PicSay Pro - Photo Editor	Shinycore	No	3,9	2000	Yes
Thumb Keyboard (Phone	Beansoft	No	3,8	NA	Yes
Vignette	neilandtheresa	No	3,8	NA	Yes
The Moron Test	DistinctDev Inc.	No	3,7	2004	Yes
WW Points Plus Diary +	Frippware	Yes	3,7	NA	Yes
Majesty: Fantasy	HeroCraft Ltd	No	3,6	2001	Yes
GRave Defense HD	ArtOfBytess	No	3,6	2008	Yes
Launcher 7 - Donate	Timo Kujala	No	3,5	NA	Individual Developer
Read It Later Pro	Read It Later	No	3,5	2007	Yes
HOMERUN BATTLE 3D	Com2uS	Yes	3,5	1998	Yes
Shazam Encore	Shazam Entertainment	No	3,4	2002	Yes
Refraction	Textual Indices	No	3,4	2011	Yes
Extreme Call Blocker	GreyThinker	Yes	3,4	NA	Yes
Icon Pack - Droidicon	Jon F Hancock	Yes	3,4	NA	Individual Developer
Weed Farmer	Grow Brothers	No	3,2	2011	Yes
Wave Launcher	MobileMerit	No	3,2	2009	Yes
DIRECTV Remote PRO	Wired DFW	Yes	3,2	NA	Yes
Better Keyboard Unlock	Quickoffice	No	3,2	2002	Yes
Better Keyboard Unlock	Better Android	Yes	3,1	NA	Yes
Camera360 Ultimate	mAPPn Inc.	No	3,1	2008	Yes
Calorie Counter PRO	4Technologies Corporation	Yes	3,1	2005	Yes
Tasker	Crafty Apps	No	3	NA	Yes
Aquarium Donation L.	Kittehface Software	No	3	NA	Yes
Gmail Unread Count 2.0	Alexander Blom	No	3	NA	Individual Developer
Catan	USM	No	3	1994	Yes
DocumentsToGo Full	DataViz Inc.	No	2,9	1984	Yes
AirAttack HD	Art In Games	No	2,9	2006	Yes
Sound Hound	SoundHound Inc.	No	2,9	2005	Yes
SplashID Safe for	SplashData Inc	Yes	2,9	2000	Yes
Office Jerk	Fluik	No	2,8	2005	Yes
ezPDF Reader	Unidocs Inc.	No	2,8	NA	Yes

Gem Miner: Dig Deeper	Psym Mobile	No	2,8	2009	Yes
Zenonia 2	GAMEVIL Inc.	No	2,8	2000	Yes
Volume+ (Sound Boost)	Meltus	No	2,8	NA	Yes
Super Dynamite Fishing	HandyGames	No	2,7	2000	Yes
EasyTether	Polyclef Software	Yes	2,6	2009	Yes
JEFIT Pro - Workout &	Jefit Inc.	No	2,6	2010	Yes
Virtual Families	Last Day of Work LLC	Yes	2,5	2004	Yes
Wyse PocketCloud Pro	Wyse Technology Inc	No	2,5	1981	Yes
WeatherPro	MeteoGroup	No	2,5	1986	No
aniPet Aquarium Live	aniFree	Yes	2,4	NA	Yes
SetCPU for Root Users	MichaelHuang	No	2,4	NA	Individual Developer
Minebuilder	Bram Buurlage	No	2,4	NA	Individual Developer
BackCountry Navigator	CritterMap Software	No	2,3	2009	Yes
GrooVe IP	snrb Labs	Yes	2,3	NA	Yes
Grocery King v5.4	Pocket Labs	Yes	2,3	2009	Yes
Uno	Gameloft	No	2,3	2000	Yes
gReader Pro (Google	noinnion	No	2,3	NA	Yes
IP Cam Viewer	Robert Chou	No	2,3	NA	Individual Developer
LogMeIn Ignition	LogMeIn Inc.	Yes	2,3	2003	Yes
Star Traders RPG Elite	Cory Trese	Yes	2,3	NA	Individual Developer
Cribbage Pro Online!	Fuller Systems Inc.	Yes	2,2	2009	Yes
FetLife for Android	Golden Spiral Software	Yes	2,2	NA	Yes
CircleLauncher	db-ware	No	2,2	NA	Individual Developer
Uloops Studio Pro	Uloops labs	Yes	2,2	2009	Yes
Alarm Clock Xtreme	Angle Labs	No	2,2	2010	Yes
Roboto	Fenix Fire Entertainment	Yes	2,1	2010	Yes
SymbolsKeyboard &	MOBISTERS.	Yes	2,1	2010	Yes
X-Plane 9	Laminar Research	No	2,1	NA	Yes
FlightTrack	Mobiata	No	2	2008	Yes
ROM Toolbox Pro	JRummy16	Yes	2	NA	Individual Developer
XDA Premium	xda-developers	No	2	2003	Yes
Locus Pro	menion.asamm	No	2	2009	Individual Developer
Bloons Tower Defence 4	ATH Developer	No	2	NA	Yes
Weather & Toggle	Android Apps	Yes	2	NA	Yes
FPse for android	Schtruck & LDchen	No	2	NA	Yes
Mango Bankai (ad-free)	Leetsoft	Yes	1,9	NA	Individual Developer
Baby ESP	Hewitt Software	No	1,9	NA	Yes
Spark 360	Akop Karapetyan	Yes	1,9	1997	Individual Developer
Pageonce Pro -	Money & Pageonce	Yes	1,9	2007	Yes
BootManager	Init 2 Winit Apps	Yes	1,9	NA	Yes
EZ Stream TV	Lead Bulb	Yes	1,9	NA	Yes
Pixel Zombies Live	haydenTheAndroid	No	1,9	NA	Individual Developer
FPse PSX BIOS	Pixel Corporation	No	1,9	1999	Yes
Pho.to Lab Pro	VicMan LLC	No	1,9	2001	Yes
iQuran Pro	Guided Ways	No	1,9	NA	Yes
DoggCatcher Podcast	DoggCatcher	Yes	1,9	2008	Yes

Tower Raiders 2 GOLD	Gianormous Games LLC	No	1,9	NA	Yes
Video Catcher	MBFG	No	1,9	NA	Individual Developer



#### IV. Quantitative research sample II: 150 Most Downloaded paid Apps Apple App Store USA July 2011

App title	Publisher	Is Local	Downloads in k	Founding year	Independent Company
Plants vs. Zombies	PopCap Games Inc.	No	707,1	2000	Yes
Angry Birds	Clickgamer.com	No	634,5	2005	Yes
Baseball Superstars® II	GAMEVIL Inc.	No	601	2000	Yes
Cut the Rope	Chillingo Ltd	No	380,2	1982 (EA)	No
Third Blade	Com2uS Inc.	No	377,2	1998	Yes
Fruit Ninja	Halfbrick Studios	No	376,2	2001	Yes
Tiny Wings	Andreas Illiger	No	328,3	2011	Yes
Angry Birds Rio	Rovio Mobile Ltd.	No	321,7	2003	Yes
Infinity Blade	Chair Entertainment	No	234,3	2005	Yes
Zombie Gunship	Limbic Software	No	219	2008	Yes
TuneIn Radio Pro	Synsion Radio	No	178,5	NA	No
Notifications + Photo	Escargot Studios LLC	Yes	178,3	2010	Yes
WARNED: Insanely	Lima Sky	No	175,2	2008	Yes
Turtle Fly	j2sighte	No	166,3	2009	Yes
Line Birds	Robert Szeleney	No	165,2	NA	Yes
Words With Friends	Newtoy Inc.	Yes	133	2008	Yes
Cave Bowling	Donut Games	No	124,8	2006	Yes
SCRABBLE	Electronic Arts	Yes	122,2	1982	No
Call of Mini: Zombies	Triniti Interactive Limited Games	No	119,1	1989	Yes
Free Music Download	Zentertain Ltd.	No	117,8	2010	Yes
WhatsApp Messenger	WhatsApp Inc.	No	112,2	2009	Yes
Cover Orange	FDG Entertainment	No	111,6	2001	Yes
NinJump Deluxe	Backflip Studios	No	109,5	2008	Yes
AppZilla 2 - 100 in 1!	Fossil Software	No	108,5	2009	Yes
Fragger	Miniclip.com	No	108,4	2001	Yes
Justin.tv	Justin.tv	No	107,1	2009	Yes
Call of Duty: Zombies	Activision Publishing Inc. Games	No	105,8	1979	No
ZombieSmash	gamedoctors	No	105,7	2009	Yes
Burn the Rope	Big Blue Bubble	No	105,7	2004	Yes
Picture Safe (HiDef) -	collect3	No	104,4	2008	Yes
FatBooth	PiVi & Co	No	102	2008	Yes
Backbreaker 2:	NaturalMotion	No	101,7	2011	Yes
iGun Pro - The Original	Crimson Moon	No	101,3	2010	Yes
Flick Golf!	Full Fat	No	99,6	1996	Yes
Device Never Looked	Apalon	No	99,5	2006	Yes
MapleStory Cygnus	NEXON MOBILE	No	93,7	1994	No
Pocket God	Bolt Creative	No	93	2001	Yes
Doodle God™	JoyBits Ltd.	No	88,7	2002	Yes

Kick the Buddy	AppZap	No	87,3	NA	Yes
Phase 10	Magmic Inc.	Yes	86,3	2002	Yes
Death Rally	Remedy Entertainment	No	85,7	1995	Yes
Alarm Clock Pro by	iHandySoft Inc.	No	85,3	2005	Yes
Solitaire	MobilityWare	No	84,1	1991	Yes
LogMeIn Ignition	LogMeIn Inc.	No	84	2003	Yes
Diner Dash	PlayFirst Inc.	No	78,1	2004	Yes
Battery Boost Magic App	Heavy Duty Apps	No	77,1	NA	Yes
Flashlight ®	i4software	No	76,8	2005	Yes
Asphalt 6: Adrenaline	Gameloft	No	75,1	2000	Yes
8.0 MPX Digital Camera	Edward Chapkis	No	74,6	NA	Yes
Camera+	tap tap tap	No	73,3	2008	Yes
Legendary Wars	Liv Games	No	72,9	2009	Yes
Sleep Cycle alarm clock	Maciek Drejak Labs	No	70,8	NA	Yes
Deer Hunter: African	Glu	No	69,7	2001	Yes
Words with cheats for friends	SKH Apps	No	68,4	NA	Yes
The Blocks Cometh By	Halfbot	No	65,1	2010	Yes
textPlus SILVER Free	GOGII	Yes	65,1	2007	Yes
Weather+	International Travel	No	62,9	NA	Yes
Status Shuffle for	Social Graph Studios	No	62,6	2007	Yes
Ultimate Guitar Tabs	Ultimate Guitar USA LLC Apps	No	62,4	NA	Yes
Lockitize Your Lock	Kuhlmanation LLC	No	62	NA	Yes
MotionX GPS Drive	MotionXTM	Yes	61,6	NA	Yes
Cars 2	Disney	No	61,3		No
Family FeudTM	Ludia	Yes	60,5	NA	Yes
Cheats with words	Dragosaurus	No	59,6	2010	Yes
Super Stickman Golf	Noodlecake Games	No	58,7	NA	Yes
Tap Tap Revenge 3	Tapulous	No	58,5	2008	Yes
Flight Control	Firemint	No	57,2	NA	No
Stylish Sprint	playus soft	No	56,4	NA	Yes
Slingo Supreme	funkitron	Yes	56,3	2001	Yes
Calorie Tracker	LIVESTRONG.COM	No	55	NA	Yes
ComicBook!	3DTOPO Inc.	No	53,9	2006	Yes
Hanging With Friends	Zynga	No	53,1	2007	Yes
STREET FIGHTER IV	CAPCOM	No	52,2	1983	Yes
2Do: Tasks Done in Style Guided Ways	Apps	No	52	NA	Yes
NOAA Radar US	Shuksan Software LLC	Yes	52	NA	Yes
Zentomino	Little White Bear Studios Games	No	51,4	2008	Yes
Zombie Highway	Renderpaz	No	51,3	2010	Yes
Call of Atlantis (Full)	Playrix	No	51,3	2004	Yes
Battery Doctor Pro -	Game Lingo	No	51,1	NA	Yes
Groove Coaster	TAITO Corporation	No	50,2	1953	No
Phone Tracking Utility TM	Midwest Blizzard	Yes	50,2	NA	Yes
Pageonce Pro – Money	Pageonce Inc	Yes	49,7	2007	Yes
AirMusic	Plutinosoft	No	49,4	NA	Yes

Racing Penguin Flying	Top Free Games	No	48,5	NA	Yes
Battleship Deluxe	BengBeng	No	48,3	NA	Yes
Cartoon Wars 2	Games	No	48,1	NA	Yes
Harry Potter: Spells	Warner Bros.	Yes	48	NA	No
Aralon: Sword and	Crescent Moon Games	No	48	2009	Yes
Counter (Diets &	nanobitsoftware.com	No	47,8	NA	Yes
iLoader for Facebook	Ky Vu	No	47,4	NA	Yes
Stupid Zombies	GameResort LLC	No	47,3	2008	Yes
Siege Hero	Armor Games Inc	No	47,3	2005	Yes
Rc Plane 2	Frozen Pepper	No	47,1	2008	Yes
Mr.Ninja	PONOS	No	47	NA	Yes
Downloads Downloader	Hian Zin Jong	No	46,4	NA	Yes
Great Little War Game	Rubicon	No	45,8	NA	Yes
Reckless Getaway	Polarbit	No	45,8	2005	Yes
The Cracked Reader	Demand Media Inc.	No	45,6	2006	Yes
Smooty	Federico Kalayjian	No	45,6	NA	Yes
Atomic Web Browser	RichTech	No	45,5	1998	Yes
Nyan Cat: Lost In Space	Istom Games Kft.	No	45,4	NA	Yes
Flower Garden	Snappy Touch	No	45	2009	Yes
Bloons TD 4	Digital Goldfish Ltd	No	45	2008	Yes
Virtual Families	Last Day of Work	No	43,7	2002	Yes
Weather HD	vimov LLC	No	43,5	2008	Yes
Anti Mosquito & Insects	Balina Life	No	43,1	NA	Yes
OvenBreak-Infinity	Devsisters	No	42,7	2009	Yes
iLoader 2 for Facebook	Tektrify Inc	No	42,7	2010	Yes
Smack That Gugl	Tayasui.com	No	42,5	NA	Yes

## V. Interview Guide

Topic	Question	Check
Company Data	Founding Year	
	Number of employees when founded	
	Number of employees today	
	Revenues in founding year	
	Revenues today	
	% of revenues generated abroad	
	Industry	
Internationalization process		
General	How did the internationalization process take place?	
	Did the internationalization process happen in phases or waves? Step by step?	
	Why did you internationalize from the start?	
	Why did you internationalize quickly / high pace?	
	What are the advantages of an early, quick, fast internationalization?	
Selection of international markets	How did you select the markets to enter?	
	How did you assess the potential of a certain market?	
	Which criteria did you chose to select the countries to enter?	
	What are the role of “lead markets” when choosing countries to enter?	
Entry Modes	When did you enter which countries?	
	Did you choose a specific order?	
	Which entry mode did you select for the different countries?	
	Why did you select the respective entry modes?	
	Did you apply several different entry modes simultaneously?	

	How did you coordinate the different entry modes?	
	How did you approach the problem of being foreign and unknown in the other country? "Liability of foreignness and newness"?	
	Which branding strategies did you follow during the internationalization?	
Networks	Does the management team have an international network?	
	Is the company integrated into an international network?	
	How would you characterize these networks?	
	Which tasks were fulfilled with the help of these networks?	
	How did the networks evolve during the course of the internationalization?	
Other	How did cultural differences influence the internationalization?	
	Does the internationalization behaviour change over time?	
	How satisfied is the management team with the internationalization so far?	
Determinants		
International Entrepreneurial Team	Who is part of the founding / management team?	
	Does the management team have international experience? If yes which?	
	Did the management team have an international vision from day one?	
	How are the tasks distributed among the members of the management team?	
	How many employees do you have abroad?	
Research Intensity	How are the R&D activities organized in your firm?	
	How much do you spend on R&D?	
	Do you have international R&D partnerships?	
Global strategy	How would you describe your international strategy?	

	Who is your target group? Who do you design your app for?	
	Why did you choose this strategy?	
	Which role does your home country market play?	
Product strategy	Please describe your product range	
	To what extent do you adapt your products to local needs?	
	Did you design products for international markets?	
	Do you want your products to become international standards?	
	How does your product differ from competitors' products?	
	How did the internationalization influence your product range?	
	How did the internationalization influence the lifecycle of your products?	
Internationalization of Value chain activities	Which activities of your value chain have been internationalized?	
	How do you coordinate the international value chain?	
Customer segmentation	What are the general characteristics of your customers?	
	How many customers do you have on average per country?	
	Do existing customers help you to acquire new customers?	
Competition	Please describe the competitive situation in your industry.	
	Are your competitors active internationally?	
Outlook	How will you continue to internationalize?	
	What is your strategy for the future?	
Industry Specific Questions	What influence did digital distribution platforms (app stores) have on your internationalization process?	
	Did international opportunities have an influence on your platform choice?	

	In which way did the introduction of digital distribution platforms change your business model?	
	How did the your revenues change after the introduction of the main digital distribution platforms?	
	How did digital distribution platforms influence your international reach?	
	What is the difference between ddps and other distribution channels with regards to international reach?	