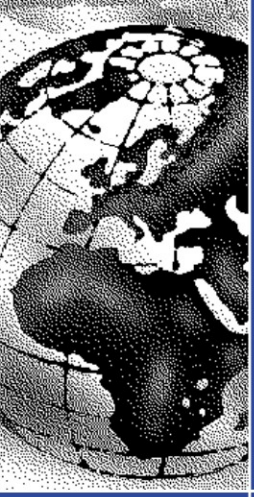

Entrepreneurship
Hrsg.: Malte Brettel, Lambert T. Koch, Tobias Kollmann und Peter Witt

Julia Christofor

Antecedents of Venture Firms' Internationalization

A Conjoint Analysis of International Entrepreneurship in the Net Economy

GABLER EDITION WISSENSCHAFT

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Entrepreneurship

Herausgegeben von
Professor Dr. Malte Brettel, RWTH Aachen,
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„Entrepreneurship" ist ein noch relativ junger Forschungszweig, der jedoch in Wissenschaft und Praxis stetig an Bedeutung gewinnt. Denn Unternehmensgründungen und deren Promotoren nehmen für die wirtschaftliche Entwicklung einen zentralen Stellenwert ein, so dass es nur folgerichtig ist, dem auch in Forschung und Lehre Rechnung zu tragen.

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Foreword

The objective of *Julia Christofor's* thesis is to analyze and explain the propensity of firms and their respective entrepreneurs to internationalize. The focus of this thesis is primarily on firms with information-technology-based business models, i.e. Electronic-Business-Firms, which create value via digital networks. Such firms are often referred to as „Born Globals". It can therefore be assumed that on the basis of the distinct characteristics of the world wide web and because the market participants are globally interconnected via digital networks, these newly founded firms are more likely to internationalize early in their life cycle.

Furthermore, because there have been fundamental changes in the technological, economic and societal spheres, the internationalization process and the propensity of these firms to offer their products on international markets may not necessarily be explained with the help of classical theories of internationalization. At the same time, the management of the newly founded E-Business firms, which are active in and pressured to thrive in a global competitive environment, are confronted with completely new challenges. The theoretical foundations presented from the academic internationalization literature stream only go some way to explaining the internationalization behavior of young E-Business-firms. This is especially due to the fact that these approaches basically relate to international, multinational and established firms.

Julia Christofor approaches these extensive shifts in internationalization behavior by integrating both the entrepreneurship and internationalization literature streams: Firstly, the basic parameters of the internationalization decision of newly founded firms are identified. Secondly, a theoretical framework of internationalization propensity is derived and, lastly, the theoretical propositions are empirically assessed. In this manner, prototypical profiles of entrepreneurs, who react differently with respect to the internationalization decision, are highlighted. By means of a comprehensive statistical methodology and based on a representative sample of Net Economy firms, the joint influence of international market orientation, protection of proprietary rights, resource commitment, scalability and digitalization of products and processes as well as the international personal network of the

parties are pointed out. In addition, this thesis combines the new research field “International Entrepreneurship“ and “Corporate Entrepreneurship” for testing the hypothesses and an exploratory analysis of the impact of the “Entrepreneurial Orientation“ on parameters of internationalization propensity is carried out. It is demonstrated that different levels of entrepreneurial orientation, i.e. a different relation of innovation, risk and proactivity of firms, also comprise different levels of internationalization propensity.

In summary, with her thesis *Julia Christofor* attempts and accomplishes a contribution which is highly significant for newly found Electronic Business firms as well as for entrepreneurship and computer sciences theories. I believe this doctoral dissertation deserves to capture a broad readership and attention in science as well as in practice and I wish *Julia Christofor* all the best in her future endeavors.

Prof. Dr. Tobias Kollmann

Aknowledgements

As the breadth of the World Wide Web and its technological applications continues to increase globally, knowledge-based firms with digital business models are able to internationalize earlier and at a faster pace in comparison to firms with traditional business models. This phenomenon suggests that a shift in the decision-makers attitude towards internationalization may occur because of the borderless, digital context the firms are active in. The internationalization decision takes on particular importance because these Net-Economy-Firms are resource-poor, manager-driven and are active in market niches. While the internationalization decision determines the future growth development of the firm, the decision arises early in the firm's life-cylce. With a focus on this epistemological interest this thesis aims to contribute to the field of International Entrepreneurship research.

This PhD-project was pursued during my tenure as research assistant at the chair for E-Business and E-Entrepreneurship, initiated at the Multimedia Campus in Kiel (Christian-Albrechts-Unviersity) and completed at the University of Duisburg-Essen, Germany. During the completion of this doctoral dissertation I am grateful to have received helpful and sincere assistance.

I genuinely thank my dissertation advisor *Univ.-Prof. Dr. Tobias Kollmann* for his constructive advice and for the freedom to realize my project ideas. His valuable insights and confidence in my mastering this task helped me greatly. I would also like to thank *Univ.-Prof. Dr. Hendrik Schröde*r for his support as second examiner.

I am obliged to *Dr. Lutz Krafft*, whose support contributed to the success of data collection. Equally, I want to thank the interview partners, i.e. the entrepreneurs in practice, whose thorough accounts of the "real world" built the foundation of this work.

For their extensive support and expertise I owe great thanks to my dear colleagues from the E-Business and E-Entrepreneurship chair. First, I would like to thank *Dr. Andreas Kuckertz* for his unswerving disposition to discuss this project, constructive feedback and encouraging words. I also owe great thanks to *Dr. Christian Herr* for his encouragement and dedication. To my colleagues in Duisburg-Essen I would also like to express my gratitude:

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Lastly, I am genuinely grateful to my dear parents who support me unconditionally and with unwavering confidence in many different ways. This thesis is dedicated to them.

Dr. Julia Christofor

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List of Abbreviations

ACA	Adaptive Conjoint Analysis
ANOVA	Analysis of Variance
CA	Conjoint Analysis
cf.	Compare
e.g.	Exempli gratia (*for example*)
ed.	Edition
EO	Entrepreneurial Orientation
etc.	and so forth
EU	European Union
FDI	Foreign Direct Investment
GEM	Global Entrepreneurship Monitor
i.e.	id est (*that is to say*)
ICT	Information and Communication Technology
IE	International Entrepreneurship
IP	Internet Protocol
IPO	Initial Public Offering
IT	Information Technology
MNE	Multinational Enterprise
N.N.	Nomen nescio
OLS	Ordinary Least Square
OR	Opportunity Recognition
PC	Personal Computer
PDA	Personal Digital Assistant
PLC	Product Life Cycle
pp.	Pages
R&D	Research and Development
s	Standard deviation
SME	Small and Medium Enterprise
TCP	Transmission Control Protocol
UK	United Kingdom
USA	United States of America
viz.	Namely
wLANs	wireless Local-Area-Networks
WWW	World wide web

„Global [information and communication technology] has become an antecedent to […] international corporate strategies and various modes of international entry. In other words, technology precedes intent.“

Schulte, 2001, p. 91.

1 Introduction

Deregulations in international trade and financial markets have lead to the global convergence and interdependence of economic spheres as well as of political, cultural, social and ecological activities (*Behnam and Gilbert*, 2002). Confronted with global competition and worldwide sources of supply and demand, local firms and markets have transformed, resulting in the homogenization of patterns of production and consumption as well as the convergence of cultures (*Koch*, 1999, 2001; *Rugman*, 1980). Above all, it is technological developments, especially in the field of communication and media, biotechnology and new materials, which have substantially lead to increased firm competition, new and dynamic market structures, economic growth and development of industrial nations (*Zerdick et al.*, 2001, 2005).

Nonetheless, globalization has been largely driven by the developments of information technology (IT) and information and communication technologies (ICT), which provide an enhanced and sophisticated communication and transportation infrastructure for firms to expand into foreign markets (*Schulte*, 2001). *Aggarwal* (1999) posits globalization and technology to be two mutually reinforcing forces: While an increase in international commerce promotes the diffusion of new technologies into foreign markets, making these more profitable than if confined solely to the domestic market, it is, in turn, exactly these new technologies that are also the driving force behind global competition, increasing internationalization strategy formulation in both small and large firms. *Schulte* (2001, p. 92) refers to this compilation of developments as “technoglobalization”, which also postulates the foundation of a new and changed competitive landscape for businesses.

These developments capture the central research interest, which initiated this study: On the basis of these technological developments small and new firms are able to compete globally, reach a world-wide customer pool, effectively and efficiently communicate, deliver products and perform transactions just as their established counterparts could (*Oviatt and*

McDougall, 1995). For this purpose, the aim of the following section is to define and describe the central concepts and terms of this study, elicit the central research question and the strategy of this study. First, the research context in which the internationalization occurs, the Net Economy, will be delineated. Then the research object, the characteristics and the role of the young firms, referred to as E-Ventures (*Kollmann*, 2006a), will be described. Third, E-Venture internationalization strategies and trajectories will be explained. Lastly, the central aims of this research study and a delineation of the structure will conclude this introductory chapter.

1.1 Research Context: The Net Economy

Barwise (2001) attests that perhaps only the innovation of electricity can match the combined speed and scale of the impact of IT and ICT[1] on businesses and everyday lives, topping earlier radical innovations such as the electric telegraph, the railroad, electricity, the telephone, the automobile, airplane, radio, and television. Basic innovations such as the steam engine in the 18th century or electricity in the 19th century had a fundamental impact on society and business economics creating new industry structures, laws, the founding of trade institutions, large scale organizations, mass production factories and industrial innovations such as the commodity futures exchange (*Chandler*, 1977). These organizational developments significantly contributed to economic growth at the time, enabling businesses to profit from increasing economies of scale and scope (*Man*, 2004, p. 1). Furthermore, it is the IT and ICT inventions and advances, which trigger the transformation from the agricultural to the manufacturing and service economy to today's *Net Economy*, *Information Economy* or *Network Economy*[2] (*Aggarwal*, 1999; *Hitt et al.*, 1998; *Kollmann*, 2007; *Man*, 2004; *Nefiodow*, 1990).

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1 Although ICT are developed and processed on the basis of IT networks and therefore are technically different, the two terms will be used synonymously in this study.

2 The term *Network Economy,* predominantly used in the USA, is used synonymously to the term *Internet Economy* (*Zerdick et al.*, 2001, p. 146). In the literature these terms are often used interchangeably and the distinctions in the definitions are blurred. The term *New Economy*, with the counterpart Old Economy, prevailed during the rapid rise in new firms and business models- predominantly over the internet- of the 1990s. This era is also referred to as the 'Dot-Com-Boom' phase. *Porter* (2001) postulates that the term *New* Economy is not adequate and misleading and refers to the distinct strategies, competitive behavior, competitive advantage based on IT and ICT technologies, which are not unfamiliar in industry economics and therefore not *new*. Furthermore, because the execution of economic opportunities via digitized networks is classified as E-Business, these firms are often synonymously referred to as E-Business firms, depending on the

Based on IT advances a global digital network of personal computers (PCs), information servers and hubs, i.e. the world wide web (WWW)[3], were developed (*Kollmann*, 2007). However, also 'smart' devices, such as new generation cell phones, personal digital assistants (PDAs), interactive digital televisions, online gaming computers, in-car telematics, electronic vending machines, and utility meters are increasingly inter-linked by digital IT networks (*Barwise*, 2001; *Kollmann*, 2007). Information, communication and entertainment technologies are compiled and processed on the basis of information systems and interactive multimedia systems (*Kollmann*, 2007). ICT advances in emailing programs, on-line auctioning and payment software, intuitive interfaces such as automatic language translations and location-sensitive communication permit *cost-reduced*, *efficient* and *effective* communication (*Kollmann*, 2007; *Maes*, 1999).

As the digital infrastructure in the media, entertainment and communication sectors continues to advance and penetrate into other sectors such as the transportation and automobile industries, the Net Economy continues to develop and grow (*Kollmann*, 2006a). The main difference between the development of the Net Economy and past economies is the *speed* and *scope* of the global dispersion with which the business operations and structures are transformed (*Kogut*, 2003; *Nefiodow*, 1990). The growth and diffusion of the Net Economy is far larger than that of other mass media such as the radio (*Kollmann*, 2006a; *Zerdick et al.*, 2001, p. 152).

Equally, this also pertains to the customer side as the number of users on the WWW continuously increases, especially in populous countries such as

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function and the actors of the economic transaction. The term *New Economy* was coined by the sociologist Manuel Castell (*Vahlne and Johanson*, 2002, p. 209). In the following, for reasons of brevity, the term *Net Economy* will be used, with the concept of the *network* at its core. In the literature the term *real* economy is applied to firms operating in the industry economy as an antipole to the digitized economy (*Weiber and Kollmann*, 1998).

[3] Originally initiated by the foreign policy conflicts with the USSR the Advanced Research Projects Agency Network (ARPANET) was initiated in the 1960s for military institutions in the USA and served as the forerunner of the internet, whose basic principle is interconnecting computers into a network for knowledge-sharing (*Flichy*, 2007). In the 1980s the network was applied by governmental and educational institutions and in 1994 non-profit organizations lost sole access to established web sites (*Brynjolfsson and Kahin*, 2000). With the development of the Transmission Control Protocol (TCP) and the Internet Protocol (IP) also known as TCP/IP, the first two networking protocols for data file transfer enabled linking decentralized computer networks and transporting multimedia applications (*Brynjolfsson and Kahin*, 2000). This development paved the way for the diffusion and the commercialization of innovations over the worldwide digital network.

China, India, Brazil, Russia or Indonesia (*N.N.*, 2006): While in 1995 the number of users was 45 million, by 2006 the number increased to 420 million and is estimated to reach two billion by 2011. Using the information networks systematically to acquire information and develop knowledge is now ubiquitous without restriction to place and time in every day life. The individual desire for life-long-learning, on the one hand, but also the increasing demand for know-how, education and training in the work force, on the other hand, are both fostered by the dispersion of the global information network. These developments build the foundation of the modern information or knowledge society (*Kollmann and Christofor*, 2005; *Man*, 2004). Moreover, with information becoming instantly accessible, digitalized networks also facilitate the globalization of knowledge for individuals and entrepreneurs alike (*Kelly*, 1998). Communication in and between firms and business operations have been fundamentally transformed on the basis of the *increased technological* and *business performance* of ICT and dominant software standards (*Zerdick et al.*, 2001).

1.2 Research Object: E-Ventures

An amplitude of innovations in the telecommunications, information technology, media technology and entertainment sectors, also referred to as the TIME-sector, lead to an increase in new business foundings in the 1990s (*Kollmann*, 2006b). These innovations are based on digitalized bits of information distributed over the digital networks of the Net Economy and the firms which generate revenues with these digital innovations are referred to as '*E-Ventures*' (*Kollmann*, 2006a) or '*digital information good providers*' (*Mahnke and Venzin*, 2003)[4]. Contrary to the marketplace, which constitutes the physical world of resources also referred to as the 'world of atoms', the space where digitalized units of information are traded is coined the 'market space' (i.e. the 'world of bits') (*Negroponte*, 1995). Value in the Net Economy is created by *collecting, systemizing, selecting, combining, distributing, exchanging, evaluating, offering and displaying electronic information* (*Kollmann*, 1998a; *Weiber and Kollmann*, 1998). Hence, business activity

[4] Terms such as *Internet Start-ups* (*Loane and Bell*, 2002) or *Dot-Coms* (*Barnes et al.*, 2004) form a subgroup of E-Ventures, since business models which create value over other types of digitized networks are literally omitted in the terms. However, the internet remains the most widespread global digital network and the sphere in which E-Ventures are most active.

based on ICT involves the *creation, processing and communication of information* (*Kollmann*, 1998a; *Porter*, 2001).

The upsurge of new and innovative firms in new and established industries redefine the industry structures and rules of competition (*Schulte*, 2001). These firm foundings with their entrepreneurial cultures, behaviors and market strategies build the foundation for the Net Economy (*Aggarwal*, 1999; *Hitt et al.*, 1998; *Kollmann*, 2007). Equally, a rise in the number of venture start-ups plays a significant role for the economic growth of a region, an industry and the national economy (*Koch*, 1999, 2001). Not only do they stimulate competition increasing the dynamics of an industry they also augment the technological innovativeness and competitiveness on a firm as well as an industry level (*Koch and Zacharias*, 2001). Moreover, innovative technological firm foundings also promote economic development and the technological advances of a region or a country by creating new demand and economic growth (*Egeln*, 2000; *Klandt and Brüning*, 2002; *Kollmann*, 2006a). This also includes, for example, the firm demanding human resources on the local labor market and, thus, creating employment opportunities.

This was the case for the Net Economy, where the number of domains shows an increase of firm market entry in a *first wave* between 1998 and 1999 (see Figure 1). Due to low interest rates in combination with an increasing availability of start-up capital the number of domains continued to increase between 1999 and 2000 (*Schmidt*, 2005). However, while the firms' market capitalization rose, the profitability of the firms did not increase as expected and, therefore, venture financing decreased strongly in the period from 2000 to 2001. This resulted in a phase of *market downturn* and consolidation between 2001 and 2003. Numerous firms exited the market, firm mergers and acquisitions proliferated and solely profitable and cost-conscious firms remained in the market (*Kollmann and Kuckertz*, 2004). Despite this phase of consolidation, the Net Economy continued to grow and new firms with digital business models joined. Hence, in a *second wave* in 2004 the number of domains continued to grow especially based on an increased number of community business models (*Schmidt*, 2005). To illustrate this, while a total of 219 internet start-ups with an average deal of US$ 1.7 million had been funded in the first half of 2005, a total of 413 firms were financed in 2004 (*IT facts*, 2005). These business models, which feed on user participation and contributions, marked the phase of a new network culture and increased

venture capital financing for young firms in the Net Economy also referred to as the Web 2.0 (*Gibbons-Paul*, 2007). By 2007 the number of internet pages reached over 80 million (*N.N.*, 2007) (Figure 1).

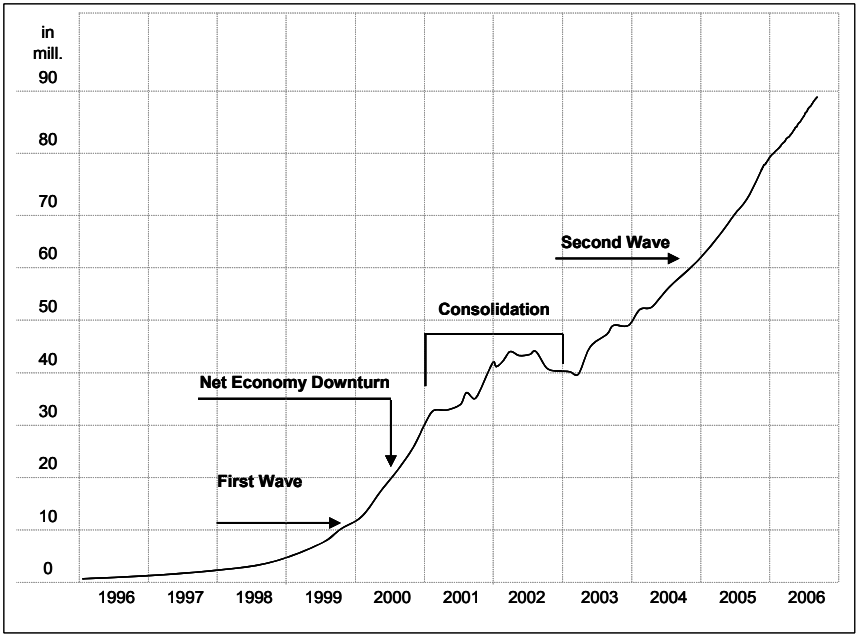

Figure 1: The number of registered domains worldwide

Sources: *Schmidt* (2005) and *N.N.* (2005) according to Netcraft/ TNS Infratest.

In summary, it is E-Ventures, which are the main research object of this study and are defined as follows (*Kollmann*, 2006a, p. 13):

> E-Ventures are firms that create value for their customers by handling electronic information via digitalized networks on the basis of ICT-software and compete in the Net Economy.

In the following, first, based on this definition, the characteristics of the value creation process in E-Ventures and the sources of competitive advantage will be described. In a second step, E-Venture product characteristics will be expound.

1.2.1 Value Creation and Sources of Competitive Advantage

With increasing business activity in the Net Economy the changed laws of competition were established for new as well as larger firms (*Kollmann*, 2006a): The pace of advances in technology lead to shorter product life cycles, changed working conditions and locations, less hierarchical organizations, and an increasing significance of intellectual assets, i.e. know-how (*Kogut*, 2003; *Kollmann*, 2006b). Hence, new sources of competitive advantage were created (*Kelly*, 1998). While in the industrial economy, *information* primarily fulfills a secondary function of the product (e.g. price) and is used for planning and control when coordination the business activities, in the Net Economy information is both the central input and output factor of all the activities in the firm (*Kollmann*, 1998a, 2006a; *Weiber and Kollmann* 2000). Contrary to the marketplace where the competitive advantage is defined by *quality and price* of the product (*Porter*, 1980), in the marketspace the competitive advantage is defined by *speed* based on ICT performance improvements and the quality of *information* (*Kollmann*, 1998a, 1998b, 2006a). Furthermore, firms' communication and operations, which embedded in ICT, are characterized by collaboration, networking, resource-sharing, information asymmetry, positive feedback cycles and increasing returns (*Aggarwal*, 1999; *Bradley et al.*, 1993).

These characteristics of E-Venture firms with information goods have certain implications for the business models: E-Ventures dispose of alternate governance structures, fast decision processes, short communication paths and are predominantly lead by a single entrepreneur or a small team with flat hierarchical structures (*Porter and Millar*, 1985; *Kollmann*, 2006a). In addition, because the products are based on information coupled with human knowledge, managers and founders of these firms are no longer, as was the case during the industrialization age, solely owners of resources such as machines, commodities, capital and labor, but are now masters of ideas, know-how and information and technology (*Aggarwal*, 1999; *Hitt et al.*, 1998, *Weiber and Kollmann*, 2000). This can be attributed, firstly, to the low market entry barriers of the Net Economy, where basic IT equipment, coupled with minimal office space, but also less need for human resources and physical resources, such as materials and machines is prevalent (*Kollmann*, 2006a). Mutually, small firms are resource-poor in terms of capital and employees but also lack *experience and know-how* in the business field, which poses difficulty in competiting with larger firms (*Koch and Zacharias*, 2001). The business

models in the marketspace are *less time-intensive* with regards to market entry than for a physical goods provider (*Kollmann*, 2007). And, most importantly, competitive behavior in the Net Economy is based on intellectual capital and characterized by the *attenuation of geographical restrictions* (*Bradley et al.*, 1993; *Johnson*, 2004; *Klandt*, 2003; *Koch and Schmengler*, 2006). This implies that the business models and the products are knowledge-based, i.e. in terms of market know-how but also technological know-how and that delivery is instantly possible. In addition, the firms are flexible and *active in market niches* (*McDougall and Oviatt*, 1996; *Koch and Schmengler*, 2006). While competition in the real economy was based on quality, in the Net Economy it is rather based on speed (*Kollmann*, 1998a).

In essence, because the Net Economy is based on ICT, a significant increase in *business efficiency* and *performance* can be observed (*Zerdick et al.*, 2001). This is because PC performance- in terms of transmission capacities- but also the price and performance ratio of hardware and software were significantly improved (*Kollmann*, 2007). These effects in combination with the value creation process lead to increasing returns (*Zerdick et al.*, 2005). The cost of transporting the information is independent from the distance and the amount of information delivered, because the information is digitalized. Therefore, transportation costs are close to zero (*Zerdick et al.*, 2001). Furthermore, due to digitalization, the *replication costs* are also insignificant, which contributes to these increasing returns.

But the increased performance is also linked to the *standardization* of products and processes fostered by ICT (*Ekeledo and Sivakumar*, 2004). Standardization is defined as the compatibility of part-systems of products and processes but also ICT innovations, where both the consumer and the provider benefit from the standardization. A harmonization of the business processes and cooperation within and between organizational entities occurs. A downside of standardization is the lower switching barrier for both software and hardware (*Zerdick et al.*, 2005).

External network effects are also characteristics of increasing performance in the Net Economy. The higher the number of users is in a network the higher the value for the users. This is also referred to as *positive network effects* (*Zerdick et al.*, 2001). However, this concept is subject to a critical mass of users where the value of the network does not increase after a certain number

of users have entered the network (*Kollmann*, 1998b; *Kollmann and Stöckmann*, 2007). An increased performance of firms in the Net Economy is also seen in the possibilities of the *lock-in effect*, where users who invest in multiple complementary products perhaps specific to a particular information system, are confronted with high switching costs (*Shapiro and Varian*, 1999). Although lock-in can occur on an individual, a company, or a societal level for E-Ventures, it is especially relevant with regards to the customer because information is stored, manipulated, and communicated in the hardware and software of the firm (*Kollmann*, 1998a; 1998b). This also implies higher *switching costs* for the customer. What is more, the characteristics of the Net Economy permit a higher *interactivity* with the customer because of the diminished distance and time but the products and processes also give way to a higher degree of *individualization*. By applying customer relationship management programs and database-management-software, the virtual customers are analyzed according to their 'online' behavior and needs. To this end, individualized offers can be made (*Kollmann*, 2007; *Picot and Neuburger*, 2003).

In sum, the enhanced performance of firms in the Net Economy are primarily attributed to the following impacting factors: The digitalization and standardization of products and process, the lock-in effects and the degree of interactivity and individuality. All of these factors comprise the main competitive criteria of E-Ventures- the immediacy, the efficiency between firms and customers and the increasing returns.

1.2.2 E-Venture Product Characteristics

Further distinctions of firms founded in the Net Economy pertain to the characteristics of electronic products: While electronic information is *intangible and non-perishable*, physical products are the opposite (*Kollmann*, 1998b). However, information is to a certain extent perishable if the topicality of information, as in stock prices or news headlines, is the value created for the customer (*Kollmann*, 2006a). Furthermore, demand and acceptance, implying also the customer's willingness-to-pay for electronic goods increase with the degree of *diffusion*, i.e. ring tones, E-papers, and the age of the product (*Skiera*, 2001). Therefore, online newspapers first ventured into the online business by solely offering their offline service free-of-charge. Only after a period of increased acceptance, due to increased trust linked to higher

switching costs and improvements on the product side, did newspapers start to incrementally introduce fees, in part, beginning solely with the archives or personalized content[5].

Another distinction is the fact that information products are *experience goods*, which implies that based on the experience, information and knowledge are available and the buying decision is based on the price (*Darby and Karni*, 1973; *Kollmann*, 1998b; *Nelson*, 1970). A further example in product characteristics is the difference in goods storage (*Kollmann*, 1998a): While the information goods are stored in databanks, physical goods are stored in warehouses. In addition, virtual products are characterized by *high start-up costs* and *low-marginal costs*, i.e. high start-up costs for programming, information gathering, restoring maintenance and product development and the inter-related low costs for product reproduction and distribution (*Brock*, 2000b; *Kollmann*, 2006a; *Rayport and Sviokla*, 1995). In sum, information goods can easily, i.e. with little additional effort, be duplicated.

This is also referred to as the *scalability* of business models (*Kollmann and Kuckertz*, 2003). Information goods are oftentimes classified as service goods, since they share product features of service goods in that they are non-perishable (*Ikechi and Sivakumar*, 2004). However, agreeing with *Mahnke and Venzin* (2003), it appears that there are differences in product criteria; services are perishable in that production and consumption are fulfilled simultaneously, and there is one cost block for a certain service and low marginal costs for information goods in comparison to service goods.

In sum, these product characteristics have three central implications for the firms (*Negroponte*, 1995): a) The additional production costs, i.e. the marginal costs for each additional unit, are close to zero. In addition no warehousing, in the traditional sense, is required; b) There is no significant difference between the original and the copy, and c) no border or regulation must be considered when handling the products.

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[5] For studies which analyze the impact of the internet on the newspaper industry see *Baer* (1998), *Dans and Pauwels* (2001) and *Geyskens et al.* (2002). *Kollmann and Herr* (2005) analyzed different possibilities of trust-building in German E-Ventures. They conclude their research by determining process-related factors of online offers as the most trust-building on the customer side.

1.3 The Internationalization Strategies of E-Ventures

Conducting business via global digital networks and applying ICT have made foreign and distant markets easily accessible for younger, smaller as well as resource-poor firms (*Bell et al.*, 2001). Worldwide digital networks are seen as a facilitator and enabler of small firm internationalization, which used to apply only to established multinational enterprises (MNE) (*Brock*, 2000a). By using the potential of the global digital network, internationalization barriers can be lowered or wholly overcome (*Berry and Brock*, 2004; *Dimitratos et al.*, 2004; *Hamill and Gregory*, 1997; *Kuemmerle*, 2002; *Prashantham*, 2005). *Schulte* (2001) attests that ICT make international expansion and various forms of entry, for example via the WWW, possible in the first place, thus, becoming the actual driver of global strategies of young firms. In this manner, E-Ventures can compensate for their liabilities of smallness and ageing (*Aldrich and Auster*, 1986) and newness (*Stinchcombe*, 1965) and are able to successfully compete with their larger counterparts in an international arena.

Small firms can conduct business on a global scale and at a lower cost, i.e. with few resources, and have instant access to a world-wide customer pool (*Butler*, 2001; *Rayport and Sviokla*, 1995). Equally, on the firm side, a worldwide network of suppliers, cooperation partners and financers become accessible (*Etemad and Wright*, 2003). This impact on small firm internationalization is often referred to as the 'death of distance' (*Waesche*, 2003). In addition, in comparison to traditional firms, E-Ventures have a lower degree of 'liability of foreignness', without logistical transportation, regulatory and cultural demands that physical goods pose (*Kotha et al.*, 2001, p. 771).

While the traditional internationalization theories, which mainly apply to multinational corporations, purport an incremental internationalization trajectory, where foreign market uncertainty is reduced as internationalization experience is gained, E-Ventures dispose of alternate and specific market entry forms (*Kollmann and Christofor*, 2004). While traditional market entry forms such as exporting, licensing, cooperating with a foreign partner or establishing a foreign subsidiary are also strategic options of E-Ventures, based on the nature of the ICT networks, other forms of market entry may be chosen (*Kollmann and Christofor*, 2004). These strategies are illustrated in Figure 2, where, depending on the budget, different market entry strategies are developed at varying speed. Instant market entry in different countries is

characteristic of the Net Economy (*Kollmann and Christofor*, 2004), the difference being if the network presence is linked to local resources or not.

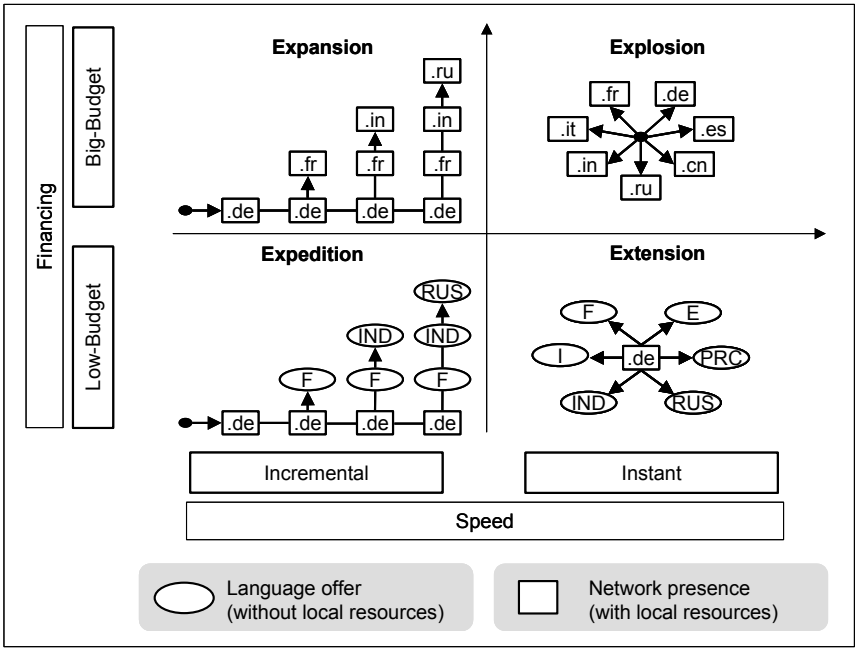

Figure 2: Alternate market entry strategies for young firms in the Net Economy

Source: *Kollmann and Christofor*, 2004, p. 113 (slightly modified).

For example, the *expansion* strategy, which requires big-budget venture financing, may start in Germany and incrementally grow with the build-up of local resources in steps, first, into geographically and culturally close markets (*Kollmann and Christofor*, 2004). This is contrary to the *expedition* strategy, where only a restricted amount of capital is available, and the site is incrementally translated into different languages (*Kollmann and Christofor*, 2004). Service operations are provided from the home country. A source of financing for this strategy is business angel funding, where experienced, oftentimes senior entrepreneurs support small firms with know-how and capital of up to € 50.0000 (*Brettel*, 2003; *Brettel et al.*, 2005; *Klandt and Krafft*, 2003).

This differs from the *explosion* and *extension* strategy, where instant internationalization is ICT-facilitated by either establishing a network presence with local resources in each country (extension) or, upon inception, translating

the site into different languages (explosion). In these cases, also geographically and culturally distant countries are targeted instantly and at a higher speed. The difference between the two strategies, however, lies in the capital resource and the required time frame for market entry. The explosion strategy is technically instantly implementable, while the extension strategy demands time and resources; above all, capital resources.

Researchers have taken up this phenomenon of fast internationalizing young, resource-poor firms in the Net Economy and refer to them as 'instant internationals', 'surprise internationals', but also 'virtual globals' or 'instant virtuals' (*Chen et al.*, 2003; *Preece et al.*, 1998). The necessary terms and conditions for fast and early internationalization, i.e. for sustainable international new ventures, are as follows (*Barney*, 1991; *Oviatt and McDougall*, 1994, p. 45):

(a) The organizational formation occurs by the internalization of certain transactions;

(b) there is a strong reliance on alternative governance structures to access resources;

(c) foreign location advantages on site are established, and

(d) the firm controls unique resources.

Reasons for early and fast internationalization of E-Ventures are attributed to the firm characteristics, the easy replicability of their business models and a 'pull and push' effect by the industry markets (*Nummela et al.*, 2005; *Prashantham*, 2005). For example, by publishing the company website and making a product offer on the internet, a firm is communicating its concept globally without restrictions of place and time. A distinction between national and international communication campaigns of firms is increasingly attenuated (*Hamill*, 1997; *Quelch and Klein*, 1996). Equally, there appears to be a contradictory imperative for early internationalization needs and requirements despite the liabilities: In particular, knowledge-intensive firms internationalize faster than other types of firms (*Nummela et al.*, 2005). However, it is yet unknown if there is a connection to the fact that knowledge is inherent in its activities and outputs and is a source of competitive advantage (*Autio et al.*, 2000). What is more, there is a strong international orientation almost from the first day of founding in firms, which internationalize early and at a fast pace

(*McDougall et al.*, 1994). However, it appears that due to the disposition of a global digital network the international orientation of E-Ventures may be stronger than for other technology-based firms, which also internationalize at an early age and at high speed[6].

In conclusion, the distinguishing feature of E-Venture start-ups is that their make-up is *global*. This provides them with a global core or origin, due to the capabilities to internationalize with few resources, at low cost and on a global scale. Therefore, internationalization at the beginning of establishment and at a faster pace than other innovative firms is implied for E-Ventures.

1.4 Research Aims and Structure of the Thesis

In summary of the line of reasoning in the previous chapter, some influencing factors must occur in the formative stages of company development of E-Ventures, which lead towards internationalization. E-Ventures, just like born globals, hold the possibility of instantly transferring their competitive advantage across borders and without geographic restrictions, where the global digital network serves as both an instrument and a facilitator for international expansion (*McDougall et al.*, 1994). Therefore, it appears that a distinct internationalization potential is ubiquitous. However, not all E-Ventures internationalize, although the characteristics needed are given (*Spence*, 2003): In a study by *Dienst* (2003) 90% of the born globals surveyed in Germany stated that they revoked their internationalization endeavors and gave up foreign subsidiaries to cater to the domestic market (*Dienst*, 2003, p. 541). This phenomenon, although E-Ventures dispose of the characteristics of Born Globals, challenges the general assumptions of the international new ventures theory. Moreover, there are assumed to be some influencing factors, which prevent other E-Ventures, although the prerequisites are provided, from internationalizing, while other firms internationalize upon inception and successfully overcome their organizational liabilities based on age, size and technology[7]. In consequence, the central research question of this thesis is:

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[6] 'Born Global' or 'instant international' does not necessarily imply engaging in international business activities from the first day of founding, but more so, engaging in the internationalization process from the formative stages of business development (*Preece et al.*, 1998).

[7] *Witt and Rode* (2005) expound on the challenges and the changed conditions of brand-building within a short time frame, which small firms dispose of upon inception. *Kollmann and Suckow* (2006) analyzed the brand-building process of E-Ventures also considering the significance of the domain name for market entry.

Which factors comprise the internationalization propensity of firms in the Net Economy?

This research question holds two main aspects: First, what are the basic parameters of the first internationalization decision of a firm in the Net Economy? And, second, what are the influencing factors of the internationalization propensity of entrepreneurs in the Net Economy? These questions are rooted in the research field of international entrepreneurship (IE). IE research investigates the contexts and behaviors of born globals, international new ventures or accelerated internationalizers (*Zahra*, 2005). In general, IE research consists of two main streams; (a) entrepreneurial behavior of organizations outside of its domestic borders and also (b) comparisons of entrepreneurship, in particular entrepreneurial behavior, in multiple countries and cultures (*Wright and Ricks*, 1994). The IE research stream developed mutually based on the strategic management, international business and entrepreneurship literature, when researchers in the field acknowledged that new paradigms were needed to explain competitive and internationalization behavior of not only younger but also smaller firms (*Coviello and Jones*, 2004). Today, IE is defined as follows:

> „International entrepreneurship is the discovery, enactment, evaluation, and exploitation of opportunities – across national borders – to create future goods and services“ (*Oviatt and McDougall*, 2005, p. 540).

This definition of IE can be applied to new ventures, small and medium-sized enterprises but also corporate ventures, multinational companies, nonprofit and government organizations and social entrepreneurship ventures (*McDougall and Oviatt*, 2005). In addition, it is consistent with the broad definition of ‘international business’ and includes aspects of risk-taking, competitiveness and expansion. What is more, all types of firms are included; hence, it also encompasses E-Ventures.

After having stated the research question and defined the field of research, in this chapter, first, the research aims and the value of research will be delineated and, second, the structure and the strategy of the thesis will be outlined.

1.4.1 Research Aims and Value of Research

This study and its research questions are issue-driven (*Buckley and Lessard*, 2005), implying that the phenomenon of interest and the research contribution apply to an observation in firms. The main issue of internationalization propensity in the Net Economy is embedded in the hereto-described research context and object. The findings of this research are of value for various purposes and means:

First, the study is motivated by a gap in the literature and lack of knowledge of the observed phenomenon. *Mahnke and Venzin* (2003, p. 16) contest that much of the IE literature has been developed in the context of large firms that provide *physical* goods versus small firms with digitalized goods. Few studies treat young firm's internationalization over digitalized networks and predominantly the question is more on *how* rather than *why* (*Rhee*, 2005, p. 279). Furthermore, the research in the IE field is mainly anecdotal and descriptive in nature (for an overview see *McDougall and Oviatt*, 2005), and an extant understanding of the role of the internalization propensity in small firm internationalization is nascent. At present existing internationalization theories do not fully explain the phenomenon of internationalization propensity. Moreover, the traditional decision processes and trajectories do not include all aspects of E-Venture internationalization. In consequence, there is an epistemological interest into how entrepreneurs make decisions. They predominantly adhere to larger, established and management-oriented firms and the entrepreneur, as an individual, is not considered on a personal level.

In general, researchers in the IE field call for more situation-specific perspectives in research (*Coviello and Jones*, 2004; *McDougall and Oviatt*, 2005; *Zahra and George*, 2002). According to the international new venture theory the influencing factors of start-ups that internationalize are a) general industry characteristics (*McDougall*, 1989), b) characteristics of founders, for example knowledge and background (*McDougall, Shane and Oviatt*, 1994), c) international experience (*Madsen and Servais*, 1997), d) the strategy (*McDougall*, 1989), and e) the attitude and philosophy of the founder (*McDougall, Shane and Oviatt*, 1994). In general, research on internationalization propensity has not been sufficiently treated in the literature. Hence, this research stream purports that a global orientation is ubiquitous, however, it is not further specified nor are the comprising factors highlighted.

Although there is an increase in literature dealing with the internationalization of digital business, most contributions are rather anecdotal and lack empirical research (*Hamill*, 1997; *Hamill and Gregory*, 1997).

Empirically, the majority of research is based on internationalizing firms *after* the decision to internationalize and this research predominantly treats such subjects as market entry strategies, financing and speed and scope. Many studies regarding the antecedents mainly focus on the effect of motivation on firm growth (*Knight*, 1997; *Moen et al.*, 2004). They suggest that there is a relation between the management's attitude and the internationalization behavior. Recent studies also indicate that the antecedents for international growth may be different than for growth in general (*Nummela* et al., 2005)

The value for the academic community mainly lies in an increased understanding of the currently limited knowledge. Understanding the determining factors of internationalization propensity may also be significant for gauging future success and failure. Hereby the author believes it is not sufficient to replicate and study the internationalization processes of firms because the phase prior to the internationalization decision is a dynamic process. Therefore, it is significant to investigate in which framework the internationalization decision occurs. More so, what the impacting factors on the entrepreneur are. In consequence, the research aims of this study are as follows:

> Research aim 1:
> The first central research aim is to identify the basic parameters of an internationalization decision of a firm in the Net Economy based on theoretical foundations. Thus, the term internationalization propensity will be defined and adapted for a better applicability for Net Economy entrepreneurs. These will be theoretically grounded based on international business, strategic management and entrepreneurship literature.

> Research aim 2:
> The second central research aim is to create a framework of internationalization propensity in the Net Economy and empirically test the parameters. Hence, insights into the mindset of internationalizing entrepreneurs in the Net Economy in Germany will be acquired in the course of this study.

Research aim 3:
The third central research aim is focused on developing typological entrepreneurial profiles for internationalization propensity in the Net Economy.

1.4.2 Structure and Strategy of the Thesis

The aim of this chapter is to briefly present the key contents of each part. In addressing the outlined research context and the research aims, this thesis will be structured as follows (Figure 3).

In part 2 the theoretical foundations of firm internationalization will be reviewed. First, the determining factors of internationalization strategies will be highlighted, in particular, the selection of international markets and firm market entry strategies. The insights gained on the grounds of theoretical and empirical insights will then be assessed for applicability to the E-Venture context. Second, the theories of international business will be reviewed with regard to explanations for internationalization propensity. These are, in particular, the monopolistic advantage theory, the internalization theory, the eclectic theory of international production, oligopolistic reaction theory and the international product life cycle theory. Because these theories do not provide adequate explanations for internationalization propensity in the Net Economy, in a next step, the traditional process and export development models will be discussed and reassessed for E-Venture internationalization behavior. For this purpose, first, the Uppsala Internationalization Model will be described and critically reviewed. Then, the static export development models deriving insights for antecedents of internationalization are expound. These insights are further deepened by considering the pre-export models of *Wiedersheim-Paul* (1978) and *Olson and Wiedersheim-Paul* (1978), who conceptualized the initial phase prior to the first expansion. This part is concluded by a summary of the central insights.

In part 3 the field of entrepreneurship theory is consulted in order to gain further knowledge of E-Venture internationalization. After first describing defining entrepreneurship and the entrepreneur the entrepreneurial process is explained. This also includes eliciting the concept of entrepreneurial opportunity and the determinants of founding intent. Subsequently, the theoretical conjunction between entrepreneurial orientation and entrepreneurial behavior is discussed. Part 3 is concluded by a summary.

Part 4 then provides a synopsis of the theoretical literature reviews undertaken in part 2 and 3. For this purpose, first, the synopsis of the entrepreneurship and internationalization theories for the research question is discussed. Then a research framework and the hypotheses are derived, in particular, from part 2 and 3. In conclusion, a research framework for internationalization propensity in the Net Economy and six hypotheses are presented.

These hypotheses are then tested in part 5, where, first, the conjoint analysis method is assessed with regards to the research question. In a next step the central methods of preference measurement, i.e. the decompositional, compositional and hybrid conjoint analysis, are explained. The adaptive conjoint analysis is then applied to design and develop the survey. First, the applicability of the Adaptive Conjoint Analysis, a subgroup of the hybrid preference measurement method, is determined and the design of the conjoint analysis is explained. A description of the development of the post-experiment questionnaire and pretesting then follow. Finally, the data collection including the sampling frame used in the study, the data collection process and survey design are described. This part ends with indications to the response rate and non-response bias as well as the missing values and the reliability of the data.

In part 6 the data collected in the empirical study is analyzed. First, the descriptive findings gained from the post-experiment questionnaire, i.e. the characteristics of the sample respondents and of the sample firms are illustrated. Subsequently, the conjoint experiment results, the part worth values and the relative importance of the attributes are analyzed. In a following step the data is segmented in order to gain a better understanding of the internationalization propensity of the founders. To this end, first, the active choice variables are determined. Second, a cluster analysis is performed on the data in three steps; first, the single-linkage procedure, second, Ward's minimum variance and third, the K-means procedure. The cluster analysis is then internally validated and is used to a discriminant function analysis is used to confirm that the cluster objects are significantly different with regards to their cluster assignment.

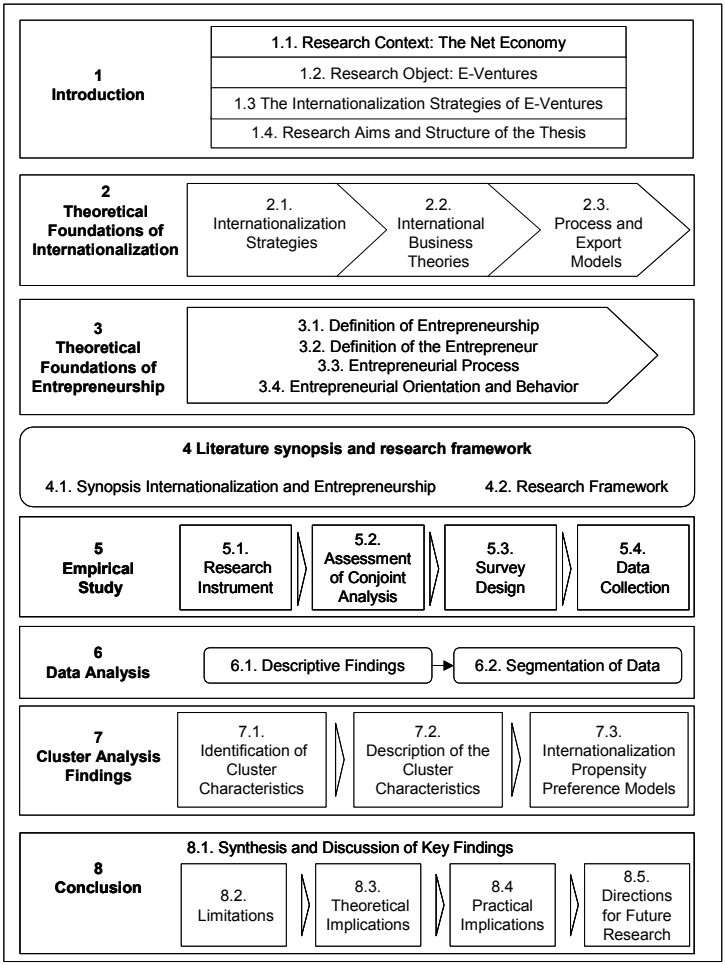

Figure 3: Structure of the study

In part 7 the obtained cluster solution is described. First, the cluster characteristics are identified by measuring the t-value and by describing the weights of the active cluster variables for each group. To this end, the members of each group are characterized based on the active cluster variables, which are the dimensions of entrepreneurial orientation: Risk-taking, proactiveness and innovativeness. Descriptions of the cluster members based on the cluster characteristics and the corresponding internationalization propensity preference models then follow.

Lastly, in part 8, a synthesis of the key findings for the general sample and for the internationalization propensity models concludes this thesis. Following this, the main limitations of the study are shed light on, followed by the theoretical and practical implications. Finally, the directions for future research are affirmed.

1.5 Summary

The impact of ICT in the 1990s together with the impact on globalization has facilitated the entry to today's information society but also the upsurge of young firms with business models based on electronic information competing in the Net Economy. These firms are referred to as E-Ventures in this study.

When comparing firms from the Net Economy and the Industrial Economy, E-Venture firms dispose of an electronic value chain with the production factors information, ICT-technology and intellectual capital. In contrast, the factors of production in industrial economics are natural resources; human capital and monetary capital and the products are stored in warehouses while in the Net Economy and not in digital data banks. The firm's headquarter in the traditional economy is located in a geographically significant and optimal location, while the Net Economy firm presents itself, above all, virtually on the WWW. Real economy firms are able to compete in a large market segment (mass market), while small E-Venture firms cater mainly to market niches, are able to adapt to rapidly changing external conditions and circumstances. The main value creating activities of E-Venture firms are *gathering, systematizing, selecting, combining, distributing, exchanging, evaluating, offering and displaying electronic information.* All these characteristic have an effect on the firm and its business model but, more so, on its competitive behavior. This includes the internationalization strategies and market entry choices. These strategies are above all impacted by technological performance improvements in ICT in combination with reduced costs and increased efficiency, the digitalization and standardization of the business models that lead to an increased immediacy and interactivity with the customer, and positive network and lock-in effects. All these factors lead to a death of distance when distributing to the worldwide customer pool but also to global activities and competition for E-Ventures and this at a lower cost. To this end, there is assumed to be a strong international orientation almost from the first day of founding due to the characteristics of the global digital network.

While the traditional internationalization theories, mainly applying to multinational corporations, purport an incremental internationalization trajectory, where foreign market uncertainty is reduced as internationalization experience is gained, E-Ventures dispose of alternate and instant market entry forms. With the potential of a global digital network internationalization barriers can be lowered or wholly overcome.

However, with regards to the international new ventures theory the explanatory power for internationalization propensity appears limited and incomplete. International new venture theory ascertains that a global orientation of the entrepreneur is ubiquitous and the firm controls unique resources and uses alternative governance structures, for example in global and digitalized networks. However, with regards to the market entry strategies foreign location advantages, in the classical sense are not required and due to the characteristics of E-Ventures, organizational formation does not necessarily occur by the internalization of certain transactions. Hence, the conditions apply to some E-Venture however, not necessarily. To empirically test the internationalization propensity in the Net Economy and to this end shed more light on the initial internationalization decision-making phase of E-Ventures is the central aim of this thesis.

"Internationalization is both a behavior and an attitude."

Johanson and Wiedersheim-Paul, 1975, p. 306.

2 Theoretical Foundations of Firm Internationalization

The definition of 'internationalization' according to *Welch and Luostarinen* (1988) is the process of business activities across home country borders with an increasing degree in operations[8]. While the term 'international business activity' implies the exchange of resources across national borders (*Fayerweather*, 1978), the 'internationalization process' is traditionally perceived as the consequence of incremental adjustments to changing conditions within the firm and its environment (*Aharoni*, 1966). Most significantly, *Perlmutter* (1969) already then acknowledged the conjunction of internationalization and attitudinal development within the firm, indicating the impact of the company expansion across borders on an organization.

Besides defining the term internationalization, the first part of this thesis aims at exploring possible explanations for internationalization behavior and antecedents of internationalization in the Net Economy. In the following, the basic concepts of internationalization strategies are described in chapter 2.1, before the theoretical approaches of internationalization theories are highlighted in chapter 2.2. In the third part of this chapter, internationalization process models will be applied to shed light on the development of the internationalization trajectories.

2.1 Conceptual Foundations of Internationalization Strategies

The purpose of the following chapter is to explore the attributes of internationalization strategies. To that end, first, aspects pertaining to the market entry *decision* are discussed, i.e. the evaluation and selection of a foreign market, and, second, the question of *how* the market is entered is determined, i.e. the market entry strategies.

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[8] The term internationalization is applied when referring to country, industry or firm-level issues (*Dana et al.*, 2004). Globalization, on the other hand, is according to the World Trade Organization (WTO) only used on a country or industry level and describes the macroeconomic and cross-national continuous integration of the world economy.

The entire internationalization process of a firm is predicated on the assumption that a strategy is first formulated and then pursued. Thus, the will to engage in an international business activity already exists and this precedes a strategy-finding process. *Chandler* (1962, p. 13) defines strategy as

> "(…) the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals."

Hofer and Schendel (1978, p. 4) further define strategy as the activity of best bringing the basic company attributes and its environment together. And, *Aharoni* (1966, p. 294), along the same lines, delineates internationalization strategy as a compilation of objectives, policies and plans for achieving goals *in a foreign market*. Each firm willing to internationalize selects certain strategic options in accordance with its objectives. These options are then evaluated with the maxim of acquiring new competitive advantages and securing existing advantages (*Szyperski and Winand*, 1980, p. 81).

Other terms employed for internationalization strategy in the literature are 'export strategy' (*Aspelund and Moen*, 2001) or 'exporting strategy' (*Miesenbock*, 1988), and 'international business strategy' (Daniels, 1983), all of which are synonymous with the frequently used terms 'international expansion' (*Mascarenhas*, 1986) and 'international diversification' (*Geringer and Costa*, 1989). One main difference between an international and a domestic strategy is that the management of the firm must in a first instance, when formulating the strategy, make a decision as to how the foreign market will be entered.

This entails a two-step procedure: First, a firm must select a market (chapter 2.1.1), and, in a second step (2.1.2), formulate a strategy for the appropriate form of market entry. In chapter 2.1.3 a synopsis of the insights will take place and be linked to empirical evidence of E-Venture international market entry.

2.1.1 International Market Selection

The market selection decision involves choosing the appropriate market for cross-border activities. Depending on the internationalization strategy,[9] this can imply the selection of one market or multiple markets that are to be entered at the same time. However, bearing this in mind, the following statements refer to a single market.

Before addressing the different types of market entry strategies in the next chapter, two central dimensions play a role in foreign market evaluation in the international business literature[10]: (1) The opportunities that are associated with entering the foreign market, and (2) the risks linked to entering the foreign market (*Doole and Lowe*, 2000; *Young et al.*, 1989, p. 26).

Opportunities pending across domestic market borders are indicated by the attractiveness of the market. Market attractiveness is determined by the economic potential for the firm in the new market. Indicators for economic potential in a foreign market are multidimensional (*Hill*, 1996, pp. 58-60) consisting of cost-related, internal firm factors and market-related criteria (*Backhaus et al.*, 2005, pp. 82-84). Cost-related factors are, for example, using surplus productive capacity to generate revenues in the foreign market, thus increasing the overall company surplus, or increasing productive capacity by producing for a foreign market, thus decreasing the costs per unit (*Dienst*, 2003). Other cost related factors are, for example, lower labor or raw material costs in the foreign market leading to production cost advantages (*Backhaus* et al., 2005, p. 82). Opportunities arising for the firm itself when internationalizing include an increase in innovation and performance (*Dienst*, 2003; *Herr*, 2007), through increased know-how in multiple markets, increased in-house experience in management, production, and marketing but also knowledge transfer in the foreign market[11]. Market-related criteria adhere to the primary goal of maintaining or establishing a new market, by the transfer of the competitive advantage into the new market. Due to different industry-life-

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[9] Market entry strategy and internationalization strategy will be used synonymously in the following.

[10] Market entry strategies are largely discussed in the international management literature, however, the question of choosing a market to process is also a dominant topic in the international marketing literature (*Meffert and Bolz*, 1998).

[11] For an insight into the role the foreign subsidiaries of international corporations can have on the technological development of the host country see *Berger* (2006).

cycles and economic-cycles the firm can diversify risks by subsequently proceeding into different markets at different points in time.

However, opportunities are also associated with risks. *Miller* (1992) and *Brouthers* (1995) present three groups of risks; (a) firm-specific risks (b) industry risks and (c) general environmental risks[12]. Contrary to firm-specific and industry risks, general environmental risks are risks which apply to all firms independent of competition, for example, the political and environmental instability.

Firm specific risks are predominantly cost-related factors: Low labor costs associated to production cost advantages may increase competition of labor within the firm and induce long-term lay-offs in the home-country production sites or headquarters. Other risks associated with international operations as stated by *Dienst* (2003) are risk of investment, e.g. the start-up costs for market entry if a distribution system in the foreign country is necessary or the risk of high coordination. Due to different demand structures in individual countries, firms need to diversify their product scope, which, in turn, increases the demand on resources and different technological standards. In sum, there is a risk of increased organizational complexity[13]. The duration of the internationalization commitment can also be seen as a risk: There may be a time lag between the high investment in and the cash-flow from the foreign operation. Furthermore, foreign operations may imply a long-term commitment, with the corresponding long-term need of company resources and cash-flows until the market position and objectives are reached. Primarily, this may be attributed to cultural divergence and need of market knowledge.

Industry risks, according to *Backhaus* (2005), mainly embody market entry barriers. Market entry barriers are “all conditions which need to be fulfilled in order to enter and operate effectively in a country market” (*Backhaus et al.*, 2005, p. 84). There are *natural* market entry barriers, which stem from existing structural conditions in the market. And there are *strategic* market entry barriers, which are established by competitors to defer the entry of new firms. These barriers are in the form of pricing advantages: Established firms can

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[12] Different classifications of risks in international business activity can be found in the literature. For empirical evidence on risks in the international competitive arena cf. *Tan* (1996) and *Brouthers* (1995).

[13] For a detailed discussion on the dimension of complexity see chapter 2.1.2.

raise their prices above the competitive pricing level in the foreign market, due to low costs through synergy effects (*Bain*, 1956). *Bain* (1956) refers to price differences for a specific product in different country markets as an indicator for the level of market barriers. There is a pricing latitude for the established players as long as the market barriers prevent new entrants from competing in a specific market. If the new entrants manage to enter the market with low costs and a lower price, then the market barrier and the competitive advantage of the established players will be overcome.

Another industry risk is that of *substitution* in the foreign market: What is the competitive landscape like? Can the direct competitors satisfy the same demand more cheaply and with better quality? Furthermore, an internationalizing firm is exposed to market-related *behavioral risks*. The consumers might be prejudiced towards foreign products or certain countries and therefore have low acceptance for the products. *Dichtl et al.* (1983) state that the openness of consumers is significant for the acceptance of a new market entrant and the impact on the success of the market entry.

Economic risks are exchange rate risks that stem from volatile exchange rates, payment transfer risks, risks of inflation and, in addition, transport and storage risks. This not only includes risks of theft and damage during distribution and storage but also of decay or loss of value in the process of reaching the customer- in most cases without compensation. Finally, there are general environmental risks, or country risks, with which a firm active in the international arena is confronted (*Backhaus et al.*, 2005; *Brouthers*, 1995, p. 9 et seqq.): These risks are not directly economic but have consequences for the financial profitability of a firm (Table 1).

In summary, it is significant to point out that the market selection process is based on an information gathering process, leading to the evaluation of risks and opportunities. *Brouthers* (1995) states that it is mandatory to holistically evaluate all risks in connection with international business activities, criticizing past research efforts maintaining a focus on one single risk group. *Wood and Robertson* (2000) analyzed the importance of *market information* needed to make a market entry decision. Managers stated the information of *market potential* to be of most value. This included the dimensions of market demand, customer's purchasing ability, product or service adaptation costs, the nature and degree of internal and external competition (*Wood and Robertson*, 2000,

p. 48): “Do the products or services adequately fulfill the needs and demands of my customers?” *Legal concerns*, like the ubiquity of tariff and non tariff-barriers, intellectual property rights, laws regarding agent contracts and also travel requirements, were second-ranked, followed by *political considerations* such as the political stability, diplomatic relations and internal political policies. Ranked subordinately, information pertaining to *infrastructure*, i.e. the nature and extend to physical distribution and communication infrastructure, were ranked as fourth in importance. Interestingly, *economic indicators* like the growth in GDP, consumption trends, level of reserve currency, education, use of modern technologies and availability of natural resources were considered fifth in importance. Information relating to the country culture was ranked as least important.

Table 1: Overview of the risks of internationalization

Risks of expropriation	Property and valuable assets may be usurped by the government with compensation rights
Security risks	Arise due to political or social unrest in the foreign country
Legal risks	The legal framework impeding business within and outside the firm
Transfer risks	A company can not fully transfer its operations across its domestic borders
Fiscal risks	Transfer, payment and expropriation issues under circumstance due to high government debt
Communication risks	Difficulties within the firm, industry and customer relations due to cultural differences
Import barriers and tariffs	General import bans, quotas, local-content requirements or diverging technical standards, may also be of a protectionist nature

2.1.2 International Market Entry Strategies

The decision for a market entry strategy comprises a trade-off of different chances but also risks. In this chapter the basic forms of market entry strategies found in the literature will first be discussed, followed by synthesis of the dimensions applied to all the strategies. This chapter will conclude with the significance of the factor speed, an underlying determinant germane to all the strategies.

When formulating an internationalization strategy, interdependencies within a firm call for the effective coordination of market entry decisions: Can the firm

manage and control its activities in the current and prospective markets? For this purpose there are numerous options for market entry. The major market entry forms being (*Backhaus et al.*, 2005, p. 821; *Contractor*, 1990; *Jeannet and Hennessey*, 1998, pp. 307-330):

- Indirect or
- direct exporting,
- licensing,
- contract production,
- joint ventures,
- strategic alliances and
- acquisition of capital participation and even
- foreign direct investment (FDI)[14] in the form of founding a new subsidiary or acquiring one in the foreign country.

Figure 4 systemizes the market entry forms by differentiating between local and foreign production and entry forms with FDI and without FDI. In the following, the market entry modes will first be described and also discussed in order to shed light on the distinctions but also the advantages and disadvantages between the alternative entry modes.

Indirect exporting: The initial contact with customers proceeds through a legally and economically autonomous third party in the form of an export trader, export agency or export co-operative (*Bradley*, 1991, p. 290). Characteristically, these parties are situated in the foreign country. These cooperation partners serve the main purpose for the firm, which needs a prolonged arm with market and country knowledge to engage in the international business activity. On the one hand, export traders introduce the products into the foreign country under their own label, while, on the other hand, export agencies are autonomous in their operations but distribute the products under the producer's name. The rights to the brand name and the associated risks remain with the internationalizing firm (*Backhaus et al.*, 2005, p. 122). Another alternative to indirect exporting for an expanding firm is to join

[14] A foreign direct investment is an "investment by one firm in another with the intention of gaining a degree of control over that firm's operation" (*Dicken*, 2003, p. 51).

an export co-operative, which is a network of exporting firms, whose central administrative organ exports in the brand names of the members or under its own name.

The main advantages of indirect exporting for a firm are primarily the limited resource commitment and risks attributed to the intervening intermediaries, who are involved in the foreign operations. This is also attributed to low organizational and management complexity. *Petersen et al.* (2000) highlight the easy reversibility and high flexibility of indirect exporting activities: A firm can end or switch to another form of foreign commitment at a fast rate and with a very limited loss of funds.

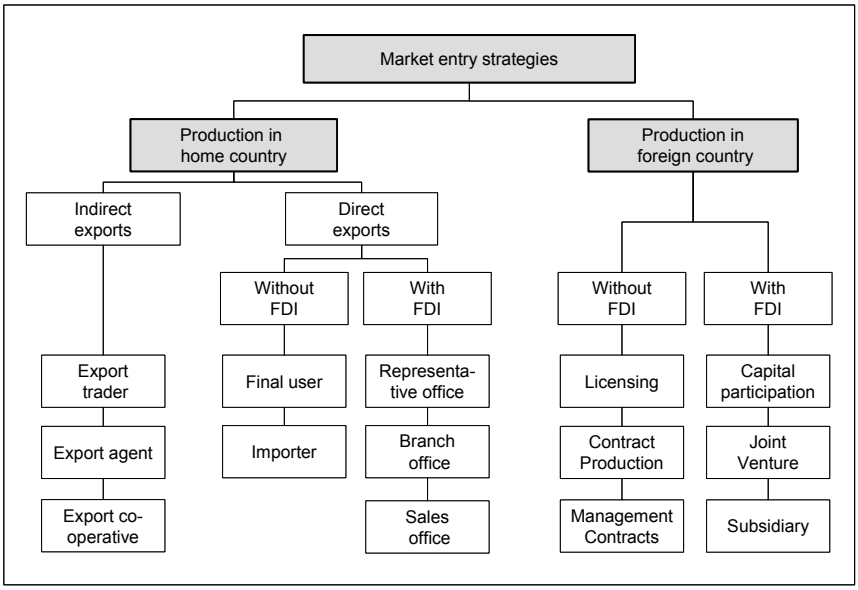

Figure 4: Systematization of market entry strategies

Source: *Backhaus et al.* 2005, p. 122 (slightly modified).

However, the problems of the indirect exporting modes are, above all, the lack of direct contact with the customers, meaning that the firm has a lack of precise knowledge of, for example, market data because it has not had enough learning experiences. Moreover, the organization has a limited knowledge of customer acceptance of its products at its disposal including customer needs and behaviors and may therefore neglect improvements or leave potentials unexploited (*Kutschker and Schmid*, 2004, p. 830).

Direct exporting: Direct exporting firms, initiated and processed by the firm itself without intermediaries, are differentiated by the effect of FDI (*Backhaus et al.*, 2005, p. 123). Direct export without FDI customers in the foreign country are reached either directly by the firm itself or by a foreign importer who bought and is reselling the firm's products. The main difference to indirect exporting is the complete transfer of risk and rights to the importer when the products are bought. The products are distributed without any adaptations, and, moreover, under the name of the manufacturer. Direct exports with FDI, on the other hand, proceed via representative offices, branch offices or sales agencies. In representative offices employees are appointed to 'represent the company' locally in the foreign country: To gain insights into the market and maintain industry and country relations. Furthermore, representatives not only serve the purpose of preparing and supervising the exports but of further development in the country market, for example, by acquiring new customers for the preparation of other internationalization strategies, like contacts to potential joint venture partners. Since representative offices are generally small- with few employees- the required investment is limited. Branch offices are similar to representative offices, the main difference being the transfer of higher decision-making authorities from the parent firm to the branch office. Contrary to representative offices and branch offices, sales agencies provide considerable services on site; such as maintenance and additional follow-up (post-buy, post-acquisition) services, to the foreign customers. Therefore, this form of direct export requires a high level of FDI.

The primary advantages of direct exporting for a firm are the possibilities associated with the direct contact to the market and customers: I.e. gaining insight into the country market and the relevant industry networks to establish further contacts. All of this, while still keeping the resource commitment and costs limited, is due to production in the home country. In fact, the entire value chain, with the exception of the distribution, is generally allocated in the home country. Therefore, the consequences of terminating a direct exporting commitment are still limited.

Nonetheless, the disadvantages of direct exporting are the increased exchange risks, as explained in chapter 2.1.1, which are a result of the unshared risk aspects of indirect exporting. And, in addition, to the acceptance problems in indirect exporting, the need to establish an organizational entity for

exporting in the parent company or in foreign company prevails. This requires an increased resource commitment and establishment period.

Licensing, contract production and joint ventures are forms of market entry that, contrary to the forms described above, encompass local production in the foreign country. However, in the case of production abroad it may also be differentiated between forms with FDI and without FDI. In the following, first, forms of market entry without FDI will be described.

Licensing: A license, enabling the recipient firm to proprietary rights, is issued to a company in the foreign country. This license allows the firm to operate in the foreign market by using patents, processes, technical and market knowledge and the brand in return for payment (*Stonehouse et al.*, 2000, p. 154). A prominent example of licensing as a market entry form is that of Coca-Cola, which issue Coca-Cola licenses to local bottling companies. These firms then produce according to the secret recipe, fill bottles and cans, and distribute under the Coca-Cola trademark, using their local knowledge of the market and industry. However, Coca-Cola as the license issuer is, in particular cases, a contracting partner in the license recipient companies-therefore, gaining more control and insights into its operations (*Kutschker and Schmid*, 2004, p. 843).

A prerequisite for licensing is a reliable and fair legal framework with international standards. With respect to the significance and the influence of the macroeconomic environment in internationalization[15], firms are not willing to expose their intellectual property if the political and legal environment is even slightly unstable. Popular press reports have stated this to be the case for international firms engaging in business in China. However, not all products are adequate for licensing, especially if the product is a commodity good without much know-how needed in production. Moreover, not all firms are appropriate licensing partners either. Depending on company culture, management background and international experience, the success of this market entry form may be affected.

Contract production: The firm outsources specific parts of the production process to a local firm on the basis of a contract. In turn, the firm exposes

[15] For a deeper insight into the environmental influencing factors, especially the micro- and macroeconomic environment of internationalization decisions cf. *Dülfer* (2001) and chapter 2.1.1.

proprietary information pertaining to the production process, for example, origin, quality and technical standards of the processes. However, the marketing of the goods generally remains the responsibility of the internationalizing firm. The expanding firm is confronted with a make-or-buy decision- should a specific product, a product line or group be outsourced by contract, and if so, which value creation activities should exactly be undertaken by the contractor? An illustrative example of contract production is in the automobile industry, especially for German companies, where labor costs are high, where procurement and production may be outsourced to a foreign company with low labor costs in India or China, while research and development (R&D), marketing and distribution remain with the parent company.

Advantages of contract production apart from the relief of company departments and resources in the home country, are the possibilities of learning from and with the contract producer and being able to gain quality and efficiency improvements. However, the firm is simultaneously extradited to dependencies, which may result in coordination difficulties, increased control and therefore organizational complexity and, in the end, quality deficiencies.

International market entry with production and FDI in the foreign country is the most resource-intensive form of internationalization. Both capital participation and joint ventures are cooperative forms of market entry.

In accordance with contract production are **management contracts**, the difference being, that managers with expertise in the foreign country or company operations are hired for a limited amount of time, for example with the status of a consultant or free-lancer, to oversee, organize and control the firm's activities on site.

The advantages of management contracts lie in the flexibility of the expanding firm to withdraw from the operations when the contract is terminated or due to contract stipulations if the targets are not met. When the resources are tied to the domestic market and, when therefore the commitments limited, the consequences of revoking their decision to internationalize are limited.

Nonetheless, although management presence hereby is high, the learning and experience curve of the parent headquarters may be restricted if the manager leaves the firm when the contract is fulfilled.

Capital participation: The internationalizing firm invests in a local firm with the aim of acquiring rights of power and therefore control in the operations of the firm. Since this form is mutually existent in the other market entry forms, this form will only be described briefly.

Joint Venture: The expanding firm engages in a joint venture with a foreign company. The distinguishing characteristic hereby is that usually a new enterprise consisting of the joint venture partners is established[16]. Two or more partners, from the same or different industry (vertical or horizontal joint venture) may be engaged in a joint venture commitment (*Kutschker and Schmid*, 2004, p. 862).

The advantages of a joint venture are first found in the speed of market entry (*Contractor and Lorange*, 1988, pp. 7-24). In contrast to the time needed to export or produce per contract when a joint venture is named, using the already established position of the partner in the country, the operations may, in the best case, begin instantly. Also, the firm may profit from the image of the partner, or vice versa, gaining a reputation boost in the foreign market activities from the already established name of the partner. The duration of a joint venture is most likely limited- however usually middle to long-term. In China joint ventures with a local partner are the only possibility for a foreign company to enter the market due to government regulations.

The pitfalls of joint ventures are the often underestimated- apart from the coordination difficulties- cultural differences possibly leading to inefficient and slow decision-making procedures and increasing costs. The biggest cost factor is foreign managers on site. The risk of a joint venture ending prematurely is higher than other market entry forms and the literature mentions examples of difficulties measuring the performance of joint ventures (*Chowdhury*, 1992, pp. 120-124).

Foreign Subsidiary: The founding of a subsidiary is the greatest commitment a company can make entering a foreign market either with production or FDI. Its characteristics are legal autonomy and liability for the FDI, contrary to a branch where the parent company retains all control rights.

[16] For a recent study on the knowledge transfer between international joint venture or alliance partners see *Klijn* (2006).

New subsidiaries can be found (greenfield-investments) or acquired- also in the form of a cross-border merger (brownfield-investments).

The proximity to the market and, therefore, customers by means of a strong local presence is the main advantage of this form of market entry. Additionally, the degree of independence, matched with the implementation of the parent company strategy leads to an effective market entry with high learning experience. However, high resource commitment is closely linked to high risks and difficulties. The high costs and duration of market-entry are associated to high sunk costs if the firm withdraws early. The possibilities of reversing the decision is limited and, therefore, the flexibility is limited and the company is exposed to the foreign country micro- and macro-environment to a much higher degree than in other forms of market entry.

Nonetheless, apart from decisions on the market entry strategy, an internationalization strategy also encompasses other dimensions which have to be considered: These influencing factors form the foundation for the strategy decisions described in this chapter and sum up the criteria used by the management to make decisions. However, in each individual case, the management has to analyze their relevance and estimate their significance (*Kutschker and Schmid*, 2004, p. 904). To sum up, a number of criteria considered and evaluated when formulating market entry strategies are illustrated in Table 2 (*Kutschker and Schmid*, 2004, p. 905).

Table 2: Examples of decision-making criteria for internationalization strategies

Scope of value chain activities	Legal constraints
Mode of resource transfer	Time scope
Scope of resource transfer	Risks
Amortization of resource involvement	Reversing the decision
Flexibility	Control possibilities
Economies of scope	Economies of scale
Speed of market entry	Revenue potential
Acceptance in the foreign country	Support from the domestic country

The market entry forms described above vary depending on the degree of company involvement in the foreign market operations. In sum, the strategies chosen and pursued by internationalizing firms are mainly determined by three

determinants- the geographic and cultural distance, value creation activities and degree of integration in the foreign country. And the degree is measured in terms of geographic scope of operations and commitment of resources. Geographic scope entails the number and diversity of countries and markets (*Cavusgil*, 1984a), while the commitment of resources refers to the assets involved in a foreign operation that cannot otherwise be deployed without losing value (*Brush*, 1995, p. xxviii). The resources committed can be social, financial, physical or human assets (*Aharoni*, 1966) and can vary from high to low. For example, the number of employees dispatched to work abroad and the percentage of goods sold abroad is high if a company chooses to enter a market by founding a subsidiary. At the same time, if the market entry form of a joint venture is chosen, the resources committed, such as the number of employees but also the financial resources dedicated to the joint research and development in the foreign market or joint production is, in comparison limited (*Brush*, 1995, p. xxviii).

These influencing factors in turn indicate the number of markets processed, cultural divergence from the home country and product dimensions such as the number and complexity of the products and services delivered in the foreign country (cf. *Bamberger and Evers*, 1997, p. 118). These factors determine the market entry strategies. Figure 5 displays the main dimensions of international market entry strategies.

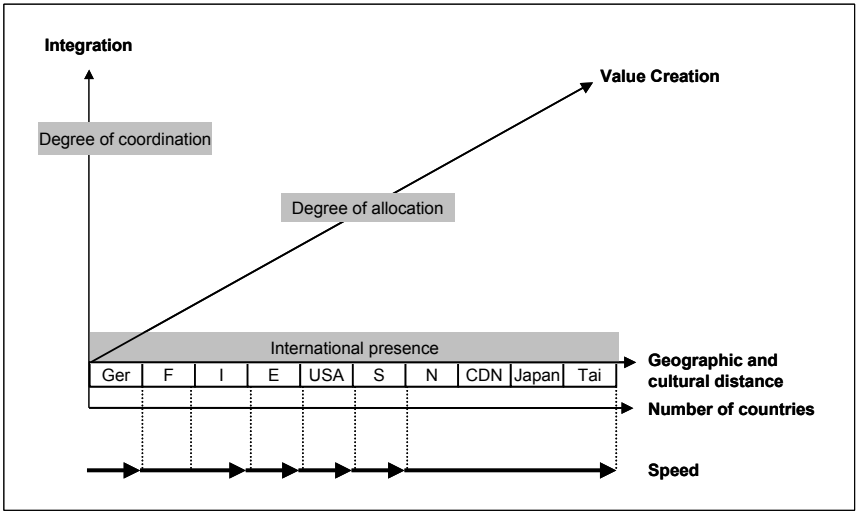

Figure 5: The dimensions of market entry strategies

Source: *Kollmann and Christofor*, 2004, p. 105 according to *Kutschker*, 1997, p. 63.

While the dimensions of internationalization strategies are determined by the market, industry-and product-life-cycle, resources and know-how, the speed of proceeding into the market can vary extensively. Moreover, the market entry forms presented in this chapter implicitly addressed the market entry into a single market. However, firms may need to enter more than one market simultaneously. With respect to the time factor, two main strategies can be found in the literature pertaining to the best point in time in the firm life-cycle to enter a market (Figure 6): The 'waterfall strategy' and the 'sprinkler strategy' (*Keegan and Schlegelmilch*, 2001). The two timing strategies for market entry were originally conceived as a model for the point in time for putting a new product on to the market (*Kutschker and Schmid*, 2004, p. 963). In this case, however, the author highlights the market entry of a firm into a foreign market. Thus, the major difference between the two strategies is that the waterfall strategy conceives successive market entries, while the sprinkler strategy embodies the simultaneous entry into multiple markets. The waterfall strategy will be examined more closely in chapter 2.3.1, because the waterfall-concept corresponds to the Uppsala School of internationalization processes. However, in this context, the timing dimension of internationalization is the focus of discussion for now- and, inherently, the role of speed of market entry.

Figure 6 depicts the different approaches with respects to timing between the two internationalization strategies.

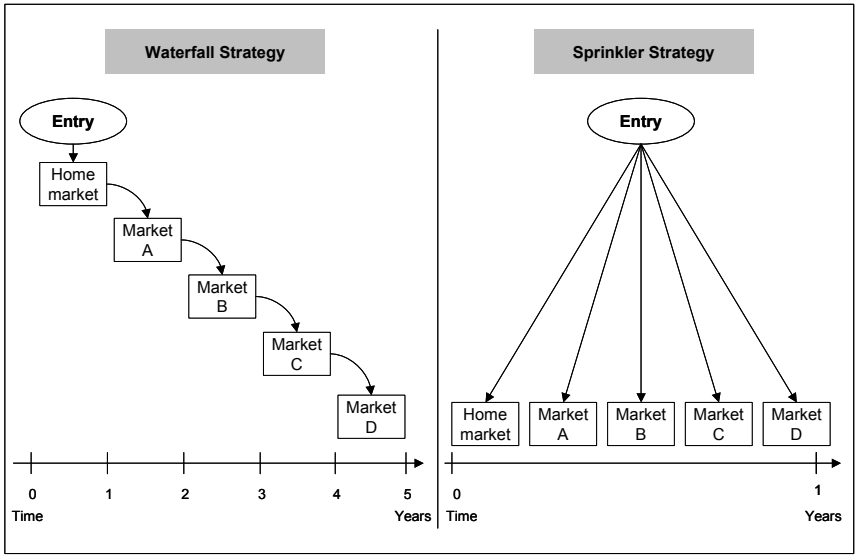

Figure 6: The timing dimension of internationalization strategies

Source: *Backhaus et al.*, 2005, p. 111, p. 119 (slightly modified).

The waterfall strategy is characterized by the successive entry into markets- i.e. markets that are close and familiar- with close psychological proximity[17]- and subsequently into markets with fewer similarities than the domestic market. Due to the fact that the number of close markets is naturally limited, a successive expansion is innate. *Ohmae* (1985, p. 33) explains that the number of markets entered rises increasingly. First, only the domestic market is catered for, then, another market is entered, and after a time lag, the countries close to this market may be targeted and so on. The expansion strategy of the firm takes a longer period of time until completion. It seems important in the context of time that the systematically targeted countries, although anchored in a plan, can be reviewed according to environmental and market circumstances (*Backhaus et al.*, 2005, p. 110). Thus the temporal expansion sequences involve a decreased risk- the firm may cancel or adapt future market entries.

[17] Although psychological proximity seems to be the most prevalent criteria in the literature for market selection. Other criteria apart from political and legal factors, demand and competition cf. table 1.

The time dimension of a waterfall strategy also allows the tentative growth of the firm and resources, and thus also an extension of the product life cycle. This implies that a resourceful coordination of assets and resources is possible and, at the same time, a local appearance in each market can thoroughly be prepared and implemented. The downside of waterfall strategies with respect to timing is the fact that imitators can quickly expand internationally while the company is successively proceeding in the domestic market and other neighboring countries. *Backhaus et al.* (2005, p. 118) proceed to elaborate on other pitfalls such as the termination of future expansion plans if the success in the domestic market for a certain product is unexpectedly low. However, the waterfall approach does not take product success in other or future markets into consideration. Furthermore, the attention given to first-movers may be diminished with a successive market approach, thus losing the increased returns of a large market roll-out.

In contrast to the waterfall strategy, companies attempting to enter multiple markets at the same time, or a very short period of time, adhere to the sprinkler strategy. The short time frame may comprise one or two years until the strategy is fully implemented. However, the choice of markets may relate to country groups or certain markets. For example, firms within the boundaries of the regional trade agreement MERCOSUR (Mercado Común del Sur) between Brazil, Argentina, Uruguay, Venezuela, and Paraguay may implement a sprinkler strategy, where a group of Latin American countries may be entered simultaneously. In other region, where the mobile industry is growing, such as Western Europe, USA and Asia may be entered simultaneously. *Keegan* (1999) argues that the reasons behind such a strategic approach, which is, backed by high-speed expansion, may be the increasingly short product and technology cycles. In this context, firms may not be able to afford to expand successively. Moreover, in innovative industries with high R&D time spans, firms may be pressured into ‘skimming’ as much of the market in as short a period as possible: Not only to gain returns from R&D investments but also to make use of the first-mover-advantages, which include high returns and virtually no competition. Image gains are also made in the foreign countries. Nevertheless, the strategic option of a sprinkler strategy reassures extremely high resources, e.g. management as well as capital resources, and, thus, a large amount of coordination. The complexity, contrary to the waterfall strategy, is inherently higher. In addition, the firm, together with its products

and resources, develops at such a fast pace, and does not leave much time for organizational and product adaptations, learning insights and knowledge transfer. The risk that accompanies internationalization in a short time frame is therefore high. Firms internationalizing with a sprinkler strategy face problems building up a local presence and country-specific market entry (*Kutschker and Schmid*, 2004, p. 968). Nonetheless, a combination of the two strategies is possible.

It is also significant to point out that all of the market entry forms do not only serve the purpose of market entry but also serve as strategic options for further progress within a market. The time dimension in the internationalization process is implicit, leading to the conclusion that the strategy used to proceed in a foreign market can vary from the point in time the market is entered and in the course of time. While a German firm beginning with production in Romania may as a first step choose a production contractor to begin its operations, in five years of positive experiences and growth it may choose a more committed strategy form such as the establishment of a subsidiary. The market entry strategies can vary within one country. For example, one product group for export can have a high risk of acceptance. Equally, there is the risk that the same product group might not be accepted in different countries.

A firm with international activities in Asia and USA may opt for higher value creating activities in the USA, due to the prospect of higher revenue. A joint venture with a local partner in China is necessary, for example, because of legal restrictions on foreign subsidiaries. *Kutschker and Schmitdt* (2004, p. 904) ascertain that there is not one optimal market entry strategy for one certain point in time. Hence, the literature and the empirical results herein mirror this argument. Furthermore, *Meissner and Gerber* (1980, p. 224) also observe that as the degree of commitment in a foreign market increases the relation of capital and management commitment in the home country will decrease (Figure 7).

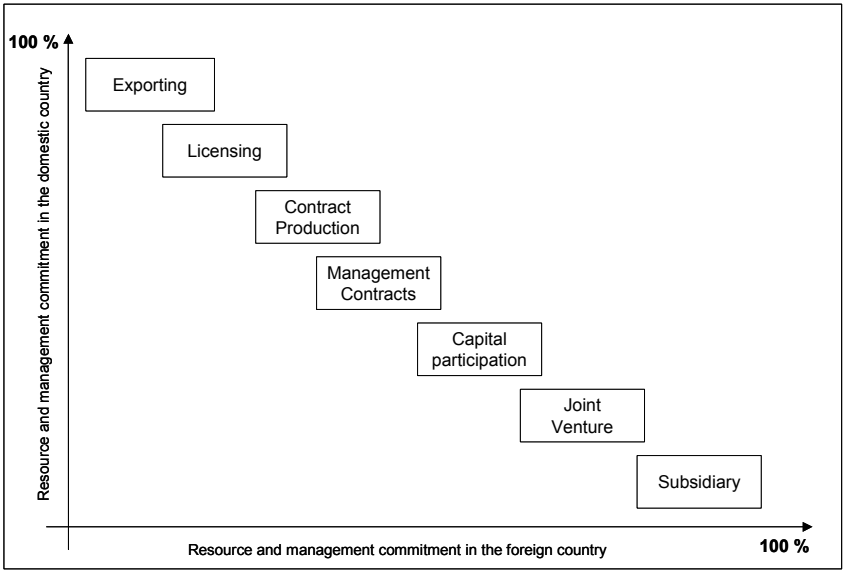

Figure 7: A systematization of market entry strategies depending on the degree of commitment in the domestic vs. foreign country

Source: *Meissner and Gerber*, 1980, p. 224.

2.1.3 Synopsis: E-Ventures and International Market Entry

International market selection feeds on opportunities and risks alike. The opportunities driving firms out of their domestic domain are the attractiveness of the market, on the one hand, and the performance of the firm, on the other hand (*Doole and Lowe*, 2000; *Young et al.*, 1989). Equally, selecting a market involves risks. Firm specific risks, industry risks and general environmental risks have been mentioned. Hereby, firm-specific risks are predominantly cost-related factors; industry risks are mainly linked with the different types of market entry barriers, while general environmental risks encompass the culture in the foreign country, for instance (*Backhaus et al.*, 2005; *Brouthers*, 1995). Suffice to say, selecting an international market encompasses an information gathering process, which encompasses evaluating the risks and opportunities of the expansion endeavor.

The market entry strategies discussed in this chapter generally differ in the degree of commitment in the foreign country, which, above all, encompass the intensity of the resources committed to the activities. The degree of resource

commitment in turn signifies different levels of risks, which need to be considered when framing the market entry strategy. Moreover, a major determinant of market entry strategies is the time factor. In this respect, the strategy may devise a rapid market entry or an incremental, time-intensive market entry. Moreover, a fundamental difference between all the predicated market entry forms is the degree of customer interaction.

For the research question at hand not all the market entry selection processes and strategies can be applied: E-Ventures, especially due to their characteristics, are restricted when formulating their internationalization strategy. Low cash-flows force the firms to implement internationalization strategies quickly (*Schulte*, 2001). Collecting information for market selection can be a two-sided coin for young firms: On the one hand, due to resource restrictions the allocation of the relevant data is confined, while, on the other side of the coin, technology-based firms dispose of fast and effective ways of gathering data (*Garicano and Kaplan*, 2001; *Kollmann*, 1998a). E-Ventures are at an advantage because the market data plays an especially important role for selecting the market and successfully entering the market. Due to the characteristics of ICT and E-Business, E-Ventures have several advantageous opportunities for collecting relevant customer information. What is more, from the literature review and the determinants of market entry strategies, success is more determined by the acquired market knowledge and less so by *how* the market is entered or, for example, the culture in the foreign market. Hence, E-Ventures benefit from these circumstances. *Kollmann and Häsels'* (2006) case study research offers a classification framework for cooperation strategies between online and offline firms, suggesting that this allows achieving a sustainable competitive advantage because both partners can benefit from ICT applications. *Bell et al.* (2001) conducted explorative case studies with 50 CEOs from the UK, Australia and New Zealand with internationalizing small and medium entreprise (SME) entrepreneurs, who confirmed that the firms focused predominantly on lead markets, while 'traditional' firms focused more on 'lag' markets that are less technologically advanced than their domestic markets. *Berry and Brock* (2004) also support the notion that the internet influences the market selection process of small technology-based firms, but does not diminish the role of the location-based market place. In this vain, the importance of market data for market selection in the Net Economy is accentuated.

Rothaermel et al. (2006) addressed the issue of international market entry of US internet firms in their investigation of country entry decisions. In total, 179 firms with a total of 7000 market entry decisions were analyzed. They emphasize that country risk, cultural distance, and uncertainty avoidance reduce the likelihood of an internet firm internationalizing, while mutually individualism and masculinity increase it. International size was, however, applied as a moderating variable and was found to weaken the negative effects of market entry, while strengthening the positive effects. Salient in this framework for internet firms is the conjunction of societal factors: The aspects of individualism and masculinity are based on Hofstede's dimension of culture (*Chiara and Minguzzi*, 2002). Larger markets are more attractive if they coalesce the factors of individualism and masculinity because, the authors argue, these dimensions are attributed to an increased use and diffusion of technological innovations. The results may be in line with European firms although Germans, according to the Global Entrepreneurship Monitor (GEM) are attributed to a low degree of risk propensity. However, it is believed that the Net Economy population may be, in comparison to other agents in the German Economy, less risk averse and, therefore, international market entry decisions in Germany may relate to the findings of *Rothaermel et al.* (2006).

Rhee (2005) explained *how* internet firms internationalize on the basis of the absorptive capacity approach. Absorptive capacity is "the ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (*Cohen and Levinthal*, 1990, p. 128). Hence, the emphasis on the information gathering phase. *Donovan and Rossons'* (2001) case-study research on Nova Scotia SMEs on internationalization on the internet conclude that "access does not equate to reach" (p. 7), implying that internet firms are not alleviated of the "traditional" modi of market entry- especially so regarding the dimension of time. Although there is a difference in the distance of E-Venture firms and their customers, they have confirmed the marketing-principle "act local, think global" in their research of internet firms. They accentuate that the origin-effect plays an important role even in the online environment and recommend the local presence of online business operations[18].

[18] The in-depth qualitative interviews echo this statement. The firms indicated making large efforts to disguise their country of origin in order to cater to the local customer's needs, e.g. offering favorable payment methods.

Moreover, *Kalantaridis* (2004) concludes the following in his research: Young internationalizing firms have a much more flexible approach to strategy and this is ascribed to the reduced degree of the complexity of strategic behavior prevailing in older firms. These arguments are based on the notion that strategic behavior per se increases with firm size. Just because their strategic behavior is considered passive, small firms are believed to be more reactive to environmental conditions. In sum, these empirical insights diminish the role of a structured market selection and internationalization strategy process, attributing these insights, more so, to large firms than to smaller or younger firms.

In an attempt to highlight the role of internet-based technologies on the corporate strategies of SMEs, *Nieto and Fernández* (2005) explored the effect of information processing, transfer and collection on market knowledge. Their empirical analysis, drawn on Spanish SMEs, verified their assumptions that firm's internationalization strategies benefit from the effects of internet-based technologies especially in relations with customers and suppliers. This is also referred to as the 'death of distance' (*Waesche*, 2003). In conclusion, firms that do not fully acknowledge the potential of the internet, for example for outsourcing services and sharing information, are not as likely to internationalize. Moreover, it may be interpreted that for these reasons SMEs that do make use of internet-based technologies reduce market risks in that the acquisition of market knowledge is more proficient. Similarly, *Loane's* (2005) cross-national study of SMEs from Canada, Ireland, Australia and New Zealand underlines these findings concluding that internet-enabled technologies pose as a significant instrument for knowledge-building especially what the development of business processes, market intelligence and competitor analysis are concerned. Therefore, young firms can use internet-based technologies for building knowledge and resources and overcome internationalization barriers they may have in comparison to MNEs in a short period of time. These insights also apply to E-Ventures, who, based on the nature of their business models, benefit from the advantages of the technologies in terms of market selection and, more so, the formulation of market entry strategies.

2.2 International Business Theories of Firm Internationalization

Theories explaining *why* firms will internationalize stem from the field of international business, strategic management and entrepreneurship. Moreover, the field of IE gives adequate explanations as to the internationalization behavior and motives of particularly young firms. Although a plethora of theories can be found to explain internationalization motives and behavior[19], only a few distinct streams provide explanations for young firm internationalization. The aim of this chapter is to describe the germane international business theories of firm internationalization.

These will be elaborated on in more detail in the following, with a focus on the theoretical conceptualizations, especially concerning the first phase in the internationalization process. In this chapter a theoretical expound of classical organization theories of industrial economics, also referred to as foreign direct investment theories, will follow. Of these the monopolistic advantage theory, which stems from the work of *Hymer* (1976) in the 1960s, along with the transaction cost theory will be explicated in chapter 2.2.1 and 2.2.2. From the international business literature three behavioral theories will be discussed: The eclectic theory of international production (chapter 2.2.3), and the oligopolistic reaction theory (chapter 2.2.4), which is rooted in modern or neoclassical industrial economics. Lastly, the international product life cycle theory (chapter 2.2.5) will be discussed.

2.2.1 Monopolistic Advantage/ Market Imperfections Theories

The core thesis of the monopolistic advantage theory is that internationalization occurs depending on the possession of unique firm-specific advantages. Based on this tenet the emergence and existence of MNEs, opposed to firms only trading with each other through importing and exporting, are explained: However, the monopolistic advantage theory also gives explanations for firm growth beyond home country borders. This may also apply to outward-bound E-Ventures, which do not necessarily have the desire to cooperate with other firms. *Hymer* (1976) observed and first demonstrated that firm's FDI occurred in oligopolistic industry structures rather than in near-perfect competitive markets. This implies that the internationalizing firm must possess competitive

[19] For an overview and the development of the theories applied to the international entrepreneurship field consult *Dana et al.* (2004).

advantages not available to local firms and is therefore able to compete despite their disadvantage and the high risks of trading in a foreign country. The unique assets compensate for internationalization risks, such as the risks of foreign exchange, government trade barriers, and discrimination by suppliers and customers[20]. It is the product and market imperfections in the local market, which allow internationalizing firms, better known as MNEs, to be able to profitably cross their national borders and be at an advantage in competition with established firms. Hence, from this tenet stems the term 'market imperfections theory'. Moreover, *Hymer* (1976) stresses that these firm-specific assets, which are not available to local firms, permit MNE to gain and maintain monopolistic advantages in the foreign country. Unique competitive advantages can include gaining economies of scale, the possession of a superior ability in manufacturing, a patented technology, organizational knowledge or the availability of expert human capital in the fields of marketing, management or finance.

Hennart (2000, p. 73 et seqq.) highlights the differences between natural and structural market imperfections. Hymer's work is based on structural market imperfections, which deviate from perfect competition in the market, and natural imperfections, due to restricted knowledge and enforcement in the market, deviating from neoclassical market assumptions.

Apart from the firm specific advantage, internationalization can also be motivated by limited domestic opportunities, which are either non-existent or have already been exploited by other firms, intense competition in the domestic market, company's size, the firm's market position or even the industry life-cycle-stage, for example, the level of maturity. Accordingly, assumptions on a firm's will to internationalize can be derived from the firm's domestic market position (*Harveston and Davis*, 2001, p. 4): According to monopolistic advantage theory internationalization is based on the possession of unique firm-specific assets which are transferred across domestic borders. For this purpose a firm needs resources and capabilities for gathering and evaluating foreign market information; this also implies a certain size and maturity in the home market. For example, an established firm, which can produce with high economies of scale, because it has established itself in the home market, has achieved a certain size and will attempt to transfer this

[20] Cf. chapter 2.1.

competitive advantage into other markets. When the firm has achieved a sufficient level of 'preparation time' in the local market, it is ready to expand into other markets.

The motivation to internationalize according to the monopolistic advantage theory stems from the firm's constant search for new opportunities, which are to be exploited in order to efficiently allocate resources and to further maximize profits. This systematic and rational search for and choice of economic opportunities abroad underlies the assumption of economic rationality. Therefore, *Harveston and Davis* (2001, p. 4) state that

> "(f)rom [the monopolistic advantage theory] perspective, internationalization is merely a process of rational identification and assessment of exchange opportunities in both the home and foreign markets."

Caves (1971) predicated his work on Hymer's assumptions, but added the perspective that superior knowledge led consumers to prefer the products of the market entrant, because they were different from similar, national goods. This is the advantage to local firms. An illustrative example of this phenomenon could be observed in socialist economies, namely the former German Democratic Republic, where a foreign product sold on the black market, produced with different know-how and assets, was more popular than the similar, national and cheaper good. In addition, *Caves* (1982) observed that the firm-specific advantage can be transferred to foreign countries at little or no additional costs to the firm.

In summary, monopolistic advantage theory gives insights into *why* firms invest in assets, which constitute long-term, protectable and proprietary competitive advantages. However, FDI and investments into firm-specific assets as stated in the market imperfections theory are predominantly performed by larger firms (*Dana et al.*, 2004, p. 11), primarily due to resource restrictions of smaller firms. The competitive advantage of E-Ventures in the Net Economy is based on distinct knowledge, on the other hand; however, it is ephemeral, due to industry dynamics and technological advances. The monopolistic advantage theory describes long-term investments into assets, which later represent unique assets to be transferred across borders.

The main reasons monopolistic advantage theory cannot fully explain the internationalization decisions of E-Ventures lies primarily in the changed

international business arena today. Hymer's assumptions from the 1960s cannot fully grasp the dynamics of the Net Economy due to the changed economic laws, the new types of business models and derived sources of competitive advantage as expounded in the introduction of this thesis. Hymer's term oligopolistic industry is not differentiated enough and its application to the Net Economy seems inadequate (*Meckl and Schramm*, 2005, p. 12). For one thing, the knowledge gap between domestic and foreign firms may not be as large as supposed in the Net Economy, since the significance of the companies' origin and also the risks are to a large part diminished. *McDougall, Shane and Oviatt* (1994) also question whether the behavior of an entrepreneur of a young company is based on solely rational economic assumptions as in the monopolistic advantage theory. The motivating factors stated in the literature also imply, for example, following the competitors, even if it is economically unwise, overruling the weight of profit maximization. In addition, the assumption that all firms possessing a unique competitive advantage will act identically is also inapplicable to E-Ventures, which are active in niche markets and therefore adhere to other competitive rules. Since there are only few to no competitors, the firms operating in a niche will avoid identical behavior if there are any direct competitors. Moreover, direct competitors might try to be the first-mover and if not penetrate completely different markets to the competitors or do not expand at all. More importantly, as *Meckl and Schramm* (2005, p. 12) point out, young firms may develop their firm specific advantage only in the international market and will not first establish a domestic market position and certain size. In the Net Economy, firms operating in niches will have no choice but to expand in the direction of their customers from inception and this- in accordance to *Cave's* (1982) assumption- at no additional costs.

However, although in the Net Economy economies of scale are stated as a motivation to internationalize, the learning curve that the monopolistic advantage theory proposes is non-existent if the firms are forced to internationalize at an early stage. Therefore, monopolistic advantage theory does not fully explain E-Venture internationalization or decision-making and even today still has more relevance for the internationalization behavior of large companies.

2.2.2 Internalization Theory/ Transaction Costs Economics

Another industrial organization theory that attempts to explain company internationalization is the internalization theory[21], also known as the transaction cost theory or transaction cost economics. The term transaction cost theory originates from *Williamson* (1975) arguing that a firm is based on the economic costs of its transactions. When the economic costs of internalized transactions exceed the benefits for the firm, the transactions are shifted to the market. The core argument of the internalization theory, which can also be viewed as an extension of the market imperfections theory, is that firms internationalize by means of diversification or integration of foreign direct investment (*Buckley and Casson*, 1991; *Coase*, 1937; *Dunning*, 1980, 1988; *Fina and Rugman*, 1996; *Williamson*, 1975, 1979, 1985).

The main firm objective is to achieve optimal efficiency by reducing risk and uncertainty, while protecting company-specific, proprietary assets (*Rugman*, 1980; 1985; *Williamson*, 1985). And optimal efficiency implies higher profits and savings: By screening and evaluating the economic costs of transactions, company management makes optimal decisions for locating firm operations. The assessment of the lowest transaction costs within the domestic market or outside of domestic market such as low cost labor in Eastern Europe, India or China is what drives firms to perform FDI by, for example, outsourcing its call center service to Bangalore or establishing a production site in China.

Transaction costs are costs, which arise from transactions along the value chain, for example, from vertical integration. It is, according to *Porter* (1980), the aim of a firm to evaluate the costs to achieve the optimal structure for each stage of production, i.e. the optimal degree of complexity. While international transactions are associated with high risks, demanding high time and resource commitments, e.g. management, firms will try to internalize processes by licenses or other forms of contractual agreement, as they fear losing their proprietary competitive advantage. This explains the reason for internalization. In international markets internalization according to *Rugman* (1980) implies exploiting firm-specific advantages in international markets, as described in the monopolistic advantage theory, and avoiding the transfer of its assets, such as

[21] *Meckl and Schramm* (2005, p. 15) suggest that transaction cost economics and the Uppsala model of internationalisation are the two most influential schools of internationalisation.

production know-how to non-related firms. Advantages of internalization are maintaining control and securing the long-term beneficial return on FDI. According to *Buckley and Casson* (1991), externalization can then take place between firms within country and beyond country borders but also across markets or industries if the benefit of this externalization outweighs the cost. In sum, internationalization can be seen as a rationality-bound assessment of transaction costs based on costs of other forms of market entry in internal or external markets (*Harveston and Davis*, 2001, p. 5).

Both internalization and transaction cost theory have a strong theoretical and empirical standing in various research disciplines. One aspect tested empirically among others by *Morck and Yeung* in 1991 and 1992 was its validity. Yet most of the empirical research on transaction cost has focused on large MNE. Perhaps economic based theories explain more clearly the internationalization behavior of large firms than young technology-based ventures. One reason for this may be that reasons for internalization abroad can not be fully explained on the basis of economic assumptions because young firms may base their decision on other criteria, for example, other strategic objectives (*Bloodgood et al.*, 1996, p. 63) or personal preferences an affinity, for example, towards a certain culture. *Bell et al.* (1995, p. 72) observed that young firms internationalize because they are not searching to perform FDI in old markets but because they are looking for new markets.

Casson (1982) maintained that the internalization theory applied mainly to young firms; however, many assess its relevance to larger firms. *Meckl and Schramm* (2005, p. 15) and Buckley et al. (1988a) criticize the assumptions of rational decision making, constant returns to scale, freely available and standardized technologies, and the acceptance of prices as given (price-takers), along with the inability to treat transaction cost as dynamic.

However, *Harveston and Davis* (2001, p. 6) admit there is limited evidence regarding whether entrepreneurial ventures internationalize based on transaction cost theory. *Buckley et al.* (1988a) argue that SMEs should expand by internalizing across borders until the costs are higher than the benefits and therefore should choose the lowest cost location when internationalizing.

2.2.3 Eclectic Theory of International Production

The eclectic theory of international production stems from the neoclassical industrial economics discipline and is derived from the monopolistic advantage theory because it also focuses on firm-specific advantages, internalization theory and location theory. In essence, *Dunning* (1973, 1979, 1980) attempted to explain internationalization behavior, in particular the type and direction of FDI, and its determinants by linking the hereto-established internationalization theories. The three main categories of advantages, which prove to be beneficial when choosing the adequate form of market entry, in his framework[22] are:

Ownership-specific advantages, e.g. patents, trademarks, superior management know-how, product innovations, technological advances or government aids; or- dynamic ownership advantages- e.g. the capability to organize assets efficiently- dynamic ownership advantages- e.g. access to unique/proprietary resources;

Location-specific advantages, which develop from being active in a foreign location, where assets and resources are committed and, in combination with firm-specific assets, prove to be unique. Such examples are better access to resources, capital, raw materials, information and also geographical risk diversification; and

Internalization advantages or the use of the internal firm market, i.e. the network of headquarters and subsidiaries can boost its other advantages, especially effects of synergies and specialization and size[23].

The decision to engage in international business and the type of market entry choice made (licensing, joint venture, contracting, subsidiary, etc.) depend on the interaction of the set of advantages mentioned above (*Young et al.*, 1989, p. 27). The eclectic theory of international production, which was further examined by other researchers in the field (*Corley*, 1992; *Gray*, 1996), pertains to a holistic view of internationalization behavior implying that all three dimensions are interdependent on each other and cannot be regarded separately. This means that a firm that has expanded abroad is likely to

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[22] This framework is also called the OLI-Paradigm, due to the beginning letters O-L-I.
[23] These are transaction cost savings achieved by internalizing operations as opposed to externalization.

experience advantages in all three categories according to Dunning. But he also emphasizes, for example, that ownership advantages can boost location-specific advantages (*Dana et al.*, 1999, p. 12), and this explains why MNEs may be more competitive in the foreign market than local players, despite the higher transaction costs they have to endure (*Williamson*, 1975). Furthermore, it is the integration of location-specific characteristics that distinguishes Dunning's approach from the other theoretical concepts mentioned in this study, taking into account, for example, the trade barriers of the other economy, when choosing to expand in the form of directly exporting or joining in a joint venture, and thereby potentially evading trade restrictions[24].

According to the eclectic theory of international production, three prerequisites have to be fulfilled in order for a firm to make a market entry decision (*Young et al.*, 1989):

(a) A firm has superior ownership advantages in comparison to local firms,

(b) the internalization of the firm-specific advantages across domestic borders, i.e. the founding of a subsidiary, is more profitable than other market entry forms (exports, licensing, etc.), and if (a) and (b) are met:

(c) It is advantageous for the firm to exploit unique assets through production in foreign countries rather than in the home country.

In summary, Dunning's eclectic theory of international production pertains more to large firms with the potential to create and exploit the advantages stated above by internationalizing and setting up international production in foreign countries. Young firms in the Net Economy produce products, which do not adhere to location-specific advantages such as lower labor and material costs, due to the location independent production and storage, for example, in databanks. The Net Economy is a consumer-oriented market, where internationalization is driven by the location of the consumer and not by the advantages posed within the firm. E-Ventures are too resource-restricted to create internal markets. This is especially the case when all of the advantages expounded by Dunning are long-term and sophisticated firm-specific assets. A

[24] Cf. chapter 2.1.

certain amount of time is necessary to gather experience, acquire resources and to develop a new brand, for example.

Moreover, the sources of advantages of an international firm as stated in this model are limited in nature (*Dana et al.*, 1999, p. 12). As far as appears that E-Ventures are based on a much more diversified set of advantages-anchored above all in their resources and processes. As far as the internationalization decision or the choice of market entry is concerned, E-Ventures try to make use of all types of sources of competitive advantages with the inherent pressures to expand. Another point are the interdependent groups of advantages in a changing, dynamic market environment: Although *Dunning* (1980) himself later stated that his model can also be applied to changing environments, the groups of competitive advantages do not seem applicable to the Net Economy environment.

And, due to the specific characteristics of digitalized networks, it is debatable whether there are location specific advantages in the Net Economy. Furthermore, the internalization of processes and the concept of international production seem more applicable to large MNEs rather than young firms, which have limited resources. In sum, Dunning's model appears to focus a (potentially) later stage in the internationalization process (*Brouthers*, 1995). It should however be highlighted that despite the limited applicability of Dunning to internationalization processes of small firms, Dunning's paradigm does provide explanations for the outcome of the internationalization process of the firms, the entry mode and the market selection as described in chapter 2.1.

2.2.4 Oligopolistic Reaction Theory

Another classical theory of International Business research literature, which also explains firm's internationalization behavior, is the oligopolistic reaction theory, which originated from Knickerbocker's dissertation in 1973. *Knickerbocker* (1973) observed a bandwagon or follow-the-leader behavior of internationalizing firms. In other words, firms reduce their internationalization risk by reacting to the internationalization decisions of their competitors and, by doing this, imitate their competing firm's entrance into foreign operations.

This theory is based on two main assumptions: The first observation suggests that internationalizing firms typically compete in oligopol industry structures and the second highlights firms of the same industries performing

FDI in the same clusters abroad. We therefore have the thesis that firms match the internationalization actions of other actors in an oligopoly and that as the direct competitors of a firm internationalize, the internationalization propensity of the firm itself increases. Additionally, Knickerbocker's theory also indicates a connection between market players in an oligopoly and FDI performed abroad: Competitors are quick to expand into other national markets as soon as a rival makes an internationalization decision in order to diminish the advantage gained by this first-mover. The firm's focus is more on the losses involved in not expanding, rather than on the benefits to be gained by expansion. The way of thinking behind this is that the disadvantages of not internationalizing and therefore the risk of being different from other industry players are higher than the potential drawbacks, which the competitors also have to go through. And, at the same time, should the decision to internationalize prove to be favorable, then the firm will be at least as successful as its counterparts.

Evidence for the application of the oligopolistic reaction theory to the context of internationalizing E-Ventures is questionable. Again, E-Ventures per definition do not operate in oligopoly market structures- but in market niches. Therefore, a bandwagon propensity is unlikely. *Dana et al.* (2004a, p. 10) refer to *Schumpeter's* (1911) definition of an entrepreneur in this context: S/he is not led by competition; on the contrary, he possesses a certain first-mover intuition for taking advantage of risky opportunities.

However, what the oligopolistic reaction theory does shed light on is the antecedent of the internationalization decision. It is the action of the direct rivals. But E-Ventures, or rather their founder's, behavior is inadequately explained by this approach. It is also unclear as to what the antecedents or the reasons for the first internationalizer in the oligopoly are.

Meckl and Schramm (2005) contest that perhaps this approach better yet leads to insights into the development of international competitive environments and the agglomeration of FDI in areas, where the demand may not be sufficient. For example, in some countries, foreign firms may produce far more than their market can absorb. Nevertheless, the main reason that internationalization propensity of E-Ventures can only be inadequately explained by oligopolistic reaction theory is because of the view of the reaction

to competitor's internationalization action, because of the inherent assumption that E-Ventures are the first-movers.

2.2.5 International Product Life Cycle Theory

The international product life cycle theory, originally developed by Vernon (*Vernon*, 1966), suggests that firms internationalize due to the tendency to protect their markets from mature products (*Vernon*, 1966; 1979). This approach, which has further been expounded by *Stopford and Wells* (1972), *Knickerbocker* (1973) and *Davidson* (1980), aims to explain FDI activities for products and also global trading streams of nations on the basis of the product life cycle (PLC).

The PLC is based on the assumption that certain products pass through a continuous cycle, which consists of four basic phases- introduction, growth, maturity and decline. Depending on the phase the products are in, production will shift to another country. Vernon observed that new and innovative products are mainly produced in the country they are sold in: In the 1960s he noticed this action in the US and in the 1980s in Japan. Highly innovative countries with new products will produce the products in their home country.

The trajectory of production can be seen as follows: In the introduction phase the product will be produced for the domestic market, and products exclusively produced within domestic borders meet the demand. Surplus production units will be exported to other innovative markets. As the product matures and demand in the home country stagnates or even decreases, the firm begins to export to foreign markets where the PLC and/ or the development may not be as advanced and the product is a novelty. Finally, when the product becomes a commodity and highly standardized in the domestic market, the firm will fully shift its production to the foreign market due to lower costs. This would go as far as the firm re-importing the goods sold in the domestic market from abroad. An example of Vernon's PLC theory can be observed in the biotechnology industry today. Products produced in Germany will also be quickly dispersed to other advanced markets and only in a second wave, when the products have matured and been replaced by new innovations. We can observe that these products are introduced into countries such as Brazil or other newly industrialized countries.

The explanation for this behavior is a) the demand for the new, innovative products existing in other countries, which are at the same development stage; b) setting up local subsidiaries can also serve more effectively and efficiently the demand onsite in that country; (c) price competition increases as the products mature, due to imitators entering the market, and entering the developing countries, where there is low cost production and also fewer competitors. Not only does competition from the home country increase when an innovative product is introduced, but successful market entries also attract foreign competitors who will also enter the market. The need to expand to low cost production sites in order to remain competitive therefore increases.

Vernon himself criticized his theory later on, which he developed by surveilling the US Market after World War II (*Vernon*, 1979). International market conditions had changed significantly at the time and global markets had begun to merge[25], and the application of the PLC theory as it was originally conceptualized became difficult. The production of innovative products does not necessarily occur in the countries where they are sold. This is especially the case since, some young firms are not active in the domestic market at all prior to exporting. The dynamics of the net economy markets makes it difficult to trace the PLC of firm's products into clearly discrete phases. But even if this is the case, the timeframe from introduction to maturity has been significantly increased, due to the dynamics, and has made deductions as to internationalization behavior are difficult.

The suitability for E-Venture products is also questionable. First of all, the theory relates to manufactured products. Although an E-Venture's knowledge-based production is dependent on production costs, as in human capital, which could be attracted, for example from specialists in India, the distance for serving foreign markets is negligible, due to the almost insignificant transportation costs. And once more, there is almost no need to produce in the same country as the country where demand is the highest. Additionally, the products are already standardized at introduction, which does not adhere to the PLC as stated by Vernon (*Roberts and Senturia*, 1996, p. 496). What can be observed in the Net Economy, is the use of the domestic market as a testing ground, for experiential and organizational learning, for future internationalization.

[25] See part 1.

2.3 Internationalization Process and Export Development Models

While the theories aimed to expose the question of *why* firms internationalize, the internationalization process models highlight the aspect of *how* firms internationalize. Internationalization process models, also considered as internationalization theories or stage theories of internationalization, have been widely used to explain export behavior. Moreover, they not only include explanations for mere market entry decisions, but also for further strategy development into current and new markets. Theoretical concepts of how a local firm, by means of making organizational decisions, transforms into an international firm feed on the organizational behavior theory of *Aharoni* (1966) and *Cyert and March* (1963). These process models are based on the assumption that internationalization occurs incrementally.

Since the 1970s, the internationalization process has been generally understood as an incremental process consisting of several stages, characterized by an increasing engagement in a foreign country (*Miesenbock*, 1988, p. 173). There are numerous process models with different classifications and definitions of stages (*Bilkey and Tesar*, 1977; *Cavusgil*, 1984b, 1985; *Cavusgil and Godiwalla*, 1982; *Czinkota and Johnston*, 1983; *Dichtl et al.*, 1983; *Garnier*, 1982; *Joynt and Welch*, 1985; *Kaynak*, 1985; *Reid*, 1981). All the models are characterized by increasing international commitment and involvement[26] in international operations and characteristic behavior patterns ascribed to each stage. For example, acquiring information is different when a firm is exporting for the first time than when it is expanding its operations into the fourth consecutive foreign market. Characteristically, internationalization process models consist of three to seven main stages[27]. The stages can be broadly categorized as follows: In the first stage the company is dedicated to pre-involvement activities, and, after the decision to internationalize, the initial exporting stage follows. Then, typically, a level of experienced exporting is reached, when the market entry is completed (*Cavusgil*, 1984a).

There seems to be no agreement in the literature as to which model best describes the internationalization process (*Miesenbock*, 1988, p. 173).

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[26] For a definition of the terms commitment and involvement cf. chapter 2.1.2.

[27] For a comprehensive literature review and discussion of the process models see *Leonidou and Katsikeas* (1996) and *Ellis and Pecotich* (1998).

Therefore, three streams, which have received particular attention in the International Business literature will be discussed in detail: First, the model of the Uppsala school, by *Wiedersheim-Paul* (1975) and *Johanson and Vahlne* (1977) will be delineated and discussed. In a second step, these findings will be reassessed with regards to the E-Venture characteristics. In the third chapter, the focus is on comparing export development models. And, lastly, the pre-export models by *Wiedersheim-Paul* (1978) and Olson and *Wiedersheim-Paul* (1978) will be exposed. The aim of this part is to evaluate the theoretical explanation power of internationalization process models for this study.

2.3.1 The Uppsala Internationalization Model

The Uppsala model of incremental internationalization was conceptualized in 1966 at the University of Uppsala in Sweden and has since received widespread consideration both in academia and in businesses (*Johanson and Vahlne*; 1990). It was initially developed by Johanson and Wiedersheim-Paul (1975) on the basis of four case studies, and then empirically assessed and further developed by *Johanson and Vahlne* (1977). The empirical-quantitative and qualitative- studies, which build the foundation of the Uppsala internationalization model were conducted in the Swedish steel, pulp and paper industry (*Johanson and Vahlne*, 1977).

Originally, Johanson and Wiedersheim-Pauls' (1975) concept identifies an internationalization process with four discernible steps for increasing involvement in a foreign market country. These four steps of gradual engagement are (1) no regular export activities, (2) engagement in indirect exporting, (3) establishment of a sales agency until, ultimately, (4) founding of a wholly owned foreign subsidiary. Broadly, the stages can be classified into one pre-export (1), two export, (2 and 3), and one post-export stage (4). Johanson and Vahlne (1977) also refer to this as the 'establishment chain'.

The model of Johanson and Vahlne (1977) is based on the behavioral theory of the firm (*Aharoni*, 1966; *Cyert and March*, 1963) but also feeds on Penrose's (1959) approach, which explained firm growth on the basis of the resource-based view. The organizational behavior theorists take two opposing stands as to why firms make growth decisions: *Aharoni* (1966) describes specific stages in FDI decisions: The decision to *look*, the decision to *invest* and the actual *commitment to invest* as characteristics of the process. He

argues that it is the environmental factors, which encourage a firm to make an internationalization decision. *Aharoni* (1966) was the first to take this organizational decision-making concept into the internationalization context[28] and posits that opportunities and threats in the external environment but also strengths and weaknesses from within the firm may suggest why firms internationalize. *Cyert and March* (1963), on the other hand, argue that sequential decisions arise out of conflicts within the organization. Because the firm's behavior is the weighted outcome of conflicts, decisions are taken within the firm to maintain the conflict of the different individuals and interest groups within it.

The general focus of the model is on the firm's development and behavior over time. The firm proceeds into foreign markets by means of different entry modes, in different evolutionary trajectories and with increasing resource commitment: While increasing experimental knowledge, i.e. an increase in understanding the global environment, competition and organizational development, the company gradually increases its commitment of firm resources, i.e. human, financial and material, to the foreign market (*Penrose*, 1959). Uncertainty regarding foreign operations and markets is reduced as the management increasingly acquires information. The information gained is based on experience. Fact is, *Johanson and Vahlne* (1977, p. 28) argue "(t)he better the knowledge about the market, the stronger the commitment". Thus, the firm incrementally proceeds in establishing its position in the foreign market on the basis of increasing experiential knowledge. In sum, two dependent variables determine the internationalization stage- knowledge and commitment.

The underlying assumption of the model is that firms are established in their domestic market before they expand into foreign markets. The expansion decision only occurs when a certain level of knowledge and experience has been reached in the home country. In consequence, internationalization in the Uppsala model entails a time-consuming gradual process (*Andersen*, 1993; *Johanson and Vahlne*, 1977, 1990). The first entry into an international market is the beginning of a process of greater commitment- beginning from no regular export activities, to export via an independent representative to

[28] In addition, the incremental internationalization approach was also taken up in the diversification literature (*Chandler*, 1986; *Vernon*, 1979).

proprietary sales representatives up to the establishment of a manufacturing subsidiary. What is more, the increasing commitment does not necessarily stipulate strategic intent, but a predetermined chain of decisions, which is depicted by the spiral in the figure 9.

In addition, the model underscores that experiential learning is best achieved in an internationalizing firm if the markets are successively entered with increasing psychic-geographical distance (*Andersen*, 1993; *Johanson and Vahlne*, 1977, 1990). *Madsen and Servais* (1997) and *Lehmann and Schlange* (2004) proverbially describe this as internationalization like 'rings in water'. Figure 8 graphically displays the concept of psychic distance where a organization develops from a local to a global firm[29] in the course of time inasmuch as the resource base is increased and, with this, the firm's degree of internationalization. The market entered increase in breadth and number and are an addition to the previous market entries. Therefore, as the firm proceeds along the establishment chain the firm's degree of internationalization also gradually increases.

Psychic distance is the difference from one's home country with respect to such factors as language, culture, political systems, level of education and level of industrial development, etc. (*Johanson and Wiedersheim-Paul*, 1975) (Figure 8). For example, the psychic distance between two countries is also a question of the difference between economic systems. The determinants of psychic distance per definition refer to the factors that disturb or hinder the flow of information between the firm and the market if the 'establishment chain' is not sequentially erected. For example, two countries may be geographically close to each other but the psychic distance is great if the economic systems vary greatly. An illustrative example could be observed in Germany during the Cold War when a social market economy and a planned economy were adjacent to one another. Although geographically close, the two markets were psychologically very distant.

Johanson and Vahlne (1977) differentiate between state aspects and change aspects in their model. State aspects comprise the variables market knowledge and market commitment, and change aspects are determined by

[29] The terms local, national, international, multinational and global were defined by *Perlmutter* (1969) and refer to the breadth of the geographic dispersion of an firm.

current activities and commitment decisions[30]. Both the change and the state categories influence each other interchangeably during the internationalization process, which is displayed in figure 9. The salient aspect of the Uppsala school model in comparison to other internationalization theories is the inclusion of static, discernible and dynamic components (*Kutschker and Schmid*, 2004, p. 458). This permits the processual view, which is dynamic, inducing change over a time period and not just the state of internationalization in time. *Miesenbock* (1988, p. 44) postulates that in practice firm experience a continual process rather than selective stages.

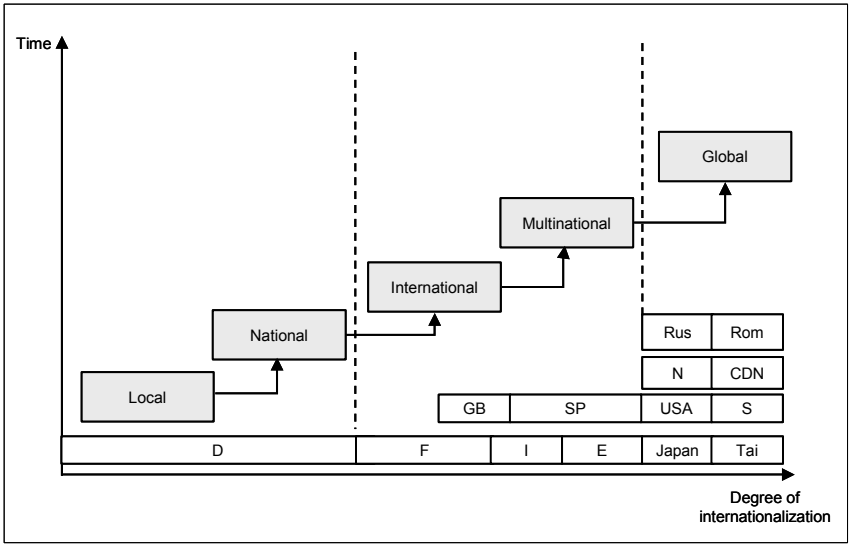

Figure 8: The concept of psychic distance

Sources: *Johanson and Wiedersheim-Paul*, 1975; *Johanson and Vahlne*, 1977; *Luostarinen*, 1979.

For example, the change aspects of a firm's development would come into effect if, for instance, a German firm decided to open a representative office in Argentina, which is a *commitment decision*. This in turn also leads to increased *market activities*, for example an increase in sales, in addition to the already proceeding current activities of the firm's direct exporting to France.

[30] This is, for example, the case in *Dunning's* eclectic paradigm (cf. chapter 2.2.3) and also in the international product life cycle theory (cf. chapter 2.2.5).

This increase in current activities may perhaps also bring an increased *market commitment* such as the acquisition of a new key account customer in Argentina. This experience, in consequence, leads to increased knowledge of the Argentinean consumers, industry traditions and dynamics (*market knowledge*), because individual employees, possibly dispatched directly from the parent company, are now working on site instead of operating from the home country. All of these activities demonstrate increased experiential learning and commitment of the firm in its degree of internationalization and in the Argentinean market.

In summary, not only has the psychic distance of the entered market been increased, the firm's total degree of internationalization has increased because the firm exported to France prior to entering the Argentinean market. Furthermore, the organization as a whole has gained in learning experience and growth by committing to a new internationalization decision. Moreover, in the course of the internationalization process also winning a new key account in Argentina has extended the firm's network. The effects of all the internationalization activities, in turn, build the foundation for further internationalization. The upward spiral in figure 9 illustrates the gradual increase in the degree of internationalization over time and incrementally on the basis of the interplay between the change and state aspects.

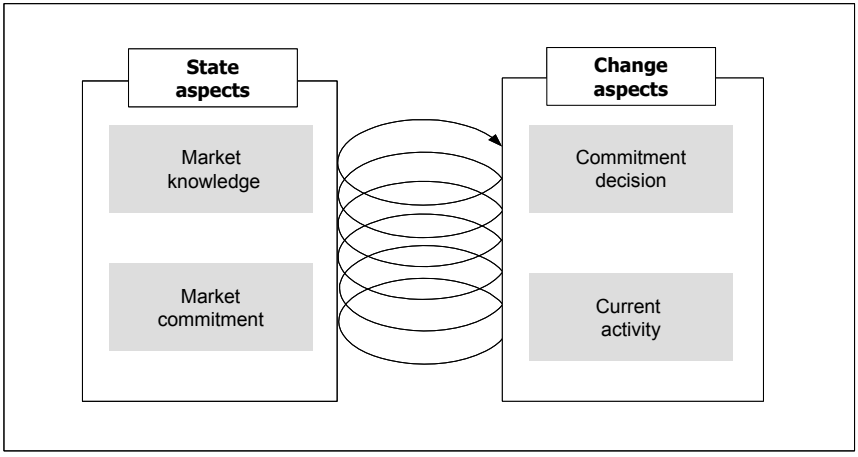

Figure 9: The basic mechanisms of the internationalization process

Source: *Johanson and Vahlne*, 1977, p. 26 (slightly modified).

2.3.2 Reassessment of the Uppsala Internationalization Model

The establishment chain of the Uppsala internationalization model is still today plausible for the internationalization trajectories of firms. Although based on empirical research, its limitational assumptions have been widely criticized (*Andersen*, 1993; *Rhee*, 2005; *Petersen and Welch*, 2003). The most common criticism is that the model is too deterministic and does not leave enough freedom for the individual strategic choices of the firm (*McDougall et al.*, 1994). In addition, the length of the stages is unspecified and, thus, remains undefined. Emanated are also; (a) the simple one-dimensional assumption of psychic distance; (b) the industry, company and people contexts are neglected (*Bell et al.*, 2001; *Buckley and Casson*, 1991; *Reid*, 1981, 1983; *Rosson and Kaynak*, 1984) and (c) the restricted applicability of the stage model to firms in practice today. The reason for this is that the market conditions on the market have changed inasmuch as deterministic models are generally less valid (*Madsen and Servais*, 1997). Firms in practice may experience forward and backward linkages or the elision of entire stages in their internationalization process (*Bell*, 1995, p. 48). This may be the case for E-Ventures.

Bonaccorsi (1992) conducted a quantitative empirical study on the Italian manufacturing industry. He analyzed export intensity defined as the ratio of exports to total sales in relation to firm size and demonstrated that the relationship of firm size and export is not positively related. His findings are that small firms can prevail in the international markets despite their size and age. Regional expansion is therefore not believed to be in conjunction to exporting or geographic expansion. What is more, exporting is believed to be a valuable growth path for small, resource-poor firms.

Therefore, the stage theory of internationalization also includes valuable insights into understanding the internationalization of young firms, for example, the use of competitive advantages, knowledge and experience in the internationalization process (*Bloodgood et al.*, 1996, 1997). Moreover, *Erikksson et al.* (2001) have empirically analyzed the significance of knowledge. In examining the relation between knowledge development and the duration of establishing foreign operations they differentiate between different types of knowledge used for internationalization: Business knowledge, institutional knowledge, experiential knowledge and internationalization knowledge. They conclude their empirical analysis of 409

managing directors of Swedish service[31] firms by stating that experiential knowledge cannot be measured depending on the duration of foreign operations, implying that there is no linear relation between experiential learning and time. Furthermore, knowledge of the institutional context was rated as more important and more difficult to build in comparison to the other knowledge types in the expansion process.

Berry and Brock (2004) analyzed the internationalization process of small technology-based firms in the Net Economy. Coined as the marketspace[32], they investigated what effect the use of the digital economy has on the internationalization of the firm. They concluded that market entry barriers erected by the internationalization process, particularly resource-related barriers, might be overcome by E-Ventures. The main reason is that conducting business via an electronic medium is argued to be beneficial to the internal as well as external resources of the firms. Due to efficiency and effectiveness of digital devices more of the firms internal resources are free for other purposes. Furthermore, increased levels of internal international business information can be collected. Online data mining and customer relationship management programs may save information of customer data but also preferences and interests without high additional cost or resource commitment.

External resource-effects of conducting an increased amount of business online are an increase in the international orientation of the firm. Implying that the physical borders of countries become increasingly blurred within the organization. Furthermore, an increase in the range and diversity of the international business contacts and an increase in unsolicited orders from foreign markets were determined. The authors conclude that internationalization, contrary to the Uppsala model, is based on countries with a high internet diffusion and not solely psychologically close countries. This therefore contradicts the Uppsala model where another conditio sine qua non was applied. In sum, for E-Ventures insights into the possible patterns and motivations for internationalization in the Net Economy are, in part, contrary to the Uppsala internationalization process model.

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[31] E-Ventures are believed to be similar to service firms in their internationalization behavior because of mutual product and firm characteristics (*Ekeledo and Sivakumar*, 2004).

[32] The term ‘marketspace’ was coined by *Negroponte* (1995); cf. introductory remarks.

According to *Johanson and Vahlne* (1990) there are three reasons why firms deviate from the process model: They are large firms with enough resources to a) take larger steps and skip the stages and; (b) acquire relevant knowledge for example by employing internationally experienced managers, which reduces uncertainty about a foreign market, and; c) if the market conditions in different foreign markets are homogenous, firms may generalize experience gained in one market to make larger internationalization steps in another. This third proposition pertains to E-Venture firms who are active in market niches, however with homogenous market structures and conditions. Thus, a deviation of the internationalization process of E-Ventures is supported and may be concluded.

Bell (1995) conducted a cross-national study on the export behavior of 187 Finnish, Irish and Norwegian small computer software firms. These are small firms from countries with limited domestic markets, which target global market niches that are geographically isolated from so called lead markets. They found that exporting as a market entry form was selected by 70% of the firms in their sample. For this group, exporting was initiated by foreign contacts to suppliers and customers; what is more, firms who possessed strong international networks experienced an accelerated internationalization process. Hence, the network also effectuates a pull effect on the firms to internationalize. In contrast to the Uppsala model, backward linkages were observed in the internationalization processes of the firms. This has also been observed for E-Venture firms, where the degree of internationalization can be increased (but also decreased) by means of the Uppsala internationalization process. Thus, the dynamic process appears to function in both ways, based on the same effects: Resource linked to uncertainty reduction. Significantly, in the study age and size of the software firms in the sample did not have an impact on the internationalization decision but industry specific considerations, market niche activities and following domestic and foreign clients, primarily also determined the internationalization trajectory. In conclusion, the key tenets hereof for this study are that less psychological and geographical considerations play a role but, more so, networks and cooperations and the distinct competitive behavior of the small firms.

Moreover, *Boter and Holmquist* (1996) list environmental determinants- on the industry level- as highly significant in the Net Economy when entering a foreign country. For instance, if there is no medium to access customers, in

the form of digital networks, then the digital distance is amplified and the business model unable to perform. Therefore, the infrastructure in the host country in order to avoid unauthorized access, disclosure or modification to data is an environmental factor, which must also be taken into consideration with respect to internationalization via digital networks (*Oxley and Yeung*, 2001). For this end, *Rhee* (2005, p. 288) suggests that therefore, the 'digital distance' adds to the concept of psychic distance in the Net Economy because firms increasingly enter into countries where a certain degree of diffusion of internet is prevalent and countries where this is not the case seem even more distant.

In conclusion, the Uppsala model is attributed to firms of the manufacturing sector, however, for this study, three important insights are incurred for this study: Resource dependency approaches emphasize a process of internationalization that takes place over a period of time- may result in gradual internationalization on the one hand (state aspects), or a more discontinuous process consisting of specific events on the other (change aspects). On the basis of decisions, the commitment and growth of the firm is initiated. Further knowledge acquisition and organizational learning apply to E-Ventures to a limited degree inasmuch as the psychic distance concept does. Moreover, due to the inherent characteristics of the Net Economy the firm has internal- and external-related resource advantages. Above all, more resources are at a free disposition due to the increased efficiency and effectiveness of electronic business processes, but more importantly, external market entry barriers such as an increased international orientation within the firms and international contacts may be surmounted. However, the Uppsala model gives insights into the development of the export process on the organizational level. Information pertaining to the early stage of the internationalization process, i.e. before market knowledge and resources, are limited. The main focus of the model is more on the predetermined stages than on the process of getting to internationalization. Furthermore, the individual level, for example, that of the founders and their strategic orientation do not carry weight in the line of argumentation. Just like the economic approach, the Uppsala internationalization model does not take into consideration the possibility of individuals making strategic choices (*Reid*, 1983; *Turnbull*, 1987). Furthermore, the effect of the network, domestic and foreign client followship as well as the targeting of market niches are not as salient as they would apply to E-Venture firms. For

this reason, in the following, the export development models will be described with a view to getting an insight of what theoretical concepts there are at the personal level linked to the export development process.

2.3.3 Export Development Models

The differentiation of stages in the internationalization process has been a frequent research theme in the export literature. While the IB theories, primarily based on theories of international marketing, predominantly feed on changes in market structures as a motivating force for internationalization, the export development models perceive internationalization as a decision-driven process. What is more, a series of decisions, which occur due to changing environmental circumstances, encompass the firm's development process. Based on the first decision to export, the firm commences the incremental growth process by adjusting to changes by making a further decision.

Export development models differ in a number of stages: The phases generally range from pre-exporting, to initial exporting to experienced exporting until a firm is established in the foreign country and enters the post-exporting phase. Each stage is hereby initiated by a decision and the decision, in turn, is a reaction to changes in the environment of the firm. Significantly, the first decision to export is the initial spark of the international expansion of the firm.

The decision to enter a foreign market by means of exporting depends primarily on the market position in the domestic market in the export development models, and the herewith-attained experiential learning curve and accumulated resources. These determine the export decision. Therefore, because internationalization is per se described as a sequence of decisions in the export development models this approach is suitable for explaining the context of internationalization decision-making.

Different export development models with a differing number of stages up to the post-export phase have been conceptualized. For example, the Uppsala school models (*Johanson and Wiedersheim-Paul*, 1975; *Johanson and Vahlne*, 1977) consist of four stages of engagement, while *Bilkey and Tesar*, (1977) and *Newbould et al.* (1978) discuss a six-stage model. However, widespread research has adhered to a five-stage model. Among these are *Cavusgil* (1980, 1984b), *Bartlett and Ghoshal* (1989), *Buckley et al.* (1988b),

Johanson and Vahlne (1990) and *Leonidou and Katsikeas* (1996). In this chapter, a comparison of three export development models, which were developed in the course of time, will be conducted: Primarily, the pre-export development models of Johanson and *Weidersheim-Paul* (1975), *Bilkey and Tesar* (1977) and *Czinkota and Johnston* (1983) will be discussed, the main aim being to shed light on theoretical conceptions of the precedents of the internationalization decision. Significant for the context of this study is the sequence of the decisions and the rationale behind them in the different models.

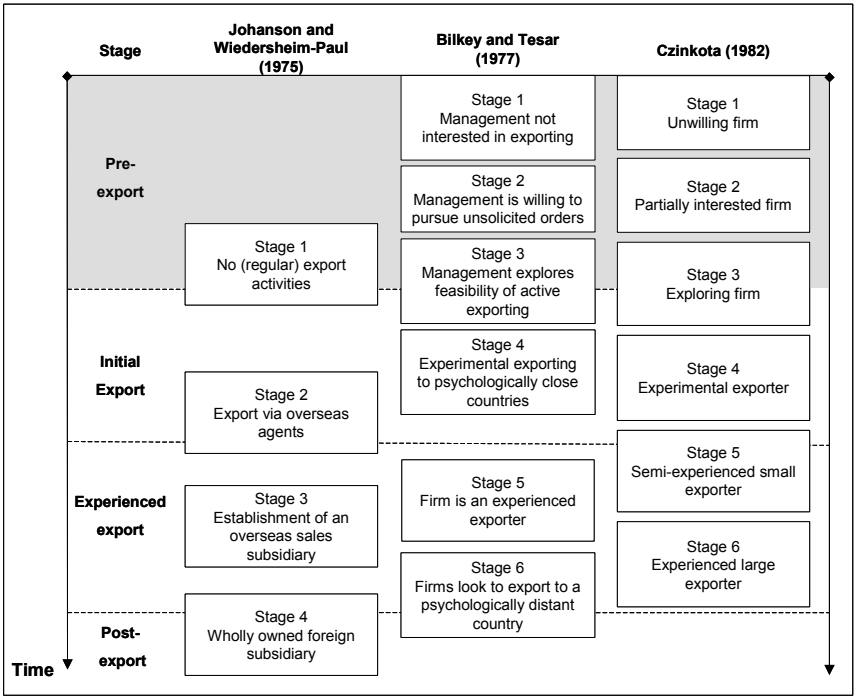

Figure 10: Overview of the export development models

The export development model, on the basis of which *Johanson and Vahlnes'* (1977) Uppsala Internationalization Model was developed, consists of four stages. Each stage is characterized by an increasing degree of internationalization, implying an increased resource commitment and a progressing time frame. In stage 1 the firm has no regular export activities and thus is in-between the pre-export and initial exporting phase. This implies that

the firm may fulfill an occasional order but does not consciously intend to become an exporter. In stage 2 the firm begins to export via overseas agents, and, in this manner, transcends the barrier between the initial and experienced exporting phase. This form of exporting induces a limited degree of commitment and risk. In a succeeding stage the firm, which is now considered an experienced exporter, establishes an overseas sales subsidiary. And, finally, in stage 4, the post-export phase, the firm has settled in the foreign market by establishing a wholly owned foreign subsidiary. Figure 10 gives an overview of this export development model over the course of the pre-, initial, experienced and post-exporting phases. The figure displays how the stages of the three models developed and differ- partially based on varying assumptions.

Bilkey and Tesars' (1977) innovation model is the first concept to advance and expand the four-stage expansion process of Johanson and Wiedersheim-Paul to six stages. The model similarly perceives internationalization as an incremental process with changes occurring within the firm as it gains market experience. Furthermore, innovations within the firm also determine the transition to the next stage. The model was confirmed by *Bilkey and Tesars'* (1977) empirical study of 423 SME Wisconsin manufacturing firms.

Basically, the model consists of the following six consecutive stages, which characterize the managerial attitudes in the export developing process of the firm (*Bilkey and Tesar*, 1977, p. 93):

Stage (1)	Management has no interest in exporting; Not even in the case of an unsolicited order.
Stage (2)	Management would pursue an unsolicited order, but is not willing to enquire into feasible exporting possibilities.
Stage (3)	Management actively enquires into feasible exporting possibilities: This stage would be skipped if unsolicited orders were received.
Stage (4)	The firm exports to countries with a low psychic distance on a trial basis.
Stage (5)	The firm has gained experience in exporting to a particular country and optimizes its export behavior to the changing currency rates, tariffs, and other situative context.
Stage (6)	Management enquires into feasible exporting possibilities to countries with a higher psychic distance.

The stages can be continuously extended in this manner. One of the main differences to Johanson and *Wiedersheim-Pauls'* model is that the management perspective is first highlighted and pre-export phase is prolonged. While the Uppsala model consisted of one pre-export and three export phases, this model comprises two pre-engagement phases and four post-export phases. In this model too, the firm establishes itself slowly in the foreign markets depending on relevant information and knowledge. The internationalization process described in the innovation model is, furthermore, driven by an increasing commitment in psychologically distant countries (*Leonidou and Katsikeas*, 1996).

Figure 10 illustrates the six phases in accordance to the export phase: Stage 1 and 2 are in the pre-export phase, in phase 3 exporting begins and stage 4 is in the initial exporting phase. Subsequently, the firm is an experienced exporter by stage 5. And in stage 6, the firm transcends into the post-export phase. The empirical testing of *Bilkey and Tesars'* model underscores that exporting activity can be perceived as a learning process where firms get increasingly acquainted with foreign markets and business operations (*Leonidou and Katsikeas*, 1996, p. 521). The innovation model has further been developed and applied in various research studies since Bilkey and Tesar conceptualized it[33]. Salient in this model is that the internationalization decisions are based on a market push mechanism (*Andersen*, 1997). Contrary to other models, this model explicitly states the possibility of a stage jump- implying that in the case of unsolicited orders, stage three (active exploration of export feasibility) may be skipped. *Cavusgil* (1980), for example, argues in his review of the innovation model that firms internationalize without conscious planning and highlights a continuous, incremental and lengthy process. Furthermore, each stage involves increasing commitments of resources and managerial know-how. Most significantly, Cavusgil ascribes the low speed of the internationalization process to the management's risk-aversion and inability to rapidly acquire the necessary knowledge and market information.

[33] According to *Miesenbock* (1988, p. 173) it is the most prominent model because it has since received widespread attention in the literature. For example, *Cavusgil* (1980, 1982) also bases his model on increasing export activities, and on a push mechanism from the external environment.

The innovation model has been further developed by *Czinkota and Johnston* (1983) who attempted to adjust the classification criteria of the stages described in the model. The reason for increased modifications to the model are allegations that the general classification criteria lead to quantification problems (*Miesenbock*, 1988, p. 173). The stages range from (1) the unwilling firm, (2) to the partially uninterested firm, (3) to the firm exploring in export, then (4) the experimenting firm, on to (5) the semi-experienced small exporter and, finally, (6) to the experienced large exporter (Figure 10). This model, based on the empirical testing of 237 SME US firms, is valuable for distinguishing between firms in the internationalization process. The pre-engagement process in this model is extended but its borders are blurred. Somewhere between the stage (3) and (4) does commitment actually begin. What is significant here is the depiction of rising interest in the engagement process, implying that a firm engaged domestically may be incrementally led to make an internationalization decision. In sum, internal pushing forces or external pulling forces, often also referred to as market push or market pull, create the momentum for the firm to make a development decision. Contrary to the innovation model Czinkota's (1983) internationalization process model is based on increasing export experience and on a pull mechanism (*Andersen*, 1997; *Brock*, 2000b).

However, export development models do not contribute to the traditional internationalization theories and they are only in part empirically assessed: For example, the model of *Bilkey and Tesar* (1977) has only been empirically tested from stage three to five. What is more, while the Uppsala internationalization model is perceived to have a dynamic component the process models are purely static in nature. While the motivation to internationalize is rooted in the market structure and the dynamics of the industry in the theories discussed in chapter 2.2, both internal and external forces incur a sequence of organizational decisions in the process models. All the decisions are attached to risk and uncertainty, which are leveraged by the knowledge and experience gained. This also pertains to the first internationalization decision to engage in exporting: The decision-making process may be unplanned and unstructured, gradually and slowly implemented and stage jumps are possible. Hereby, the decision-makers orientation towards the market and towards internationalization plays a significant role.

However, the phase of internationalization propensity still remains undifferentiated and the focus in the models is still focused on the individual level. In the following, further theoretical considerations of the pre-export phase will be conducted. What is more, the internationalization process can, for the purpose of this study, be roughly split into three main parts: The internationalization propensity, the internationalization decision and the internationalization process. For this study it is assumed that a decision process is not attached to a certain point in time but to a phase in time, supposing that a decision can occur over a length of time.

2.3.4 Pre-export Models by Wiedersheim-Paul (1978) and Olson and Wiedersheim-Paul (1978)

The following chapter aims at primarily gaining further knowledge of the internal and external motivating forces of the pre-export phase, i.e. the phase prior to making an internationalization decision. In the following two pre-export models will be described and discussed.

Pre-export is the time period before a firm performs its first export sale (*Olson and Wiedersheim-Paul*, 1978, p. 284). The model of *Wiedersheim-Paul et al.* (1978) and *Olson and Wiedersheim-Paul* (1978) are two *similar* export models, which especially shed light on the pre-export phase and elucidate some influential forces leading to a firm making an internationalization decision. This is especially appealing to the focus of this research, because it also gives insights into the state of the firm prior to internationalization. Both models start with the basic assumption that the firm is a non-exporter- i.e. is *only* serving the local market- prior to the internationalization decision.

The model of *Wiedersheim-Paul et al.* (1978) is based on three main forces, which affect the export decision: the decision-maker, the firm and the environment of the firm (Figure 11). These three interdependent forces have an impact on internal and external attention-evoking factors. These are forces, which generally make a firm consider exporting as a strategy option. Internal attention-evokers are, for example, the possession of unique competence and the availability of excess capacity resources such as management, marketing, production or finance.

External attention-evokers can be identified as

(a) unsolicited orders from foreign customers,

(b) opportunities in the market/ industry,

(c) competitor's actions and

(d) government policies stimulating export.

The key tenet of the model is that the decision-makers are able to influence both the environment and the perceptions of internationalization. The manner in which attention-evoking factors are perceived and paid attention to depends on the decision-makers. They are also the ones who decide to dedicate their attention to gathering pre-export information, paving the way for the export decision (Figure 11). Examples of pre-export information activities are the willingness to initiate export, activities for transmitting export information and activities leading to collecting information.

Therefore, the value system of the decision-makers, their history and past experience, especially their professional experience have an impact on the internationalization decision. And, on the other hand, the decision-makers are also subject to influences from within the firm, from the firm environment and vice-versa. The founders influence the firm environment through their actions but are simultaneously influenced by changes in the firm environment and will react to them.

Wiedersheim-Paul et al. (1978) argue that a founder with a high international orientation will have a higher probability of both noticing and acting upon attention evoking factors. Another factor influencing the perception of 'triggering cues' for making an internationalization decision is the decision-makers perceived uncertainty of internationalization. And, depending on his personal level of uncertainty tolerance, i.e. his personal risk level, he will either proceed to make the decision or will opt against international activity. This also depends on his personal characteristics and experience.

Firm level factors included in the model, which mediate the decision-makers perception, are, mainly the goals, products and history of the firm. Is the prime goal of the firm sales growth? Are the products in demand in other markets? Questions like these can either enforce internationalization or demotivate the decision-maker from taking this path. What is more, the domestic environment of the firm also has an impact on 'the mental map' of the firm. For example, if the firm is located in a high-tech incubator it may have another view of

internationalization, than if located in a rural area and working out of the metaphorical “garage”.

Basically, *Wiedersheim-Paul et al.* (1978) distinguish between three groups of firms: (a) domestic non-exporters, with no intention of exporting, (b) passive non-exporters, with a latent interest in exporting, meaning that the probability to export is high, if there is an unsolicited order from another country or (c) active non-exporters, with a strong interest, proactively seeking export opportunities.

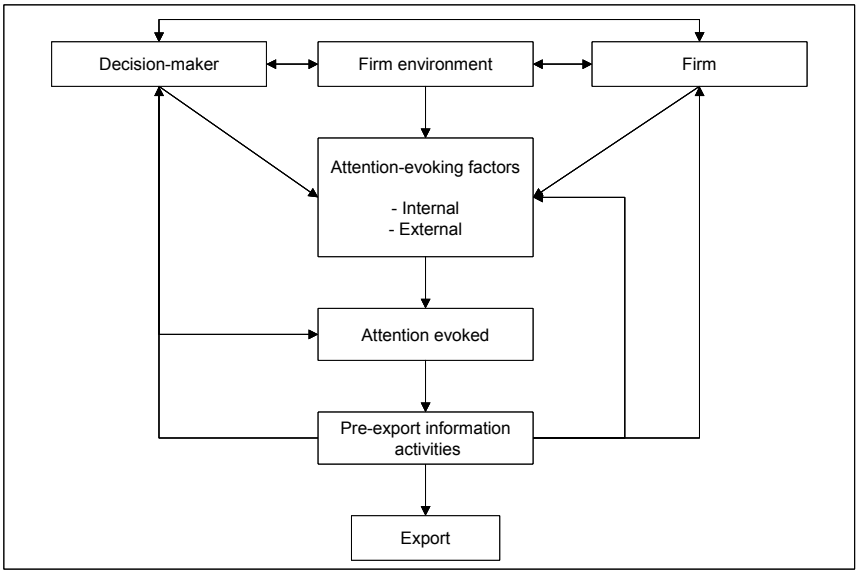

Figure 11: Factors affecting the pre-export behavior of the firm

Source: *Wiedersheim-Paul et al.*, 1978, p. 48.

In sum, the key tenet of the model is that firms proactively engage in pre-export activities, will not only have less difficulties in internationalizing, but will also be more successful than other groups in terms of growth.

Olson and Wiedersheim-Paul (1978)

The model of *Olson and Wiedersheim-Paul* (1978) is similar to that of *Wiedersheim-Paul et al.* (1978) in that it is based on the same grounds, where the firm is a non-exporter and is forced to make an internationalization decision due to internal and external changes. However, the model differs

slightly in that it sheds light on a slightly different and more detailed process of pre-export activities (Figure 12). Hence, especially the differences will be elaborated in more detail in the following.

Similarly, in this model the decision-maker is influenced by the firm's internal and external environment. Due to the individual characteristics of the firm, the firm is exposed to export stimulating factors. The perception of these stimulating factors and the interpretation of these depends on the individual characteristics of the decision-maker. In addition, the authors differentiate between the decision-maker's perception of external and internal stimuli, which fundamentally influences his export-making decision. What is different about this model is that the export maker' s decision is categorized into four types of behavior: active, passive, domestic and reactivating. In the following, the stimulating factors, the decision-makers characteristics and perception and the subsequent firm behavior will be highlighted in more detail.

Stimulating Factors

Internal stimulating factors for exporting are related to the goals of the firm and degree of achievement in the firm in the present environment. If a firm has underachieved in terms of growth, it may feel pressured (i.e. *stimulated*) to expand into other national markets. Therefore, the present perception of internal stimuli such as excess capacity in human capital, marketing, production and finance, the firm's product characteristics and expansion goals can all drive a firm's founder to internationalize. Other internal influencing factors mentioned are also a change of owners or the high profitability aims of the present owners.

External export stimuli, on the other hand, are described as fortuitous and unsolicited orders from foreign customers. Therefore, it can be still be perceived as one of the strongest influences, even today. But other external stimuli like market opportunities in other countries, the competition's penetration into other markets, government stimulation in the form of monetary and non-monetary incentives (support) and reductions are also of significance. Finally, economic integration is an external export stimuli because of the consequences of reduced trade barriers, decreased tariffs but also reduced non-tariff barriers, psychic and cultural distance.

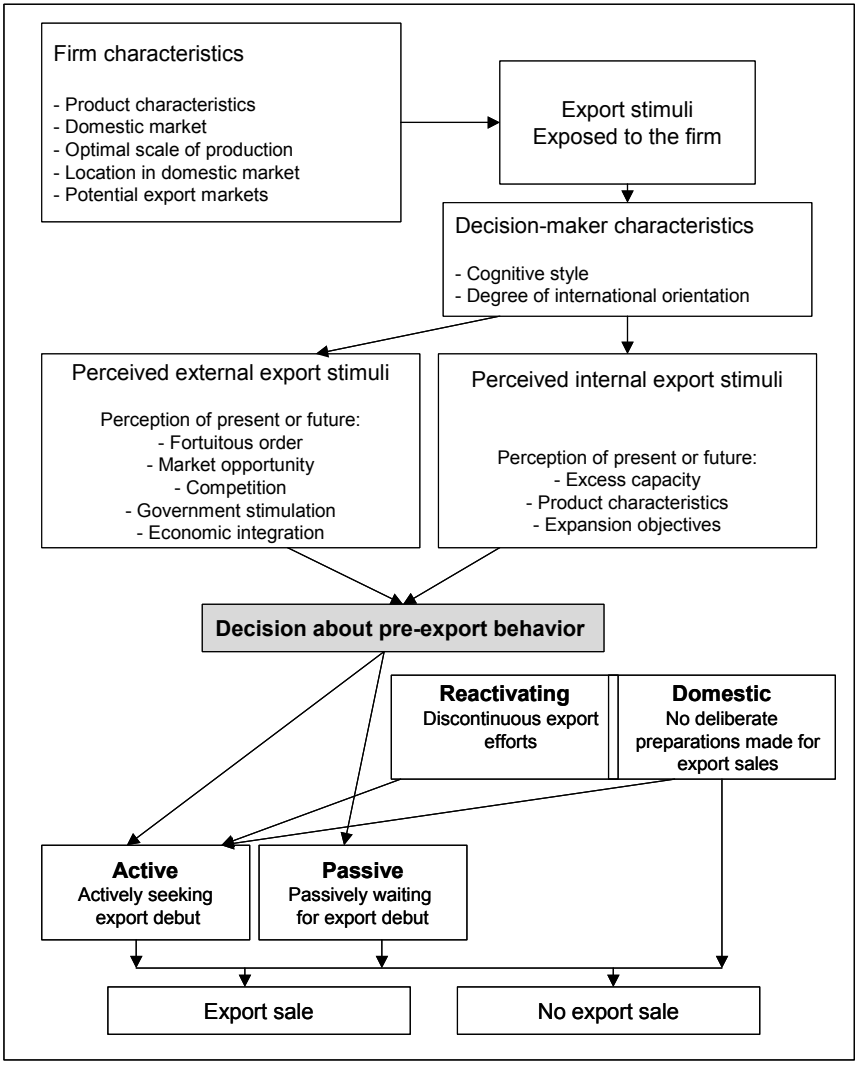

Figure 12: The pre-export development model

Source: *Olson and Wiedersheim-Paul*, 1978, p. 285 (slightly modified).

The best example for this is the effect on firms from the establishment of the European Union (EU), where it became debatable if the expansion of firms

within the EU's single market is perceived as internationalization per se due to the convergence of the psycho-geographic distance.

A strong mediating force of the internal and external export factors is the firm itself and its characteristics. In particular, the product characteristics, the domestic market and potential export markets are, according to the authors, responsible for the form and strength of the stimulating forces. That goes to say, that the product characteristics or the domestic market of a firm, determine if there are stimulating forces. The best example is the German pharmacy industry. A German pharmaceutical may not be likely to experience *any* export stimulating forces, due to governmental license restrictions and the product characteristics, for example name and package in German, and license to only sell in Germany.

Decision-makers

However, due to globalization, there are virtually no firms, which are theoretically restricted to the domestic market, and still not all firms internationalize. Differences in the decision-makers seem to be a major force in internationalization decisions. The authors even refer to the decision-maker as "the black box" (*Olson and Wiedersheim-Paul*, 1978, p. 291), into which the decision-makers assessment of her/his environment is fed. One difference individuals have is their cognitive style, which has a major impact on information gathering and information evaluation. It can be distinguished between preceptive and receptive individuals. Preceptive individuals act on cues to gather information- analyze information in combination with their principles: Firstly, they gather information and then react to it. Receptive individuals, however, react to get the information and are more open towards its message. The same can be stated with reference to information evaluation: Preceptive individuals are more systematic and receptive persons are more intuitive when evaluating information.

Another personal factor influencing the decision-makers is the international orientation of the company. This is defined as the "extent [s/he] perceives and considers what is happening outside his own country as interesting" (p. 293): The higher the international orientation, the higher the decision-maker's capability for recognizing information for feasible internationalization opportunities and the higher the likelihood of actually exploiting this opportunity.

In sum, the decision-makers' cognitive style and international outlook highly influence the likelihood of making an internationalization-decision.

Behavior

The authors distinguish between four types of export behavior: Active, passive, domestic and reactivating.

(1) *Active behavior* incorporates the firm actively participating in the pre-export process. This group of founders consciously prepares internationalization and the probability that the firm will commence internationalization earlier than firms with other behaviors is higher.

(2) *Passive behavior*, on the other hand, implies that the company is not actively attempting to export their good or service. This decision-maker type seems to be more intuitive and receptive than the active decision-maker who is more intuitive and preceptive. Therefore, this group is believed to take longer to become exporters that the first group. The decision-maker has the positive belief that if a stimulus is followed, the export decision will be taken.

(3) *Domestic behavior* implies the firm concentrating solely on the domestic market without planning or preparing for export. Typical for this group is the belief that the decision-makers ignore or take no interest in export stimuli. This sheds light on possible behavioral changes of the founders. For example, solely domestic founders should acquire a more preceptive and systematic style than other types of founders. For this reason, the probability of internationalization is assumed to be lower in this group.

(4) Lastly, *reactivating behavior* refers to a firm preparing to continue with the internationalization efforts, which have been discontinued. The authors admit to the fact that per-definition this group is not part of the model because they have already commenced internationalization. However, the authors regard these firms as non-exporters and argue that a further division into passive and active depending on their attitude towards further export can be undertaken.

Although these types of pre-export behavior are in part included in the other models, the model, which stems from the 1970s and has only partially been empirically assessed, provides the following insights for this study:

Firstly, both assume that the one single decision maker in the firm is the founder and has the decision-making power to determine the strategic direction of the firm. Indications of the small firm can be found where the founder or the founding team predominantly shapes the strategy. Therefore, the founder can be perceived as the most prominent antecedent of the internationalization decision. Secondly, the models also indicate push and pull factors in the phase leading to the exporting decision (*Brock*, 2000b, p. 66). Thirdly, the models differentiate between active and passive pre-exporter's, which is a notion underlining the planned or unplanned internationalization decision. This may be transcended to E-Ventures and unsolicited orders on the internet. And, lastly, the founder's perception, which plays a decisive role in the pre-export behavior, is pronounced. The digital networks or the Net Economy as a whole may be perceived as an external export stimuli, without psychological and cultural barriers, no tariffs of exporting. According to this model the characteristics of the Net Economy may be perceived as powerful stimuli for the first exporting decision.

2.4 Summary

In the introduction the aim of chapter was formulated as searching for theories and possible explanations of *why* firms internationalize. In general, the motivation to internationalize is predominantly rooted in the fact that it is the changing market structures and competitive industry dynamics, which motivate firms to internationalize (industrial economics). Most significantly, the theories fail to distinguish firms by size or age and therefore are not applicable to E-Ventures.

However, the theories do not fully capture the phenomenon of E-Venture internationalization and possible explanations seek to be assessed: Firstly, the IB theories are more concerned with the question of *why* MNEs exist and in how an MNE evolves: That is the development from a domestic to an international firm. These theories focus more on the outcome rather than the actual process. This signifies a static and not dynamic processual view, which does not tangent the pre-export or internationalization stage. Secondly, the FDI and economical approaches to internationalizing behavior are too limited, predominantly because of the focus on multinationals, which is not always attributable to small firms and their decision making (*Ibrahim*, 2004, p. 133).

For this purpose, to further deepen the insights on antecedents of E-Venture internationalization the internationalization process models were discussed in chapter 2.3. The internationalization process can, for the purpose of this study, be split into three main parts: The pre-export phase, the internationalization decision and the internationalization process phase. Moreover, the discussion of the export development models conclude that it is the market push and market pull mechanisms, which primarily drive the firm to internationalize, more precisely, to make the first internationalization decision. The pre-export model has advanced this insight, where the behavior of the firm prior to the internationalization process was highlighted. Here, the interplay of the personal, organizational and environmental context can be attributed to the behavior prior to the internationalization decision. The decisive factor with strategic shaping power is the founder, who is considered a dominant antecedent of the internationalization process. This notion emphasizes the role the entrepreneur's international orientation but also the role of contextual factors such as cultural, psychological factors and tariffs.

The influencing factors during this pre-export phase, be it internal or external forces, are numerous and multi-faceted (*Wickramasekera and Oczkowski*, 2006, p. 43). The important influences in the initiating pre-export phase and in the succeeding internationalization process can be summarized as follows: The *managerial* commitment, orientation and "awareness" of foreign markets, the characteristics of the *products* and their competitiveness and pricing, market information and exporting possibilities. Furthermore, there are basically two perspectives of the export development process beginning with irregular foreign sales (*Johanson and Vahlne*, 1977; *Wiedersheim-Paul et al.*, 1978) versus a rational planned process joining the management's full commitment and required resources of the company into the internationalization process.

Lastly, all the concepts provide valuable insights but do not elicit all the aspects of internationalization propensity in the Net Economy "since internationalization is a complex phenomenon, many different perspectives are needed to understand it" (*Andersson*, 2000, p. 64). The process theory of internationalization is too limited, providing only partial answers to the entrepreneur's or the firm's internationalization motives and processes. The pre-export models demonstrate the importance of investigating into the relationships between the decision makers, in the case of this study the

entrepreneur, the firm itself and the firm's environment. *Boter and Holmquist* (2000, p. 473) reflect this notion of having to analyze the internationalization decision in a more holistic context, indicating the limited explanatory power for the internationalization behavior of young technology-based firms. Moreover, the importance of the individual and the individuals' actions seeks further emphasis.

"The 'heart' of entrepreneurship is an orientation toward seeing opportunities".

Krueger, 2003, p. 105 referring *to Stevenson and Jarillo*, 1990.

3 Theoretical Foundations of Entrepreneurship

On the basis of the explanations in the preceding chapters with reference to E-Ventures with distinguished internationalization behavior patterns, the need for holistic explanation approaches for internationalization propensity was assessed. In this following part theoretical foundations of *entrepreneurship theory* will be applied to the research problem at hand to achieve a better analysis of the internationalization decision and the phase of internationalization propensity. Inasmuch as internationalization behavior encompasses the recognition of business opportunities across borders it is believed that young firms' internationalization comprises *entrepreneurial activity*. Further, it is postulated that "it might be that the entrepreneurial way of life takes precedence over national culture in small firms" (*Boter and Holmquist*, 1996, p. 479), and thus the internationalization processes may be more closely linked to individual rather than formal structures. A research study comparing the internationalization propensity of 357 young German and Chinese students conducted by *Kollmann et al.* (2007) found that although the political, economical and cultural contexts of the two groups differed highly, the propensity to become entrepreneurial is anchored within the individual in both countries. Moreover, while political, microeconomic and macroeconomic environments showed to have a low impact on the individual, the cultural environment had a significant influence on the individuals from both countries. Students from both countries had a positive relation towards power, while the biggest difference between the two countries was the attitude towards risk, which is negative for the German respondents and therefore has a negative influence on their entrepreneurial propensity. The opposite is the case for the Chinese respondents. The attitude of Germans respondents towards entrepreneurial activity mirrors the results of the Global Entrepreneurship Monitor (*Sternberg et al.*, 2004).

While it is the entrepreneurs with their distinct characteristics who shape the strategic direction and make the strategic decisions in the firm, the aim of the following section is to analyze to what extent entrepreneurship theory offers

explanations for the antecedents of internationalization propensity of the individuals in the Net Economy. Because entrepreneurial ventures are per se the medium and outcome of entrepreneurial actions, it is these actions, which are in the main focus of interest in this chapter.

For this purpose, firstly the term entrepreneurship will be defined. Secondly, the theoretical foundations of the entrepreneur will be explained, while, thirdly, the entrepreneurial process with the model of (*Brazeal and Herbert*, 1999) will be highlighted. This shall lead to insights and a discussion of how opportunities are recognized, based on entrepreneurship theory. Lastly, the chapter will conclude with a synopsis of the significance of entrepreneurial orientation for entrepreneurial behavior. In chapter 3.5 the main insights of this section are summarized.

3.1 Definition of Entrepreneurship

The term entrepreneurship originally stems the French word '*entreprendre*'. The semantic meaning of entrepreneurship is "taking from below" or "undertaking", with the connotation of someone taking charge, responsibility and the challenge from the beginning on (*Fallgatter*, 2002). Significantly, the word entrepreneurship, in its origin, implicitly encompasses the ability of an individual to change something (*Dana et al.*, 1999, p. 4).

One central dilemma of the entrepreneurship research field until today has been the existence of a myriad of definitions and perspectives of entrepreneurship and the lack of a unified research framework (*Davidsson*, 2005, pp. 1-5; *Shane and Venkataraman*, 2000, p. 218): Some researchers defined entrepreneurship along the lines of who the entrepreneur *is*, others have defined entrepreneurship along the lines of what the entrepreneur *does* (*Venkataraman*, 1997, p. 120)[34]. Moreover, entrepreneurial studies may refer to either the founding of a new venture (e.g. *Gartner*, 1985), or to one or more special characteristics of the entrepreneur (e.g. *McClelland*, 1961). One explanation for this incidence can be found in the development of the field: Entrepreneurship theory has its roots in four disciplines; economics, business

[34] A consequence of this dilemma is the lack of unified approaches in entrepreneurship research, which makes it difficult for scholars, to compare concepts and empirical results. *Katz and Gartner* (1988) explain that the views on entrepreneurship are so fundamentally different that perhaps a comprehensive definition may not even be possible to achieve. For an overview and discussion of entrepreneurship definitions cf. *Davidsson* (2005).

history/ anthropology, psychology and sociology and each discipline further developed its concept of entrepreneurship independently from each other (*Brush*, 1995; *Dana et al.*, 1999; *Shane*, 1996).

At the end of the nineteenth century, the general focus of economics research and practice expanded to include understanding entrepreneurial activity. First interest in entrepreneurship occurred in the USA and only later shifted to Europe to be a central issue not only in the field of research, but also politics, economics and culture today (*Egeln*, 2000, p. 5; *Niederkofler*, 1989, p. 57). Especially in highly industrialized nations with few natural resources, such as Germany, politicians and researchers alike are looking to entrepreneurship to secure and further increase economic growth rates. Instilling entrepreneurship in a society can increase the innovation potential of a nation but also the employee qualifications - providing an opportunity to increase the gross national product. Furthermore, researchers also contest that entrepreneurship is also of societal value by helping to expand the tax base, strengthen national competitiveness and generate highly skilled employment opportunities (*Kassicieh and Radosevich*, 1994; *Storey and Johnson*, 1987).

Much later, *Low and MacMillan* (1988) purported in 1988 that entrepreneurship is the founding of a new organization and its role in economic progress[35]. This implies that entrepreneurship takes place on an individual level and is co-existent and co-dependent on its macro-economic environment (*Davidsson*, 2005, p. 5). *Gartner* (1988, 1990, 1993, 2001) defines entrepreneurship as the *emergence of new organizations.* According to *Gartner* (1988, p. 430) there are four necessary conditions for organizations to emerge. First, firms exist because of the interaction between agents such as individuals, partners, groups, parent organizations and the environment. Results from the interaction of these agents are new ventures, new business units, corporate entrepreneurship programs but also ecological perspectives and government policies (cf. *Katz and Gartner*, 1988, p. 433).

Secondly, it is mandatory for a firm to possess resources. The types of resources, may they be physical or intentional, determine the strategic

[35] Entrepreneurship can occur for reasons other than profit, for example, social entrepreneurship, where measuring the performance is still challenging today. However, in the following discussion, only profit entrepreneurship will be considered. For an overview and discussion of different forms of entrepreneurship see (*Roberts*, 1991).

direction and geographic distribution of the new organization (*Hannan and Freeman*, 1984; *Liebenstein*, 1968). Thirdly, due to the clear boundaries between the organization and the environment, an extra-organizational exchange must take place for an organization to emerge. This, according to *Katz and Gartner* (1988), can be easily traced. Lastly, a fourth property for identifying an emerging organization is intentionality, moreover, i.e. the intentionality of the agents or founding entrepreneurs. The intentionality of an emerging firm discloses the goals, not only of the agents or entrepreneurs, but also of the environment of the organization. At a later stage- the organization will pursue its own goals but during the founding phase, intentionality is an expression of common belief structures, purposes, history, traditions and methods in the time frame of emergence.

Similarly to the dilemma of the internationalization theory described in part 2, entrepreneurship theory has predominantly focused on the post-founding phase of new ventures (*Katz and Gartner*, 1988, p. 433). In fact, organization theories, up to this point, premised with already existent organizations (*Davidsson*, 2005, p. 20). And *Katz and Gartner* (1988) were one of the first entrepreneurship researchers to attempt to shed light on this phase of venture creation accentuate studying the *behavior* in the process of the birth of entrepreneurial firms.

This prominent definition of entrepreneurship is significant for the context of this study because it includes the aspect of behavior, the concept of a process and the creation of new firms. All these perspectives promise to shed light on the research question: How do entrepreneurs *behave*, in the beginning of the *process* when new ventures emerge? Another reason for consulting Gartner's definition of entrepreneurship is that it does not solely concentrate on the characteristics of the entrepreneur. *Gartner's* definition takes a holistic approach to entrepreneurship and has been widely complemented by other researchers for this. The holistic contribution to entrepreneurship is Gartner's combination of the structuralist and processual perspective of the phenomena. Structuralists (e.g. *Blau et al.*, 1966) view the organization in terms of attributes such as span of control within an organization, while the processual view (e.g. *Weick*, 1969) focuses on predominantly cognitive processes, which evoke the emerging organization (*Katz and Gartner*, 1988, p. 430). The focus of this study shall be solely on the emergence of new ventures.

3.2 Definition of the Entrepreneur

Richard Cantillon, a French economist and banker (1680-1734) originally introduced the concept of entrepreneurship in economics by observing and recognizing entrepreneurial activity in the eighteenth century in France[36] (*Jevons*, 1931). He noted that entrepreneurs pay a certain price for a product in order to resell it at an *uncertain* price on the market– hence reasoning that entrepreneurs differ from others because they are risk-bearing. *Adam Smith* (1776) later deepened the introduction of the concept of entrepreneurship in economics by referring to a profit-seeking individual as an *enterpriser* looking to form an organization with a commercial purpose on the market. Entrepreneurs are termed the *invisible hand* in an economy, because of the ability to react to economic change by becoming economic agents and turning demand into supply (*Bjerke and Hultman*, 2002, p. 52). Moreover, it is the entrepreneur, i.e. the invisible hand of the market who coordinates the actions of millions of demanders by efficiently transmitting information through the price of a good on the market. The buyers never have to interact or be aware of who, why or how others produce goods and services (*Smith*, 1776). On a general note, the market system can be seen as a means of coordinating economic activity, because prices simultaneously coordinate the production plans, resource availability and resource requirements of entrepreneurs in a way that limits the possible alternatives and therefore decisions of the market participants (*Shane and Eckhardt*, 2003, p. 165).

Jean-Baptiste Say (1807) further developed the term entrepreneurship by including economic developments into the concept of entrepreneurship. He postulated that the function of the entrepreneur was to serve as a coordinator of factors of production. And, by means of this role, the entrepreneur also takes on the risk of the enterprise but at the same time also creates profit and wealth. What is more, the entrepreneur identifies the essential needs of society and is therefore able to meet the demands of society.

In the perspective of Austrian-American economist Joseph A. Schumpeter a new venture is created by a new innovation or by the entrepreneur carrying out '*new combinations'* of resources and activities in an economy (*Schumpeter*,

[36] Exemplary occurrence of entrepreneurial activity per se was documented as early as 1500-1750 when the silk road from China to Europe was established in the age of Mercantilism in Europe.

1934, p. 74). The growth of a new venture is facilitated by the entrepreneur creating new demand or by entering new markets. Schumpeter views the entrepreneur as a destructor in a market in the state of equilibrium. This equilibrium implies that market economies exist in a state in which participants are not willing to change their present state due to lack of incentives (*Shane and Eckhardt*, 2003, p. 162). All prices in the market convey all the relevant information needed by the participant, i.e. there are no information asymmetries and the prices form the basis for resources directions. In addition, market decisions are based on these prices. All information and expectations of future market participant's actions are observed according to current price bids (*Arrow*, 1974). Thus, all decisions made lead to the optimization of the market equilibrium, because all the decisions are based on information included in, and respectively, derived from the prices (*Casson*, 1982). In this context, the Schumpeterian view portrays the entrepreneur as an innovator and the essence of *enterprising, i.e. entrepreneurial activity,* is innovation:

> "The function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, opening a new source of supply of materials or a new outlet for products, by reorganizing a new industry" (*Schumpeter*, 1952, p. 72).

Agreeing with to the other classical economists (viz. *Casson*, 1982; *Kirzner*, 1973), the entrepreneur, according to Schumpeter, is perceived as depending on her/his *function* and not her/his person. The innovativeness of the entrepreneur can be observed in his manner of dissolving or at least destabilizing the existing economic system. This means that an individual who creates an innovation combines new ideas. The existence of innovative ideas helps the entrepreneur to create a new firm by acquiring the resources required to develop the innovation, create an enterprise, and by market introduction, successfully grow it (*Kirchhoff*, 1991). And, the disequilibrium is created on the market, when the new firm enters the existing market with its new combination of ideas. In essence, *Schumpeter* suggests, that new wealth is created, when oligopolistic new market entrants destroy structures.

In summary, there are some specific characteristics shared by those who excel at recognizing opportunity. When viewing the development of the entrepreneurship literature the entrepreneur can take on different but mutual roles. For example, besides *Schumpeter's* view of the entrepreneur as an innovator, entrepreneurs also embody risk-takers (e.g. Cantillon), but also serve the needs of society by managing organizations (e.g. Smith) and exploit feasible and promising opportunitities (e.g. Kirzner) (*Bjerke and Hultman*, 2002). Specifities of entrepreneurs in small knowledge-based firms according to *Boter and Holmquist* (1996) are that, firstly, few people often dominate small organizations and thus the function and influence of the entrepreneur's persona is emphasized. Secondly, the strategic direction and activities of the firm can be explained on the basis of the entrepreneur and his personal traits and experiences. What is more, and lastly, the entrepreneur's professional identity strongly determines the firm's culture and the identification of the employees. Therefore, there is a pronounced link between the professional experience and attitude of the entrepreneur and the firm's behavior and culture in a knowledge-based firm such as an E-Venture.

3.3 The Entrepreneurial Process

The aim of this chapter is to gain further insight into entrepreneurial activity by discussing the entrepreneurial founding process, i.e. the process of the emergence of a firm. This serves the purpose of gaining knowledge of the influencing factors of entrepreneurial events and the triggers of entrepreneurial activity. Above all, the role of the entrepreneur in the founding process is of special interest in this section. Entrepreneurship is, according to Katz and *Gartner* (1988), when an entrepreneur recognizes a business opportunity, accumulates the required resources, erects an organization, produces a product and/ or service, then enters the market, and, as a firm, responds to and interacts with government and society. In essence, entrepreneurship is the creation of a new organization.

The key events in the gestation process[37] generally comprise a) the principal's, i.e. the manager's, commitment, b) the initial hiring and financing efforts and c) initial sales (*Reynolds and Miller*, 1992). *Bygrave and Churchhill* (1989) have outlined the founding process by combining a myriad of

[37] The term *gestation* will be used synonymously with *founding* in the following.

theoretical models from both the social sciences and practical concepts from applied sciences. The model incorporates theoretical and practical concepts as they affect entrepreneurial activity. Moreover, the venture formation process according to the authors consists of four main entrepreneurial events[38]: An innovation precedes a triggering event (*Kollmann and Kuckertz*, 2006a), which is followed by an implementation and a growth phase (Figure 13). This entrepreneurial founding process is initiated by an innovation in the shape of an opportunity[39], leading to a triggering event[40], such as the decision to found a venture (*Bygrave and Churchhill*, 1989, p. 9). This decision is in turn attached to the implementation of the business idea, in the long term aiming to realize a profitable business in conjunction with organizational growth[41]. Notably, entrepreneurship in this process-based perspective is not a series of isolated activities or undertakings but a string of interdependent entrepreneurial events.

The founding process is affected by entrepreneurial activity in different ways when the different entrepreneurial events occur. Factors, which influence the process, are categorized as environmental, personal, sociological and organizational factors. Environmental factors, such as the opportunities themselves, role models, creativity in the initial stages or- in the more advanced phases- competition or government policies up to the influence of bankers and other addresses play a salient role. But also personal factors form a variable in the entrepreneurial process. Personal characteristics, such as achievement, internal control and risk-taking are influential in the primer part of the process. However, strongly depending on the individual's vision and commitment to the firm, further growth can be instilled. Figure 13 gives an overview of the different factors affecting the four entrepreneurial events.

To further gain deeper insights into the phase prior to the actual entrepreneurial event *Brazeal and Herbert* (1999) provide a model with a more holistic perspective, integrating several different components, into the pre-

[38] For a different perspective on the venture formation process viz. *Katz and Gartner* (1988).
[39] An exact definition and discussion of the term opportunity will follow in chapter 3.3.
[40] *Kollmann and Kuckertz* (2006) focus on this triggering event in a cross-cultural empirical comparison of entrepreneurship.
[41] For a more detailed and case-based delineation of the venture creation process consult *Timmons* (2004).

founding phase (Figure 13)[42]. What is significant in *Brazeal and Herberts'* model is that entrepreneurship per se or entrepreneurial activity or entrepreneurial behavior can occur "within and without the established organization." *Brazeal and Herbert* (1999, p. 40), imply that entrepreneurship is viewed as being detached from an organization, moreover, also from the size and the goal of an organization. Thus, the entrepreneurial event and the preceding actions and behavior are the central focus of the model (Figure 14).

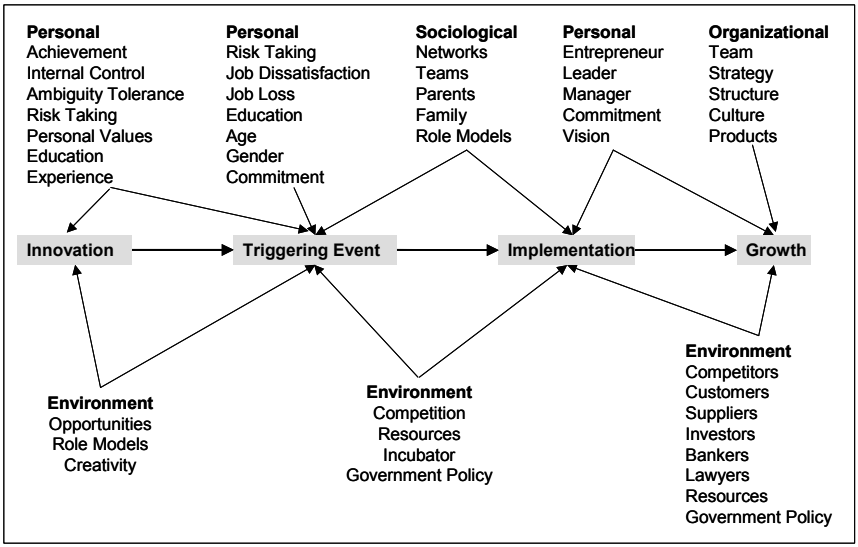

Figure 13: The entrepreneurial events formation process

Source: *Bygrave and Churchhill*, 1989, p. 9.

The entrepreneur in this entrepreneurial process is assumed to be either the individual or the organization. The entrepreneurial process includes the following components (*Brazeal and Herbert*, 1999, p. 34):

(a) An *innovation*, i.e. the current or potential existence of something new,

[42] Other process models cf. *Sarasvathy* (2001), *Shane* (2000) and *Van de ven et al.* (1999). However, *Brazeal and Herberts'* (1999) model, also applied in the international entrepreneurship field by *Jones and Coviello* (2005), explicitly intertwines the personal, environmental and potential organizational context.

(b) the *creativity* of the founder, induced by new ways of looking at old problems, and

(c) *environmental change*, i.e. the new or emerging external conditions, which lead to an increased or new capability of prior processes or solutions,

(d) *change per se*, which can substitute or be complementary to existing processes or solutions, and, essentially,

(e) *an innovator*, i.e. one or more individuals who is committed to the organization and driven to achieve growth.

Environmental change initiates the entrepreneurial process. Change is hereby perceived as an antecedent of the entrepreneurial event and just like innovation may be viewed as either a process or an outcome. This is similar to the internationalization process. Further, external change may be evoked and amplified by hostile or dynamic effects in the environment. A change induced by the environment eventually leads to an innovation, which perceives the current or potential existence of something new. In sum, an impetus from within and from outside of the organization can initiate the entrepreneurial process.

Innovation (e.g. innovation 1 in the figure) occurs as the result of a cyclical process of human response and volition towards environmental changes. An example of innovation 1, based on the technology literature, is the implementation process of computer technology in the organization. By changes in the global computer hard and software industry and the global marketplace a process driven by human willpower is instilled. Originally defined as the “successful implementation of creative ideas”, innovation is facilitated by creativity, although creativity is not the only precondition for innovation (*Brazeal and Herbert*, 1999, p. 36 referring to *Stein*, 1974, and *Woodman and Griffin*, 1993). Creativity is a necessary but not sufficient element for innovation to occur. In the literature, one differentiates between incremental and radical innovations (*Schumpeter*, 1911). Incremental innovations embody an extension or modification of an existing innovation. These can take the form of improvements in operations, cost control and product or service performance. Radical innovations, on the other hand, are ‘discontinuous’ innovations- implying they represent drastic changes from a current state (i.e. idea, design, application or process). Characteristics of both

incremental and radical innovations are that they are crucial for the creation of competitive advantage and the enforcement of products on the market. As a consequence, radical innovations, especially in hostile markets, do more to improve a firm's competitive advantage.

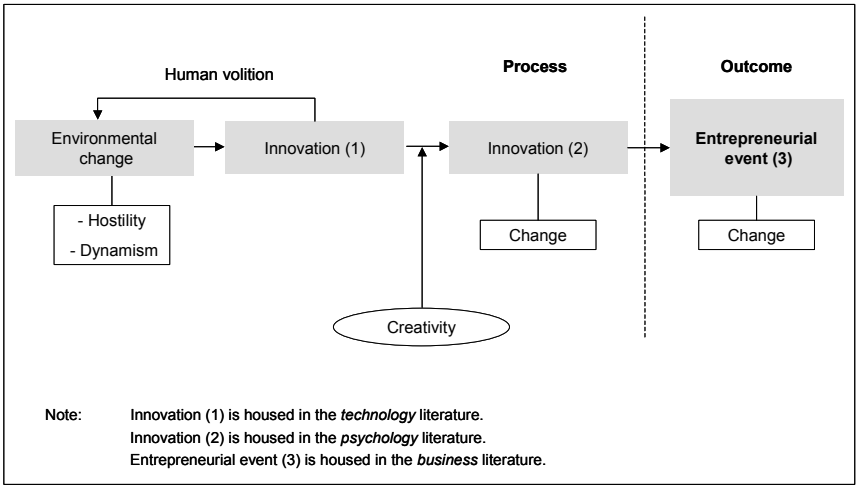

Figure 14: Model of the entrepreneurial process

Source: *Brazeal and Herbert*, 1999, p. 32 (slightly modified).

Creativity is a process, by means of which, inventions, i.e. innovations, come into existence. Innovation per se begins with searching for new ideas. Therefore, creativity is seen as a key factor between innovation 1 and 2. Innovation 2 is the outcome of a creative or innovative process and the creativity is based or dependent on the entrepreneur himself. Based on the psychology literature, Innovation 2 can be ascribed to the individual level, emphasizing the role of the entrepreneur in the innovation process. Moreover, individual characteristics, personalities and behaviors such as skill, knowledge, intensity and the entrepreneur's availability of other resources influence creativity.

Finally, the entrepreneurial event is exploited. The components of the entrepreneurial process, innovation, change and creativity, feed into the entrepreneurial process, whose outcome is the entrepreneurial event (3). In essence, the entrepreneurial event, which is derived from the business literature, is the founding of the firm. Entrepreneurial events are non-linear and

the outcome is innovation, which comes out of the process of change and creativity. In a nutshell, change, possibly in form of a process, stimulates innovation and innovation, be it incremental or radical, induces entrepreneurial events as a result or outcome of the process. Accordingly, the process may be evolutionary or discontinuous (*Jones and Coviello*, 2005, p. 288). The entrepreneurial event has the potential to implicitly create value, in the form of growth, if exploited.

In summary, the human being is seen as an initiator and creative force of the entrepreneurial process and the human volition is the prime impetus for the beginning of the process. This is therefore, proactive human behavior in preparation for the entrepreneurial event. However, change is also a major but not the sole facilitator towards the innovation and actual founding of the firm. Essential components, moreover the influencing factors leading to the entrepreneurial event are *innovation*, *creativity* and *change*. To gain further insights into the entrepreneurial process, first, the determinants of entrepreneurial opportunity recognition will be discussed in chapter 3.3.1 and the determinants of founding intent will be discussed in chapter 3.3.2.

3.3.1 Entrepreneurial Opportunity Recognition

To understand entrepreneurship requires understanding how opportunities are perceived and what determines the decision to pursue them. The central question in this chapter is what personal characteristics of the entrepreneur facilitate opportunity recognition? Because what precedes the emerging firm, and, what is of interest in the context of studying the behavior process of emerging firms is the *search*, *discovery* and *exploitation* of opportunities. An opportunity must first *exist,* and second, be *identified* in order for a *decision* to exploit this opportunity to succeed. Only after these steps have been run through, will a firm emerge.

The opportunity recognition (OR) process will be defined and discussed in more detail in this chapter. The aim of this part is to define opportunities and the recognition process. Lastly, also a definition of entrepreneurial action based on opportunity recognition will be presented.

Entrepreneurial opportunities according to *Casson* (2003) are circumstances, in which new goods, services, raw materials, markets or organizing methods are introduced on the market and sold at a higher price

than their cost of production. In other words, opportunities can be described as "a set of external conditions thought to be favorable [to certain individuals] for creating the need for a new product" (*Shane and Eckhardt*, 2003, p. 35).

An opportunity is realized by the introduction or formation of new means, ends, or means-ends relationships (*Shane and Eckhardt*, 2003, p. 165). This is what distinguishes entrepreneurial opportunities from other business opportunities. Opportunities by means of which profit is generated, because of an improvement or optimization of an already existing solution, for example increased efficiency, is not considered an *entrepreneurial* opportunity. An entrepreneurial opportunity has to consist of an entirely new creation of a means-ends combination (*Kirzner*, 1997). Opportunities are objective in nature, implying that they may be perceived by anyone (*Shane and Venkataraman*, 2000, p. 220; *Hayek*, 1945; *Shane and Eckhardt*, 2003; *Kirzner*, 1997). The actual recognition of opportunities, however, is of a subjective nature.

In essence, what distinguishes entrepreneurial opportunities from other opportunities are three central criteria (*Corbett*, 2005; *Sarasvathy et al.*, 2003; *Timmons and Spinelli*, 2004):

(a) Aspect of potential economic value: Product or service creates or adds value for the buyer or end user;

(b) Aspect of time: Product or service includes a new component;

(c) Aspect of durability: Product or services are perceived as sustainable;

(d) Aspect of attractivity: Product or service is demanded and perceived as desirable on the market.

The perceived desirability is an innate belief about things favorable to the achievement of possible valuable ends on the market (*Sarasvathy et al.*, 2003, p. 143). In accordance to the entrepreneurial process, the source of a new business opportunity lies in a change of the business environment, which also can develop from one or more changes to the political, economic, social and technological environments.

There are different definitions in economics of the entrepreneurial opportunity in connection to the individual who discovers them. Entrepreneurs, according to the Austrian Economist Israel *Kirzer* (1973), are those who are

believed to be constantly looking for opportunities for exploitation, i.e. disequilibria or gaps in the equilibrium of a market[43]. And an entrepreneur's main aim is to realize a (theoretical) market equilibrium (*Kirzner*, 1979). By noticing a profitable gap, which others did not perceive as an opportunity, they create a *new* equilibrium on the market by means of effective coordination of resources (*Bjerke and Hultman*, 2002, p. 53; *Kirzner*, 1982). The entrepreneur, therefore, possesses superior knowledge of market imperfections, which others do not perceive and which he uses to his advantage. An equilibrium is actually never reached. This disequilibrium is furthermore the reason for ample opportunities to be discovered by alert entrepreneurs, who are repeatedly able to find new gaps or combinations of resources which others are not aware of.

It is an individual's aptitude of perception of *identifying* a disequilibrium, without the actual need to create it, which is the source of opportunity recognition (*Kirzner*, 1973). Opportunities are existent only to a certain percentage of the population and this subset of the population is only aware of these opportunities at certain periods or points in time (*Hayek*, 1945). Not everyone is aware of opportunities all the time. Which leads us to the conclusion that a certain set of terms and conditions needs to be given, in order for an individual to even recognize the opportunity.

The OR process entails the discovery, evaluation and exploitation of opportunities by an entrepreneur (*Shane*, 2003; *Shane and Venkataraman*, 2000). OR refers to the process of perceiving the possibility of a profitable new business, product or service (of a new business possibility). OR, however, as stated in the definition above, also includes an aspect of belief or perception. The exploitation of entrepreneurial opportunities includes the entrepreneur's belief that the value of resources combined to form a new means-ends framework would be higher in their current form. It is this belief or this perception, which distinguishes entrepreneurs from non-entrepreneurs (*Shane and Venkataraman*, 2000). Kirzner's term of discovery refers to creative acts of entrepreneurial invention, which are at the same time 'discoveries' of profit opportunities.

[43] Equilibrium theories define entrepreneurship along differences among people rather than differences in the information they possess as proposed by economists (viz. *Knight*, 1945, and *Hayek*, 1945).

The discovery of opportunities is the objectivistic view of new venture ideas by an individual (*Davidsson*, 2005). And the exploitation of opportunities, on the other hand, is the *decision* to act upon a perceived opportunity. Exploitation refers more precisely to behaviors that are undertaken to achieve the realization of opportunities. However, both the discovery and exploitation implies the *attempted* realization of ideas and not the explicit realization of a firm's goals and profits. When an entrepreneur believes he has seen a profitable opportunity, has exploited it and is proven to be correct, entrepreneurs earn entrepreneurial profit. But if they are proven incorrect, entrepreneurs risk loss (*Casson*, 1982; *Shane and Venkataraman*, 2000).

In conclusion, in addition to the definition of entrepreneurship presented above, entrepreneurial *action*[44] by individuals based on the perspective of opportunity recognition can be described as follows:

> "How opportunities to bring into existence 'future' goods and services are discovered, created, and exploited, by whom, and with what consequence." (*Venkataraman*, 1997, p.120).

Thus, it is the opportunity that holds the source of an entrepreneurial venture. The reason that some people discover opportunities, while others do not lies, according to Kirzner, in the different beliefs of an individual about the relative value of resources and the given potential to transform them (*Kirzner*, 1997). Entrepreneurs see the potentially viable business idea- others just any idea as the outcome of playing with thoughts. However, an entrepreneur must rely in part on instinct and in part on proactive tasks and analytical techniques (*Barringer and Ireland*, 2006; *Krueger*, 2003, p. 28).

One central question in OR research concerns the question of whether opportunities are '*discovered*' or '*enacted*' (*Krueger*, 2003, p. 106)? Moreover, the authors refine this concept as:

(a) Does the pursuit of opportunity begin with a process wherein a set of observation and recognition that a set of conditions constitutes a viable opportunity? Or,

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[44] Entrepreneurial action can be conducted by an individual (i.e. personal level) or by a group of people who attempt to take parts of the entrepreneurial process together or independently (*Shane and Venkataraman*, 2000, p. 219).

(b) does the pursuit of opportunity begin with a process wherein a set of observed (and/ or assumed) conditions could be developed into a viable opportunity?

According to *Bhave's* (1994) case-based research on venture founding, the ability to recognize opportunities can be internally or externally stimulated. It can either precede or follow the decision to found a firm[45]. Figure 15 depicts the framework of *Bhave's* (1994) model. Primarily, the two possible sequences of the OR and the decision to found is illustrated, but the concept also gives insights into the stimulants of opportunities.

Externally stimulated OR sequences occur when individuals are led to make a founding decision due to personal or environmental circumstances at a certain point in time. The most common case is joblessness, other examples are relocation of the employer or an innate need to be self-employed, etc. In this case, the decision to found a firm precedes the systematic search for viable opportunities. This search is initiated by an alignment of the entrepreneur's knowledge, experience, skills and available resources with the market desirability (cf. definition of opportunity). At this point the opportunity filtration phase begins, an iterative process where the different opportunities (i.e. ideas) are weighed up and one is finally chosen. Consequently, the opportunity refinement stage begins, where the chosen idea is further developed into a business concept. This step paves the way for the final decision to found a firm. In the final stage, the venture idea is further developed to distinguish itself from other firms in the market. According to *Bhave* (1994, p. 230), 59% of new ventures are externally stimulated, implying that first the decision is made, followed by the opportunity filtration process.

Internally stimulated opportunities are perceived when a problem or an opportunity gap that needs to be filled is identified (*Cyert and March*, 1963). And, entrepreneurs create a business to fill it. This meta-opportunity stage is commenced by the entrepreneurs identifying need, by means of experience or an unfulfilled demand not met by other firms on the market. By fulfilling the need alone or in a group a business idea is not yet obvious, and therefore this

[45] Entrepreneurial process models mainly serve the purpose of conceptualizing and highly aggregating the whole establishment process of a firm, for example, *Bhave* (1994) interviewed 27 firms and developed his model of the founding process accordingly. One particular strength of *Bhave's* models is that it is one of the few empirical founding process models, while the majority of founding process models are conceptual.

is referred to as the meta-opportunity stage. However, as the usual individual need turns out to be a widespread need, the idea turns into a business opportunity. Only when the business opportunity is recognized, i.e. when the business opportunities become apparent and attractive, does this lead to the opportunity-refinement stage, leading to the venture decision and creation.

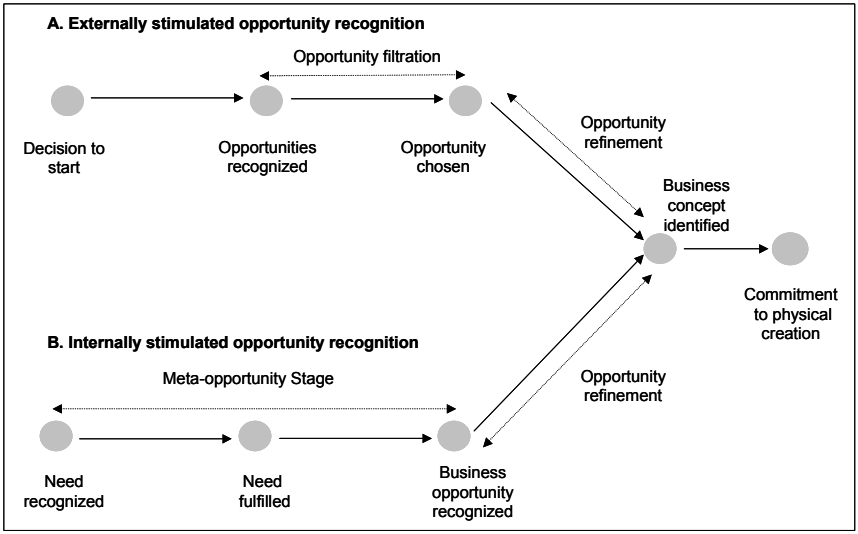

Figure 15: Opportunity recognition sequences

Source: According to *Bhave*, 1994, p. 229.

Hayek (1945) conducted research on the dispersion of knowledge in an economic context and concluded that no two individuals are similar because of the uncertainty created by knowledge. Basically, there are two types of knowledge: scientific and information of particular time and place, whose importance only the individual possessing it can judge. For entrepreneurial opportunities, disposing of the latter type of knowledge, that is information of particular time and place, provides a basic explanation for the presence of uncertainty, which gives rise to opportunities in the first place (*Sarasvathy et al.*, 2003). But the dispersion of knowledge also explains why the enterprising individual discovers, creates and exploits an opportunity. Without this link between the opportunity and the individual there would be no exploitation or invention.

There are three main uncertainties associated with OR (*Sarasvathy et al., 2003*): OR is an individual's ability to identify an idea and transform it into a viable business concept that creates value. Moreover, the recognition of opportunities entails a process, which is not a linear process but an iterative, unstructured procedure. This is predominantly due to the uncertainty associated with evaluating and exploiting an unknown and new endeavor. The decision to realize an opportunity cannot be compared to decision-making procedures in business administration where an arithmetic optimization process to a certain set of alternatives is taken (Shane and Venkataraman, 2000, p. 6). Therefore, the difference between non-entrepreneurial decisions and entrepreneurial decisions is that the latter decisions involve the *identification* of ends and means previously unperceived by other entrepreneurs. While, in analogy to the definition of an opportunity above, non-entrepreneurial decisions maximize scarce resources across previously developed means and ends.

In this context, entrepreneurship is also seizing an opportunity by taking innovative actions (*Kirzner*, 1997). While entrepreneurial alertness leads to the discovery of new opportunities, innovative action facilitates exploiting the opportunity. This implies that there is an aspect of innovative action associated to discovering and exploiting new opportunities. What takes on particular importance in these arguments, which delineate the research field, is that entrepreneurship implicitly is not only attributed to new organizations but also to the emergence of new market offerings- which are coined as 'new or future goods and services' (*Schumpeter*, 1911). In conclusion, the OR process and the nature of opportunities take on three main particular influences: They are idiosyncratic, situation specific, are subject to external and internal influence factors.

3.3.2 Determinants of Founding Intent

The most critical distinction between the entrepreneur and the non-entrepreneur is the intentional pursuit of an opportunity. The tendency of an individual to respond and react to 'situational cues' from opportunities is a specific- although not stable- characteristic of entrepreneurs (*Shane and Venkataraman*, 2000, p. 219). It appears that entrepreneurs obtain cues or signals from the environment, which shape their intentions by filtering the stimulants through a number of mechanisms. The intention to found an

organization and the series of decisions linked to this intention determines the firm's strategy for the immediate future. And, with these initial decisions the strategy is defined but also the structure and processes in connection to the environment are finalized. However, salient in this respect is also the fundamental characteristics of decisions, where the agent, in this case the entrepreneur, repeatedly chooses among actions with potentially risky consequences. Thus, as in the internationalization models, the founding decision includes an aspect of uncertainty and risk.

An entrepreneurial opportunity consists of a set of *ideas, beliefs and actions* that *enable* the creation of future products and services in the absence of current markets for them- thus, it is based on this foundation that the founding intent develops. Entrepreneurial intentions are influenced by the personality of the entrepreneur, his motivation, cognitive style (either intuitive or adaptive), his social role models (family member or close friends) and his ability to improvise, which underlines the creative and innovative aspect of entrepreneurial decision-making (*Hmieleski and Srobett*, 2006). Moreover, the founding decision is accommodated to suit the entrepreneur's knowledge, experience, skills and other resources with market needs (Bhave, 1994).

Cognitive psychologists argue that entrepreneurs have the ability to recognize useful patterns in the myriad cues and signals received and that it is patterns that suggest potential opportunities. For example, *Shapero* (1985) depicts the creation of entrepreneurial intentions by means of "antennae": Each individual has antennae tuned to certain frequencies and in different directions and is thus receptive to signals. However, entrepreneurs are only different as to the directions 'their antennae are tuned" (*Krueger*, 2003, p. 107). Furthermore, *Venkataraman* (1997) and *Shane and Venkataraman* (2000) indicate that the gap between entrepreneurs does not only reside in the fact that there is a difference in alertness but, moreover, there is an aspect of information asymmetry between individuals, which also determines the intention to exploit an opportunity.

Gelderen et al. (2006) conducted a longitudinal empirical study of 517 nascent entrepreneurs over a 3-year period and found that of all the efforts 195 entrepreneurs succeeded in transcending to the founding phase and 115 efforts were surrendered. By analyzing the relative importance of different influencing variables in the pre-start-up phase they concluded that the

perception of market risk is the most determining in the pre-inception phase. Further variables tested were the amount of intended start-up capital; the higher the amount, the less likely the establishment of a firm became, while also entrepreneurs with manufacturing ideas were more likely to found firms than others. For knowledge-based entrepreneurs these findings in turn imply a lower relative founding intention. Furthermore, full-time entrepreneurs are more likely to actually found, and equally male entrepreneurs and individuals with substantial professional experience also prevailed in the pre-start-up phase. Hence, conclusions about personal attributes, such as gender and experiential knowledge but also contextual variables such as funding and sector affiliation play a role for the founding intentions of entrepreneurs.

3.4 Entrepreneurial Orientation and Entrepreneurial Behavior

The main reason entrepreneurship theory is discussed and consulted for answering the research question at hand is because this leads to insights on what entrepreneurial behavior is and, more precisely, *why* individuals behave entrepreneurially. This also leads to question what role the entrepreneurial attitude of the individual plays in initiating the entrepreneurial process, for this issue has not been adequately addressed and answered by the literature review of the previous chapters. In essence, an individual's attitude towards entrepreneurship, i.e. the driver of entrepreneurial action, is captured by the concept of entrepreneurial orientation (EO) (*Bhave*, 1994; *Covin and Slevin*, 1986, 1991; *Gartner*, 1985). EO determines the decision-making styles and practices within a firm, is linked to firm strategy formulation and shapes the expectations, beliefs and attitudes of individual's and their behavior (*Covin and Slevin*, 1986, 1989). Moreover, according to *Miller* (1983) it is an individual's level of innovativeness, proactiveness and risk-taking, which determine the entrepreneurial behavior of a firm. EO comprises three dimensions[46]: An organization's posture towards innovations, for example, determines their entrepreneurial actions on the market and also in their products. In addition, the entrepreneurial behavior of the organization is influenced inasmuch as the propensity towards taking risk and the characteristic of being proactive are prevalent. All these characteristics determine the way opportunities are

[46] *Lumpkin and Dess* (1996) further developed the EO construct adding two further dimensions 'competitive aggressiveness' and 'autonomy'. These dimensions apply solely to the firm-level.

exploited, more precisely, *if* they are recognized and exploited. In sum, EO is a frame of mind embedded in the firm's processes and corporate culture, which leads to increased entrepreneurial performance: *Lumpkin and Dess* (2005) state that EO has a high impact on the decision-making styles and practices of firm's employees. Strategy-making is viewed in terms of patterns of action or decision-making styles observed across organizations. This applies to entrepreneurial decisions in general, be it for firm founding, initial strategy formulation or corporate strategy formulation.

Furthermore, the significance of EO in a firm is shown in the research of *Wiklund and Shepherd* (2003): The authors elicit that EO determines the structure and processes of a firm and the acquisition or possession of resources, in particular, knowledge-based resources. Moreover, the authors suggest that EO has a positive impact on the relationship of knowledge-based resources required for discovering and exploiting opportunities, and, in addition, increases a firm's performance. Hereby, EO has a moderating role on firm performance. In essence, the ubiquity of knowledge-based resources strengthens the competitive advantage of the firm but this, in turn, requires a high level of EO. This conjunction applies in particular to E-Ventures. *Jantunen et al.* (2005) determined that EO, along with the dynamic capabilities of the firm, has a positive impact on international performance. This implies that entrepreneurial firms applying their resources and capabilities to seize opportunities abroad have a higher performance than firms without EO attributes. They argue that it is EO, which enables firms to reconfigure their existing assets and processes in order to exploit international opportunities. Influencing factors of EO are according to *Blesa and Ripollés* (2005) also the personal networks and the information gained from these networks of the entrepreneur. This implies that information gained from personal contacts impacts EO. This occurs on a personal level, however, has a positive effect on firm growth or development. *Witt* (2004) postulates a positive relationship between the networking activities of founders and new venture success. Based on the theory of socially embedded ties, entrepreneurs are able to attain resources at cheaper prices via network contacts than a) obtained in markets or b) ressources that are not purchasable (e.g. reputation and customer access, etc.).

This line of argument supports the author's contention that EO applies to the firm as well as the personal level. In accordance to the research of *Wiklund*

and Shepherd (2003) above, individuals use their knowledge to exploit an entrepreneurial opportunity, which is determined by the EO (*Kollmann et al.*, 2007). Furthermore, the EO construct, originally developed to analyze the entrepreneurial posture on a firm level (e.g. *Covin and Slevin*, 1991, 1983), measures the impact of the individual attitudes on the organizational culture and, in this way, determines the inclination to act entrepreneurially. Hence, it was first measured on the individual level and the measure is subsequently applied to the firm level. Since the focus on this study is on young and small *entrepreneurial* firms with fast and adaptable strategies and decision-making styles and patterns, it may be concluded that it is the entrepreneur or the small founding team that shapes decisions. Hence, the personal level of EO has an impact on the entrepreneurial behavior. What is more, the EO construct has also been successfully applied to the societal level in *Peterson's* (2000) intercultural research study. In conclusion, we contend that this may also pertain to an entrepreneurial decision because the discovery of the entrepreneurial opportunity and the decision takes place on an individual level especially in the small firm (*Shane*, 2003). Thus, the individual EO is embedded in the opportunity identification process and influenced by the culture and processes of the organization s/he is in (*Kollmann et al.*, 2007).

3.5 Summary

The underlying definition of entrepreneurship for this study is that of *Gartner* (1985), whose framework for new venture creation suggests that initiating entrepreneurial activity is shaped by a) the characteristics of the individual who founds the venture, b) by the organization, which is created, c) the environment the venture is in and d) the process by which a venture is started. However, salient in this framework is the importance of the entrepreneur, who recognizes the opportunity and eventually exploits it. In this process, it is the entrepreneur's personality, cognition, beliefs and intuition, which determine if the venture is founded, or not. Furthermore, in the underlying definition of the entrepreneur in this study the individual fulfills several roles: That of the innovator, risk-taker, the manager and the visionary who recognizes a market gap or a societal need and realizes the offer. In the case of this study and in the case of small knowledge-based firms, the entrepreneur either refers to an individual or a team because of the strong influence the persona with the specific background and experience has on the organization and its strategy.

In order to spot the opportunity and to be able to exploit it the entrepreneur must possess a certain degree of entrepreneurial alertness and innovativeness in order to perceive and act on the existing opportunities. Nevertheless, the aspects of risk and uncertainty are attached to an entrepreneurial decision just like to the opportunity itself in analogy to the internationalization decision. Antecedents to the entrepreneurial process are changes in the external environment, be it hostility or dynamism in the industry. In the Net Economy with the adapted renewed structures and laws this may be the recognition of an existing or new technological innovation. In this case a technological source of entrepreneurial activity may also be increased efficiency, as is the case in the Net Economy (cf. introductory remarks). Furthermore, it is postulated that the change in human volition is the driver in a succeeding step leading to the entrepreneurial event. This again, demonstrates the salient role of the entrepreneur. In addition, entrepreneurial activity can therefore occur before or after the founding event based on the model of *Brazeal and Herbert* (1999).

What is of particular importance for this study is the proactive and creative component in the behavior leading to the entrepreneurial event and the innovativeness leading to a decision. *Jones and Coviello* (2005) further developed the model of *Brazeal and Herbert* and conceptualized it for internationalization processes: The entry mode choice and the country selection choice are based on internal and external environmental changes. Organizational and experiential learning occurs while the innovation process evolves and the internationalization event is perceived as a major change in the long-term development of the firm.

In essence, the internationalization propensity also includes, next to the global orientation of the founder, the components creativity, change and innovation. The personal traits of the founder, the background (i.e. educational, personal and professional), the culture of the organization and the external and internal environment of the firm and the entrepreneur are considered the most important antecedents leading to entrepreneurial activity.

The decision to exploit an opportunity is based on personal as well as contextual variables. In the pre-inception phase Entrepreneurs are attributed with a distinct entrepreneurial alertness versus non-entrepreneurs. Experiential but also technical knowledge plays a role in overcoming the information

asymmetry between the two groups. Nonetheless, research has shown that in this phase gender and experiential knowledge, the funding possibilities and sector affiliation increase the likelihood of exploiting an opportunity. The author further contends that the EO construct may be applied to measure the individual's attitude toward behaving entrepreneurially, because the potential entrepreneur disposes of entrepreneurial characteristics and uses these when making an entrepreneurial decision be it for a firm founding, when formulating a corporate strategy or when making a decision on a firm level.

"Breadth of thinking is crucial in the culturally diverse global marketplace."

Graham, 2003, p. 533.

4 Literature Synopsis and Research Framework

The theoretical foundations of firm internationalization and of the entrepreneurial firm and the explanatory power of each discipline for the internationalization propensity were elucidated in part 2 and 3. The central research question of this study, the investigation into the internationalization propensity of firms in the Net Economy, contains two aspects: On the one hand, what are the parameters of the first internationalization decision of a firm in the Net Economy and, on the other hand, what are the influencing factors of the internationalization propensity of entrepreneurs in the Net Economy?

The explanations of the preceding chapters have shown that several studies analyzed the antecedents of international entrepreneurship based on organizational, environmental or individual variables. However, this phenomenon has been predominantly highlighted from a single theoretical perspective either in the entrepreneurship or international business streams (*Zahra and George*, 2002). With regards to the derived conclusions of the preceding chapters, the antecedents deducted from the single theoretical threads are in part contradictory or ambiguous: The assumptions of the internationalization process theories, where foreign market uncertainty is reduced as internationalization experience is gained, do not necessarily apply to E-Venture internationalization (*Johanson and Vahlne*, 1977, 1990; *Vahlne and Johanson*, 2002). In addition, because the process theories are based on large, established management-oriented firms, they fail to address the specifities of the Net Economy as well as the time phase *prior* to the internationalization decision (*Bell*, 1995; *Melin*, 1992; *Reid*, 1981). They further do not take the possibility of *individuals* making strategic choices into consideration (*Reid*, 1983; *Turnbull*, 1987). In sum, the explanatory power for the internationalization decision is limited and attached to the firm level. Furthermore, antecedents have been explained with a one-dimensional perspective but it appears that for E-Ventures the internationalization decision is rooted in the individual or founding team, i.e. the entrepreneur who

determines the strategic direction and shapes the growth of the firm (*Bjerke and Hultman*, 2002).

Therefore, the aim of this part is to elicit the variables pertaining to the internationalization propensity on the basis of different theoretical perspectives; in particular, the international business, strategic management and entrepreneurship fields. The reason for this approach is that a holistic perspective on the *founder*, *business model* but also the *firm* level should be taken into consideration when explaining the *internationalization propensity of entrepreneurs in the Net Economy*. Furthermore, internationalization propensity has not been investigated in this industrial or firm context in the literature. Hence, on the basis of these theoretical explanations it appears that the *framework* in which the initial decision is made is distinct because of the *time phase* in the firm's development, and is mainly impacted by the industry and product characteristics and the scope of influence of the founder. What is more, based on the literature review of the previous chapters, the internationalization propensity is anchored on the personal level. This approach contributes to the international entrepreneurship research literature.

To this end, the aim of this chapter is, first, to perform a synopsis of the internationalization and entrepreneurship literature in the context of small firm internationalization. Second, a derivation of the influencing factors of internationalization propensity is performed by outlining the theoretical arguments in the previous chapters. Hereby, the author seeks to provide a detailed exploration of the influencing factors of internationalization propensity in the Net Economy. Above all, a holistic view of internationalization propensity based on a literature review of relevant theoretical streams will be taken.

4.1 Synopsis: Internationalization and Entrepreneurship

The contributions of entrepreneurship theory to the research question at hand are threefold. Firstly, the internationalization process, i.e. the time phase from when an opportunity is recognized to when the internationalization decision is made, is perceived as an *entrepreneurial* process; the decision itself is an *entrepreneurial* event. This final assertion may be drawn because entrepreneurship and internationalization are generally accepted as entailing processes: And, what is more, both are *behavioral* processes associated with the creation of value by assembling a unique package of resources to exploit an opportunity (*Andersen*, 1993, 1997; *Johanson and Vahlne*, 2003; *Madsen*

and Servais, 1997; *Morris et al.*, 2001). Because the research object under investigation is the internationalizing firm that has entrepreneurial characteristics (i.e. entrepreneurial firms who are believed to internationalize early in the process) these conclusions are supported. *Schumpeter* (1934) already acknowledged this parallelism highlighting the entrepreneurial character of internationalization: „Internationalization is an example of strategic change that can be defined as an entrepreneurial action". Several authors, e.g. *Jones and Coviello* (2005) posit that the interface of internationalization and entrepreneurship is a logical connection of two research disciplines that serve to enrichen the concepts of the established international business and strategic management disciplines, which have different levels of scientific rigor.

The entrepreneurial behavior of these firms is also based on the industry dynamics of the Net Economy but also the pace of technological innovations and advances and the herewith fast changing competitive environment, which affects the firm and forces it to be active and adapt to changes. In this vain, the phase prior to the internationalization decision is compared to the pre-nascent organization. The commonalities of effects between the pre-inception phase and the pre-internationalization phase for young Net Economy firms can be found in the phase, which elapses prior to the decision, but also in the incisive decision. Both the decision to found or to internationalize inflict a long-term impact on the future of the firm and serve as cornerstones in the development of a firm. In both the time frame from recognizing the opportunity to exploiting it in an entrepreneurial event a similar orientation towards the decision is observed. Similar mechanism or mental maps of orientation occur. Therefore, the theory of the entrepreneurial firm was consulted to investigate the internationalization propensity because of the parallels between the intention to found a firm and the intention to internationalize. The main influencing factors of this orientation mechanism paves the way for the entrepreneurial event and encompasses aspects of creativity, innovation, change induced by the internal and external environment and aspects of risk and uncertainty. All the factors occur in the internationalization as well as the founding decision.

Davidsson (2005, p. 8) emphasizes that geographic market expansion per se may also be considered as entrepreneurship and defines this as an already established firm enters a new market by means of economic activities. Changes in the marketplace are in this vain induced by the introduction of new economic activity – e.g. the firm internationalizing. New may imply the

emergence of an entirely new market as was the case when the Net Economy emerged or new implies the launch of an innovation in the case of an activity being new to an existing market. Thus, along these lines, internationalization activities as in the case of E-Ventures are characterized as entrepreneurial as defined by Davidsson's criteria. In conclusion, entrepreneurship entails the study of new and independent organizations but also the emergence of *new* markets and services. As in the case of E-Ventures, entrepreneurship may also be defined as the creation of "new" goods and services through different modes of exploitation.

Secondly, during this pre-nascent phase the focus of entrepreneurship theory more so that the theoretical conceptions of the internationalizing firm is centered on the entrepreneur. Sine qua non to the entrepreneurial event is human volition as an antecedent. An entrepreneur who is *alert* to an opportunity and recognizes its demand and success is indispensable in the founding as well as internationalization process. The mechanism of alertness and the entrepreneur's function and influence on a small organization, which encompasses his background, experience but also attitude, beliefs and cognition, is what leads the firm to become international. The entrepreneur as a motor towards the entrepreneurial event is salient in the entrepreneurship theory because, on the basis of her/his implicit and explicit knowledge opportunities in an industry or market can be recognized and exploited. However, the main reason this is feasible is because of the entrepreneurial component in the firm, subject to a strong impact of the decision maker's persona, which determines the firm's survival and performance. On the basis of the fast changing and competitive industry environment the entrepreneur is forced to make sequential strategic decisions and is thus the dominant agent in effecting changes and determining the long-term development. Significantly, as the industry's internationalization increases, the pressure to internationalize increases for all members of the industry (*Ohmae*, 1990; *Porter*, 1990). Therefore, the likelihood of E-Ventures making that first internationalization decision in an entrepreneurial manner due to the pressures of the industry is high.

Thirdly, *Harveston and Davis* (2001) also argue that entrepreneurship theory contributes to small firm internationalization by allowing the internationalization process to be systemic rather than situational, which was one central caveat to the internationalization process models. Systemic in this

case implies encompassing the personal, organization, industry and environmental context of an internationalizing entity in the Net Economy. This permits the analysis of the internationalization propensity with a multi-dimensional perspective depicting a yet complex phenomenon, which is hardly possible to approach by means of simple direct-effects models.

Therefore, internationalization propensity pertains to the entrepreneur, however, as s/he is not only embedded in the firm but also in an industry with certain products with specific competitors in an dynamic environment in a specific country the framework in which s/he makes the decision comprises several layers. The central question is, in the following, (a) which criteria play a central role for the internationalization propensity of the entrepreneur in different contextual layers in her/ his environment, (b) what factors constitute the framework in which the propensity to internationalize is embedded.

4.2 Research Framework and Hypotheses

Generally, in order to remain competitive in the international arena young firms must ascribe to other competitive factors apart from firm size, for example, factors of the Net Economy industry. Moreover, the competitiveness of young firms in the Net Economy in international markets is anchored in the product and the business models. It is assumed that the characteristics of the products and business model of an E-Venture have an effect on the internationalization behavior, more so, on the internationalization propensity. One attribute of the product or business model in the Net Economy, which is salient in the literature, is the level of digitalization (*Ekeledo and Sivakumar*, 2004). Full or partial digitalization has an impact on the chain of distribution and this determines the 'digital distance' between the firm and the customer. The partial digitalization of the product poses several challenges for internationalization, for instance, how to organize the value chain and which resources and what regional handling requirements are needed. But, apart from this, it is the degree of digitalization, which appears to attenuate the 'death of distance' in the Net Economy: The higher the digitalization, the smaller the perception of distance within the firm and to the end consumer, because of faster and instantaneous delivery of the firm's products or service. Hence, the degree of digitalization also minimizes the cultural distance salient in the internationalization process models.

In addition, the degree of standardization and scalability of the products also have an effect on internationalization (*Choi et al.*, 1997). While the standardization of products implies that the products are indestructible, i.e. the product retains quality and form no matter how often it is used, scalability refers to the fact that a product or service is transmutable, i.e. the digital service is easy to modify- can be changed easily- and delivered quickly across borders. Because standardization in the times of mass customization is also a factor for manufactured products, the factors especially pertaining to the internationalization propensity in the Net Economy are the degree of digitalization and scalability. The attributes 'death of distance' and network effects of the digital economy, which implies that the utility of the users of a network is increased as the number of users rises also have an effect on internationalization in the Net Economy. However, these effects adhere more to the perception and benefit of the customer rather than the firm. Nevertheless, it has been accentuated that the internationalization propensity of the entrepreneur is believed to be more dependent on the product or the business model of the Net Economy firm. Therefore, based on the arguments above, the *digitalization* and the *scalability of products and processes* appear to contribute to the internationalization propensity of entrepreneurs in the Net Economy.

For the entrepreneur's internationalization propensity with regards to the *industry context* of the Net Economy the following hypotheses may be drawn:

> Hypothesis 1:
> A high degree of *digitalization of the products and processes* positively contributes to the internationalization propensity of E-Ventures.
>
> Hypothesis 2:
> A high degree of *scalability of the products and processes* positively contributes to the internationalization propensity of E-Ventures.

In the organizational context the market entry strategy of the firm is attributed to internal and external environmental changes, e.g. the market push and market pull, which are purported to force the firm to change. On the one hand, the pressure to make a strategic decision is induced externally and, on the other side, internally. However, it appears these forces are independent of the internationalization propensity restraining the entrepreneur to inter-

nationalize due to pressure. But, in addition, the internationalization literature stated the degree of control and resource commitment as two main determinants of the market entry strategy, which determine the speed of internationalization in the Net Economy (cf. chapter 2.1). The level of control for the foreign operations appears to have a conjunction for internationalization propensity. However, this may not deviate from that of other types of firms assuming that each firm aims for the highest control level in the foreign market to minimize risk and uncertainty. But also the degree of resource commitment shapes the international market entry strategy and is believed to have an effect on the internationalization propensity; implying that if a firm has the possibility of internationalizing with low resources commitment, which is the case in the Net Economy, then the propensity to internationalize is assumed to be affected. Hence, an orientation towards internationalization is fostered. Furthermore, another factor attached to the market entry strategy and the make-up of the products is the protection of proprietary rights (*Autio et al.*, 2000), especially in the Net Economy where the protection of business models and brand-building is challenging and difficult (*Schröder*, 2005), and the boundaries to potential imitators are essentially lowered. These effects are strengthened by an increasingly digitalized globalization. From this link there appears to be a relation between the possibilities for protecting the proprietary knowledge deeply anchored in the Net Economy products and the internationalization propensity as the product is prepared to be offered on a foreign market. Therefore, based on the arguments, the *protection of proprietary rights* and *resource commitment* in the foreign market appear to contribute to the internationalization propensity of entrepreneurs in the Net Economy.

For the entrepreneur's internationalization propensity with regards to the *market entry strategy formulation* the following hypotheses may be drawn:

> Hypothesis 3:
> A high degree of *protection of proprietary rights* in the foreign country positively contributes to the internationalization propensity of E-Ventures.

> Hypothesis 4:
> A low degree of *resource commitment* contributes positively to the internationalization propensity of E-Venture entrepreneurs.

The final contextual level to be treated with regards to the internationalization propensity is that of the entrepreneur himself. The literature- both internationalization and entrepreneurship literature- gave insights into the significance of networks of an entrepreneur for the internationalization process. The higher the degree of internationalization of the contacts- be it private or professional- the more likely an international mindset and orientation in business activities is purported. A certain self-awareness and self-efficacy are factors derived from the entrepreneurship literature which also enforce entrepreneurial behavior. In the Net Economy these personal characteristics may lead to an international orientation where the digital business models and the small firm are believed to be able to compete with larger firms and with firms from other industries. Self-efficacy may foster an attitude towards international expansion. However, it remains uncertain whether a dimension of strategic decision-making can be attributed to the Net Economy or if this aspect has the same effect on entrepreneurs in other economies as well. Furthermore, with respect to these considerations, there seems to be a global orientation upon inception. This international vision or international orientation can be described by the personal international market orientation (*Knight*, 1997). This international market orientation embodies the entrepreneur's empathy toward other cultures and markets. The worldwide accessibility by means of the internet and unsolicited orders from foreign and distant countries have especially become an issue even for small firms. Hence, the international personal market orientation also encompasses an openness and responsiveness to these unsolicited orders and the volition to satisfy these demands. Therefore, based on the arguments above, the degree of internationalization of the *personal network* and the *international market orientation* appear to contribute to the internationalization propensity of entrepreneurs in the Net Economy.

For the entrepreneur's internationalization propensity with regards to the *individual level* the following hypotheses may be drawn:

> Hypothesis 5:
> A high *international market orientation* contributes positively to the internationalization propensity of E-Venture entrepreneurs.

Hypothesis 6:
A highly *internationalized personal network* contributes positively to the internationalization propensity of E-Venture entrepreneurs.

These hypotheses comprise the general research framework of this study. Figure 16 graphically displays the research framework and the hypothesized relations. A central aim of this thesis is to empirically test the hypotheses on Net Economy managers. In addition, in the theoretical explanations of chapter 3, the impact of EO on entrepreneurial activity and decisions were highlighted. Based on these assertions, a further objective of this research study is to link internationalization propensity to EO and to analyze the data on these grounds. This conjunction is a further objective of this research study, because the internationalization decision has an impact on the firm's future growth and development path. It appears that depending on what grounds the internationalization decision is made, the succeeding internationalization behavior differs. Thus, EO has an effect on the internationalization behavior (*Pla-Barber and Escribá-Esteve*, 2005). In sum, the internationalization propensity depending on different levels of EO will also be investigated.

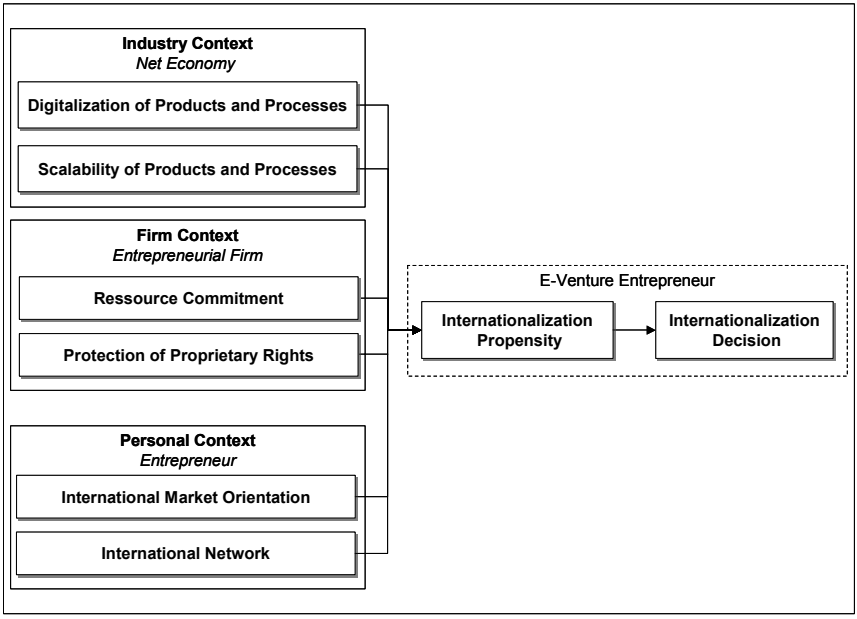

Figure 16: The research framework

4.3 Summary

The research framework of this study encompasses a holistic approach to the entrepreneurial internationalization propensity in the Net Economy and includes factors on the individual, firm and industry level. Above all, the antecedents of internationalization in the Net Economy are anchored on an individual and not on a firm level, due to the age and size of the firms and the influence of the entrepreneur or small entrepreneurial team. For this reason there is assumed to be a relation between the EO and the internationalization propensity in the Net Economy. The research objective of this study is to test the research framework empirically. To achieve this aim a research instrument will be assessed in the following part.

Nova ex veleris

(Latin: The new must be born out of the old)

5 Empirical Study: Internationalization Propensity in the Net Economy

The aim of this section is to empirically test the hypotheses derived from the preceding chapter. As yet based on theoretical foundations, the basic parameters of the internationalization decision of a Net Economy firm have been identified and a conceptual framework for the internationalization propensity in the Net Economy has been developed. Thus, in the attempt to answer the research questions, the aim of the empirical study is to deliver a holistic picture of the internationalization decision process and the constituting factors of internationalization propensity in the Net Economy. Above all, an adequate method for measuring the influencing factors of an unobservable, cognitive phenomenon such as internationalization propensity must first be ascertained.

Unlike regression analysis, where a causally reciprocal relationship between- oftentimes directly observable- influencing factors is modeled and tested, measuring the underlying structure of a judgment is challenging. In a decision-making situation a trade-off between the impacting factors occurs and the factors have different weights on the final judgment (*Shepherd and Zacharakis*, 1997). What is more, the direction of the effects is neither definable nor directly measurable. An illustrative example of the effect of the constituting factors of a decision is the acquisition of human resources for a firm. If the decision criteria for the candidate are hard as well as soft skills, the joint effect on these skills are attached to the decision-maker's final judgment for hiring. However, the factors have different bearings on the decision. For example, the candidate possesses hard skills such as technical know-how, analytical thinking competencies, on the one hand, and mutually soft skills such as fluent language skills, team orientation and communicativeness on the other hand. Assuming two candidates with similar qualifications apply and are equally suitable for the position, the candidate will be preferred by the human resource coordinator, who gives more weight to the importance of soft skills than hard skills. Technical skills may also be considered as important by the decision-maker but in the ultimate decision a trade-off between the criteria on

the basis of the subjective perception of an individual takes place. In conclusion, the weight on the factors subjectively perceived as more important is higher.

A research instrument for measuring such a phenomenon can be found in the field of decision theory. Measuring the preferences of individuals and groups in a decision-making situation has been of high interest not only in economics but also in other scientific disciplines such as psychology and behavioral science (*Green and Srinivasan*, 1978). Examining an actor's subjective preferences for the essential attributes can be explained on the basis of Multiattributive Utility Theory (*Green and Krieger*, 1993). In this context a management decision is not analyzed on the grounds of maximizing profit, as in other fields of strategic management research, rather the objective is to analyze a manager's or entrepreneur's subjective utility structure. For example, different entrepreneurs in the Net Economy have different preferences for such factors as the degree of digitalization of the product when making an internationalization decision and formulating an expansion strategy. Moreover, it is assumed that the preference for different factors is relative to that of the other impacting factors.

The central tool for examining the weights of the variables on a decision is conjoint analysis (CA)- also referred to as conjoint measurement[47] (*Shepherd and Zacharakis*, 1997). CA is a quantitative, multivariate method for analyzing and testing individual or group preference structures.

In order to verify whether this instrument is applicable to the research question, first, the adequacy of the method for the research question will be discussed. Second, an overview of the different methods of preference measurement will be given in chapter 5.2. Subsequently, in chapter 5.3 the survey design and development will be explained and, lastly, in chapter 5.4 the data collection process and an initial evaluation of the quality of the data will be elicited.

5.1 Assessment of Conjoint Analysis Method for the Study

After having presented the CA method and discussed the different measurement approaches the question is raised - in this chapter- of whether

[47] The terms conjoint measurement and conjoint analysis are used synonymously in the following.

the CA method is applicable to the research question and what the potential benefits to the research field may be.

In *Green and Raos'* (1971) pioneering CA article the method was first introduced to business research- especially in the field of marketing[48]. Here, the method still is widely applied for various types of problems in marketing research and practice even today. Typical research questions are (*Klein et al., 2005*, p. 6)[49]:

- Planning new products and modifications of already existing products and services (e.g. *Aust*, 1996; *Green and Krieger*, 1987; *Kamakura and Srivastava*, 1986, *Schubert and Wolf*, 1993),
- Determining the customer's (maximal) willingness to pay and consequently the general pricing policy of a product or service (e.g. *Eggenberger and Hauser*, 1996; *Goldberg et al.*, 1984; *Kucher and Simon*, 1987), and
- Segmenting the market and determining which customer group has which preference structures (e.g. *Hagerty*, 1985; *Steenkamp and Wedel*, 1993).

However, *Green and Rao* (1971, p. 361) also proposed the applicability of the method in the entrepreneurship field[50]. For example, the method may be applied for the appraisal of new ventures from the perspective of the financer or the analysis of an entrepreneur's preference for distributing the incoming cash-flows (*Kollmann and Kuckertz*, 2006b). This shows that a possible application- even if only conceptually- in entrepreneurship was conceivable when it was first mentioned and discussed in the literature.

Moreover, applying conjoint measurement poses several benefits to the research question and the IE field of research:

Firstly, using a method in a field of research where it has not yet been applied leads to an opportunity to generate new knowledge (*Gustafsson et al.*, 2003, p. 7). To the awareness of the researcher, the CA method has not yet

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[48] Only then had CA begun to receive widespread acknowledgement in both the academic and industrial world (*Fabian*, 2005, p. 126 referring to *Aaker and Day*, 1985).

[49] *Gustafsson* (2003, p. 6 et seq.) provides a comprehensive overview of studies applying CA in the market research area.

[50] *Shepherd and Zacharakis* (1997) echo this opinion.

been applied to the field of IE[51]. *Shepherd and Zacharackis* (1997) support an application of CA especially in the field of entrepreneurship arguing that it is a chance for expanding the research field- perhaps leading to new research perspectives. For this study, applying the CA method to the research question can lead to new perspectives and deeper knowledge about internationalization propensity[52] in the Net Economy. New insights into the Net Economy might therefore be created, paving the way for new research questions.

Secondly, the application of the conjoint method is essential for this research question, which does not have a main-effects model. Just as the investigation of contingency interactive relationships can bring high-value to the field of entrepreneurship (*Shepherd and Zacharakis*, 1997, p. 208), the analysis of joint effects on the internationalization propensity in the Net Economy can also lead to valuable insights into international decision-making.

Thirdly, retrospective decision-making studies are subject to human attribution errors (*Fiske and Taylor*, 1991; *Shepherd and Zacharakis*, 1997, p. 204): One major weakness is hindsight reporting, i.e. retrospective narration, and another related problem is the phenomenon of self-reporting. Both pitfalls lead to biased results: Self-reporting and hindsight bias are provoked by the human propensity to forget or not mention negative failure factors. Examples of these effects are the omittance of uncontrollable external actors, for example, poor market conditions or the political situation at the time of decision making as part of the test person's narration (*Shepherd and Zacharakis*, 1997). Another example may not perceive failure factors as such. The ensuing results can, in both examples, lead to a distortion between the manager's report and the actual situation. These pitfalls may also apply to internationalization propensity: If the entrepreneurs are reporting in retrospective and personally narrating their decision-making process their memory of the importance of certain Net Economy attributes may not correspond to their actual thought processes at the time. Furthermore, self-reporting on such factors as protection of proprietary rights, for example, may be biased, as the individual subjective point of view may not mirror that of the

[51] For a comprehensive overview of applied methods in IE cf. *Zahra et al.* (2004).
[52] For an application of the conjoint analysis method in the entrepreneurship field see *Davidsson* (1986).

team the decision was made with. In addition, the entrepreneur may have a different attitude *after* the internationalization decision as opposed to before.

One solution for this dilemma is to survey only founders prior to the decision and directly ask them to evaluate which factors are concurrently important to them. However, in a field such as the Net Economy this proves to be a difficult task. A large part of the population is believed to be internationalizing both early and fast. Databases listing young E-Ventures are non-existent and these firms are difficult to find. On the other hand, the conjoint measurement technique allows us to observe the decision-maker *as* the decision is made. The method obliges the subject to make decisions under "the surveillance" of the researcher, implying that conjoint measurement a) gives the test person no other option than to complete the whole CA procedure and b) the pitfall of hindsight bias and self-reporting cannot occur (*Shepherd and Zacharakis*, 1997, p. 204). These are central benefits of the CA method.

Fourth, the IE field can benefit from conjoint measurement with regards to the value-added by shedding light on the cognitive structure of an entrepreneurial decision. According to *Shepherd and Zacharakis* (1997, p. 228) CA "manages to capture the cognitive influencing factors of a decision, leading to visible results". This can also be applied to this study: By means of CA the researcher can gain an insight into the "unobservable" determinants of the internationalization decision.

At the same time, a disadvantage of the research instrument are the hypothetical and somewhat abstract questions and procedures. Conjoint research is often difficult for the test persons to understand, which could impact the results. The experimental design with different attribute levels and the multitude of stimuli judged in successive phases may lead to low participation rates. Thus, the method has two major pitfalls: Firstly, on the researcher who has to tackle the complex and time-consuming method and, secondly, on the respondent whose concentration capacity and motivation are perhaps also tested (*Shepherd and Zacharakis*, 1997). However, in conclusion, when considering the trade-off between the two sides of the coin, the danger of a decision-maker bias outweighs the complexity of the method. Moreover, possibilities for overcoming this obstacle will be discussed in the following chapter.

5.2 Methods of Preference Measurement

The CA process encompasses several steps and options for design as well as analyses[53]. Since the choices made when developing a CA are highly dependent on and mandatorily tailored to the research problem at hand, a multitude of designs and terms are - oftentimes inconsistently- found in the respective literature. Therefore, the general terms as they appeal to this research problem will be defined and explained in this chapter.

CA is a concept, which originated in the mathematical psychology field (*Debreu*, 1960, p. 16 et seqq.). Together the pioneers Luce, a mathematical psychologist, and *Tuckey* (1964), a statistician, and *Kruskal* (1965) developed a non-metric method for estimating metric effects of categorical variables (*Fabian*, 2005). Converting non-metric observations such as preferences into metric values and putting them into relation to each other is the basic concept of CA. *Green, Tull and Albaum* (1988, p. 243) describe the procedure as follows:

> "Numbers are assigned to objects […] in such a way that the relations between the numbers reflect the relations between the objects […] with respect to the characteristics involved".

In other words, by means of CA the preference ranks attained from the survey are transformed into interval data and the preference structure of a judgment is exposed (*Green and Rao*, 1971). Furthermore, this enables explanations and interpretations of the effects and indicators.

A preference is defined as a one-dimensional indicator expressing the advantage of choosing or judging one object[54] over another (*Böcker*, 1986, p. 556). Preferences are person and time-specific, implying that each person has a unique combination of preference indicators for an object at their disposal (*Fabian*, 2005, p. 116). Hence, a preference is a non-observable, subliminal phenomenon, its measurement is a distinct feature but at the same time a central challenge of CA. Moreover, *Hermann et al.* (2003, p. 305) globally define preference with reference to *Peter* (1981, p. 134) as a construct

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[53] *Gustafson et al.* (2003, p. 9) depict a flow diagram of CA displaying the different options the researcher has in designing the CA.

[54] An object in the following is anything subject to a decision: It can be something immaterial as a strategy or investment decision but also a product, for example.

> "specifically designed for a special scientific purpose generally to organize knowledge and direct research in attempt to describe or explain some aspect of nature."

In sum, the main aim of conjoint measurement is to predict and explain preferences (*Gustafsson et al.*, 2003, p. 7). The variables or parameters attached to an object are referred to as attributes. And, it is assumed that objects are multiattributive, i.e. are composed of differing and multifaceted attributes (Figure 17). For example, a car is described by numerous attributes such as *color*, *motor power*, *size*, *fuel consumption*, etc. In addition, each attribute consists of different levels (*Green and Krieger*, 1993; *Green*, 1984). For example, the attribute color can be described by various color shades. Multiattributive Utility Theory contends that the specific attribute levels of an object, which are preferred by an individual, constitute the total utility[55] of an object (Figure 17) (*Green and Krieger*, 1993). An object with the highest total utility for a customer making a purchasing decision is, for example, a *red* car, with *high* power, *low* fuel consumption and *small* size. In summary, it is the source of the utility itself, which is constituted by the characteristic levels of an object. The specific utility of each attribute level, i.e. the respondent's preference for this attribute level when making a judgment, will be referred to as 'part worth' in the following.

To measure the preference values the test person assesses real or hypothetical stimuli consisting of different attributes and attribute levels (cf. *Hair*, 2006). The values of the preference judgments by a test person are used to estimate the contribution of each attribute (partial benefit) to the overall preference (total benefit)[56] (*Backhaus et al.*, 2006).

In summary, conjoint measurement investigates the partial contribution of the attribute levels of an object to the overall preference of an object. In addition, CA is also able to deliver the relative importance of each attribute in comparison to others. Figure 17 illustrates the conjoint measurement method by starting with an object subject to judgment, which consists of different attributes and attribute levels. By means of different methods, which will be

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[55] The terms utility and benefit and will be used synonymously to the term preference in the following.

[56] Depending on the CA method, as explained in the following chapter, the part worths may be inversely derived from the total utility.

discussed in the following chapter, the attribute levels are combined to so-called stimuli objects, which are judged by a test person. From this judgment by conjoint measurement estimation the total utilities, the part-utilities and the relative importance of the attributes are estimated.

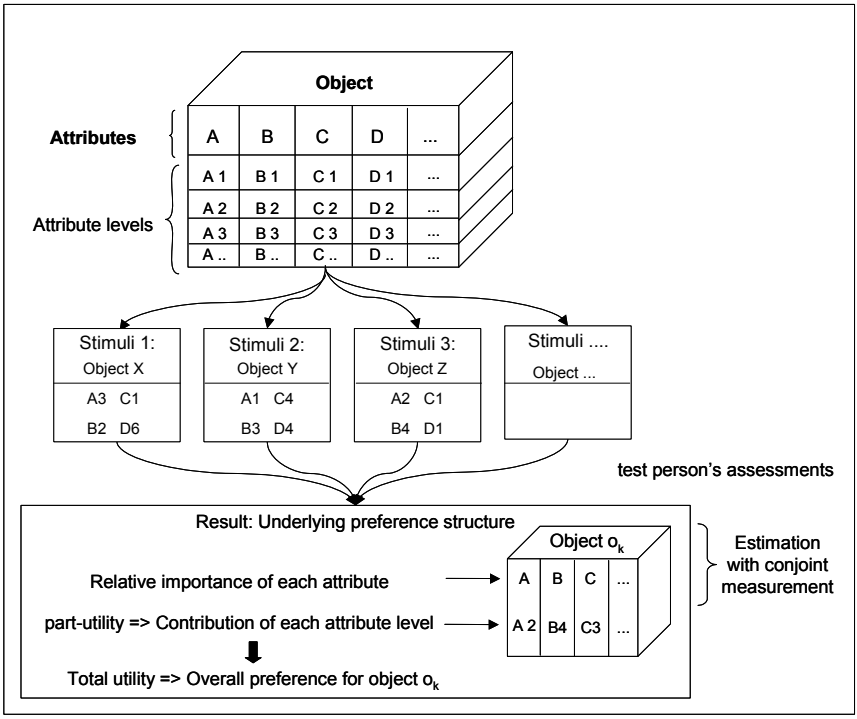

Figure 17: Overview of Conjoint Analysis procedure

Mathematically modeled, an object o_k consisting of the attributes i=I,…I_j and attribute levels j=I,…,J can be described as o_k'=(e_{iI},…,e_{iJ}) (*Green*, 1984; *Green and Krieger*, 1993; *Herrmann et al.*, 2003, p. 306). The specific utilities for each attribute level - i.e. part worths- as evaluated by an individual are u(e_{ij}). In order to calculate the overall utility value for the object $U(o_k)$ the researcher aggregates the part worths by means of CA. This can only be done if object o_l is not preferred to object o_k and the monotony restriction $U(o_k) \geq U(o_l)$ $\forall$ *k, l* is fulfilled. Thus, the task of CA is to transform the part worths to the overall utility value of the object (*Herrmann et al.*, 2003, p. 306).

Conjoint measurement encompasses different survey methods as well as data analysis methods. A major distinction between the different CA procedures is

the manner in which the data is gathered and by means of which procedures the utility part worths are estimated. In this sense, to attain an individual's preference structure, several procedures and estimation methods must be evaluated for the research problem at hand and be applied (*Green and Srinivasan*, 1990; *Hensel-Börner*, 2000). The three central conjoint measurement methods will be explained in the following. These are the

(a) decompositional,

(b) compositional, and the

(c) hybrid approach.

5.2.1 The Decompositional Conjoint Analysis

The *decompositional method* is the traditional CA method, and therefore often referred to as the "actual" conjoint measurement procedure as a result. *Green and Srinivasan* (1990, p. 4) define CA as

> "any decompositional method that estimates the *structure* of a consumer's preferences (i.e., estimates preference parameters such as part worths, importance weights, ideal points), given his or her overall evaluations of a set of alternatives that are prespecified in terms of levels of attributes."

With this method, data is collected by asking the test person to deliver general preferences for objects with certain attributes. In a successive step, the overall judgments of the respondent are decomposed, i.e. broken down, into part worth values for each attribute level by means of conjoint measurement[57] (*Green and Krieger*, 1993; *Herrmann et al.*, 2003, p. 307; *Jain et al.*, 1979).

For instance, a respondent is asked to assess his preference for different car models varying in the four attributes *color*, *price*, *brand* and *engine power*. Subsequently, by means of conjoint measurement the overall evaluations for different car variations are broken-down into part worth values for specific attribute levels. This procedure results in metric values for the preferences. Most likely, the test person would assess the highest total utility for a *red* car, with the *lowest* price, the most *prestigious* brand and the *strongest* engine if

[57] Alternatively, multidimensional scaling methods can be applied (*Green and Srinivasan*, 1990).

directly asked to evaluate each attribute. However, by means of the decompositional CA method the preference for certain attribute levels in comparison to other attribute levels are quantified. Thus, the contribution to the buying decision for a *low* price is highest, followed by a *strong* engine, and, in comparison, the brand and the color result in significantly lower part worths. Thus, the subjective preference for a *red* car and a *prestigious* brand is lower than for a *low priced* car and a *strong* engine.

An illustrative example is the general customer preference when buying a Ferrari (*Fabian*, 2005). The subjective utility for the customer group for the color *red* vs. *black*, assuming all other attribute levels are the same, is prominently higher. The preference for a red Ferrari is higher and has a higher weight in the buying decision than the color black does.

To create the stimuli, i.e. the representative combinations of attribute levels, which are presented to and judged by the respondent in the first step of the decompositional method, there are two main alternatives (*Backhaus et al.*, 2006, pp. 557-618 et seqq.; *Cattin and Wittink*, 1982; *Green and Srinivasan*, 1978):

a) The full-profile or

b) the trade-off method.

(a) With the *full-profile* method the stimuli consist of combinations of all attribute levels and the respondent is asked to deliver preference evaluations. For example, when purchasing a car with only two attributes and two attribute levels each: *price* (€ 1000 or € 2000) and color (red or blue). The respondent is presented 4 (= 2 ·2) stimuli. The advantage of the full profile method is that the respondent is confronted with complete and therefore realistic choices (*Herrmann et al.*, 2003, p. 308). However, due to the limited cognitive capacity of the human being, the “information overload” inflicted on the respondent is a major pitfall of the full-profile CA method. For this reason, the number of attributes and attribute levels should be restricted in order to ascertain the quality of the CA results (*Green and Srinivasan*, 1978). According to *Miller* (1956) research shows that the human capacity for handling information is restricted to about seven pieces of new information at a time in order to effectively absorb

and apply the information. Thus, the number of attributes should be limited to a maximum of six (*Green and Srinivasan*, 1978)[58].

(b) The *trade-off approach*, on the other hand, based on the work of *Luce and Tukey* (1964), postulates that respondents deliver preference judgments on only two attributes at a time (*Green and Srinivasan*, 1978; *Johnson*, 1974). The stimuli are derived from cells in matrices; each column and each row representing a certain level of the respective attribute. The respondent is asked to assess the stimuli by distributing a certain amount of points among the stimuli depending on his preferences. An example of the trade-off approach is illustrated in figure 18. Even though this approach considerably reduces the cognitive burden on the respondent, it poses the risk of reducing the decision choices in such a way that an unrealistic, "artificial" choice environment is created (*Herrmann et al.*, 2003). This threatens the validity and reliability of the results.

The two attributes ‚price' and ‚warranty are given. Please look at the manifestations of these properties and enter the number 1 into the combination you prefer most. Enter the number 2 for your second choice into one of the remaining fields. Enter the number 3 etc. for your next choices until all figures from 1 to 9 have been used.

		Warranty		
		6 Months	12 Months	18 Months
Price	high			
	medium			
	low			

Figure 18: Example of a two-factor matrix

Source: *Gustafsson et al.*, 2003, p. 15.

5.2.2 The Compositional Conjoint Analysis

Another method for data collection and conjoint measurement is the *compositional or self-explicated approach*, which is widely applied in the field

[58] In most CA studies the number of possible combinations is too large to be fully evaluated by the test person. Therefore, a representative subset of stimuli can be created according to a systematic plan referred to as fractional factorial design (*Hair*, 2006). *Addelmann* (1962) developed the orthogonal method for designing 'reduced' stimuli.

of marketing[59]. Here, the preference for each attribute level is first evaluated separately (*Agarwal and Green*, 1991): e.g. a) "Do you prefer a *red*, *blue*, *black* or *green* car?" b) "Do you prefer *brand a*, *brand b* or *brand c*?" Based on these evaluations the part worths are estimated. In a second step, the indicated part worth values of each interviewee are estimated into the total utility[60] value of an object (*Green and Krieger*, 1993; *Hoepfl and Huber*, 1970). The total utility is calculated by multiplying the value of the importance of the attribute, attained in the first step, and the part worth of the attribute level, attained in the second step, and summing up the values for all attributes and levels (*Fishburn*, 1967; *Green and Krieger*, 1993; *Green, Goldberg and Montemayor*, 1981; *Herrmann et al.*, 2003, p. 306). In other words, the total utility of an object is the *sum* of the part worth values of all attribute levels and exhibits the total preference structure of an individual when making a decision.

Both methods described above assume a linear additive utility model. Thus, the total utility is the sum of part worths and vice versa. This model also includes the premise that there are no interaction effects between the attributes (*Johnson*, 1974). It is, however, rather unrealistic to assume that there is no link between a car brand and a color. The example of the Ferrari showed that there is indeed a link between the attribute color and brand in reality. The customers have a high total utility for a *red* Ferrari. But empirical studies have shown that the additive utility model does prove to have a higher predictive validity[61] and therefore, this assumption is often applied in the compositional as well as decompositional CA (*Green*, 1984; *Green and Srinivasan*, 1990).

5.2.3 The Hybrid Conjoint Analysis

The *hybrid approach* is a combination of the compositional and decompositional procedures. Introduced in the 1980s by *Green, Goldberg and Montemayor* (1981a) and *Green, Carroll and Goldberg* (1981b) this CA approach was developed in order to avoid or minimize the problems of the two original approaches and to simplify the data collection procedure (*Green and*

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[59] For a discussion on the applicability of conjoint measurement in retail cf. (*Schröder*, 2006).
[60] The total utility is synonymous with the preference model and the overall preference structure of a person.
[61] Predictive Validity is the probability that the acquired result is the factual preference of an individual (*Olshavsky and Acito*, 1980; *Johnson and Meyer*, 1984).

Srinivasan, 1990). The cognitive burden on the individual is considerably reduced using this approach. In a first step, individualized part worths of each test person are collected by means of the self-explicated approach (cf. explications in chapter 5.2.1): “Do you prefer a *red*, *blue* or *green* car?” In a second step, the test persons are first classified into groups based on their preferences stated in the first question. And, then, in accordance with the decompositional method, the respondents are asked to judge the stimuli. Furthermore, the respondents in each group are only confronted with a subset of stimuli. In this vain, in the end, every group - as an entity – answers a full stimuli design without the full strain on the concentration and motivation of each person. Finally, the part worths are estimated by weighing the individual part worths and the group-level part worths from the conjoint tasks (*Agarwal and Green*, 1991; *Green*, 1984; *Green et al.*, 1981a; *Green and Srinivasan*, 1990). Nonetheless, a pitfall of this CA method is that the part worth findings are based on responses gained in the group situation and not the individual’s.

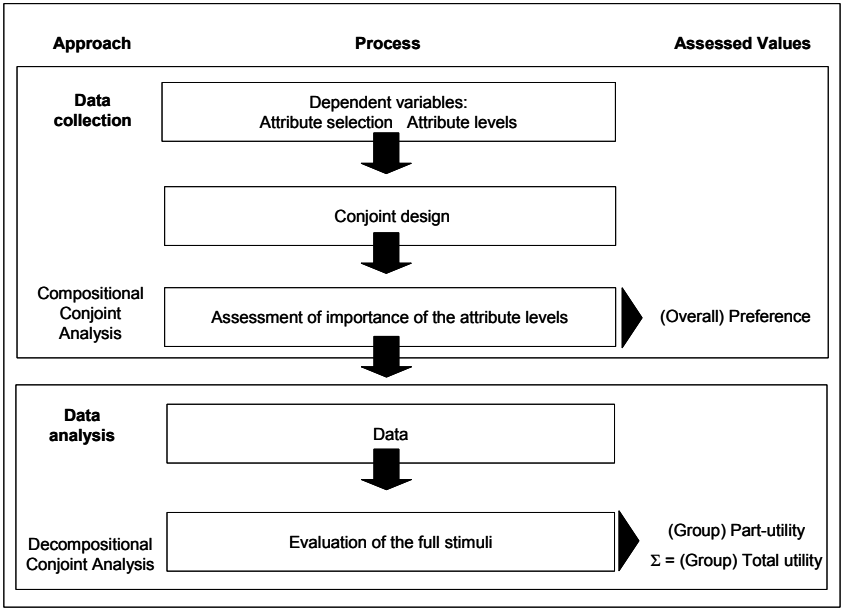

Figure 19: Components of the hybrid conjoint analysis survey method

Figure 19 illustrates the hybrid conjoint analysis process based on groups not on individuals, which highlights the mixture of a data collection process, on

the one hand, and data analysis on the other hand. After selecting the dependent variables, i.e. the attributes and their attribute levels, and designing the CA, the hybrid CA begins. In this first phase, which is the compositional component of CA, the test person is asked to evaluate the relative importance of the attributes on a general level. For example: How important is the price for you when buying a car? From these indications the overall preference for a certain object can be derived. In a subsequent, second phase of the hybrid method, the data is analyzed by grouping respondents and asking them to evaluate the full stimuli as a group. Hence, the burden of answering the full stimuli is divided among the group and therefore the final results can only be assessed on a group level.

5.3 Survey Design and Development

In chapter 5.1 the CA method was discussed and found to be an adequate research instrument for testing the propositions derived from the literature base. The aim of this chapter is to design and develop the survey by applying the CA method. To collect the data the adaptive conjoint analysis (ACA), a subgroup of the hybrid conjoint measurement method, will be implemented.

Firstly, the general procedure of ACA will be explained, including a discussion of the application of the ACA in this study and, successively, an overview of the research design will be provided in chapter 5.3.2. In addition, the post-questionnaire survey will be described in chapter 5.3.3 and, lastly, a summary of the survey pre-tests will be given in chapter 5.3.4.

5.3.1 Applicability of Adaptive Conjoint Analysis

Adaptive conjoint analysis (ACA), a variant of the hybrid CA (cf. chapter 5.2.3), was developed by Richard M. Johnson of the Sawtooth Software company (Huber, 2005). Basically, the procedure of the ACA is the same as that of the hybrid CA. The ACA procedure, which is a computer-based CA, is professed to be the *true* CA because it contains an adaptive component (*Backhaus et al.*, 2006, p. 558 et seqq.). In this adaptive process the respondent's preferences are gradually narrowed-down. During the decompositional testing phase of the ACA, by means of the trade-off-method, the respondent evaluates only two stimuli at a time. These pair comparisons are composed and combined depending on the respondents' preference indications. As the respondent proceeds, the stimuli pairs become more and more similar. In this manner, the

most preferred stimuli are investigated. This is feasible because the test person's answers are analyzed in real time and the follow-up questions are *adapted* depending on the respondent's previous answers (*Green and Srinivasan*, 1990).

The ACA, especially in comparison to the hybrid CA, holds several benefits for this study. Firstly, the effect of performing a computer-based CA is linked to increased possibilities for design and, therefore, an increased involvement and interest on the part of the respondent (*Fabian*, 2005, p. 181). A computer-based survey has several opportunities for increasing motivation and procedural efficiency, especially when using multimedia effects. Examples are interactive progress indicators, or the personalization through the survey process. The possibility of tailoring the design and functionalities of the ACA appeals strongly to the response group, which consists of founders or managers active in a digitalized business community, and promises to increase the responses or at least to ensure the interest of the target group.

Secondly, because of the *adaptive* component of the ACA the calculation of the part worths on an individual level is possible. Thus, the quality and the explanatory power of the findings, especially in comparison to the hybrid method where the results can only be derived on a group level, are significantly increased.

Thirdly, performing an ACA promises benefits for the researcher and respondent alike. Due to the adaptive component, the inclusion of up to ten attributes is possible without overburdening the respondents (*N.N.*, 2004a). For the researcher performing an ACA this also implies a higher flexibility when designing the survey. Adapting both the look and feel of the questionnaire, customizing the process and the attribute presentations in accordance with the research aims, but also individualizing the analysis are advantages of the ACA. In addition, obtaining data from a survey in a digital form allows for a fast and easy data transfer to other software programs with a low error rate (*Hair*, 2006).

For the respondent, the instant availability of the findings enables the test person to see the relative importance of the attributes upon completion. Being able to immediately offer a graphic illustration of the results is a value-added contrary to many other survey methods and a benefit for and motivator for the respondents.

However, some pitfalls attributed to the ACA are the limited amount of literature available. Documentation of the method and empirical findings exist predominantly with regard to of the Sawthooth Software product[62]. In this case the researcher is left with the possibility of resorting to studies, which used the Sawtooth software and assume that there is complete equivalence between the products. Furthermore, in comparison to the other CA methods the ACA has proved to be slightly less precise in terms of predictive validity (*Green and Srinivasan*, 1990). *Green and Krieger* (1991) assert that the compositional CA has a higher predictive validity than the ACA. On the other hand, early research on the predictive validity of the ACA initiated by Johnson in the 1970s determined that the two-factor-evaluation method has a greater predictive validity than the profile method (*Green and Srinivasan*, 1978).

On a general level, *Hensel-Börner* (2000) also analyzed the validity of different hybrid CA methods. Comparing the different CA methods she discovered significant differences in discriminant validity, only on an individual level however. From an aggregated perspective, the findings differed only in single cases. The predictive validity of the differences on the individual and aggregated levels show only limited differences between the methods. The same is the case for the external validity. In conclusion, the validity of ACA findings is comparable to those of other methods. With regards to the benefits of the method the ACA will be implemented in the following section.

5.3.2 Adaptive Conjoint Analysis Design

The ACA software Unipark of the firm Globalpark[63] was licensed for data collection. To design the ACA survey, the attributes derived in part 4, were defined for inclusion in the survey phases. The attributes were verified to fulfill the following criteria: a) A compensatory relation to one another must exist, b) must be relevant to the judgment, and c) the attributes must be independent from each other (*N.N.*, 2004a). Table 3 gives an overview of the criteria and the definitions as they were used for making the terms more comprehensible for the respondent. This was done in order to create transparency of the terms and also to assure that all respondents define the terms in the same way when

[62] www.sawtoothsoftware.com.
[63] www.globalpark.de.

proceeding with the ACA. Each time the terms are used in the survey, the definition was also presented.

Table 3: Definition of the Conjoint Analysis attributes

Attribute		Definition
Attributes pertaining to the Net Economy		
(1)	Degree of digitalization of the product and processes	Part of the product or process which creates value over digitalized networks
(2)	Scalability of products and processes	The marginal cost of replication for each additional product after the first production
Attributes pertaining to the market entry decision		
(3)	Degree of resource commitment abroad	Part of the total resources (human, capital and assets), which is engaged entry into the foreign market
(4)	Degree of protection of proprietary rights (viz. know-how)	Possibility of protecting proprietary knowledge with entry into the foreign market
Attributes pertaining to the entrepreneur		
(5)	Degree of international personal network	Ratio of private to professional contacts in foreign countries
(6)	Degree of international market orientation	An empathy and openness towards international customers and markets, i.e. the disposition to fulfill unsolicited foreign orders

The attribute levels must fulfill the criteria of being a) influenceable, b) feasible and c) easy to communicate. Therefore, three attribute levels, high, medium, low were chosen for each attribute.

In accordance with the compositional CA described in chapter 5.2.2, the first step of the ACA may be the evaluation of the attributes levels (*N.N.*, 2004a) (See appendix figure 32). For example, “How important is a *high* resource commitment for your internationalization decision?” However, this phase is optional if there is a priori knowledge- based on logical or theoretical considerations- of the rating behavior, i.e. the respondents’ preferences. This assumption is supported by the ideal vector model (*N.N.*, 2004a, p. 9)[64]. In this case, the utility of the model increases or decreases with the according attribute level. For example, based on logical derivations it is assumed that a low resource commitment is attached to a higher preference versus a high resource commitment. This step is optional and was omitted to reduce the time

[64] The opposite would be the part utility model where the utility values are in no functional or proportional relation to each other. Thus, various types of preferences can be measured. For a detailed explanation of the ideal vector model cf. *Fabian* (2005).

burden. The knowledge gained from expert interviews gave sufficient indication of the rating behavior of the attribute levels.

In the ACA design all attributes, with the exception of resource commitment, were indicated to have an increasing importance from low to high. Resource commitment was inversely coded: The importance from high to low increases. The values in the analysis are centered around zero. With the three attribute levels this means 3, 2, 1 transforms into 1, 0, -1, and, in a following step, the values are standardized to the range of 1 (*N.N.*, 2004a, p. 9). I.e. the values 1, 0, -1 turn into 0.5; 0; -0.5.

Figure 19 gives an overview of the ACA phases and steps. In the data collection phase, the respondent is asked to assess the importance of the attributes, then, in phase 2, an evaluation of pairs of stimuli follows (see appendix figure 33). Finally, in the calibration phase the respondent is asked to evaluate complete stimuli before the analyzed results are delivered.

Each phase will be briefly described in the following section (See appendix for an example of a question in each phase of the ACA survey). The calculation of the results after each phase leading to the final findings will be detailed for each phase.

Phase 1: Attribute importance

In the first phase, the respondent is asked to evaluate the importance of the attributes on a general basis (see appendix figure 32). This is the compositional approach of the ACA. A seven-point scale is used, ranging from very important to not important at all. A large scale is recommended in order for the respondents to be able to exploit the whole range of the scale and make the measurement as precise as possible (*N.N.*, 2004a). The input data is transformed by standardization on a scale from 1 to 4. Finally, these values are multiplied with the data from the evaluation phase. This leads to the “prior utilities” values, which are then used to construct the stimuli (*N.N.*, 2004a, p. 14).

Phase 2: Pair comparisons

A total of 15 pair comparisons were presented. The respondents are asked to indicate which one of the two different object variations they would prefer. The same scale from one to seven was used. Considering the number of

attributes and attribute levels 15 pair comparisons were determined for this study in order to ascertain the maximum level of validity and a minimum burden of the respondent. In this phase a rotating effect was applied to prevent the respondent from choosing the same pairs. Empirical studies showed that the first attributes at the top of the stimuli were perceived as more important than the attributes at the bottom (*Cattin and Wittink*, 1982; *Huber et al.*, 1993; *Johnson*, 1989). Firstly, each stimulus consisted of two attributes. Then this was increased to three in order to eliminate as many combinations as possible. In this manner, the approximate part worths are successively narrowed-down.

The values of the attributes are inserted into a row in the matrix after each pair comparison (*N.N.*, 2004a). The attribute levels attain a value of 0, 1 or –1; 0 if they did not appear, 1 is the value if the right object is preferred and -1 if the left object is preferred. The dependent variable, i.e. internationalization propensity attains the numbers –4 to +4. –4 is a strong preference of the object on the left, 0 is indifferent and + 4 is a strong preference for the object on the right. These scores are attained in each pair comparison. To calculate the pair utilities an Ordinary Least Square (OLS) regression is performed after each pair comparison (*Hair*, 2006). The regression coefficient b represents the pair utilities. After each pair comparison, another OLS regression has been performed; the pair utility values are recalculated.

To estimate the final utilities the pair and prior utilities are combined. The prior and the pair utilities are first standardized on a common scale; the prior utilities are multiplied by the factor n/(n+t). *n* is the number of attribute levels, i.e. three, and *t* is the number of pair comparisons, in this case 15. Attributes, which have not been applied in the pair comparisons, are entered into the OLS equation without changes. The pair utilities are multiplied by t/(t+n). The sum of the weighted values result in the final utilities (*N.N.*, 2004a, *Fabian*, 2005).

Phase 3: Calibration

In this last phase of the ACA the respondent is asked to judge full profiles, which include all six attributes (see appendix figure 34). A total of four calibration profiles are presented. Four are sufficient to estimate the regression parameter (*Fabian*, 2005, p 192). This means they are asked to judge objects according to their probability (from 0 to 100%) for making an internationalization decision. Hereby, the respondent is first confronted with

the least preferred object, then the most preferred, and the last two are of medium preference to the test person (*N.N.*, 2004a, p. 9). This phase also ascertains that the respondents' evaluations in the last two phases are consistent. Thus, the calibrated utilities are also used as an indicator for reliability[65]. To calculate the total utilities the correlation between the final and the calibrated utilities are estimated.

5.3.3 Post-experiment Questionnaire

The research instrument also enclosed a post-experiment questionnaire where participants were asked to provide demographic information including variables as will be detailed in chapter 6.1 (see appendix figures 36-42). In general, these are questions pertaining to the entrepreneur, the firm and several determinants of internationalization of the firm. This was done to test whether these variables explained variance in decision policies across managers.

Apart from these variables, the EO variable construct risk-taking, proactiveness and innovativeness were included. Following the approach of *Churchill* (1979) the questionnaire used indicators that had already been used in previous studies. The EO construct, originally from *Miller* (1983)[66] and *Covin and Slevin* (1986, 1989) was adapted along the research of *Dess and Lumpkin* (2005), who further developed the EO scale on the organizational level. The developed EO construct was adapted to the individual level according to (*Kollmann et al.*, 2007)[67]. Furthermore, adaptations with respect to the internationalization propensity were made[68]. All three were measured on a 5-point-Lickert scale anchored by the end points "I completely disagree" to "I completely agree" (See post-experiment questionnaire in the appendix).

5.3.4 Pre-testing the Survey

Developing a survey is in itself an adaptive and incremental process. Several versions of the questionnaire were developed and tested in August 2006. For professional input, three experts familiar with the conjoint method from

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[65] See chapter 6.2 for an evaluation of the survey reliability.

[66] *Lumpkin and Dess* (1995) further developed the EO construct, albeit on the firm level, adding two further dimensions- competitive aggressiveness and autonomy. However, the two new constructs were not operationalized (*Harms*, 2004).

[67] For the theoretical justification of this approach see chapter 3.3.

[68] The measurement reliability of the scale was tested in chapter 6.2.1.

academia and one founder were asked to pretest the survey at length. A pretest took an average of 50 minutes. Their comments and our discussions led to vast improvements in the questionnaire. They were asked to “think aloud”, comment and describe how they interpret the questions (*Velde et al.*, 2004, p. 131). The experts were also consulted to ascertain the selection and validity of the attributes for this research study from their stance (*Shepherd and Zacharakis*, 1997, p. 212). Moreover, what played an important role is the right interpretation of each attribute definition and the wording in each conjoint phase. Above all, the comprehensibility of the questions for the target group was tested and the questions were successively rephrased for more clarity.

In a succeeding step, the online stability, functionality and procedure of the survey was tested with 18 participants from the student body who were contacted by Email in August/ September 2006. This also helped to ascertain the average time needed to complete the survey (15 minutes). Again corrections were made to make the survey more user-friendly. The main aim was the stability of the online survey to secure data collection and data transfer to ascertain the anonymity of the respondents.

5.4 Data Collection

In this chapter the principles of the data collection procedure and its design will be specified. Firstly, the sampling frame of the survey will be established. Secondly, the data collection process including arrangements for increasing the response rate will be described. Thirdly, the response rate and potential non-response bias of the survey will be explained in detail. And, fourthly, the missing values and the reliability of the CA results will be investigated in chapter 5.4.4. In general, the collected data is analyzed using the statistical package for social science (SPSS) in version 13.0.

5.4.1 Sampling Frame

The research population of this study is strategy-making entrepreneurs of Net Economy firms. Accordingly, the central challenge for creating the sample frame for this study is, first, identifying the Net Economy firms. After the firms have been identified, the second challenge is sampling the respective manager of or in the firm, who is qualified to complete the ACA. Central criteria for selecting the entrepreneurs is that they are involved in any type of strategic

formulation or implementation processes at a *firm* level. Ideally these decisions may be strategic internationalization decisions but this is not mandatory.

The sample frame of a survey encompasses a list of the target entrepreneurs, i.e. the research units, who show the same characteristics (*Velde et al.*, 2004, p. 59). However, the Net Economy is a cross-industry field. The Organization for Economic Cooperation and Development (OECD) defines the ICT industry as a cross-section of the manufacturing, service and trade firms (*N.N.*, 2004b). The codes[69] of the German Federal Statistical Office[70] for classifying industries and sectors cannot be combined to depict the whole Net Economy. The same is the case for the German stock market: The *Prime all share index* of the Deutsche Boerse Group enlists the prime sectors "retail" and "software", both containing the industry subgroup "internet" and the prime sectors "IT-Services" and "software" - all of which most likely include E-Venture firms. For this reason, up to today, no extensive list or data base of E-Ventures in Germany exists and the Net Economy as an industry remains unexplored. In consequence, researchers in the field are required to search across and within subgroups of other similar industries. In consequence, a strategy for identifying the sample firms is necessary.

For the purpose of collecting data for an empirical research study, acquiring the largest sample possible is recommended (*Velde et al.*, 2004, p. 62). This is also important with respect to the representativeness of the results and to what degree they can be applied to the population as a whole. In addition, the validity of the conjoint results is increased if the sample is representative (see chapter 5.1) (*Hair*, 2006, p. 512). Simple random sampling is an approach with which a representative sample can be drawn (*Zöfel*, 2003, p. 13). This is done by sampling from a multitude of sources with the aim of achieving a maximal coverage of research units, i.e. the entrepreneurs of Net Economy firms. Consulting as many sources as possible also ensures each firm has an equal chance of being included in the sample (*Dillman*, 2000, p. 210). Additionally, a

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[69] These are the European NACE (Nomenclature Générale des Activités Économiques dans les Communautés Européennes) codes. Their counterparts in the USA are the SIC (Standard Industrial Classification) codes where all registered firms are enlisted depending on their industry affiliation(s).

[70] www.destatis.de.

biased sample[71] is avoided by using various sources: For example, sample lists of only firms operating online-shops or only start-ups would result in a one-sided and unrepresentative subgroup of the population (*Denzin*, 1978; *Knight*, 1997, p. 34).

The opposite of simple random sampling is conducting a systematic search of the whole population (*Müller-Böling and Klandt*, 1993). However, this would be a time and cost-intensive task because of the different and ambiguous sources of E-Ventures and because start-ups are difficult to detect upon inception. Moreover, a sample can only be representative for one or more characteristics of the population (*Velde et al.*, 2004, p. 64 et seq.). On the other hand, *Velde et al.* (2004, p. 62) argue that representativeness is difficult to achieve if the frequency distribution of specific characteristics of the population are unknown. For example, the distribution of certain E-Venture characteristics such as business model, geographic dispersion or age is unknown. However, drawing the sample with the principle of approximating full representativity is implicit.

The Net Economy firms were selected using simple random sampling based on their business models. Table 4 provides an overview of the criteria by which the Net Economy firms were identified and selected. For the purpose of drawing the sample firms the following sources were used and continuously scanned between February 2005 and August 2006:

- *E-start-up* data base[72] consisting of 9000 Internet/ E-Commerce firms collected in Germany at the zenith of the Net Economy in the year 2000,
- *Prime all share indices* of the Deutsche Boerse Group,
- *Web directories*, *press releases* and *magazine articles*,
- the *Start-up Monitor*[73] listing venture capital financed start-ups in Europe,

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[71] A sample is biased if it is not representative of the tested population (*Velde et al.*, 2004, p. 62)

[72] www.e-startup.org. The author is highly indebted to Dr. Lutz Krafft of the e-startup.org project, who shared his research database for the purpose of this study (*Krafft*, 2006).

[73] The start-up monitor is a database of the chair for E-Business and E-Entrepreneurship at the University of Duisburg-Essen, www.e-entrepreneurship.com.

- German *start-up initiatives* (e.g. Forum Kiedrich[74]), and
- winners and nominees of internet, start-up or related award categories on a European and German level (e.g. www.internetpreis-deutschland.de co-sponsored by the German Federal Ministry of Economics and Technology).

Since the focus of this study is on German E-Ventures and their expansion across the home market borders, an indispensable condition for sampling was that the firm headquarters are in Germany.

After acquiring a sample list of firms the responsible manager of the firms had to be identified. This is especially important due to the experimental CA design, because only the actual decision-makers in the Net Economy who are involved in strategic decisions can mirror the decisive preference models. Because German law requires the founder of each website to be personally named on the homepage an identification and verification of the chief executive- including the first and last name- was possible.

Table 4: Search criteria for Net Economy business models

Search Provider	Information provider	Online sourcing
Application-Service-Provider	Interest portal	Payment services
Auction	Communication	People search
Bonus program	Personal ads	Platform
Chat portal	Customer interaction	Price agency
Community	Customer profiles	Product portal
Service	Market place/ stock market	Expert search
Domain business	Online broker	Referral service
Shopping guide	Online betting	Shopping mall
Erotic services	Online shop	Job market

In total, a sample frame of 1495 E-Ventures was collected. This was narrowed down to 1120 firms after the firms founded before 1995 were eliminated from the sample. This was done to avoid a distortion of the sample data, for instance, by including Old Economy firms also active in E-Business, e.g. with an online distribution channel.

[74] www.forum-kiedrich.de.

5.4.2 Data Collection Process and Survey Design

The data collection process began in mid September 2006. The designated respondents were contacted in two ways: 980 by postal letter and 140 by Email. To increase the response rate, the emailed respondents, who had not participated were contacted again after a period of two weeks (*Dillman*, 2000).

Gathering from the insights of past research projects and the experience of other entrepreneurship researchers it is assumed that there is a limited willingness of German executives to participate in quantitative research surveys. Thus, several measures were needed to design the survey and data collection procedure in order to maximize the response rate. According to *Dillman* (2000, p. 149 et seqq.), who developed the Tailored Design Method (TDM) for self administered questionnaires, the response rate can be increased by

(a) establishing *trust*,

(b) demonstrating the *rewards* of participation and

(c) reducing the *social costs*[75] for participating in the survey.

For example, *trust* can be instilled by demonstrating appreciation, legitimating authority and indicating the importance of the task. To increase the respondent's *rewards* the researcher can, for example, highlight the positive aspects of participating in the questionnaire, show gratitude and appreciation, actively engage the respondent by asking for opinions and advice, indicate social validation and offer tangible incentives. To reduce the *social costs* such measures as avoiding any inconvenience, keeping the questionnaire as short and easy as possible, minimizing the requests for obtaining personal information and tailoring the language to that of the sample population may be taken.

To successfully address the Net Economy executives and increase their interest for participating a high degree of professionalism and a maximal degree of personalization were interlaced (*Yu and Cooper*, 1983). Both effects contribute towards demonstrating the importance and the respectability of the research.

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[75] The social exchange costs of an individual are high, for example, if a person is unwilling or uninterested in the survey and nevertheless participates.

The letters were professionally printed in color and signed by the author and the chair of E-Business and E-Entrepreneurship using official letterhead stationary. The cover letter explained the motivation, the subject of the survey and a short explanation of the CA process (see appendix figures 29 and 30). In addition, the appreciation of the respondent's participation was expressed both verbally and by the sweepstake of an electronic device among the participating respondents (*Dillman*, 2000, p.155 et seqq.). The postal letters included a plausible uniform resource locator (URL) for the survey consisting of the word "internationalization"[76] and a password consisting of four or five randomly assembled numbers and letters for reasons of security and anonymity. All the letters were directly addressed to the executive including the first and last names to demonstrate respectability. The questionnaire was sent unfolded in a large-size envelope (*Churchhill*, 1991).

The reasons for sending the majority of letters per postal mail rather than solely by Email, despite the fact that the survey population is active in the Net Economy, are as follows: To avoid being associated with commercial advertisements, other arbitrary contacts such as spam Emails, only entrepreneurs where the direct personal Email address was available were contacted. Furthermore, contrary to a tangible letter, Emails can be neglected if not directly answered and are perceived as less "official" or "valuable" in comparison to a postal letter. A letter allows the possibility of laying it in a to-do pile for later attention. Lastly, a letter allows more room for design options and can thus be tailored to the target group (*Churchhill*, 1991). The Emails included a personalized hyperlink, which linked the respondent directly to the online questionnaire.

The questionnaire itself included the following incentives and personalization modi intended to elicit subject participation: The first page of the questionnaire was personalized with a salutation and the university and chair logos as a header (see appendix figure 31). The participant was offered a summary of the survey results to show the test person the benefit of taking part. Progress indicators were also included, to make the survey process more transparent and increase motivation (*Heerwegh*, 2004). What is more, the first page of the questionnaire included a color photo of an Apple iPOD offered as a reward (*Mizes et al.*, 1984) (see appendix figure 31). Lastly, the respondents

[76] http://ww3.unipark.de/uc/internationalisierung.

were asked for comments or questions at the end of the survey to show appreciation for and importance of their opinion (*Yu and Cooper*, 1983). By asking the respondents to name other respondents at the end of the survey, snowball sampling was initiated (*Babbie*, 1990). However, only one respondent made use of this option.

5.4.3 Response Rate and Non-Response Bias

A total of 1120 Net Economy firm managers were requested to participate in the questionnaire. 128 were returned due to bad addresses- 13 by Email and 115 by postal service. In total, 992 entrepreneurs were successfully contacted. The procedure resulted in 72 usable responses, which equals a response rate of 7.26%.

This rate seems relatively low in comparison to those of other studies. *Paxson and Tarnai* (1995), who reviewed 183 business surveys in selected journals published since 1990 found an average response rate of 21%. More so, *Cooke, Heath and Thompson* (2000) even report an average response rate of 39.6% for web surveys.

Nonetheless, when evaluating the response rate of this study two main factors should be considered: Firstly, the cognitive strains of the CA method pose a burden on the respondent (*Chrzan*, 1991, p. 207). Secondly, the length of the questionnaire, approximately 15 minutes with 15 trade-offs pairs, is above average for web surveys- five to ten minutes is a common length for web surveys. Concerning the absolute number of answered surveys, 72 viable surveys is an adequate number in comparison to other CA studies targeting strategic management. For example, *Fabian's* (2005) work on competitive strategic behavior in Germany reached 21 test persons and the work of *Patzelt* (2006) testing for biotech managers' decision to seek a new strategic alliance tested 51 German managers. Furthermore, *Shepherd* (1999) analyzed decision policies of 66 venture capitalists using the conjoint method, Kollmann and *Kuckertz* (2006b) interviewed 59 and *Hitt and Tyler* (1991) had a completed sample of 65 managers.

On the other hand, conjoint studies in the marketing field that predominantly focused on consumer preferences have much higher response rates (e.g. *Sattler and Schirm*, 2003). However, these studies are usually shorter and appeal to a much larger audience. But, in summary, considering that the target

group are managers or founders in the Net Economy, 72 usable surveys and a response rate of 7.26% is considered an adequate and reasonable figure.

To assess if there is a bias in the study findings, researchers recommend testing if there are significant differences between the respondents and the non-respondents of the study (*Armstrong and Overton*, 1977). The results may be influenced by the respondent's awareness of the survey situation or if only certain types of entrepreneurs participated. For example, if the sample consisted of only entrepreneurs with an academic background, business professionals, or only interested and experienced test persons the sample would be biased.

To avoid bias, the characteristics of early and late respondents are compared. Late respondents, especially after a follow-up, are believed to be similar to non-respondents beyond their motivation to participate in the survey. *Armstrong and Overton* (1977) suggest that early and late respondents- on average- are similar in certain characteristics. If significant differences between the two groups are found one can assume a bias in the survey responses. In conclusion, the findings would not be representative for the sample population.

For assessing a non-response bias, the first and last third of the survey data were compared. The t-tests performed comparing the mean values between the key variables *age of respondent*, *sales in 2005*, *number of employees* and *year of foundation*. All the results with the exception of *number of employees* were comparable to a significant degree ($p>0.05$) (See table 18 in appendix). The variable *number of employees* showed a 2-tail significance of 0.1 between the groups. In conclusion, non-respondent bias is not expected to affect the study results.

5.4.4 Missing Values and Reliability of Conjoint Analysis

Preparing the data for multivariate analysis includes examining the characteristics of missing data as well as assessing the reliability of the ACA part worths (*Hair*, 2006, p. 37 et seqq.). In sum, the *quality* of the data will be examined in this chapter before further analyses of the data are undertaken.

Missing values are a common predicament of empirical surveys (*Kim and Curry*, 1977). The data missing can be attributed to a) errors in data collection or data entry or b) the omission of answers by the respondents (Hair, 2006, p.

38). In this study, all entries in the ACA are mandatory and, therefore, only entries in the post-experiment questionnaire could potentially be missing. These missing values exist either due to respondents quitting the survey or omitting entries by skipping the question. Reasons for avoiding survey questions are the unwillingness to deliver sensitive information or the nescience of the respondent.

In total, 1.1% of the entries of the post-experiment questionnaire are missing. On average, one entry per variable is missing. Five values of one variable are the highest missing amount. As a consequence, considering the limited number of missing values, losing the valuable information by deleting the respondent's entries would be too high (*Hair*, 2006, p. 55). No logical pattern was perceived between the missing data and the data already received. Thus, it can be assumed that the missing values are completely missing at random (*Little and Rubin*, 2002). In the case of values missing completely at random any desired method of data remedy might be applied (*Hair*, 2006, p. 57 et seq.)[77]. The mean substitution method was selected to complete the missing values. This replacement value is imputated with the mean value of that variable. Although this method potentially reduces the variance and may distort the distribution in the variables, mean imputation is unbiased in comparison to other methods, and for a limited number of cases, this method is recommended (*Hair*, 2006; *Kuckertz*, 2006, p. 174).

Once all data entries are complete, the question of the reliability of the CA findings is raised (*Gustafsson et al.*, 2003, p. 24; *Green and Srinivasan*, 1990). In particular: How reliable are the entries of the respondents in the ACA and which preference models and part worths actually qualify for the subsequent analyses? Testing the reliability of the measures prior to the subsequent data analysis process is essential because of the costs incurred when performing data analysis and deducting normative statements on the basis of unreliable findings (*Herrmann et al.*, 2003, p. 314.). Reliability[78] in conjoint measurement is defined as the "consistency or agreement in results between equivalent and comparable conditions" (*Herrmann et al.*, 2003, p. 315 according to *Wittink*

[77] For a description of different remedy methods for missing values see (*Hair*, 2006, p. 49 et seqq).

[78] *Green and Srinivasan* (1990) note that the term reliability is used inconsistently in the CA literature.

and Walsh, 1988, p. 1). Basically, conjoint measurement under different circumstances is compared.

More precisely, according to *Reibstein et al.* (1980), there are four main types of approaches for testing the reliability of the part worths: These are conjoint analyses, differing in the following components:

(a) Over time,

(b) with different attribute sets, but where the stimuli differ in only single attributes,

(c) with different stimuli with different profile descriptions, and

(d) with different data collection methods.

Applying these approaches are time-consuming, and demand both efforts and costs. ACA, conversely, where data collection and analysis are intertwined, includes its own test of reliability. The correlation of the final utilities and the logarithmically scaled calibrated utilities result in the coefficient r^2 (cf. chapter 5.3.2). R^2 indicates to what degree there is a fit between the respondent's answers in the CA and the calibration phase (*N.N.*, 2004a). Therefore, r^2 elicits if there is a consistency in the respondent's indications, moreover, if the test person is attentive and sensitive to the adaptations in the process of the experiment. If r^2 is above 0.5, the entries in the calibration phase can be considered reliable (*N.N.*, 2004a). However, exceptions on the figure of 0.5 are permitted when assessing the reliability of conjoint studies with respects to the cognitive burden on the respondents and the high costs linked to implementation (*Chrzan*, 1991, p. 207; *Herrmann et al.*, 2003, p. 315). After examining the reliability coefficient of each data set individually, a total of six cases that did not meet this criterion were removed. One single data set with a reliability coefficient of 0.48 remained undeleted, because of obviously coherent data patterns. The completed sample now totals 66.

5.5 Summary

Due to the nature of the research question CA is the adequate research instrument. In general, the CA approaches (decompositional and compositional) differ in three major points. Firstly, one major difference is the *data collection method* employed. In the decompositional approach the test person is asked to provide an overall judgment for stimuli objects; the total utility is then broken down into the part worths. The compositional approach

proceeds in exactly the opposite fashion: The evaluation of the attribute levels results in the estimation of the total utility. Therefore, a basic assumption of the decompositional method is that it is not the objective stimuli but the subjective perceived stimuli, which determine the decision-making behavior of individuals. This means that the overall impression of an object, be it a car or any other product composed of all the attributes determines the decision at hand. In consequence, the decompositional method is ascribed to be more realistic, and leads in turn to more valid results.

Secondly, *the results* of the two approaches differ: The decompositional method leads to knowledge of the part worth utility on a personal level, while the compositional method is only able to predict a segment or group preference structure. However, because attributes are evaluated separately, combinations of attribute levels, the strain of both the respondent's time and perceptivity are reduced in the compositional approach. Thus, the compositional method leads to more reliable results.

The third difference is the *strain on the test person*: The decompositional method poses the danger of overloading the test person with information. This is a general risk of the CA as all the attributes and levels need to be described. The researcher is faced with a dilemma: On the one hand, it is necessary to restrict the time frame of the survey in order to avoid overburdening the respondent. This, in turn, leads to a loss of concentration and demotivation and, consequently, to missing data and unreliable results. On the other hand, a high number of attributes is linked to a higher validity of the CA results because it enables a more precise estimate of the part worths. The researcher is therefore confronted with this vital trade-off when designing the survey and choosing between the two methods.

Nonetheless, the hybrid method seems to be superior to the other two methods, first, because it overcomes the limitations inherent in the self-explication approach of having to use a reduced number of stimuli. Secondly, it includes a decompositional- second- step which serves as an internal validity check for the test-person's answers from the first step. Finally, it reduces the information overload on the test-person by minimizing the number of stimuli by grouping the respondents (*Green and Srinivasan*, 1990, p.11).

The CA method is often criticized as these types of 'experiments' do not represent real decision situations and therefore lack external validity[79]. However, studies have shown that CA actually does reflect decision processes employed by individuals (*Brown*, 1972; *Hammond and Adelman*, 1976). The external validity can be ensured in two ways: By deriving the attributes from theory, but also interviewing potential study participants with regard to the relevance of the decision attributes (*Karren and Barringer*, 2002; *Patzelt*, 2006). The external validity can further be enhanced by ascertaining the representativeness of the sample (*Hair*, 2006, p. 512) (cf. chapter 5.4.1).

The ACA, a hybrid form of preference measurement, is used for designing and developing the survey. The ACA is a computer-based CA and has an adaptive component. In this adaptive process the respondent's preferences are gradually narrowed-down and in a procedure entailing several phases the preferences are incrementally estimated. The follow-up questions depend on the respondent's entries in the preceding questions. The attributes derived from the literature review must have a compensatory relation to one another, be relevant to the judgment, and independent from each other. In addition, for the ACA three attribute levels, high, medium, low were determined for each attribute. The research instrument also enclosed a post-experiment questionnaire where participants were asked to provide demographic information and internationalization and entrepreneurial indications. And, in order to guarantee the comprehensibility of the questions for the target group the conjoint design was tested and the questions were successively rephrased for more clarity.

72 usable responses with a response rate of 7.26% were achieved with the empirical study and the study results were tested for non-response bias, which could not be confirmed. Furthermore, for completing the missing values, the mean substitution method was applied. The reliability of the results was ascertained by the reliability coefficient r^2, which indicates to what degree the respondent's answers in the CA and the calibration phase are consistent.

[79] For an overview and analysis of the different types of CA validity cf. Hensel-Börner (2000, p. 30 et seq).

"Firms vary vastly in their characteristics as do the entrepreneurs who create them."

Bhave, 1994, p. 224 referring to *Gartner*, 1985.

6 Data Analysis of the Empirical Study

For analyzing the data collected in the field survey, firstly, the descriptive findings on of both the ACA and the post-experiment questionnaire will be first and, secondly, in order to gain deeper insights into the internationalization profiles of the entrepreneurs in the Net Economy, the data will be segmented in chapter 6.2 by means of a cluster analysis.

6.1 Descriptive Findings of the Empirical Study

A detailed description of the participants of the empirical study is called for. This serves the purpose of securing the validity by a) gaining more knowledge of the respondent's qualifications and responsibilities and b) by ascertaining that the firms in the sample are representative for the German Net Economy. Moreover, by analyzing the characteristics of the respondents and their firms their adequacy for participating in this study can be supported. In consequence, the description of the participating firms aims to further strengthen the validity of the internationalization propensity models. Moreover, to protect against possible weaknesses in the sampling technique a univariate analysis of the post-experiment questionnaire will be performed. In the following the frequencies, means, the minimum and maximum value and the standard deviation of the variables in the post-experiment questionnaire will be evaluated. Inferences or interpretations of results will not yet be presented in this chapter (see part 8), rather the descriptions of the results of the univariate analysis.

First in chapter 6.1.1, the characteristics of the personal-level variables will be explained. Next, the findings of the firm-level variables will be examined: What kinds of firms of the Net Economy were surveyed; when were they incepted, how many employees, sales, etc. do these firms have? Moreover, the findings of separate univariate analyses of the internationalized and non-internationalized firms in the sample will be offered. Thus, the similarities in characteristics of firms in the Net Economy before and after internationalization can be highlighted.

6.1.1 Characteristics of the Sample Respondents

Of the 66 respondents all but two were male (97%) and all the respondents (100%) indicated that they had strategic influence in the firm. This figure may have been provoked by the way the question was phrased: “Do you have the possibility of influencing your firm’s strategy?” This may lead to subjective bias since there can be an assumed respondents’ reluctance to answer this question with ‘no’. For this reason, each respondent was also asked to state his position in the firm. As shown in table 5, 63.6% of the respondents are in a management or executive position, while 33.3% indicated being the actual founders, the owners or managing directors. Since the question was posed as an open question, there are no indications as to whether the managers of the predominantly entrepreneurial firms are also the founders unless they clearly identified themselves as such. Nevertheless, it can be concluded from the data that all but two of the respondents serve in an executive, i.e. managerial, function. Therefore, implicitly all the respondents have a certain level of education and professional experience. This knowledge, in turn, serves as an indicator of the validity and reliability of the survey data, especially in conjunction with the conjoint analysis data (*Hensel-Börner*, 2000; *Tscheulin and Blairmont*, 1995).

Table 5: Position of the survey respondents in the firm

Position	%	n
Founder, Owner, Managing Director	33.3	22
Manager, Executive Position (CEO, CFO, etc.)	63.6	42
Unknown	3.0	2
Sum	100.0	66

The average age of the respondents is 39.6, the eldest being 62 and the youngest 26 (Table 6). The EO of the respondents measured by the constructs of proactiveness, risk-propensity and innovativeness according to *Miller* (1983) shows that there is a tendency of the respondents towards a high proactiveness on an average of 1.9 on a five-point Likert scale and high innovativeness with an average of 2.1 followed by a moderate risk-taking propensity of 2.4 (Table 6). In sum, the overall average for the respondents’ EO is 2.1, when combining the three EO construct variables. Thus, the entrepreneurs in the sample have an inclination towards entrepreneurial

behavior. Notably, none of the respondents indicated having the minimal level (5) of any of the EO variables. Thus, only values between 1 and 4 are exhibited.

Table 6: Characteristics of the respondents on an individual level

Characteristics	Mean	Median	s	Minimum	Maximum
Age	39.6	38.5	8.44	26	62
Proactiveness*	1.9	1.7	0.76	1	4
Risk-propensity*	2.4	2.3	0.76	1	4
Innovativeness*	2.1	2.0	0.69	1	4

* Measured on five-point-Likert scale: n=66
1 (I completely agree) to 5 (I completely disagree)

6.1.2 Characteristics of the Sample Firms

An examination of the age of the firm shows that the average firm in the sample was founded in 2001, while the year of establishment ranges between 1995 and 2006; the median is 2000. This confirms that the sample includes firms, which were founded at the beginning of the Net Economy but also firms which were founded after the collapse of the Net Economy 2001 (see introductory remarks; see chapter 5.4). Therefore, firms that represent different development stages are included in the sample and a bias of Net Economy "survivors" or "starters" can be excluded. At the same time, the year of establishment proves that the firms in the sample are entrepreneurial in that the year of establishment does not exceed eleven years.

Table 7: Firm level characteristics I

Attribute	Mean	Median	s	Minimum	Maximum
Year of establishment	2001	2000	2.8	1995	2006
Number of employees*	18	7	24.7	0	111

* Other than the founding entrepreneur

A further indication of "young" entrepreneurial firms in the sample is the number of employees, which is on average 18, while the median number is 7 (see table 7). Firm sales in 2005 ranged from € 500,000 to € 1 million on average (see table 8). 70% of the firms generated revenues of up to € 1.5 million, while only eight firms indicated sales in the seven to € 9 million category in 2005. With respects to the firm age and size the sales are in a consistent range. What is also characteristic for Net Economy firms in this context are the possibilities of generating high revenues despite their small size. This is especially due to the automated transactions and know-how based production.

Since the business model was one of the main criteria for selecting the sample, the respondents' entries of business models were categorized according to the 4C-Net-Business-Model typology created by *Wirtz* (2001, p. 218 et seq.). *Wirtz* classifies businesses-to-consumer relations in the Net Economy into content, commerce, context and connection categories.

Content business models generate revenues by compiling information and delineating or preparing content on an electronic platform. Examples of content providers are online-newspapers, online entertainment sites, or educational institutions and firms. The aim is the simple, fast and visually appealing display of content for the users (*Kollmann*, 2007).

Via the *commerce business model* revenues are generated by attracting, bargaining/ negotiating and transacting with customers. Examples range from banner advertising, to mall operators (attracting) but also include demand aggregators, such as auction and price-seeking sites (bargaining/negotiating), and payment and delivery firms (transacting). Certainly all three business processes can take place on one platform, as is the case for any online-Shop.

Context is a business model, which is uniquely rooted in the central characteristics of the Net Economy. The primary purpose of these firms is to support navigation and aggregate information for the user. Most prominent examples are search engines or web catalogues. The classification and ordering of internet information, hence, the reduction of complexity, is the main objective of the business activities (*Rayport and Sviokla*, 1994).

The c*onnection* business models, the last of the 4-Cs, create the possibility of exchanging information on the basis of networks. Thus, the main activity is connecting users for commercial, technological or communicative purposes. Examples are virtual communities, market places and personal mailing providers (*Kollmann*, 2005). Revenues can be generated directly by charging customers, or indirectly by means of advertising.

In addition to Wirtz's 4Cs, a fifth category for classifying business models is included: These are service business models, that provide a supporting service in the Net Economy as their main source for generating revenues (*Kollmann*, 2006). These are, for example, domain name registration firms, online-market researchers, online-advertising firms and online consulting and IT-support providers.

Table 8 also exhibits that most firms in the sample have a *connection business model* (31.8%) followed by the *service providers* (27.3%). 24.2% of the firms are traditional *E-commerce* firms, 9.1% of the firms surveyed have *context* business models, while only 4.5% of the firms are active with *content* business models. Only two firms did not specify their business model.

Table 8: Firm level characteristics II

Attribute		n	%
Firm Sales 2005*	not specified	7	10.6
	0 to 0.5	23	34.8
	from 0.5 to 1	13	19.7
	from 1 to 1.5	4	6.1
	from 1.5 to 2	6	9.1
	from 2 to 2.5	3	4.5
	from 2.5 to 3	2	3.0
	from 3 to 5	-	-
	from 5 to 7	-	-
	from 7 to 9	1	1.5
	from 9	7	10.6
Business Models	Content (*i.e. Online Newspaper*)	3	4.5
	Commerce (*i.e. traditional E-Commerce*)	16	24.2
	Context *(i.e. Search engines)*	6	9.1
	Connection *(i.e. Marketplace*)	21	31.8
	Service *(i.e. IT-service providers, online-marketers)*	18	27.3
	Not specified	2	3.0

* in millions of € n=66

In examining international business activities, 66.6% of the firms in the sample have internationalized, i.e. are generating revenues outside their domestic market. By way of comparison, the internationalized group of firms was, on average, 1.8 years at the time of expansion, the median is one, the earliest expanded within the year of establishment, the latest at seven years of age (Table 9). Moreover, 81% of the firms internationalized three years after their inception, while 69% of the firms were two years old (see appendix table 19). Brush (1995, p. 88) refers to early internationalizers in the manufacturing sector as firms who internationalized at six years of age or less. This figure is highly reduced for firms in the Net Economy. Nevertheless, this confirms the assumption that the firms in the Net Economy predominantly internationalize early, if not at inception as the Born Global stream of research suggests (cf. chapter 1).

When asked about the percentage of sales generated outside of the domestic market, an average of 17% was indicated, the median value being

10% (see Table 9). The degree of internationalization on average is low: 83% of the firms in the sample generate less than 20% of their revenues abroad (see appendix table 20). In general, the data shows Net Economy firms internationalize fast in terms of age, but not in terms of speed and scope. This may also shed some light on a rather risk-averse management, which still predominantly generates revenues in the domestic market.

Table 9: Firm level characteristics of internationalized firms in the sample

Attribute	Mean	Median	s	Minimum	Maximum	n
Firm age at internationalization (in years)	1.82	1	1.91	0	7	42
Degree of internationalization*	17.09	10	20.85	0	95	41
Growth orientation**	322.37	200	473.17	-17	1900	42

*% of total company sales outside of domestic market in 2005
** increase of foreign sales in five years in %

These findings notwithstanding, the respondents were asked to name the ratio of revenues- domestic and international- in five years as an indicator for the growth orientation of the firm. Although the values are linked to a high standard deviation, only two firms in the sample displayed the intent to decrease revenues by 17%. The highest value was an increase of 1900%, while a high standard deviation of 473.17 is measured. The average is 322%, the median 200%. These values are clear aspirations and rough estimates of the respondents and, therefore, the reliability of the figures is highly debatable. What becomes clear, however, are the high-growth intentions and the mindset of the respondents, possibly linked to future expansion plans of the respective firms.

6.1.3 Part worth Values and Relative Importance of the Conjoint Analysis Attributes

In this chapter the individual part utilities of the sample population will be aggregated in order to attain a clearer picture of the general composition of internationalization propensity for the sample group. Moreover, based on the zero-centered utility differences the contribution of each attribute characteristic is exhibited. The main question answered will be: What attributes contribute in what way to the internationalization propensity? Subsequently, the relative importance of the six attributes for the sample will be explained. The relative importance is indicative of how sensitive the individuals are if the parameters for making an internationalization decision would ceteris paribus vary. Finally,

the relative attribute importance of internationalized and non-internationalized firms in the Net Economy will be compared in this chapter.

An individual preference profile of each participant can be estimated from the CA results (*N.N.*, 2004a, p. 19). During the CA experiment each test person is asked to assess a sufficient number of attribute combinations in order to be able to create individual preference models. On an aggregated level, when describing the sample, one can create group preference profiles by calculating the arithmetic average of the part worth estimates and the relative importance of the attributes (*Backhaus et al.*, 2006; *Lausberg*, 2002; *N.N.*, 2004a). However, in order to describe and compare the preference models of the sample, they must first be converted to some common scale. By scaling the part worth estimates, the relative positioning of the attribute levels can be effectively presented and discussed (*Hair*, 2006). Moreover, the signs of the part worths, i.e. if they make a positive or a negative contribution to the preference of the individual's internationalization decision, become clear by scaling. Therefore, in the following, the values of the zero centered utility differences of the attribute levels will be applied in order to describe the conjoint analysis results.

The respondents prefer a high degree of *digitalization of products and processes* with a positive part worth value of 51.71 (Figure 20), while the middle level has a - close to zero- benefit of 0.14. What appears to be significant is the part worth value of low digitalization with a value of –51.85. This figure is almost equivalent - but in a negative sense- to the contribution of a high level of digitalization. This means that a low degree of digitalization has a strong negative contribution to the respondents' internationalization decision, just as a high degree of digitalization would be strongly preferred in comparison and has a positive impact on the internationalization decision. The middle level, on the other hand, has an insignificant impact for the internationalization decision.

The managers also unambiguously prefer a high *scalability of the business models* (48.82) to a strong negative utility for low scalability (-49.73). The medium level shows a small positive preference value of 0.91. The part worth values of the attribute of *proprietary rights protection* create a similar pattern. A strong positive utility for high (43.45) and a moderate positive benefit for the middle (4.88) level of protection can be noted, while there is a strong negative

contribution to the internationalization propensity if there were few possibilities of protecting the proprietary rights abroad (-48.32). The interviews conducted for this study confirm this statement, indicating that one of the biggest challenges of Net Economy founders is easy imitability of the business models and the limited possibilities of protecting them in foreign markets (Kollmann and Christofor, 2004).

The utilities of *resource commitment* show an inverse pattern. High resource commitment abroad has a negative contribution to the internationalization decision (-51.02), while a medium (6.45) and low (44.58) commitment of resources are positively preferred by the entrepreneurs. Clearly, a low level of commitment of resources abroad implies a low risk for the firm when entering unknown terrain. This is especially true for young firms with a small resource-base.

A large *network of international contacts* has a positive contribution (50.46) to internationalization propensity, while the part worth of a low degree has a negative utility value of –55.14. In comparison, the utility difference of the medium level of a personal internationalized network for the test persons is 4.68. Lastly, the managers prefer to have a high level of *personal market orientatio*n with a utility difference of 41.10, whereby the negative part worth of having a low market orientation is estimated to be –44.15 for the sample. Again, the managers lean toward a small positive part worth of 3.05 if they have a medium level of personal international market orientation at their disposal (Figure 20).

By way of comparison across all attributes and levels, several observations can be made. Generally, the high levels of the attributes have a positive part worth and therefore a positive impact on the internationalization decision, with the exception of resource commitment, where high resources commitment has a negative connotation for mangers with regards to internationalization. The range of the high levels of the preference contribution is close (highest value is 51.71 for the level of degree of digitalization versus the lowest value is 41.10 for the attribute personal international market orientation). Overall, the degree of digitalization of products and processes has the highest contribution to internationalization propensity, closely followed by a highly internationalized network. The degree of personal international market orientation has the

lowest positive benefit for internationalization propensity, while the other firm-based factors lie in between.

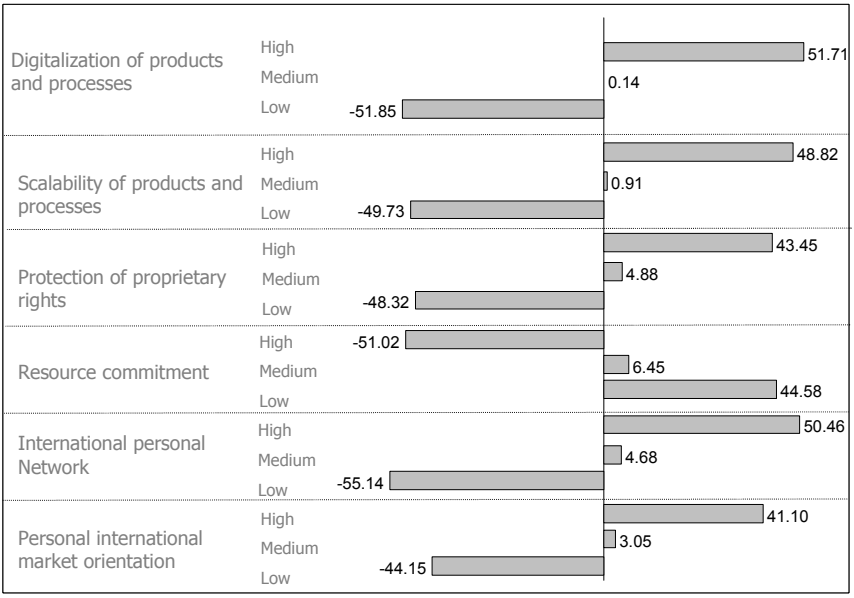

Figure 20: The aggregated zero-centered utility differences of the attribute levels

Interestingly, the range of positive and negative contributions is almost equal. The attribute with the highest negative part worth is a low degree of internationalization of the personal network, which leads one to the conclusion, that the ubiquity of a network does have a high impact on the internationalization activities of a manager. This attribute is followed by the negative part worth of a low degree of product digitalization. The personal international market orientation has the least negative impact on the preference contribution in comparison to the other factors. This implies that both a high and a low level of international market orientation are of the least importance to the sample group when regarding the preference for internationalization circumstances.

The middle levels were found not to have a high impact on the preference models, although it can be noted that the contributions of the middle levels are positive, the highest being a middle level of resource commitment.

The value of the relative importance for an attribute indicates how sensitive the respondents are if, ceteris paribus, this factor were to change. The score

for the relative importance of a change in preference of an attribute is calculated by dividing the maximal utility difference of an attribute with the maximal utility difference of all attributes (*N.N.*, 2004a, p. 20). Direct knowledge of the importance of an attribute can only be attained if the respondent was asked to assess his importance for an object. However, this is not the case and, therefore, it is referred to the relative value.

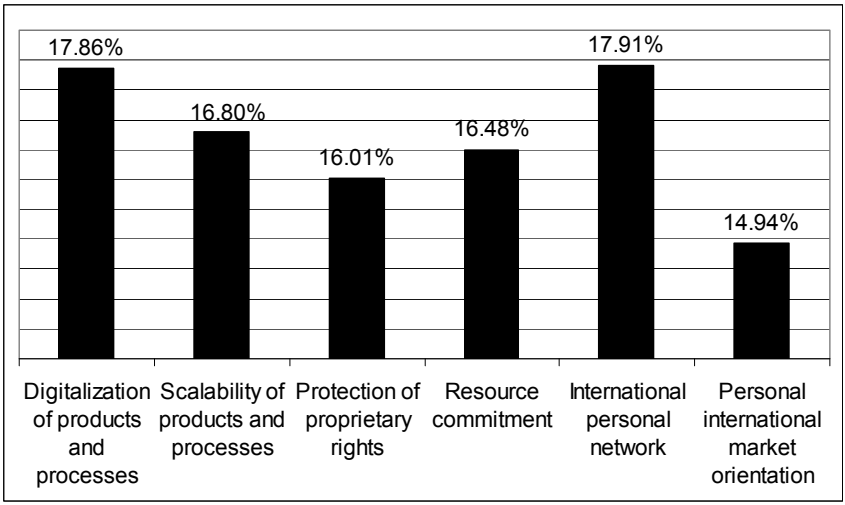

Figure 21: The relative importance of the attributes

The attribute *international personal network* has the highest relative importance (17.91%) for the respondents (Figure 21). Hence, the respondents would react most sensitively, i.e. it would be unfavorable to the decision, if the level of this attribute varied, while all the other factors stayed constant. The relative importance of the *personal network* is closely followed by the *relative importance of the digitalization of the products and processes* (17.86%). These two attributes are most important to the respondents, while the *personal market orientation* is the least important with a value of 14.6%. The attributes scalability, protection, and resource commitment are close in their relative importance values. Whereby the attribute *scalability* has the highest relative importance of the three (16.8%), followed by *resource commitment* (16.48%) and the *protection of proprietary rights* (16.01%) (Figure 21).

When comparing the relative attribute importance of the internationalized versus the non-internationalized firm respondents, the following observations

can be made (Figure 22): To the managers of the internationalized group of firms, the attributes digitalization, scalability and network are the most important. While in comparison to the non-internationalized firms, the attributes digitalization, scalability and resource commitment are more important. In sum, it is the Net Economy level attributes *digitalization and scalability, and the personal network*, which are most important to the individuals practicing international activities. However, the firm-level indicator, i.e. resources committed abroad, also plays a more important role in comparison to firms with solely domestic activities.

For domestic firms, primarily, an *international network*, followed by the *scalability* and *the protection of proprietary rights* are the most important attributes. However, the personal network, the protection of proprietary rights and the personal market orientation are more important in comparison to the internationalized firms. For this group, the personal-level factors such as the network and the personal market orientation outweigh the findings from the other group. Perhaps these factors can be interpreted as an impediment for this group to engage in internationalization activities, while the Net Economy factors of protection and scalability also play an important role. To sum up for the managers of the domestic firms, an internationalized personal network has the most importance, and, for the internationalized group, it is the digitalization of products and processes which are the most favorable for starting internationalization activities.

Finally, the aggregated preference models are to be interpreted with caution (*Backhaus et al.*, 2006; *N.N.*, 2004a). Especially the common scaling and the aggregation by averaging all attribute values are linked to a loss of information of the individual preference structures. The conclusions drawn from conjoint part worths of the whole population do not take heterogeneous preference profiles models into consideration and may therefore lead to false interpretations for the sample. Valuable information about the individual preference models may thus be lost. Rather than drawing misleading general, normative conclusions from the aggregated preference models, more valuable insights on the individual preferences can be gained by creating clusters of respondents with homogenous characteristics. By classifying the data into smaller groups, the preference model for each group can be interpreted separately and differentiated insights into the characteristics and preference models of the respondents can be gained. In order to classify the data, the

cluster analysis method, which is recommended in the literature, will be described and applied in the following chapter (*Backhaus et al.*, 2006; *Punj and Stewart*, 1983).

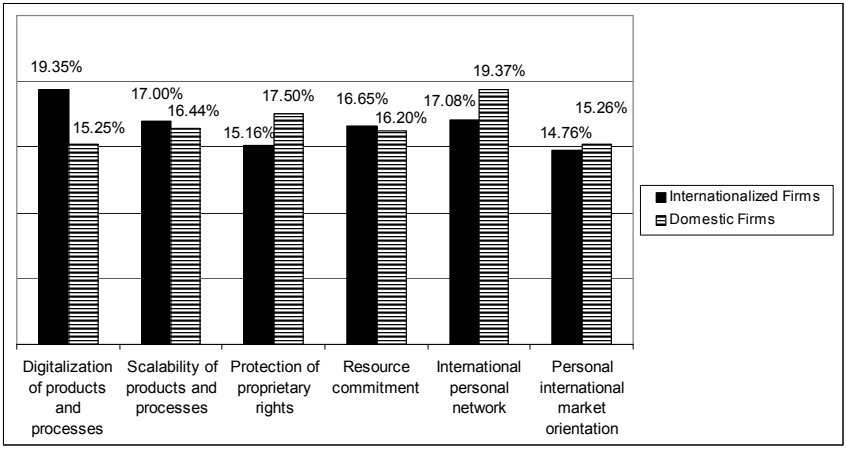

Figure 22: Comparison of relative attribute importance of internationalized and non-internationalized firms

6.2 Segmentation of Data

For the reasons mentioned above, the aim of this chapter is to proceed with the data analysis by classifying the data into segments of entrepreneurs and managers of the Net Economy with common characteristics. Before describing and analyzing the preference profiles of the internationalization propensity for each group in the following chapter, the survey data will first be divided into groups. Classifying data by grouping individuals with common attitudes or propensities in order to gain insights into the typical characteristics of each group is the basic principle of segmentation research (*Punj and Stewart*, 1983, p. 135). One of the main aims of segmentation research is to seek a better understanding of human behavior by identifying and analyzing homogenous groups. Thus, cluster analysis, much like conjoint analysis, is an inductive statistical method aimed at gaining knowledge about a population by reducing the data into homogenous groups and interpreting the characteristics of the group members. This procedure is widely employed in the field of conjoint measurement, especially for research in the field of marketing for the creation of market segments and typical customer profiles or test market simulations (*Green and Krieger*, 1993; *Green and Srinivasan*, 1990).

To gain deeper knowledge of the preference models of the sample, a cluster analysis will be conducted in the following way. In comparison to other methods for data classification such as discriminant analysis or factor analysis, the cluster analysis method stipulates having hypotheses about expected differences within the population (*Punj and Stewart*, 1983, p. 135). Moreover, similar to the CA, the cluster analysis does not require a specification of independent and dependent variable relationships. This premise is essential for this study otherwise no assumptions about homogenous data structures in the sample population or about conclusions can be made.

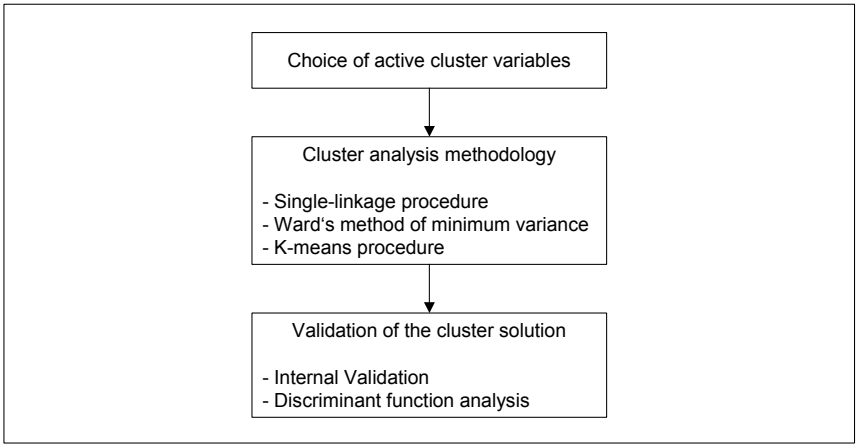

Figure 23: Overview of data classification procedure

In the following section, the methods and statistical tests employed for creating and validating the clusters will be described. This will take place in several steps: First, the active cluster variables will be selected in chapter 6.2.1. The selected variables will be tested for the reliability of the measurement scales and a factor analysis is attempted before proceeding with the clustering procedures. The cluster analysis will be conducted in three steps: First the single-linkage for identifying outliers (chapter 6.2.2.1), then the Ward method for creating a preliminary cluster solution (chapter 6.2.2.2) and, finally, the K-means procedure will be applied in chapter 6.2.2.3 before the final cluster solution is identified. In a final step, the cluster solution will be validated (6.2.3), firstly, by validating the internal homogeneity of data within the clusters (6.2.3.1), and, secondly, by performing a discriminant function analysis (6.2.3.2). With the final cluster solution at hand, the clusters will be

described according to their characteristics in the succeeding part. These steps are graphically portrayed in figure 23 in order to get a better overview of this chapter.

6.2.1 Active Cluster Variables

Before beginning the cluster analysis, the clustering variables- the main foundation of the classification- will be identified in the following (*Punj and Stewart*, 1983). However, since segmentation on the basis of the conjoint part worth utilities is objectionable due to the sampling difficulties described in chapter 5.4.1[80], further considerations for choosing the variables are needed. This is particularly the case as the selection of the clustering variables should be based on theoretical considerations pertaining to the research question and the choice has an impact on the performance of the cluster analysis (*Backhaus et al.*, 2006, p. 549; *Punj and Stewart*, 1983, p. 143).

With respect to the characteristics of the respondents in the sample, i.e. manager-entrepreneurs of small firms in the Net Economy, a differentiation of a set of clusters based on common characteristics of the individuals seems reasonable, especially as the conjoint measurement was performed on the individual level of the respondents and individual preference models and characteristics could be obtained.

On the basis of the theoretical considerations of part 4, there are conjunctions between internationalization and entrepreneurial behavior. In addition, the personal characteristics of the owner-manager, who has specific goals, determines the strategic direction- be it for the establishment or internationalization of the firm (*Miller*, 1983, p. 770). In each case, the influence of the managerial persona is similar. Moreover, the composition of an individual's EO, i.e. the innovativeness, proactiveness and risk-taking, forms the basis for her/his decision-making styles and practices. Expectations, beliefs and attitudes towards internationalization will foster endeavors abroad. EO emphasizes risk-taking, innovation and proactiveness in international expansion (*Pla-Barber and Escribá-Esteve*, 2005). For example, *Covin and Slevin* (1991) and *Dess et al.* (2003) suggest that proactive firms pursue high-risk projects such as internationalization more aggressively and competitively,

[80] This is due to the highly heterogeneous population of firms in the sample, i.e. firms and managers of different industries, the common denominator being the business models.

aiming to be the first in a new market. Hence, the decision of the company to export or not has an impact on the firm's growth and development paths (*Pla-Barber and Escribá-Esteve*, 2005). For this reason, it is believed to be possible to differentiate between a set of identifiable groups of individuals with different levels of EO in the sample.

For the purpose of this study, the indicators risk-taking, proactiveness and innovativeness of *Miller's* (1983) EO construct, which was included in the post-experiment questionnaire[81], will be selected as the clustering variables. In the following, the scales are first tested for reliability before assessing their applicability as active cluster variables.

The reliability is ensured by the inner consistency of the summated scales, i.e. the scales by which the constructs risk-taking, proactiveness and innovativeness were measured (cf. chapter 5.3.3) (*Hair*, 2006, p. 137). The inner consistency ascertains the degree to which the individual items of each scale measure the same construct. An indicator of inner consistency is the measure of Cronbach's alpha, which determines to what degree the items of a scale are intercorrelated. A high intercorrelation between the items of the scale is an indicator of a highly reliable scale. The reliability coefficient of Cronbach's alpha can take on values ranging from 0 to 1 and to assess reliability, the literature calls for a value of Cronbach's alpha above 0.70, although for exploratory research 0.60 is acceptable (*Homburg and Giering*, 1996, p. 8; *Nunnally*, 1978, p. 245). For scales composed of two or three indicators, a value of over 0.40 can be considered as sufficient (*Backhaus et al.*, 2006). Cronbach's alpha for the proactivity scale measured by three items is 0.696. After removing one item with a negative coefficient, the risk-taking scale measured a reliability coefficient of 0.794. The four-item-scale of innovativeness has a reliability coefficient of 0.728. In conclusion, the three constructs are above the acceptable limit of .60, which suggests a sufficient reliability of the constructs.

To determine the applicability of the constructs as active cluster variables an attempt to further summarize the variables by means of a factor analysis is undertaken. Factor analysis is an interdependence technique used to

[81] *Lumpkin and Dess* (1995) further developed the EO construct, albeit on the firm level, adding two further dimensions- competitive aggressiveness and autonomy. However, the two new constructs were not operationalized (*Harms*, 2004).

determine the underlying structure of data among variables. *Backhaus et al.* (2006) recommend conducting a factor analysis prior to the cluster analysis in order to verify the variance of the data. Interrelations of variables, which are partial correlations explained by not simultaneously taking the effects of all variables into account, can be explained by factor analysis. Factor analysis tests for overlapping variables, which, due to interrelating data structures, are not discriminant and, therefore, could be summarized to one variable.

The correlation matrix, the anti-image correlation matrix, and the Kaiser-Meyer-Olkin-criteria are all indicators for the applicability of factor analysis to a data set. The partial correlations in the correlation matrix with a practical and statistical significance for factor analysis must be above 0.70 (*Backhaus et al.*, 2006, p. 274). The anti-image correlation matrix, the negative value of the partial correlation can also be applied to detect variable data structures. High partial or anti-image correlations are indicative of variables not suited for factor analysis (*Hair*, 2006). According to *Dziuban and Shirkey* (1974) a minimum of 25% of the diagonal values in the anti-image covariance matrix are permitted to be above > 0.09 in order to fulfill the factor analysis criteria (*Backhaus et al.*, 2006). Additionally, the Kaiser-Meyer-Olkin-criteria, indicating to what degree the variables correlate, are another indicator for the sample adequacy (*Backhaus et al.*, 2006). A value of ≥ 0.80 is suitable for proceeding with the analysis (*Kaiser and Rice*, 1974).

The scores in the correlation matrix score about 0.30 (see appendix table 21). The anti-image matrix displays diagonal figures all above 0.09 (See anti-image matrix in appendix, table 22) and the Kaiser-Meyer-Olkin-Criteria of the three variables is 0.63. In conclusion, the scores indicate that an explanation of the variable's variance in the data structure of the other variables is not possible. Therefore, there are no indications that sufficient correlations exist among the variables to proceed with the factor analysis. The variables can only explain the variance in the data to a limited degree and the constructs of risk-taking, proactiveness and innovativeness are not adequate for factor analysis. Moreover, the data structure of the variables is so heterogeneous that they are adequate for application as active cluster variables.

6.2.2 Cluster Analysis Methodology

The basic principle of the cluster analysis is to identify groups of subjects with a maximal homogeneity of observations within the group, while simultaneously

having a maximum heterogeneity between the groups (*Hair*, 2006, p. 555). To achieve this, a myriad of procedures and methods can be applied. The approaches, which aim to shed light on the nature and character of each resulting cluster, vary according to the measure of interobject similarity employed. This empirical measure determines how and which entities are to be clustered. These algorithms of classification can be categorized into correlation, distance and association measures. The application of these algorithms depends largely on the research aims and type of data available. *Punj and Stewart* (1983, p. 139 et seqq.) conduct a meta analysis of studies applying cluster analysis methods. The authors conclude that, due to the lack of a general definition of a cluster and a unified concept of cluster operationalization, all the algorithms hereto developed have different strengths and weaknesses. The employment of a measure of interobject similarity depends on the research question and the demands on the sample data (*König*, 2001).

In order to achieve an optimal assignment of the entities to the clusters, a combination of cluster analysis methodologies is recommended in the literature. A combination of methods increases the stability of the solution and, thus, the validity (*Hair*, 2006). Both *Milligan and Sokol* (1980) as well as *Punj and Stewart* (1983) suggest a two-step approach: First, a preliminary cluster solution is identified by means of a hierarchical-agglomerative cluster method and, subsequently, the cluster solution is then refined by an iterative partitioning method. Thus, by way of combination, the benefits of the methods with different prerequisites of application, which will be described in the following, can be fully deployed.

These recommendations will also be sought in this study. For the detection of a starting partition the generally recommended Ward's minimum variance method will be applied and, in a second step, an iterative partitioning algorithm, the K-means method, will be employed. These will be described in more detail in the following.

First, however, to ensure that only data will be clustered which is representative for the sample, outliers must be eliminated from the database (*Backhaus et al.*, 2006, p. 549). Outliers can be identified because they have a completely different combination of attributes in comparison to the other objects. These need to be removed from the data set before clustering is

started, because they have an impact on the order and types of clusters created, which would lead to a distortion in the calculated results and invalid and equivocal conclusions about the sample population. The Ward method, particularly, which will be conducted in the following step, proved to be sensitive to the existence of outliers (*Milligan and Sokol*, 1980, p. 340). For this means, a clustering procedure applying the single-linkage algorithm, especially adequate for identifying outliers, will be used.

In summary, a three-step cluster analysis is carried out:

(1) Single-linkage- procedure for the identification of outliers,

(2) Ward's procedure for determining the number of clusters and an approximate solution, and

(3) K-Means procedure for optimizing the approximated solution.

To measure the similarity between the entities, the square Euclidean distance measure is applied in the three-step cluster analysis. Given that the cluster variables are metric and Ward's method suggests this measure, this distance measurement was selected. Furthermore, this measure is generally recommended and applied as the measurement of choice in similar ACA research studies (*Lausberg*, 2002). The square Euclidean distance approach measures the proximity between observations as the sum of squared differences. Hence, the distance between two observations, X and Y, is measured by the following equation (*Hair*, 2006, p. 575):

$$\text{Distance measurement} = (X_2-X_1)^2+(Y_2-Y_1)^2$$

The Euclidean distance measure of the similarity method also has the advantage that larger distances are being taken into closer consideration than smaller differences during the clustering procedure. As the sample is expected to be heterogeneous, this is a premise to be recommended for a measure of similarity.

Lastly, another issue to consider before beginning with the partitioning of the sample into homogenous groups is the standardization of the data (*Backhaus et al.*, 2006; *Hair*, 2006;). Because all of the cluster variables are measured on the same scale (five-point-Likert scale from 1 to 5), the variables do not need to be standardized prior to clustering, which will be described in more detail in the following part.

6.2.2.1 The Single-Linkage Procedure

The single-linkage cluster analysis is a hierarchical-agglomerative clustering algorithm[82]. This algorithm creates distinct cluster solutions without overlapping. Observations are clustered by contracting the data, i.e. clustering takes place on the basis of the smallest distance measured to another object or cluster of objects (*Backhaus et al.*, 2006, p. 527): The minimum distance between any single object in one cluster and any single object in another determines the next clustering step. Therefore, the single linkage procedure is also termed the "nearest-neighbor" approach. For the detection of outliers, this approach has the advantage that it has the tendency to create a few large and many small clusters. In general, the clusters formed are less compact and the smaller groups are indicative of outliers. A disadvantage of the single-linkage procedure is that it creates chain-like clusters, stringing objects together because they are the "nearest- neighbors". This creates the danger of making a poorly differentiated and non-identifiable clusters solution. In conclusion, two outliers were detected in the sample; both with a maximum heterogeneity measure of 25. The highest heterogeneity measure for the remaining data using the single-linkage procedure is 7.

6.2.2.2 Ward's Minimum Variance Procedure

In the following step, Ward's algorithm of minimum variance was applied to the remaining sample data for preliminarily identifying a cluster solution and determining the number of clusters. This is also a hierarchical-agglomerative approach and was chosen because it is known for its qualitative and significant partitions and has proved to be a useful tool for identifying a valid number of clusters (*Bergs*, 1981).

Ward's method of minimum variance distinguishes itself from the single-linkage approach in that it does not unify the entities with the closest distance. Instead, only those objects are joined in clusters, which only minimally increase the given measure of heterogeneity. In other words, the aim of Ward's approach is to create the most homogenous clusters possible, by merging entities, which do not increase the group's variance. The measure of heterogeneity, i.e. the criteria for variance, is the total sum of squares across all clusters (*Hair*, 2006, p. 588). The measure of heterogeneity rises with the

[82] For a classification and description of the cluster analysis approaches cf. *Backhaus* (2006, p. 511).

number of clusters, and is zero if there are no groups. At the end of the procedure all the observations are merged into a group with the highest heterogeneity measure.

Ward's algorithm for creating a cluster solution is recommended, if the distance measure of similarity can be applied, all variables are metric, the variables do not correlate and the variance in the groups are about equal (*Backhaus et al.*, 2006, p. 528). The disadvantage of this method is the creation of clusters of equal size and difficulties in recognizing small groups. Since this is a preliminary solution, which will be refined in the following, and the criteria for application are fulfilled, the method was applied. To determine the number of clusters two indicators were used:

First, the agglomeration coefficients were analyzed. Table 10 shows the agglomeration coefficient for the first nine clusters created with the survey data. The squared Euclidean distance between these two respondents is given under the column labeled 'agglomeration coefficient' also referred to as the heterogeneity measure. This measure is high at the beginning of the cluster procedure and begins to decrease as the data is ultimately joined into one big cluster. Table 10 displays the development of the coefficients in the course of the clustering procedure and the relative differences of coefficients in comparison to the prior solution. It is assumed that when the heterogeneity within the clusters decreases only minimally from one clustering step to the next, the number of clusters can be determined. Since the jump in the absolute difference of the agglomeration coefficient from cluster four to five is the lowest, four clusters appear to be the appropriate solution. In this case, the difference of the agglomeration coefficient between cluster three and four is 1.53%. To support this decision a scree-plot was used to graphically verify this assumption (see appendix figure 45). The so-called elbow criteria shows that the curve begins with a linear path with high distances between the heterogeneity measures and from cluster four on the curve begins to bend (*Hair*, 2006, p. 610 et seq.). Thus, the four-cluster solution is also visually supported by the scree-plot analysis.

Thus, the distribution of the respondents in the clusters using Ward's method is as follows:

Cluster 1 22 cases

Cluster 2 13 cases

Cluster 3 18 cases

Cluster 4 11 cases

The main premise for selecting a cluster solution is to achieve a maximal degree of heterogeneity between the groups and homogeneity within the groups. The solution, as of now, seems to fulfill these criteria, however in a third step, the solution will be refined to meet this goal.

Table 10: Clustering coefficients at the last stages of merging

Number of clusters	Agglomeration coefficient	Absolute difference	Percentage difference to next stage
1	95.34	36.30	12.06 %
2	59.05	15.36	5.68 %
3	43.69	8.88	5.09 %
4	34.81	5.30	1.53 %
5	29.51	4.04	-0.52 %
6	25.46	3.62	-0.90 %
7	21.84	3.30	-36.33 %
…	...	...	….

6.2.2.3 The K-means Procedure

The K-means method is a non-hierarchical, iterative partitioning method. All the non-hierarchical clustering methods begin with partitioning the objects into the given number of clusters and subsequently reassigning the objects to the clusters until a predetermined decision rule stops the process (*Bühl and Zöfel*, 2005, p. 507 et seqq.). In case of the K-means procedure, the cases are first partitioned into the four groups identified in the hierarchical cluster analysis. Initial partitioning occurs in the centroids of the three variables in each cluster derived from the preliminary cluster solution. The centroid value is the mean value of each variable of all the cases contained in each cluster (*Hair*, 2006, p. 556). Subsequently, reassignment begins by moving the single cases to the cluster with the closest centroid. For each new case assigned to a cluster, the centroid value is recalculated and new clusters with new centroid values are created (*Bühl and Zöfel*, 2005). Thus, as the process progresses, the centroid values change and adapt depending on the new combination of clusters. This process is repeated until the centroid values have been optimized in such a way that with each further clustering step no change in centroid values occurs. By means of this procedure the variance within each cluster is implicitly minimized and homogenous clusters are created. An advantage of applying the K-means method for refining the cluster solution is that in an empirical

comparison K-means outperforms the Ward's method if a number of clusters for the first partitioning is specified (*Punj and Stewart*, 1983).

In the case of this study, no stopping rule was applied. Eight iterations took place until all the cases were reassigned and the centroids were no longer subject to change. The number of cases in each cluster after the reassigned is 14 in cluster 1, 20 in cluster 2, 21 in cluster 3 and 9 in cluster 4 (Table 11). While the cluster number of four clusters has not changed, some modifications among the cluster observations can be observed. Cluster 4 is the smallest cluster, containing 14% of the observations in the total sample, while cluster 3, now includes 21 observations. Hence, this cluster has been extended, just as cluster 2 has, which now counts 20 cases, making up for 31% of the sample. Cluster 1 is the second smallest, counting for 14 observations. The clusters were built on the principle that the differences between members of different clusters are maximized. Thus, there is a dispersion among the variable means, as the displayed centroid values in table 11 show. The centroid for proactiveness lies in a range between 1.37 and 2.77, and the variable risk-taking displays a range in centroids from 3.11 in cluster 1 and 1.75 in cluster 3. The variable innovativeness also shows varying centroids among the clusters. On the other hand, the lowest centroid value for this variable is 1.45 for cluster 3; cluster 1 has a mean of 2.52 for this variable.

In sum, in the refined cluster solution the clusters now vary in size and variance of variable means, while the cluster number remains the same.

Table 11: Values for clustering variable means and the cluster analysis solution

	Proactiveness*	Risk-taking*	Innovativeness*	n (%)
Cluster 1	1.69	2.07	2.52	14 (22 %)
Cluster 2	2.77	3.07	2.41	20 (31 %)
Cluster 3	1.37	1.75	1.45	21 (33 %)
Cluster 4	1.52	3.11	1.89	9 (14 %)
			Sum	64 (100 %)

* Measured on five-point-Likert scale: 1 (I completely agree) to 5 (I completely disagree)

6.2.3 Validation of the Cluster Solution

Validating the cluster solution serves two main purposes: Firstly, it is necessary to prove that the performed classification of data is not random. Therefore, the question of whether the presented cluster solution differs from a random solution will be answered by validity tests. Secondly, the final cluster solution can only be accepted if the final utility of the solution is first tested and

demonstrated (*Punj and Stewart*, 1983, p. 144). This final utility is given if the classification system ultimately leads to further understanding of the research phenomenon. For these purposes, firstly, the internal validity and, secondly, a discriminant function analysis will be performed.

6.2.3.1 Internal Validation

Firstly, the degree of homogeneity of the objects within the groups will be used as a measure for the internal validity of the cluster solution (*Wedel and Kamakura*, 1998, p. 60). Since one of the main aims of a cluster analysis is to classify homogenous groups of objects (see chapter 6.2.2), this criterion indicates if general statements about the characteristics of cluster members can be made. For metric variables, such as the three applied cluster variables, the F-value can be used to assess internal validation. The F-value is measured as follows (*Backhaus et al.*, 2006, p. 545):

$$F = \frac{V(J, G)}{V(J)}$$

where

V(J,G) is the variance of variable J in cluster G and

V(J) is variance of variable J in the sample population.

The smaller the equation above the smaller the variance of this variable within the cluster is in comparison to the sample population. A cluster solution is fully homogenous if all the clusters have F-values below 1. If the F-value is above 1 the variable has a greater variance in this group than in the total sample population, implying that the cluster members are more heterogeneous in this variable in comparison to the overall sample.

Table 12 gives an overview of the calculated F-values of the four-cluster-solution. All the F-values are below one with one the exception: The F-value of the variable innovativeness in cluster 2 is 1.011. This means that this active clustering variable has a, albeit only slightly, higher variance than the rest of the population. Since 92% of the F-values are below 1, the homogeneity within the clusters can be considered as adequate. This statement can also be met in accordance with other cluster analysis studies (*König*, 2001).

Table 12: F-Values of the cluster analysis solution

	Proactiveness*	Risk-taking*	Innovativeness*
Cluster 1	0.409	0.324	0.356
Cluster 2	0.173	0.527	1.011
Cluster 3	0.230	0.300	0.206
Cluster 4	0.238	0.283	0.602

* Measured on five-point-Likert scale: 1 (I completely agree) to 5 (I completely disagree)

6.2.3.2 Discriminant Function Analysis

In a second step, a discriminant function analysis will be conducted. Discriminant function analysis can be applied in a confirmatory manner for evaluating the cluster analysis result (Backhaus et al., 2006). Moreover, discriminant function analysis is applied to answer two main questions: Firstly, if and to what degree is there a differentiation between the groups and, secondly, to what degree are the clustering variables able to differentiate between the four groups (*Morrison*, 1969). For these aims, the clustering variables are chosen as the discriminating variables. These discriminators are simultaneously used to estimate the discriminant function based on the survey data (*Decker and Temme*, 2000, p. 302). By applying this technique, the data is first classified into homogenous groups by estimating the discriminant function. Consequently, the degree to which the sample data can be accurately classified in relation to the predetermined cluster solution is assessed, and, in addition, by means of the discriminant function a quantitative statement of the degree to which each variable contributes to the overall discriminant function score of each case can be made (*Huberty*, 1994).

In the case of four clusters, three discriminant functions are computed in the analysis. The first discriminant function estimates the primary differentiating power of the cluster solution and the last two estimated discriminant functions explain the remaining variance between the clusters. The discriminant function can be expressed as (*Hair*, 2006, p. 271):

$$Z_{jk}=a+W_1X_{1k}+W_2X_{2K}+\ldots\ldots+W_nX_{nk}$$

where

Z_{jk}=discriminant Z score of discriminant function j for object k

a = intercept

W_i = discriminant weight for the independent variable i

X_{ik} = independent variable i for object k

The coefficients of the discriminant function are then used to assess the discriminatory significance of the cluster solution. The correlation of the coefficients is an indicator of how well the cluster variables separate between the groups. Wilks' method of extracting the coefficients is applied in this study. Wilks' lambda is a widespread measure for evaluating the statistical significance of a) the discriminant functions, created on the basis of classifying the sample data into homogenous groups, and b) the discrimination between the groups. For this study a multivariate Wilks' lambda was applied, because there are more than two clusters to validate. Furthermore, Wilks' lambda is an inverse indicator and can take on values between zero and one (Huberty, 1994, p. 184): Measures close to zero are highly significant, while measures close to one have a low significance.

Wilks' lambda test statistic shows a value of .072 and, thus, achieving a high significance ($p<.001$) for the discriminant functions. This means the sample data could be differentiated into four homogenous groups with a high statistical significance, i.e. the data can be classified into the specified groupings to a highly significant degree by the discriminant functions. The canonical discriminant function 1, 2 and 3 respectively explained 82.6%, 11.6% and 5.8% of the total variance between the clusters in the sample (see appendix table 23). The Eigenvalue of the first function is 5.020 and the canonical correlation coefficient is 0.913. In sum, these values support the statement that the cluster solution is not random and the differences between the groups as estimated by the discriminant analysis functions are highly significant.

Table 13: Univariate discriminatory contribution of the clustering variables

	Wilks' Lambda	F
Proactiveness	.240***	63.4
Risk-taking	.357***	36.0
Innovativeness	.520***	18.4

***p<.001

When testing for the discriminatory significance of each active cluster variable, the discriminant function analysis shows that all three variables significantly ($p<.01$) contribute to differentiating between the clusters (Table 13). Proactiveness with a Wilks' lambda value of 0.240 is best able to divide the data into the four-cluster solution, followed by the observations of risk-taking (.357) and innovativeness (.520). The Fischer value also supports the assumption that proactiveness best discriminates between the four clusters

with the highest score of 63.41. However, all the variables alone are able to discriminate significantly.

The discriminant functions prove that there are significant differences between the groups, but for the purposes of confirming the predictive accuracy, the overall fit of the discriminant function analysis has yet to be tested. This can be tested by applying Fisher's linear discriminant function, which is a classification function to the survey data (*Backhaus et al.*, 2006, p.189). Here the values for the three variables are inserted into the discriminant analysis functions and a discriminant Z score (cf. equation of the discriminant function) is calculated for each object of each group. Each object is then classified into the group with the highest classification score. By means of the classification matrix of the discriminant analysis, the predictive accuracy of the original classification can be assessed. However, this is, as *Hair* (2006, p. 296) points out, more valuable for "practical significance rather than statistical significance". With multiple discriminant analysis the percentage of correctly classified cases, also termed hit ratio (*Hair*, 2006, p. 297), reveals how well the discriminant function classifies the objects. Thus, 100% of the objects are correctly classified with a value of Wilks' lambda of 0.072 (Table 14). This assesses a high predictive accuracy of the results.

Table 14: Classification matrix for discriminant function analysis

	Actual	Predicted	Predicted validity
Cluster1	14	14	100 %
Cluster 2	20	20	100 %
Cluster 3	21	21	100 %
Cluster 4	9	9	100 %
Sum	64	64	

Although the results of the discriminant function analysis are satisfactory, literature on discriminant function analysis does warn of an upward bias in predictive accuracy (*Hair*, 2006, p. 290). This sample-effect emerges because both the discriminant functions and the hit rate of reclassification are computed with the same data sample (*Huberty*, 1994). To avoid this effect, cross-validating the results by splitting the sample and testing one half for the fit of the discriminating functions and the other half for predictive accuracy is recommended (*Breckenridge*, 1989). The degree of consistent results is then used as an indicator for validating the cluster solution. However, due to the already comparatively small sample size of 64 cases, this procedure will not

be applied. This is in accordance with suggestions of other studies with comparatively bigger samples (*Brush*, 1995; *McDougall*, 1989; *Punj and Stewart*, 1983). *Hair* (2006, p. 289) even calls for a sample of at least 100 in the total sample before such a procedure can be justified.

6.3 Summary

The survey subjects exhibit to be predominantly male and an average of 40 years of age. Of these respondents 63.6 are in a managing position in the firm, while the others indicated being the actual founders or owners of the businesses. These scores underline a certain level of entrepreneurial orientation and strategic responsibility in the development of the firms. They can further be characterized by a high level of proactiveness (1.9), an above average inclination towards innovativeness (2.1), and a medium degree of risk-orientation (2.4).

With these characteristics in mind, reliability of the subjects' conjoint analysis findings is supported, since certain business administration qualifications, strategic management expertise and a certain degree of professionalism exist. The firms of the Net Economy are on average established in 2001, with an average of 18 employees and 54.5% of the firms generate revenues of up to € 1 million. The business models commerce (24.2%), connection (31.8%) and service (27.3%) are the most pronounced in their representativeness. In all, these scores are indicative of firms in the German Net Economy. The average age at internationalization is 1.8 and the firms display an average degree of internationalization of 17%. Thus, the assumptions that the firms internationalized early are definitely verified, however the degree of internationalization is lower than those of Born Globals (cf. chapter 1). These Net Economy firms abroad do not confirm fast internationalization in terms of revenues.

Concerning the utility models of internationalization propensity, all the high levels of the attributes exhibit positive contributions, the middle levels very slim positive and the low levels almost exactly opposing negative contributions. The attribute *resource commitment* is opposite to the others; a high level has a negative parameter value, while the middle and the low contribute positively. The *digitalization of products and processes* and the *personal network* hold the highest contribution for the internationalization decision, followed by the part

worths of the high levels of *scalability*, *protection* and *international market orientation*.

The relative importance of the attributes for the sample is in the following order from high to low: *International personal network, the digitalization and scalability of products and processes, resource commitment, protection of proprietary rights* and, lastly, *international market orientation*. Thus, the personal-level parameter is perceived as the most vital, followed by firm-level and business related factors. The personal market orientation plays the least important role for the respondents.

Inasmuch as the internationalized firms in the sample most highly preferred the attributes digitalization, scalability and personal network as parameters for making an internationalization decision, their counterparts, non-internationalized firms favored the *international network, scalability and protection of proprietary rights*. Thus it can be assumed that for firms, which have yet to internationalize, the protection of proprietary rights, especially in the Net Economy pose a barrier. Nevertheless, by aggregating the data into one utility model, information of heterogonous preference models is lost and, thus, remains unobserved. Therefore, for gaining more insight into the conjoint measurement data structures further analyses are needed.

On the basis of the three entrepreneurial orientation variables of proactiveness, risk-taking and innovativeness the database could be divided into four groups, which are uneven in size and vary in variance of the means of the variables. However, before this cluster solution can be ultimately accepted, it has yet to be validated. Above all, this is mandatory, because the cluster solution is exploratory in nature and underlies the researcher's subjective evaluation (*Hair*, 2006, p. 618). Furthermore, the cluster solution needs to be validated to prove that this cluster solution is not random. For as *Punj and Stewart* (1983, p. 145) state a "final cluster solution will be reached even when there are no natural groupings in the data". Therefore, validation also ensures that the implications derived from the cluster analysis are significant and conclusions for the researched phenomena can be drawn.

The results of the validity tests show an internal validity of 92%, implying that the data structures within the clusters are, to a high degree, homogenous. The discriminant function analysis shows that there are significant differences between the groups with respect to the classification of the cluster solution.

The results underline that the cluster solution is not random. Furthermore, the contribution of the clustering variables to the groupings is also significant. Proactiveness is the variable, which contributes the most to the division of the cluster solution. In addition, the classification rate of 100% met the test of prediction accuracy, but the possibility of an upward bias of small samples cannot be ruled out. At this stage, the cluster solution can conclusively be accepted, and in the subsequent chapter, a characterization of the cluster solution is presented.

"(A)ll 'international markets' are in fact domestic markets.
What makes them international is the perspective of the [entrepreneur],
not the character of the market."

Keegan, 1984, p. 33.

7 Description of Cluster Solution Findings

The aim of the following chapter is to describe the cluster solution findings. An interpretation of the cluster findings will only take place in the conclusion of this study. First, in chapter 7.1, the clusters will be characterized based on the active cluster variables and the demographic and firm data gained in the post-experiment questionnaire. Second, each cluster will be described and characterized individually based on the internationalization propensity preference model.

7.1 Identification of Cluster Characteristics

Based on the assessment of the internal validity of the cluster solution in the last chapter, the aim of this chapter is to characterize and describe each individual cluster. For this purpose, the cluster members can primarily be characterized by the active cluster variables, i.e. the variables applied in the cluster analysis procedure, especially for creating EO of each group. However, the passive cluster variables, i.e. the other variables included in the post-experiment questionnaire, will also be applied to describe the clusters in the following section. Therefore, to increase the stability and demonstrate the statistical significance of the cluster descriptions, analytical techniques will be applied to the active and passive cluster variables to begin with.

In the following, first the degree to which each active cluster variable is represented in each group using the t-value will be measured. Secondly, the clusters will be described along the lines of the mean values of the active cluster variables. In a third step, each cluster will be described and characterized in more detail based on statistical tests run on the passive cluster variables (in chapter 7.1.1). Finally, in chapter 7.1.2 the preference models for internationalization propensity and the importance of the attributes will be described.

7.1.1 Measurement of the t-value of the Active Cluster Variables

For a better interpretation of the cluster solution t-values can be applied as a test statistic for characterizing cluster objects. Moreover, the t-value of the active cluster variables will lead to insights on the weight of each variable in the groups. The t-value measures the variance between the centroid of a cluster and the total average values of the active cluster variable in relation to the standard deviation of the variable. The t-value is measured by the following equation (*Backhaus et al.*, 2006, p. 546):

$$t = \frac{\overline{X}(J, G) - \overline{X}(J)}{S(J)}$$

where

$\overline{X}(J, G)$ is the average of variable J over all objects in group G, and

$\overline{X}(J)$ is the total average of the variable J in the sample population, and

S (J) is the standard deviation of variable J in the sample population.

Since the cluster analysis is based on metric-scaled data, t-values can be calculated for the three active clustering variables in each of the four clusters. Negative t-values demonstrate that the cluster centroid is lower than the total average of the variable. On the other hand, the average of variables in a cluster with positive t-values is indicative of a higher centroid in the cluster than in the overall sample. Table 15 shows an overview of the calculated t-values. Positive t-values are highlighted.

Table 15: t-Values of active cluster analysis variables

	Proactiveness	Risk-taking	Innovativeness
Cluster 1	-0.297	-0.456	0.707
Cluster 2	1.258	0.840	0.549
Cluster 3	-0.767	-0.880	-0.892
Cluster 4	-0.545	0.897	-0.237

The variable innovativeness has a positive value in cluster 1, while the values of proactiveness and risk-taking are negative, and therefore the centroids are below the overall average in this cluster. Cluster 2 displays

positive t-values in all three variables: Proactiveness (1.258), risk-taking (O.840) and innovativeness (0.549). Hence, the variables are overrepresented in this cluster in comparison to the total sample. The opposite is the case for cluster 3, where all three t-values are negative, thus, implying that the weights of the active cluster variables in cluster 3 are lower than in the overall sample. The t-value in cluster 4 specifies a positive score for the variable risk-taking (0.897), while the variables proactiveness and innovativeness are underrepresented within the cluster.

7.1.2 Description of Active Cluster Variable Weights

Based on these findings, an interpretation of the means of the active clustering variable will take place in the following.

The average clustering variable means, which are displayed in table 16, demonstrate a high significance when testing for cluster membership by applying ANOVA (analysis of variance) techniques. Moreover, the variable proactiveness has the highest F-statistic value of 63.4, followed by risk-taking (36.0) and innovativeness has the lowest value with a score of 18.4. In accordance with the results of the discriminant function analysis, these findings show that proactiveness is the most significant value in comparison to risk-taking and innovativeness. All three variables divide the four groups with a high significance, however. Furthermore, the average mean values in each cluster can be compared to the overall means in the first column. Since the composed three active clustering variables are an indicator for EO, the lower the centroid the stronger the inclination towards the individual's characteristic and hence the higher general level of EO. The main reason for this is that the EO variables are measured on a five-point-Likert scale from 1 to 5: 'I completely agree' to 'I completely disagree'. Thus, the variables with negative t-values in each cluster are highlighted in the table indicating a lower centroid for this variable.

In cluster 1 innovativeness has a centroid of 2.5, the highest across all clusters. The variables proactiveness and risk-taking show below average centroid scores of 1.7 and 2.1 respectively and negative t-values. Thus, a relatively high level of proactiveness and an above average, which scores 2.4 for risk-taking, can be attributed to the members of cluster 1, and at the same time, a below average propensity for innovative behavior. There is a strong weight of all the variables in cluster 2, and, an above average centroid of the

variables (2.8, 3.1 and 2.4 respectively) can be observed. This group is the least proactive in comparison to the other clusters (value of 2.8), only slightly less innovative than cluster 1 and just as risk-averse as cluster 4 with a centroid value of 3.1. For interpretative purposes, these values indicate that the cluster members possess a low degree of the EO. Moreover, the total level of EO is the lowest in this group in comparison to the other clusters.

Table 16: Active cluster variable means

	Overall mean n = 64	Cluster 1 n = 14	Cluster 2 n = 20	Cluster 3 n = 21	Cluster 4 n = 9	F-Statistic
Proactiveness***	1.9	1.7	2.8	1.4	1.5	63.4
Risk-taking***	2.4	2.1	3.1	1.7	3.1	36.0
Innovativeness***	2.0	2.5	2.4	1.5	1.9	18.4

***p <.01 highly significant

Measured on five-point-Likert scale: 1 (I completely agree) to 5 (I completely disagree)

The findings in cluster 3 are opposite to those of cluster 2: All three dimensions of EO are underrepresented, i.e. the mean values are below the mean of the rest of the sample. With values of 1.4, 1.7 and 1.5, the cluster averages are all below the sample's. Nevertheless, although these dimensions are lower in value, the total impact of the three dimensions on the respondents is more pronounced. Therefore, in cluster 3 the EO of the members is highest, because all three dimensions can be strongly attributed to the cluster members. Notably, this group has the highest inclination towards all the variables within the cluster. For example, with a value of 1.5, this group is the most innovative of the four groups. Cluster 4 has a high t-value for risk-taking and a mean of 3.1, which is considerably lower than the overall mean of 2.4. On the other hand, the other two dimensions of EO, proactiveness and innovativeness are less distinct in comparison to the other clusters with values of 1.5 and 1.9 respectively. Thus, the members of this group are more inclined towards proactive and innovative behavior than the other clusters.

In summary, with respect to the characteristics of the clustered survey respondents: Cluster 1 can be attributed to a high level of proactiveness and risk-orientation. However, there is a low level of innovativeness. While cluster 2 is weakly pronounced in all three dimensions, the lowest level of entrepreneurial orientation is observed in this group. Moreover, the exact opposite is the case for cluster 3: With all three dimensions underrepresented in terms of mean value, this group has the highest overall level of

entrepreneurial orientation. In addition, the members of cluster 4 can be characterized as a proactive and innovative, nonetheless rather risk-averse, group of individuals. Thus, in general, and in accordance with the insights from the discriminant function analysis, proactiveness is the variable, which is most highly represented in terms of mean value and, consequently, is the most pronounced characteristic within clusters 1, 3 and 4. Only the members of cluster 2, which have a mean average of 2.8, are the least proactive, as also the t-values indicate. In conclusion, based on these observations, the members of cluster 1 will be characterized as having a medium-level of EO but are risk-takers, the second cluster is characterized as having a low EO, the third, a high degree of EO and the fourth cluster has a medium level of EO but with a focus on innovation.

7.2 Description of the Cluster Characteristics

The description of the variable means allows a first characterization of the four clusters along the lines of the three EO dimensions. However, more information, which can be attributed to the clusters, is contained in the so-called passive cluster variables. These variables are indicators, which were also included in the post-experiment questionnaire, but which were not used to create the clusters. Nevertheless, they also characterize the cluster solution. These are personal variables of the respondent such as age, sex and position within the firm, but also business data such as the year of inception, number of employees, firm sale category in 2005 and the type of business model (Table 17). To further validate the cluster description and interpretation, the passive cluster variables will, in a first step, be tested for statistical significance in the groups (*Malhotra and Birks*, 1999). Moreover, the statistical tests are applied to identify if the differences of the variables between groups are significant.

For this purpose, the ANOVA technique is applied to the metric variables and a contingency analysis using a Chi-square measure tested the nominal variables (*Velde et al.*, 2004, p. 148; *Zöfel*, 2003). While the cluster membership is the dependent variable, the hypothesis states: The mean values of the variable in the different clusters are random. If there is a significant link between the variable and the cluster affiliation then the null hypothesis can be rejected. Thus, the cluster attribution is not random (*Malhotra and Birks*, 1999, p. 453).

The ANOVA test shows that the variable 'year of founding' is very significant ($p < .05$) in relation to the cluster assignment (see appendix table 25). The Chi-square test showed no significant impact of the categorical variables. However, a discriminant analysis, which according to *Backhaus* (2006, p. 552) can also be used for describing the cluster solution by analyzing the discriminating power of the passive cluster variables, resulted in the variable 'business model' significantly differentiating between the clusters. This, therefore, implies that the variable 'business model' is not randomly attributed to the clusters. Moreover, it discriminates between the clusters with a significant probability error of 10%.

Nonetheless, the results of the statistical tests only serve the purpose of supporting the general description of the clusters. Suffice to say, while the active cluster variables are highly significant, the passive cluster variables can thus be used for description and interpretation purposes, aiming to create more insightful knowledge of the entrepreneur's profiles for international decision-making.

Table 17 gives an overview of the sample segments. The categorical variables are displayed using the absolute and relative frequencies and the metric variables contain the mean in each cluster. P_{va} and p_{dis} are the levels of significance of the ANOVA and discriminant function analyses. In the following part, the characteristics of each cluster will be described in detail, based on the insights attained from the active cluster variables in conjunction with the findings of the passive cluster variables.

Cluster 1: Medium Entrepreneurial Orientation- Risk-takers

The respondents of the first cluster with a high level of proactiveness and risk-orientation are predominantly male (92.9%) and on average 38 years old, which is one year below the sample average. 10 (71.4%) of the 14 respondents in cluster 1 are in a managerial or similar executive position. Their firms are the youngest, in comparison to the overall sample (2000) founded on average in the year 2002. Additionally, this group has an average of 13 employees, which is in accordance with the year of founding. This is below the total sample average of 18 employees. The largest part of the group (57.1%) generates up to € 500,000 a year, whereas two firms (14.3%) indicated a turnover above € 9 million. Some firms of this group are also in the € 500.000 to € 1 million, € 1 to € 1.5 million and € 2 to 2.5 million range. One firm did not

specify its sales. Half of the group (seven firms) has a connection business model, while five firms (35.7%) are active with a service for generating revenues. One firm holds a content and another a context business model.

Table 17: Attributes of the passive clustering variables

Attributes	Total n = 64	Cluster 1 n= 14	Cluster 2 N = 20	Cluster 3 n = 21	Cluster 4 n = 9
Entrepreneurial Orientation[1]					
Proactiveness	1.9	1.7	2.8	1.4	1.5
Risk-taking	2.4	2.1	3.1	1.7	3.1
Innovativeness	2.0	2.5	2.4	1.5	1.9
Personal-level variables					
Sex					
female	2 (3.1%)	1 (7.1%)	1 (5%)	-	-
male	62 (96.9%)	13 (92.9%)	19 (95%)	21 (100%)	9 (100%)
Age (mean)	39	38	41	40	37
Position					
Founder, owner, managing director	22 (34.4%)	4 (28.6%)	9 (45%)	5 (23.8%)	4 (44.4%)
Manager, executive position	40 (62.5%)	10 (71.4%)	11 (55%)	15 (71.4%)	4 (44.4%)
Unknown	2 (3.1%)	-	-	1 (4.8%)	1 (11.1%)
Firm-level variables					
Year of establishment (mean) p_{va}**	2001	2002	2000	2001	1999
Employees (mean)	18	13	21	24	5
Firm sales (in millions of €)					
not specified	7 (10.9%)	1 (7.1%)	1 (5%)	5 (23.8%)	-
0 to 0.5	22 (34.3%)	8 (57.1%)	6 (30%)	3 (14.3%)	5 (55.6%)
from 0.5 to 1	13 (20.3%)	1 (7.1%)	3 (15%)	7 (33.3%)	2 (22.2%)
from 1 to 1.5	4 (6.2%)	1 (7.1%)	2 (10%)	-	1 (11.1%)
from 1.5 to 2	6 (9.3%)	-	2 (10%)	3 (14.3%)	1 (11.1%)
from 2 to 2.5	3 (4.6%)	1 (7.1%)	-	2 (9.5%)	-
from 2.5 to 3	2 (3.1%)	-	2 (10%)	-	-
from 3 to 5	-	-	-	-	-
from 5 to 7	-	-	-	-	-
from 7 to 9	1 (1.5%)	-	-	1 (4.8%)	-
above 9	6 (9.3%)	2 (14.3%)	4 (20%)	-	-
Business model p_{dis}*					
Content (e.g. online newspaper)	3 (4.7%)	1 (7.1%)	1 (5%)	1 (4.7%)	-
Commerce (e.g. E-Commerce)	15 (23.4%)	-	6 (30%)	3 (14.2%)	6 (66.6%)
Context (e.g. search engines)	6 (9.4%)	1 (7.1%)	3 (15%)	1 (4.7%)	1 (11.1%)
Connection (e.g. market place)	20 (21.3%)	7 (50%)	6 (30%)	7 (33.3%)	-
Service (e.g. IT-service providers)	18 (28.1%)	5 (35.7%)	3 (15%)	8 (38%)	2 (22.2%)
Not specified	2 (3.1%)	-	1 (5%)	1 (4.7%)	-

* p <.1 significant
** p <.05 very significant
*** p <.01 highly significant
[1]: Measured on five-point-Likert scale: 1 (I completely agree) to 5 (I completely disagree)

Cluster 2: Low Entrepreneurial Orientation

This group of 20 firms, which have a low level of EO in comparison to the total sample, consists of 19 (95%) males and one female (5%). The average age is 41, making this group the oldest cluster. 11 (55%) of the cluster members are in a management or executive position, while 9 (45%) are founders or managing directors. In comparison to cluster 1 and the total sample population, there are more founders/ owners in this group with a low level of EO. The average year of establishment is 2000, one year below the overall mean and two years below the mean of cluster 1. Moreover, the average number of employees (21), is higher than the overall sample average (18) and that of cluster 1 (13). Six businesses (30%) indicated a turnover of up to € 500.000 in 2005, while four firms (20%) have sales above € 9 million. However, the majority of firms have sales in the lower range: Three firms (15%) generate € 0.5 to 1 million, two firms (10%) € 1 to 1.5 million and two firms (10%) € 1.5 to 2 million. Only two firms indicated achieving sales of € 2.5 to 3 million. The distribution of this group corresponds approximately with the distribution of the whole sample. In comparison to cluster 1, there are more firms with sales in the € 1 to 3 million range. Six firms (30%) of the firms in cluster 2 have commerce business models, while yet another 6 firms (30%) have connection business models. Similarly, three firms (15%) have a context business model and three firms (15%) offer a service based on the Net economy. While one firm did not specify, one firm is active in the content field. Thus, a distribution over all the business models can be observed, whereby predominantly connection and commerce revenue generation models prevail. This group differs from the proactive and risk-taking cluster 1 in as much as a weight on the category of E-Commerce business models can be observed.

Cluster 3: High Entrepreneurial Orientation

Cluster 3, the largest cluster in the sample (21 respondents), consists of only male respondents, of which 15 (71.4%) are managers or executives, while five (23.8%) are founders or managing directors. One respondent did not specify his position in the firm. The distributions of the firm positions are identical to cluster 2. While in cluster 2 the managerial position dominates (55%), the founding position is strongly represented in cluster 3 (71.4%). The average age is 40, slightly above the average of 39, thus constituting the second oldest group. The mean year of establishment is 2001 just like the total sample. The

average number of employees is 24, 5 above the total sample average, and the highest score of all the clusters. No firm in this group, unlike the predecessor clusters, generates sales above € 9 million and only one firm has a turnover of € 7 to 9 million. The majority of firms are in the lower sales range: Seven firms (33.3%) in the € 0.5 to 1 million category, three firms (14.3%) generate up to € 500.000 and equally three firms (14.3%) can be found in the € 1.5 to 2 million range. Five firms (23.8%) did not specify their level of firm sales in 2005. In accordance to the other clusters and the overall sample, the lower categories of sales are also strongly represented in cluster 3. Eight firms (38%) have service business models, while seven firms (33.3%) have connection business models. One firm (4.7%) generates revenues with online content, and one firm respectively has a context business model.

Cluster 4: Medium Entrepreneurial Orientation- Innovators

Cluster 4 is the smallest cluster of the sample with 9 members. This group is rather risk-averse in that the dimensions proactiveness and innovativeness are the prominent traits of these individuals. All respondents are male and the average age is 37. Hence, this is the youngest cluster. The distribution of founding and managing positions in this group is even: Four respondents (44.4%) in each category. One respondent did not further specify. The firms in this cluster are the oldest, the average age of establishment being 1999. Surprisingly, these firms have an average of five employees, the lowest number in comparison to the overall average of 18. Contrary to the other groups, the turnovers range from € 0.5 to 2 million. The majority of five firms (55.6%) generate sales of up to € 0.5 million, while two firms indicate sales ranging from € 0.5 to 1 million, one firm from € 1 to 1.5 million and one firm € 1.5 to 2 million. The business model categories also show a clear majority of six firms (66.6%) active in commerce in the Net Economy, while two firms (22.2%) are active in service and one firm has a context business model.

7.3 Description of Internationalization Propensity Preference Models

In the following, the internationalization propensity preference models will be described for each cluster. For this purpose, the relative importance of each attribute for the clusters will be highlighted at the beginning of each chapter. An attribute is relatively important in comparison to others, when the respondent is sensitive to this attribute varying, while all the other attributes remain constant. Subsequently, the utility weights of the attribute levels of the

preference models will be described in more detail. This will lead to insights on the composition of the preference models of the clusters, especially with regards to the coefficient signs of the parameter values. As in chapter 7.2, the preference models in the following exhibitions are based on the zero-centered utility differences of the attribute characteristics.

As with the passive cluster variables, the differentiating power of the part worth and importance values are first tested for statistical significance. ANOVA testing of the part worth utilities and the relative importance of the conjoint analysis attributes shows that the relative importance of the attribute scalability differentiates very significantly between the groups (*p_{va}=0.07). Furthermore, a discriminant function analysis on the conjoint analysis variables shows that the variable a low degree of product and process scalability has a discriminating significance of p_{dis}=0.043. Implying that these variables are significant with regards to their classification in the group, while the other attributes and part worths describe the internationalization propensity character of each group.

7.3.1 Cluster 1: Middle Entrepreneurial Orientation- Risk-takers

This group views the *digitalization of products and processes* as the most important attribute (20.06%) when making an internationalization decision (cf. figure 24). This attribute is followed by the *internationalized personal network* (18.6%) and the *protection of proprietary rights* (18.03%). This group is least sensitive to the *personal international market orientation* (13.10%), while the *degree of resource commitment* (14.31%) and *scalability of products and processes* (15.89%) are in the middle field.

These results are mirrored in the preference models of the group (see figure 24). With the exception of resource commitment, all the high levels of the attribute's contributions positively impact the internationalization decision, while all the low levels have a negative part worth. The benefit weights of the middle level are positive, with the exception of the international personal network (-0.3). The highest utility weight on the middle level is observed for the protection of proprietary rights (7.4). Hence, if the degree of international contacts is not high, the middle and low level are viewed as not beneficial for internationalization. Notably, all variables, with the exception of proprietary rights, have a higher negative weight on a low level than a positive contribution on a high level. Thus, the low characteristic of those attributes is to a higher degree negatively perceived than the high parameter values.

When looking at the part worths of each attribute in detail, this group of proactive risk-takers has a positive utility part worth for high-level *digitalization* of 58.2. The high utility weight is the highest of all parameter scores on this level, implying that this attribute has the highest contribution to the preference model. The negative utility weight (-59.4) signifies a negative influence on the internationalization decision if the products and processes had a low degree of digitalization. A medium level would only minimally influence the group members with a part worth of 1.3. The *scalability of products and processes* also has a positive impact on the internationalization decision with a positive contribution of 45.0 on a high level and a score of –45.7 on the low level. In addition, the medium level has an almost insignificant part worth of 0.7. The contributions to the internationalization decision of the high, medium and low levels of the *protection of proprietary rights* in the foreign country for this group are 47.9, 7.4 and –55.4 respectively. Again, the part worth of the high attribute level is lower in an absolute sense in comparison to the negative part worth. However, the difference between the low and the high level is larger in comparison to the preceding two attributes. The signs of the part worths of the attribute *resource commitment* are opposite to the other attributes. A high level of resource commitment has a negative part worth of –42.8, a medium level a positive part worth of 1.0 and a low level a positive part worth of 41.8. Notably, the respondents are almost insensitive to a medium degree of resource commitment on the medium level.

The parameter *international personal network* has a higher impact on the respondents. The positive contribution of a high level of an international personal network is 55.3, while the medium level has a negative contribution of –0.3 and a low level, almost exactly contrary to the positive level, is –55. Since the utility part worth of the internationalization propensity on a medium level exhibits a negative coefficient sign, a negative weight on the internationalization propensity of this group can be attributed. The *personal international market orientation* has a positive part worth for a high level of personal international market orientation of 36.7, for a medium level of 0.6 and for a low level of –37.3. The utility weight of this group on a high level has a positive impact to a slightly lower degree than the low characteristic. The medium level is the lowest among all the other attributes for this proactive, risk-taking group. What is more, the part worths of this parameter are the

lowest, implying that the contribution to the overall benefit of the international market orientation is the lowest for internationalization propensity.

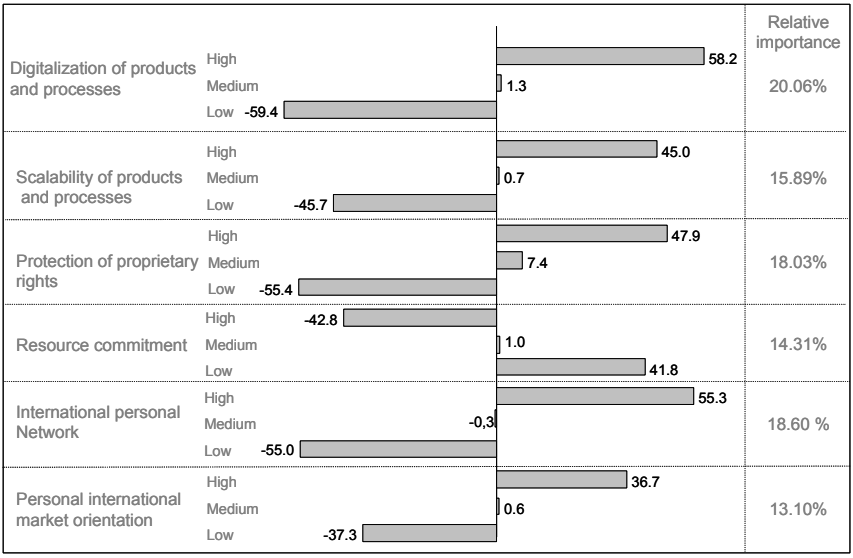

Figure 24: Cluster 1 part worths and relative importance of attributes

7.3.2 Cluster 2: Low Entrepreneurial Orientation

The members of cluster 2, which have a low level of proactiveness, risk-orientation and innovativeness, perceive the *scalability of the products and processes* (19.46%) as the most important attribute (Figure 25). What is more, the *digitalization of products and processes*, also a Net Economy attribute, is perceived as the second most important (18.11%) attribute, followed by the *degree of resource commitment* (17.62%), the *personal international market orientation* (15.75%) and the *internationalized personal network* (15.14%). The *protection of proprietary* rights is viewed as the least important (13.92%). What appears to be significant for this group is the low difference between the attributes: International personal network (15.14%) and personal international market orientation (15.75%) seem to be almost equally important to the subjects and the differences between the three most important attributes scalability (19.46%), digitalization (18.11%) and resource commitment (17.62%) are not even 2%. This means that the respondents would react equally sensitive with regards to their internationalization decision if one of these attributes were to change.

As in the previous cluster, the coefficients of the utility weights of a high level are positive, with the exception of resource commitment, while the low level coefficients are negative (Figure 25). All the middle-level attributes have a positive weight on the preference model. The highest is the *protection of proprietary rights* (11.7). The lowest contribution value in the middle level is the *scalability of products and processes*, which is perceived as minimally favorable (0.8). Thus, the variance in the middle level is higher for this attribute than in cluster 1, although all the negative contributions on a low level are higher (in an absolute sense) with the exception of *resource commitment* than the high levels. Thus, this group prefers these low parameters to a lesser degree than the positive part worths, indicating an even more improbable internationalization decision if these factor characteristics prevail.

With regards to the utility weights of each attribute level, a high degree of *digitalization* has a positive part worth of 51.8, a low level of digitalization has a negative contribution (–53.9) and the mid level is 2.1. The high level is the second highest contribution in the preference model, following the *scalability of products and processes*. Here, the positive contribution of a high level is 57.8, for the middle 0.8. The low level has a negative parameter weight of -58.6. This is the highest impact factor for the internationalization propensity of this segment, both in the high and low levels, although, the medium level has the lowest part worth value of all the attributes with 0.8.

For the attribute *protection of proprietary rights* the high-level has a positive contribution of 33.5, the middle level of 11.7, while the low level has a negative benefit value of –45.2. Thus, if there are few possibilities of protection the business model and idea, this is perceived as a higher impediment to the internationalization decision. Nevertheless, the high level is the lowest positive and the low level the highest negative contribution of the preference model. In addition, a high degree of *resource commitment* has a negative benefit contribution (-55.3) rather than a low degree (50.1). These part worths show, however, that the weight of a high level of resource commitment is higher in the preference model. A medium level has a positive contribution of 5.3. Thus, the medium and low levels of resource commitment are the most favorable for the internationalization decision. The attribute *internationalized personal network* has a positive part worth contribution to the internationalization decision on a high (40.1) and medium (8.0) level, while a negative contribution (–48.1) is observed on the low level. The gap between the high and the low

part worths is the highest for this attribute, which is indicative of the sensitivity of the individuals if the levels were to vary. This is similar for the parameter *personal international market orientation*, which has a positive contribution for the high (45.0) and medium level (1.2), while the low level has a negative sign for the parameter (-46.2).

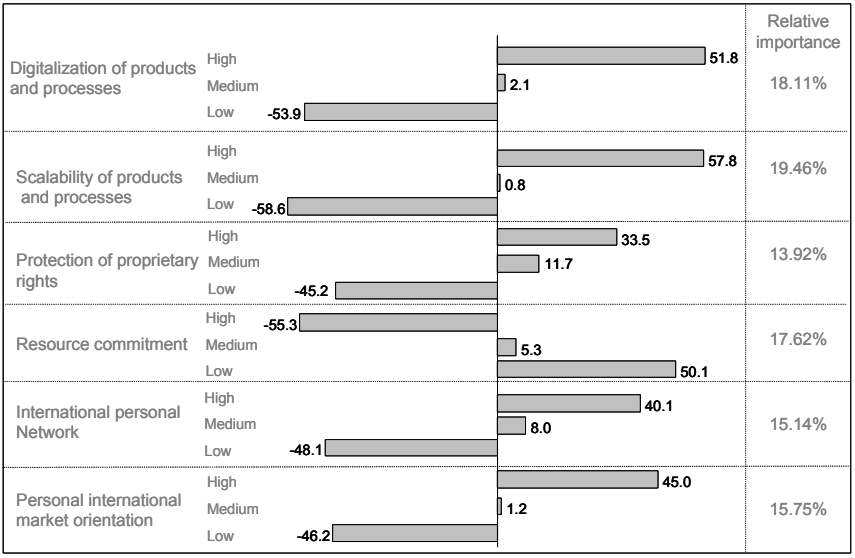

Figure 25: Cluster 2 part worths and relative importance of attributes

7.3.3 Cluster 3: High Entrepreneurial Orientation

This group with a high entrepreneurial orientation perceives the *international personal network* as the most important attribute favorable for an internationalization decision (20.04%) (see figure 26). This is the first cluster with the most important attribute on the personal level. The second most important parameter for this group is the *resource commitment* (17.08%). Almost equally important hereto are the *protection of proprietary rights* (16.82%) and the *digitalization of products and processes* (16.67%). By way of comparison, the attributes *personal international market orientation* (14.97%) and *scalability of products and processes* (14.46%) are the least important to this group. These findings imply that the group is most sensitive to the parameter of having an internationalized personal network. The part worths of this cluster with high EO are, similar to the low EO cluster, all positive on a high level and all negative on the low level. It is the only group to have a

negative coefficient sign for the middle level of digitalization (-2.6). The highest part worth is shown by the high level of international personal network (57.3), which simultaneously displays the lowest benefit contribution on the same parameter on the low level (-62.3). This is the lowest part worth observed, indicating that these individuals with a high EO are especially impeded by this characteristic.

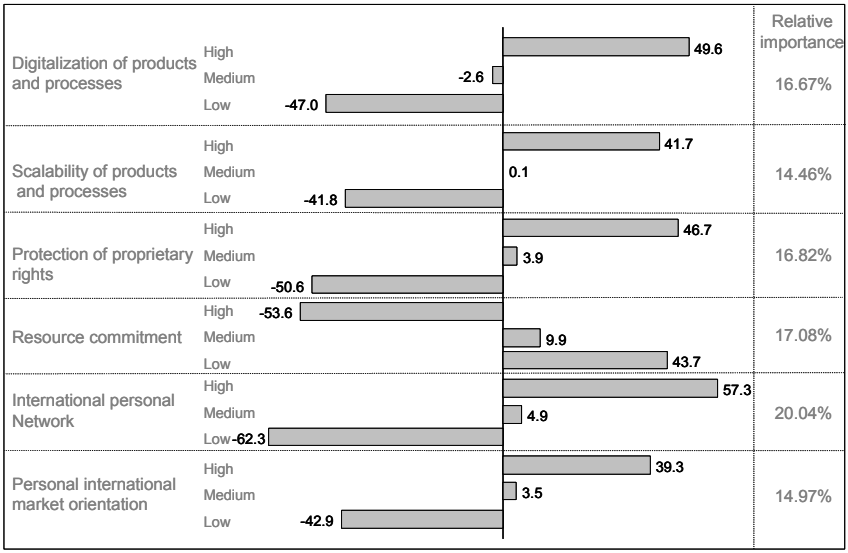

Figure 26: Cluster 3 part worths and relative importance of attributes

When taking a closer look at the utility weights, the preference contribution of a *high level of digitalization* has a positive coefficient sign (49.6), while, contrary to the first two groups, the middle and low preference contributions are negative. Thus, solely a high level of digitalization has a positive contribution to the preference for internationalizing. For the attribute *scalability of products and processes*, the high level has a positive contribution (41.7), the middle level is close to indifferent (0.1) and the low level has a high negative contribution of (-41.8). A high level of *protection of proprietary rights* has a positive contribution coefficient (46.7), just like the middle level (3.9), while the low level has a negative part worth of –50.06. The preference for the parameter of *resource commitment* is negative (-53.6) for a high level, while a medium (4.9) and low (43.7) level are favorable. An *internationalized personal network* on a high level is most preferred by a utility contribution of 57.3, the

highest for this cluster, while a low level is perceived as the highest impediment with a negative contribution of –62.3. The middle level of this parameter contributes positively to the preference model (4.9). In addition, the parameter *personal international market orientation* also positively contributes to internationalization propensity on the high (39.3) and medium (3.5) level, but negatively if the level of this attribute is low (-42.9).

7.3.4 Cluster 4: Middle Entrepreneurial Orientation- Innovators

The differences in importance are the highest for this group of innovators (see figure 27): The highest importance is noted for the attributes *digitalization of products and processes* (17.59%) and *personal market orientation* (17.07%). Just like for the first cluster, the digitalization of products and processes is perceived as the most important attribute. However, this is the first group to specify the parameter of personal market orientation, i.e. an openness towards other cultures and markets, as highly important. There may be a conjunction to the risk-orientation of this group: Since the group is rather risk-averse, the importance of having an international market orientation increases the internationalization propensity. The *commitment of resources* abroad is the third most important attribute for this group (16.78%), while the *scalability of the business model* (16.43%) and the *protection of proprietary rights* (16.29%) are almost equally important. Notably, the least important attribute, in contrast to the high EO group is the *personal international network* (15.83%). Presumably, for this group the personal network does not play an important role in internationalization endeavors. Therefore, if this factor were to vary, it would not have an impact on this group, contrary to digitalization.

With regards to the preference models of the proactive innovators, all high characteristic part worths, excluding resource commitment, are positive, while all low levels have negative coefficient signs. The variance of the high-level part worths is, contrary to the other clusters, very low, the highest value being 50.8 and the lowest value 41.4. In contrast, the variance of the middle level part worths is high between 9.2 (personal international market orientation) and –6.3 (protection of proprietary rights).

Considering the part worths in more detail, a high level of *digitalization* has a positive contribution of 48.6. In addition, while a low level has a negative parameter sign (-49.5) the middle characteristic is an almost insignificant weight of 0.9 on internationalization propensity. The utility weights are similar

for the attribute *scalability of products and processes*: The high (46.8) and medium (4.3) levels have a positive contribution to the preference model, while the low contribution is negative (-44.4). The part worth for a high attribute level of the *protection of proprietary* rights is the highest of all part worths (50.8), while the medium and low levels have negative parameter signs (-6.3 and –44.4).

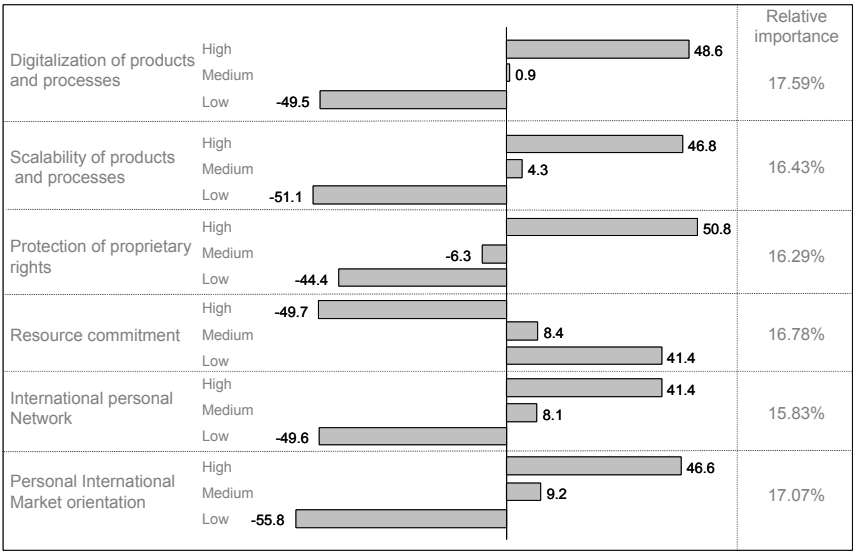

Figure 27: Cluster 4 part worths and relative attribute importance

This is the only group with a negative contribution for the medium level of protection of proprietary rights. Hence, this group, of which 67% are engaged in E-commerce business models, has a high preference contribution to a high level of business model protection. What is more, a high degree of *resource commitment* has a negative coefficient sign (-49.7), while the medium (8.4) and low (41.4) levels of resource commitment have a positive utility weight in the preference model. Notably, the utility part worth of a highly *internationalized network* and a low level of resource commitment are identical (41.1). While an internationalized network is positively preferred on the medium level (8.1), there is a negative (-49.6) contribution for a low *internationalized personal network* (-49.6). Furthermore, the attribute *personal international market orientation* has a positive utility part worth for the high degree and the highest positive part worth for the middle level (9.2). Equally,

this parameter has the highest negative part worth for a low personal international market orientation (-55.8).

7.4 Summary

This chapter describes the importance of attributes and preference profiles for internationalization propensity. All the clusters have positive contributions for the high level characteristics, with the exception of resource commitment, which is negatively perceived by all cluster members on a high level. The exact opposite is true of the low levels. While negative contributions can be observed for all low attribute characteristics, low resource commitment in the foreign country is viewed as highly favorable, even to the members of the risk-taking cluster 1 and the individuals with high EO. The middle level characteristics generally, with few exceptions, have positive coefficient signs. While cluster 2 subjects view all the middle characteristics as favorable to making an internationalization decision, the subjects of cluster 1 perceive a medium internationalized personal network as unfavorable (-0.3) and the subjects of cluster 4 find a medium protection of their tacit knowledge as unfavorable (-6.3).

Regarding the relative importance of the attributes for the respondents, the clusters differ in their preferences. These differences are displayed in figure 28. Cluster 1 and cluster 4 jointly regard the digitalization of the products and processes. In addition, cluster 3 and cluster 1 exhibit a high importance for the personal network, a personal-level factor, which is also the case for cluster 4, where the personal international market orientation is viewed as important. In contrast cluster 1, 2 and 3 perceive the personal market orientation as not being important in comparison to the other factors. In addition, the importance of the attribute scalability is distinctly high in comparison to the other clusters in cluster 2. On the basis of these differences, some conclusions about the EO of the groups and the importance of the attributes can be drawn: A high importance of the characteristics of the international personal network can be observed for the risk-prone groups (cluster 1 and cluster 3). Cluster 2, the group with low EO, exhibits the least relative importance for the protection of proprietary rights, which can be attributed to the fact that this is, together with cluster 4, the oldest group of firms. It can be, thus, assumed that the protection of the business model was not as important in the year 2000 as it is today. The

findings described in this chapter will be discussed in the following chapter in more detail.

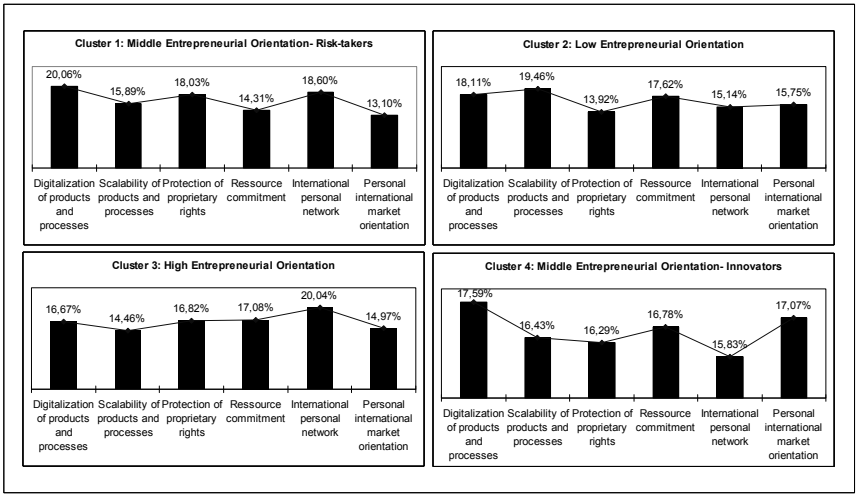

Figure 28: Relative importance of attributes across clusters

„Nevertheless, it is the scientific method (...) that has often been responsible for increasing human understanding of the natural and social world. Despite its flaws, it remains the best means of delivering us from the errors of intuitive beliefs and intuitive methods for testing those beliefs."

Cooper, 1998, p. 184 referring to *Ross and Lepper*, 1980, p. 33.

8 Conclusion

In the introduction of this study, E-Ventures firms and their internationalization trajectories are described. These firms are young and small in terms of employees and, therefore, flexible, active, competitive in market niches and have business models based on digitalized data networks. What is more, these firms are lead by managers, who individually or in small teams determine the strategic development of the firms. Also due to the nature of the Net Economy, these decision-makers are believed to exhibit an innate propensity to engage in a significant level of international business activities at or near inception. This is especially due to the 'death of distance' between the entrepreneurial firm and the universally accessible client in the Net Economy. In consequence, the original research question of this thesis is:

What is the internationalization propensity of firms in the Net Economy?

This research question contains two aspects:

(a) What are the basic parameters of the first internationalization decision of a firm in the Net Economy?

(b) What are the influencing factors of the internationalization propensity of entrepreneurs in the Net Economy?

With these research questions in mind, three main research aims were developed and approached in the course of this study. Derived from the introductory remarks they can now be refined as follows:

Research aim 1: Identify the basic parameters of an internationalization decision of a firm in the Net Economy based on theoretical foundations.

Research aim 2: Empirically test the parameters by means of Conjoint Analysis measurement in order to assess their utility for making an internationalization decision in the Net Economy.

Research aim 3: On the basis of the survey data develop characteristic entrepreneurial profiles and analyze their utility models of internationalization propensity.

The following chapter focuses on the question of how the findings contribute to answering the research question. Moreover, how well the purpose of this study was met and if and how the data has added to knowledge of internationalization propensity is the central theme of this chapter. The method shows and tests the strength of effects between the variables in the hypotheses. The conjoint analysis resulted in different strength of relations for different types of entrepreneurs. These effects and the resulted propositions for each group will be described in more detail in the following chapter. However, this concluding chapter will begin by a coalescence and discussion of the key findings of this study (chapter 8.1). In particular, adhering to the third research aim, the internationalization propensity utility models will be discussed, first, in general, and then for the different entrepreneurial profiles developed in this study. Subsequently, the limitations of this study will be evaluated in chapter 8.2 before theoretical and practical implications will be derived from the results in chapter 8.3 and 8.4. The study will be concluded with directions for future research in chapter 8.5 and a summary (chapter 8.6).

8.1 Synthesis and Discussion of Key Findings

The aim of this chapter is to elicit what the findings of this study reveal pertaining to the research question. Furthermore, what conclusions may be made based on the thesis results? Derived from theoretical considerations, the framework of antecedents for internationalization decision-making, six main antecedent factors for the internationalization decision were eminent. Internationalization propensity of decision-makers in the Net Economy is thus composed of

(a) the *digitalization* and the *scalability* of products and processes, which are factors adhering to the Net Economy and derived from the ICT literature (Hypothesis 1 and 2),

(b) the prospective of *protecting the proprietary rights* and *degree of resource commitment* upon foreign market entry, which are firm-level factors from the IB and strategic management literature streams (Hypothesis 3 and 4), and

(c) the disposition of an *internationalized personal network* and *international market orientation*, two personal-level factors of the decision-maker from the IE literature (Hypothesis 5 and 6).

First, the key findings of the total sample and, second, of each individual group of entrepreneurs will be recapitulated in this chapter.

8.1.1 General Key Findings

The utility models of the parameters reveal, which characteristics (high, medium, low) of the presented attributes the entrepreneurs prefer in an internationalization decision-making situation. The sample demonstrates positive contributions for the high attribute levels with the exception of resource commitment. The contributions of the middle levels of all attributes, although containing of positive coefficient signs, are low. Thus, their weight in the utility models are insignificant in comparison to the high and low levels. Low resource commitment abroad is perceived as favorable for making an internationalization decision. A highly internationalized personal network has the highest part worth. Additionally, the internationalized personal network exhibits the lowest contribution for the sample population, which consequently, indicates that the personal network is both a motor and an obstacle for firm internationalization. The international market orientation of the founder is least preferred on a high level and most preferred on a low level by the subjects. On these grounds, the subjects seem to be the least influenced by this attribute: If an international market affinity is given, the contribution to internationalization propensity is comparatively low. If the characteristic is not given, the negative part worth is comparatively high. Hence, the respondents are the least perturbed in their decisions by the attribute international market orientation.

Despite the different contribution signs, the part worths of each attribute characteristic lie in a close range. Moreover, the variance of the part worths of each attribute level is not considerably high (a total of 21.8 on the high, 22.1 on the low and 6.7 on the medium level). Therefore, the attributes do not seem to polarize the preferences of the subjects, implying that although differences can be observed, all the attribute characteristics can be considered both positively or negatively favorable in a similar manner.

Concerning the relative importance of the attributes, the high degree of *internationality of the personal network*, followed by the *digitalization* and

scalability of products and processes are observed to be the most important to the sample. *Resource commitment, protection of proprietary rights or international market orientation* are considered to be least important in comparison to the other parameters. Thus, the personal component of having an *international network*, which increases the trust in its own capabilities but also supports entering uncertain terrain, is the most salient. Furthermore, this attribute also holds the promise of gaining other qualitative contacts through these personal contacts and, in consequence, to be able to enter the foreign market quickly. The Net Economy factors such as *digitalization* and *scalability* are secondary to this attribute, but also considered highly important. This is also mirrored in the expert interviews. In summary, the characteristics of the business model such as *digitalization* and *scalability of products and processes* foster internationalization propensity by suggesting a fast and effortless foreign market entry even when the *personal international market orientation* of the entrepreneur is low.

By way of comparing between internationalized and non-internationalized firms, the parameters of the *personal network*, *protection of proprietary rights* and *international market orientation* are more important to domestic firms. Internationalized Net Economy firms hold the *digitalization* and *scalability of products and processes*, and *resource commitment* to be the most important. Notably, from the differences in priorities, it remains to be speculated if the non-internationalized firms prefer the *personal network, protection and international market orientation* because these factors are perceived to provide the greatest support for first market entry attempts. In the same instance, firms, which have already attempted international market entry view the Net Economy factors as decisive, i.e. factors which permit an efficient und effective foreign market entry in terms of cost, time and quality for the customer and the firm. Therefore, derivations for the internationalization propensity of the founders can be made as follows: The internationalization propensity between the two groups differs in that the non-internationalized group perceives non-firm factors as facilitators for the international market entry decision, while for the internationalized firms firm-level factors are the most important instruments for international market entry. In sum, it may be assumed that the non-internationalized entrepreneurs, due to a lack of experience in internationalization activities, underestimate the importance of the firm and Net Economy factors for initiating internationalization activities. Moreover, perhaps

the internationalized firms ranked these firm-level factors to be so important because of the experience they have. As a consequence, the suspicion arises that a non-internationalized firm with a highly digitalized and scalable business model, not aware of the weight these factors have for internationalization, may not internationalize because it perceives the personal factors as insurmountable impediments. Thus, due to a false valuation, the full development of the products and processes may be impeded.

In sum, the six factors derived from the literature all contribute to internationalization propensity, moreover, on a high level with the exception of resource commitment. The middle levels of the attributes contribute insignificantly while the low levels contribute negatively. This explorative data analysis approach has shown that a high degree of *digitalization of the products and processes* positively contributes to the internationalization propensity of E-Ventures (Hypothesis 1 confirmed). In addition, a high degree of *scalability of the products and processes* (Hypothesis 2 confirmed), a high degree of *protection of proprietary rights* in the foreign country (Hypothesis 3 confirmed), just like a low degree of resource commitment contributes positively to the internationalization propensity (Hypothesis 4), a highly *internationalized personal network* contributes positively to the internationalization propensity of E-Venture entrepreneurs (Hypothesis 5), and a highly *internationalized personal network* contributes positively to the internationalization propensity of E-Venture entrepreneurs (Hypothesis 6). In conclusion the hypotheses have been confirmed.

What the data of the firms in the sample holds is support for the notion that firms internationalize early but their revenue growth abroad as a result of this internationalization is moderate. While the firms were founded, on average, in the year 2001, the average percentage of revenues abroad is 17%. However, the firms in the sample do confirm to be fast internationalizers, expanding, on average, within 1.8 years of inception. Thus, it can be assumed that the internationalization propensity of the founders is to a certain degree given upon inception, if a certain time horizon for planning is assumed. Either the internationalization propensity is present at founding or it develops very quickly after inception. The exact triggers for this remain to be studied and analyzed: Be it the first international customer order (market pull), internal growth

pressure from or from the financers (market push) (*Knight*, 1997). Nonetheless, 67% of the firms in the sample have internationalized.

As a consequence, it is questionable if the sampled firms in the German Net Economy can per definition be referred to as Born Globals, although they do possess some of the key characteristics: According to the Born Global literature stream, young firms internationalize quickly in the dimensions of speed, scale and scope (*McDougall and Oviatt*, 1996). Remarkably, the Net Economy internationalizes quickly, however the proportion of international to domestic sales is limited at 17% and the scope of the internationalization activities is unknown. Born Global firms can be attributed with generating up to 75% of sales within the first 3 years of existence (*Coviello and McAuley*, 1999). Thus, Net Economy firms internationalize fast in terms of speed, but the findings do not support a fast internationalization in terms of scale. Conservative growth in terms of turnover is in fact observed.

Although the IE stream of literature purports Born Globals to have an innate international orientation from the beginning and the results of this study support this assumption, due to the characteristics of the Net Economy industry, a global orientation may be self-evident, with the exception of firms, which are not restricted to internationalize based on their business model, e.g. the state lottery or pharmaceutical companies. However, the results of the study also emphasized that E-Ventures are not per se Born Global judging by the pace of their expansion and the uniqueness of the resources, since business knowledge in the Net Economy globally available. More so, the competition is based on speed and first-mover advantages (*Kollmann*, 2006a, p. 268). Furthermore, the findings reveal that that the entrepreneurial start-ups have an average number of 18 employees and the average year of establishment is 2001. What is more, the majority of the firms (55%) in the sample generate revenues of up to € 1 million, 23% between € 1 to 3 million, and 12% above € 7 million. All the business model categories are represented in the sample: Service (27.3%), commerce (24.2%) and connection (31.8%) are more pronounced, while context (9.1%) and content (4.5%) have a lower weight.

8.1.2 Key Findings of the Internationalization Propensity Models

Pertaining to the third research aim of this study, the development of entrepreneurial manager profiles is required in order to differentiate between

different utility models of internationalization propensity. The data was classified into four groups, in which the entrepreneurs have similar degrees of EO. Because the degree of EO is believed to have an impact on decision-making and the internationalization behavior, the utility models of these groups are individually highlighted. Four types of managers with different levels of EO were distinguished. In addition, personal- and firm-level variables provided information for further narrowing the group typologies down.

Group 1

The first group of entrepreneurs with a medium level of EO is characterized as proactive-risk-takers; the second group consists of individuals with a low degree of EO, the third high EO and in the fourth group, where the characteristics of proactiveness and risk-taking are salient, are individuals with a medium EO.

The group's utility model for internationalization propensity consists of the highest part worth for a high level of *digitalization*, followed by a high degree of the *personal network*, *protection of proprietary rights*, *scalability of products and processe*s and *personal international market orientation*. The low degrees have negative contributions, the lowest being the *digitalization of products and processes*, followed by the *protection of proprietary rights*, the *personal international network*, the *scalability of products and processes* and the *personal market orientation*. The attribute resource commitment is almost equal with a negative coefficient sign for the high level of *resource commitment* and a positive contribution for a low degree. The highest impact of a middle level can be observed of *protection of proprietary rights*, while the medium level of the attribute *international personal network* reveals a negative part worth.

These results are mirrored in the relative importance of the attributes to this group. The *digitalization of products and processes* is the most important, while the other factors are secondary in the following order: The *personal network, the protection of proprietary rights, the scalability of products* and processes and the least important to this group are *resource commitment* and *personal market orientation*.

Furthermore, with respect to the key data findings, the first group consists of 14 subjects, who are predominantly in managerial positions (71.4%) and on average 38 years old. This is one of the youngest groups of entrepreneurs.

Also the firms are the youngest in the sample, established on average in 2002, and have on average 13 employees. While 63% of the firms generate revenues below € 1 million, two firms (14.3%) generate revenues of up to € 9 million. The businesses clearly focus on the connection (50%) and service (35.7%) models for generating revenues.

In conclusion, in this cluster- compared to the total sample and in comparison to the other attributes- the parameters *digitalization* and *international personal network* are pronounced in their importance. Additionally, the *international market orientation* is evaluated as being least important to the respondents. In consequence, these entrepreneurs are most favorable for having an *internationalized network* on a high degree, because this group will take action and make decisions regardless of the *personal market orientation*. While a domestic network does not positively benefit the decision, the impact of a *highly internationalized network* is slightly increased. This could be seen in relation to the risk-propensity and proactiveness of these entrepreneurs, where empathy towards other cultures and markets is not considered as an impediment to making the market-entry decision.

In addition, while the entrepreneurs are proactive and risk-taking and the main foci of business models are on connection and service, a link between the entrepreneurs' importance for the personal network attribute and the business models is suggested. While the connection and service business model both rely heavily on a critical mass of users in order to achieve sustainable growth, achieving a certain level of market diffusion depends to a large degree also on the quality of the personal contacts. Furthermore, the managers' risk-propensity and proactiveness in conjunction to a content business model is more evident than for the service business models, where the risk aspect is not so pronounced. The trait of proactiveness is called for in both manners of penetrating a market.

Notably, the attribute *resource-commitment* is not considered as highly important implying that the firms in this cluster would internationalize regardless of the attribute. This parameter does not have a high impact on the internationalization propensity of this group, probably due to the proactive and risk-taking characteristics of the individuals, who view their network as one of the main facilitators of internationalization propensity. However, this is only the

case, if the business model of digitalization and protection of the products and processes is given.

Group 2

The second group consists of individuals with a low EO and which have comparatively low levels of risk-orientation, proactiveness and innovativeness. The utility models of internationalization propensity of these entrepreneurs hold the highest positive part worth on a high level for the attribute of *scalability of products and processes*, followed by the *digitalization of products and processes*, the *personal international market orientation* and *international personal network*. In particular, a high degree of *protection of proprietary rights* holds the lowest positive contribution.

In addition, the lowest negative contribution is posed by the *scalability of products and processes*, followed by the *digitalization* hereof, *internationality of the network* and the *personal international market* orientation. The attribute characteristic of a low degree of *resource commitment* of this group is higher than that of cluster 1 and the total sample. This underlines the notion that the degree of *resource commitment* has a stronger effect on the internationalization decision in comparison to the other groups. Conclusively, these entrepreneurs are highly influenced by the amount of resources necessary for foreign market entry. On the contrary, a medium level of *resource commitment* has a positive part worth and the high level part worth a strong negative contribution. Hence, the likelihood of internationalization is higher if the *commitment of resources* in the foreign country can be kept low. This conclusion is in line with the risk-averse personality trait of the entrepreneurs.

The relative importance of the attributes supports these findings. The *scalability of products and processes* is perceived as the most important in comparison to the *digitalization of products and processes*, *resource commitment*, *personal international market orientation*, *personal international network*, and, lastly, the *protection of proprietary rights*.

This group of managers is the oldest in terms of age (41) and is equally constituted by the founding (45%) and managing (55%) positions. It is also the oldest group of firms, founded on average in 2000. With respect to the low degree of EO a link between the high age of the group and the firms may be drawn: On the one hand, this low degree of EO can be attributed to the

advanced age of the firms and the respondents. This again may signify that the EO was not always low but may vary over time with different growth and experiences of the decision-makers. This cyclic development of EO can be assumed provided that the respondents are the founders themselves or were involved in the company upon inception. On the other hand, these firms are 'survivors' of the Net Economy market downturn in 2001, which may signify that the firms survived the market collapse especially due to the low EO of the founders. This may be an attribute to conservative and risk-averse entrepreneurial decision-making.

Furthermore, the sales are concentrated on the range of up to € 2 million and the foci of the business models are on commerce and market place models. In general, these findings hold several notable conjunctions: Both the part worths and the relative importance of the attributes mirror the pronounced position of the Net Economy attributes, scalability and digitalization. Surprisingly, these links were not expected of entrepreneurs with a low degree of EO, rather of entrepreneurs with a high degree of EO, who can then exploit these Net Economy traits for a rapid internationalization. Thus, this group can be attributed to a certain firm-level focus, when considering internationalization plans. Moreover, this is also confirmed by this group's importance of the amount of resources committed abroad. What is most salient for this group of EO however, is the low degree of importance for the protection of property rights. In consequence, the parameter of protection does not impact the internationalization propensity of this low EO group in comparison to the other clusters. Equally, the personal level factors do not exert much influence on this group: international market orientation and international personal network are perceived as subordinated. In sum, these individuals are unperturbed by personal factors, however, much more so by 'hard' firm level and business-model parameters.

Group 3

Opposed to the second group of entrepreneurs with a low EO are the entrepreneurs of the third group with a high EO. The utility models of internationalization propensity of this group show the highest positive contribution for the attribute of the *personal international network*. The *digitalization of products and processes* holds the second highest part worth on the high level, followed by a *high degree of business model protection*, the

business model scalability and the *personal international market orientation*. *Resource commitment*, on the other hand, has a positive contribution on a low level, and a negative contribution on the high level. This negative part worth is the second lowest of all the other negative contributions. Thus, this group is more sensitive to resource commitment on a high degree than on a low degree. This finding in connection to a high degree of EO was expected and assumed.

Consequently, the internationalization propensity of these entrepreneurs is most highly influenced by the personal-level attribute of having a network or not having a network. The score is the highest for all groups of this attribute characteristic and, similarly, the part-benefit of the low attribute characteristic (62.3) and the medium level (4.9.) are the lowest of all groups.

In summary, the high level of the personal-level attribute, an internationalized network, exhibits the highest influence for the utility model, followed by the firm-level factors high digitalization and protection. This high contribution for the protection of the business model is surprising since it would not have been expected in connection with the high level of EO of the individuals. With respect to the other positive contributions, secondary to the contribution of the personal network, are the Net Economy factors. This supports the notion that this group makes decisions based on the business models and their possibilities when internationalizing.

Moreover, when looking at the low levels of the attribute characteristics: the lowest contribution, apart from the network characteristics and resource commitment, can be observed for a low degree of *protection of property rights*, followed by *digitalization*, *personal market orientation* and *scalability*. In consequence, apart from not having an internationalized network, this group views firm and Net Economy factors as the greatest impediments to developing the internationalization propensity. On the medium level, *resource commitment* has the highest contribution and the medium level of *digitalization* has a negative coefficient sign. All other medium levels remain close to insignificant in their contributions: *Scalability*, *proprietary rights protection*, *network*, and *personal market orientation*.

With respect to the relative importance of these entrepreneurial managers the *international network* is perceived as the most important, along with the parameters *resource commitment*, *protection of proprietary rights*,

digitalization, and *market orientation*, which are subordinate. The least important for the entrepreneurs is the Net Economy factor *scalability*. Hence, while the personal network is the most pronounced, the firm and Net Economy factors, with the exception of scalability, are almost equal in importance. The rating of the Net Economy factor scalability can be perceived as surprising, since this attribute does play an important role for the service business model. However, when considering the connection business model attributed to marketplaces for example, the scalability of the products and processes is not decisive, since the multiplication does not occur in terms of reproduction but in terms of increasing the user number (Kollmann, 2000, 2001). Therefore, this relation, on the other hand, is understandable. The low importance of the factor of market orientation draws a picture of the entrepreneur with a high level of EO, who does account for his personal empathy of markets and customers abroad. This relationship was expected.

This group, consisting of 21 members, is the largest in the clusters. Managers, on an average of 40 years of age, are strongly represented in this group (71.4%). While the average year of inception is 2001, equal to the total sample average, the firms in this group have the highest number of employees (24). In addition, more than in the other clusters, the turnover of last year is predominantly below € 1 million. Consequently, although the entrepreneurs have a high-risk propensity, the firms have survived the market downturn and show a sober, almost restricted, growth rate with regards to the turnover. In this case, it can be assumed, that there is a connection between the EO of the entrepreneurs and the size of the firms in terms of the number of employees. It also remains unknown how many of the firms in this group have internationalized and it may also be assumed that there is a link between a high degree of EO and internationalization endeavors. The personal resources may perhaps be available. Furthermore, the main business models attributed to this group are services (38%), connection (33%), and marginally commerce business models (14%). This distribution is surprising since a connection between a high EO and the business models content, commerce and connection was expected as these endeavors encompass higher risks and innovativeness and proactiveness for growth and development. Nonetheless, the connection, i.e. market place, business models are highly represented, which is implicit.

In sum, the firm and Net Economy factors are subordinate to the network attribute. However, this group regards resource commitment as an important constraint for internationalization, especially in comparison to the other groups. This perhaps indicates a link between proactiveness and resource commitment. The attribute scalability does not play an important role for this group, since it is assumed that it does not pertain to the business models.

Group 4

A differentiated picture of internationalization propensity can be gained when analyzing the fourth group.

The internationalization propensity of the entrepreneurs shows the highest variance of the high part worths of this group in comparison to the others: The difference of high part worths is 9.4, while the low attribute characteristics have a part utility difference of 11.4. The highest part worths on a high level can be observed for the *protection of proprietary rights*, while the high *degree of digitalization* is subordinate and almost equal in utility contribution to the *high scalability* and *personal international market orientation*. The lowest utility difference of a high degree is the *personal network*. On the negative level, the lowest part worth contribution is that of *personal market orientation*, which suggests that if the personal market orientation was low, the individual would be most inhibited by this factor. Further negative part worths are the *scalability of products and processes*, *international personal network* and the *digitalization of products and processes*.

The attribute *resource commitment* has a positive contribution on the low level and a higher negative utility difference of if this factor were to be high. The medium levels differ from those of the other groups: The personal *international market orientation* has a positive part worth, while the medium level of *international personal network* also has a positive part worth as well as *resource commitment*, *scalability* and *proprietary rights protection*, while *digitalization* is almost insignificant.

The utility part worths of the entrepreneurs differ strongly from those of the third group and are only comparable to the second group with a low EO. That the utility difference of the attribute protection is this high is not surprising considering the EO of the entrepreneurs, however the other firm and Net Economy factors seem to be almost equal in utility. The personal level factors of a high international market orientation and international network play the

least important role for the internationalization propensity. Thus the firm level factors, above all the protection of the business model, foster internationalization.

What is striking about the internationalization propensity of these entrepreneurs is that they are the first to have a negative contribution, although slight, for the medium level of protection of proprietary rights. This indicates that if the protection possibilities of their business models were not available to a high degree this would inhibit the motivation to internationalize. An explanation for this can be found in the business model types. For example, E-Commerce business models are subject to easy imitation and there are ready-made models on the market to acquire. However, since these firms are active in niches and the E-Commerce business model highly depends on the sold product, which could be either acquired or digitally produced with a high degree of knowledge, this aspect is not comprehensible.

The relative importance portrays the *digitalization of products and processes*, the *personal market orientation* and *resource commitment* to be the most important. Subordinate to these factors is the *scalability*, *the protection of proprietary rights* and the least important is the *personal network*. Consequently, and contrary to the other groups, a Net Economy and a personal-level attribute is the most important. Perhaps this can be interpreted as a shift of orientation, that these, although younger entrepreneurs, view international market orientation as an important facilitator of internationalization propensity, while the older entrepreneurs do not appreciate this trait in comparison. Moreover, the importance of digitalization can be attributed to the orientation of innovativeness of these entrepreneurs, implying, that the inclination for innovativeness can be combined with the creation of digitalized products and processes. The other Net Economy factors are equally important, while resource commitment is pronounced. Most notably, this group is least dependent and influenced by having a network or not.

This group of proactive innovators with a medium EO is the youngest at 37 years of age and consists of equal parts founders (44%) and owners (44%). It is the smallest group of firms (9) but also the oldest, founded on average in 1999, the mean number of employees being 5. Thus, these are start-ups, which have survived the Net Economy decline, yet have stayed small, which may be attributable to resource-poor firms. The majority of the firms (56%)

generate sales of up to €500.000. Consequently, the firms can be characterized as highly flexible and competitive. Perhaps the reason this group of firms survived the Dotcom-downturn may be attributed to the comparatively low risk-orientation of the founders. In addition, the firms are predominantly active with E-Commerce business models (67%). And a minority of the firms has service business models (22%). Interestingly, the risk-averse, but proactive and innovative, entrepreneurs are attributed to the commerce business model. Suffice to say, that this appears surprising because this business model may be perceived as the least innovative business model. Oftentimes firms are able to acquire a ready-made E-commerce business model and only the actual product varies.

Perhaps the preference profile of the firms is representative of the age of the firm and thus a different need for managers and types of owners. These firms, being the pioneers in the net Economy, that started growing commercially in 1995, may be of a more conservative type, which is proactive and innovative but not risk taking. Therefore, these foci may have an influence.

8.2 Limitations

The hereto discussed and explained results may be subject to several shortcomings, which will be addressed in this chapter.

First, the application of the ACA is attributed with several caveats. While the research aim of the study was to measure the preferences of entrepreneurs of their preferred parameters, the six factors were derived and implemented for testing via conjoint measurement. However, despite pre-experiment testing and the definition of each characteristic in the course of the survey, the respondents' interpretation of the parameter terms and the highly hypothetical questions remains unknown. Among others, the reliability scores of the ACA of each individual respondent were tested for. This reliability measure is the logistic regression between the results of the first three conjoint phases and the calibration phase. Generally, the calibration phase serves the purpose of testing if the answers of the adaptive conjoint procedure are coherent. Furthermore, the Unipark software also included a test measure of the average time the respondent needed to perform the survey. Thus, respondents whose survey duration was below average could be eliminated, for it is assumed that the questions were not read. However, these are the only measures available to the researcher to make an estimation of the survey

input data. The comprehensibility and the evaluation of the attribute characteristics also seem questionable with regards to the low part worth utility differences of the middle levels. The low scores create two assumptions: First, that the respondents are indifferent towards the middle level and, thus, did not see the importance of these evaluations. Second, the respondents may not have been able to appreciate what the middle-level, contrary to the high and level is. Thus, the borders between the three levels may have been unclear to the respondents. To avoid this, pre-tests were conducted to improve comprehensibility. However, the respondents, aware of pre-testing may have intentionally chosen more diverse levels because of an increased time frame and the personalization.

Furthermore, with regards to the middle level results it may be speculated that the middle and high levels may be summed up, because the results yield positive contributions for both levels; the middle level is mostly insignificant. A further disadvantage of the ACA method is that there is no personal contact with the respondents. It hereto remains unknown if the actual decision-maker performed the survey development. On this basis the validity of the results can be questioned. This may be the case for any questionnaire based survey, however with emailing and the hypothetical question formats of CA, where theoretical knowledge is not necessary, any assistant or other person working with the decision-maker may have answered. And, this person may not have been involved in any internationalization or strategic decision-making. To avoid this, several precautions were used such as the personally picked names of the CEO, addressed mail envelopes and a personalized password for entering the survey. However, the uncertainty still remains.

In addition, due to the cognitive and time constraints of the respondent, the performance of a CA is always related to the minimization of factors and procedure steps (see chapter 5.3.2). Thus, further factors and more steps may have lead to a more precise estimation and more insights into the framework.

A second limitation to point out is the difficulty related to sampling: The Net Economy consists of a heterogeneous population of firms in various industries but with similar business models. There is still limited knowledge, both scientifically and practically about a) E-Venture firms and b) the Net Economy as an industry that has existed since about 1995. Moreover, there has been limited research in Germany but also internationally about the Net Economy as

a population[83]. Therefore, the firm characteristics are difficult to test for representativity. For example, no firm in the sample has a turnover between € 3 and € 7 million and the distribution in the business model categories lacks comparable studies. A large part of the firms in the sample are in the service sector, which is a sector which has not yet been defined in the 4-Cs-model of *Wirtz* (2001).

These shortcomings are confronted by a) the thorough and widespread search of Net Economy firms in a myriad of sources. And b), regarding the survivor bias, the sample showed firms, for example in the fourth cluster, with an average year of establishment in 2002. Therefore, since the research aim of this study is the delineation of the internationalization propensity, the analysis of newer start-ups is included in the study. The results were juxtaposed and discussed in comparison to older firms.

Thirdly, since both the conjoint measurement and the cluster analysis are explorative multivariate data analysis methods the final results cannot be generalized with regard to the population. The conclusions of the internationalization propensity can be merely made for the sample. However, the insights are still valuable contributions to a yet young field of research, where a new method and research object has been analyzed. For this reason, there are theoretical contributions, which will be explained in the following.

8.3 Theoretical Implications

Several theoretical streams were consulted for deriving the parameters of internationalization propensity. Among them are the international business, the strategic management theories, the international entrepreneurship research and the entrepreneurship literature. In addition, information systems and ICT research studies were also included in the development of the research framework. Each stream contributed to the knowledge of the individual international orientation of the founder. Studies in the international and strategic management field highlighted the manager's possession of international orientation, which determines the firm's development (cf. pre-export models in part 2). However, the classic economic theories claim that it is the changing market structures and competitive industry dynamics that

[83] Comparable is research on knowledge-based firms, e.g. *Nummela et al.* (2005), which is also limited.

motivate firms to internationalize (industrial economics). The international business theories are more concerned with the question of *why* MNEs exist and *how* an MNE evolves, i.e. the development from a domestic to an international firm. These theories focus more on the outcome rather than the actual process. This signifies a static and processual view that does not tangent the pre-export or internationalization stage. Hence, the theories do not fully capture the phenomenon of E-Venture internationalization and possible explanations seeked to be assessed: Most significantly, the theories fail to distinguish firms by size or age and the specifities of knowledge-based firms. In this study, E-Venture's industry, product and firm context was considered on the individual level of the entrepreneur.

The findings contribute to the literature in several ways: First, the E-Ventures in the sample, as a subgroup of knowledge-based firms, are not according to the international new ventures theory "born global", because on average they internationalized at 1.8 years and the average degree of internationalization is 17%. Born globals per definition internationalize upon inception and generate the majority of revenues outside of the domestic market (*Oviatt and McDougall*, 1994). This implies that perhaps E-Venture internationalization behavior encompassing this first decision is, on a whole, more risk-averse and gradual than expected with referral to the international new ventures theory.

Second, the research study contributes to the international entrepreneurship literature analyzing the antecedents of internationalization by the holistic approach taken especially encompassing the firm-specific attributes of *digitalization* and *scalability* of products and processes. Thus, one finding is that the degree of these parameters facilitates internationalization in this firm context and may therefore be considered as antecedents for internationalization of knowledge-based firms. This is also the case for the *personal international market orientation* and the role of the *protection of proprietary rights* for firms with knowledge-based business models.

Third, the impact the *individual* EO has on the internationalization decision in these firms is a contribution of this study building on the entrepreneurship and international entrepreneurship literature with regards to the phenomenon of knowledge-based firms. In an empirical study by *Pla-Barber and Escribá-Esteve* (2005) a cluster analysis was conducted by comparing fast and gradual

internationalizing industrial firms from Spain: The internationally active firms proved to have managers with a higher proactive attitude regarding internationalization activities. In addition, marketing differentiation strategies and strong relationships with clients and suppliers were also found to foster international activities. These results are not necessarily coherent to the findings of this study, where digitalization is suggested to drive fast internationalization and the entrepreneurs with a high EO do not view this factor as important. Adding to the literature on international growth orientation on a firm level (*Nummela et al.*, 2004), this research highlights the existent impact on the personal level for small firm internationalization.

Lastly, the concept of the 'death of distance' as it was derived from the information systems and international business literature appears to be differentiated by the findings: For the risk-takers the 'death of distance', mirrored in the perception of *personal international market orientation*, is the lowest versus that of the innovators, who are driven by the sense of not having a distance to the foreign market and customer.

8.4 Practical Implications

Knowledge of the constituting factors of internationalization propensity may be used as a point of reference in practice, above all, for entrepreneurs, but also other actors of the Net Economy such as venture capitalists[84]. First, what appears salient in the findings is the different foci on the attribute categories in dependence on the EO. These conjunctions and their implications will be described in the following points and have implications for the managers of E-Ventures, because depending on their personal EO they face different barriers, which may impact the succeeding internationalization behavior and market entry choice. With these findings entrepreneurs may become aware of why they have or have not committed to an internationalization endeavor. In the following the implications for entrepreneurs with high EO (a), with a low EO (b) and the risk-takers (c) and innovators (d) will be expound.

(a) Entrepreneurs with a *high* EO are most influenced by the *personal network* and the *digitalization of products and processes* of the firm they are managing. This implies, in turn, that if the less important

[84] *Kollmann and Kuckertz'* (2004) case-based research analyzes the venture financing process of E-Ventures and they conclude with specific propositions for E-Venture financers.

characteristics such as the *scalability* of the business model and the *personal international market orientation* of the entrepreneur are high then this may be the reason for an entrepreneur not to commit to international endeavors. Implications along these lines are that, for example, entrepreneurs with a high EO should make use of their *personal network* to enter the foreign market quickly and hereby overcome their and the firm's inherent liabilities. Mutually, these founders are triggered by industry characteristics to achieve a secured market entry and therefore an impeded internationalization may be analyzed along the nature of the business model. If the digitalization is low, modifications or alterations will increase the probability of foreign market entry. This group of entrepreneurs is also dependent on the capital resources available. Thus, an implication for entrepreneurs with a high EO would be to adhere to the instant and big budget strategy *if* a highly digitalized business model and international contacts are available (viz. chapter 1.3, figure 2).

(b) Entrepreneurs with low EO are highly influenced by the industry-related factors- *scalability and digitalization*- as well as the firm level factor of *resource commitment*. Concerning the internationalization decision, the propensity is high if the factors are given and impeded by the lack of these. This implies, in turn, that the *network*, although not viewed as important by this group, is according to the entrepreneurship and international business literature a facilitator of internationalization (*Moen et al., 2004*). This signifies that this group of entrepreneurs may be driven towards internationalization or may make a faster entry if they perceive the network as important and made use of foreign contacts for a faster foreign market entry. The constellation of factors perceived as important leads to insights that an instant market entry strategy would be conceivable for this group, if a big budget, in terms of venture financing, for example, was available (viz. chapter 1.3.) (*Kollmann and Christofor*, 2004).

(c) Triggers for international market entry are the *digitalization of products and processes* and the *international network* for the risk-takers with a medium EO. Because the degree of *resource commitment* is perceived as not being of high importance for foreign market entry, for this group of entrepreneurs a low budget in combination with an instant market entry

strategy is conceivable (viz. Figure 2). This is because this group views the *digitalization* of the business model, which facilitates a fast internationalization, as highly important. Equally, The *protection of proprietary rights* is viewed as important, which implies that internationalization should be predominantly attempted in markets with a psycho-geographic proximity. However, this is not mirrored by the *personal international market orientation*, which these entrepreneurs view as unimportant. In consequence, internationalization to distant countries with instant market entry is feasible for these entrepreneurs, especially considering the limited possibilities of business model protection in the Net Economy (*Kollmann*, 2006).

(d) As for the innovators with a medium level of EO, internationalization is also driven by the *digitalization*, which implies an instant market entry strategy in practice. In addition, the internationalization decision is triggered by the personal *international market orientation*. Above all, this implies that a gradual market entry or a fast market entry into familiar markets may follow. Depending on the entrepreneur's experiences and know-how of the foreign market, the market will be targeted where know-how is given. This group of entrepreneurs should, just like cluster 2, make use of the *international contact network*, which they do not perceive as important but may aid in successfully entering a market fast. Furthermore, the capital requirements are viewed as unimportant, which implies in practice that this group may formulate a low-budget strategy.

Second, the findings may be consulted to create complementing start-up teams. In this way, building a team, which is a central characteristic of E-Ventures, can be, depending on the strategy, conducted on the basis of if the team should avoid or consider a foreign expansion quickly on the basis of the personal EO. In addition, these insights may also support venture capitalists when selecting start-up team members for high-growth targets (*Franke et al.*, 2006). For example, if an entrepreneur with a high EO does not have a personal international network, an internationalization decision is more likely with a team that does. Entrepreneurs with a low EO, for example, should participate in teams with a high *digitalization* and *scalability* or choose the business model along these lines to lead the way for expansion and growth. In addition, risk-taking entrepreneurs with a medium EO are more likely to internationalize because they view the factors equally important to a higher

degree in comparison to the innovators. This latter group seeks complementing the *digitalization* and *personal market orientation*: In conclusion, the new team members should dispose of those attributes that are perceived as important.

8.5 Directions for Future Research

One direction for future research concerns the differences of the internationalization propensity of internationalized and non-internationalized firms. For the purpose of this study the focus was on the first internationalization decision. However, for future research purposes, it is of interest to know how the internationalization propensity changes over the course of time but also over the course of different market entries. On this basis, the IE literature calls for more longitudinal studies (*Zahra et al.*, 2004). This would be an approach highly recommended for future research in studying the internationalization propensity. Advantages are that firms and their respective managers can be studied over the course of time and changes in their internationalization propensity monitored. In this context, as has been suggested when the key findings were discussed, the development of EO in the course of start-ups growth phases can be of interest. Furthermore, the link of internationalization propensity and EO, highlighted in this study, deserves closer attention.

A factor not considered in the framework but raised in the discussion section is the role of international experience of the entrepreneur. Hence, an entrepreneur with international experience be it international studies, experience of living abroad or international work experience, may dispose of a different internationalization propensity and thus should not be compared to entrepreneurs with opposing experiences. Several studies in the IE field include this aspect (cf. *Autio et al.*, 2000; *Sapienza et al.*, 2005).

A central focus of this study is showing and testing the effect relations, i.e. how strong the effect of which antecedent is on the entrepreneur. Less so was the aim comparing the internationalization propensity of founders with different business models, in different industries and in this manner, emphasizing the main antecedents for entrepreneurs in the Net Economy. Such a comparison may be a further direction for future research.

Lastly, it has been stated that the results of the study are merely explorative. Apart from the possibility of applying different multivariate methods to this field,

which can be compared to the results of this study, the internationalization propensity phenomena also calls research in relation to the firm performance. It can be of great interest to know how the different managers with different entrepreneurial and internationalization profiles impact the firm's performance. Above all, measuring the impact EO and internationalization propensity has on the firm's performance may further develop the IE research stream.

8.6 Summary

This chapter has presented and synthesized the key findings of this study's research aims for analyzing the internationalization propensity in the Net Economy. It has been shown that several significant linkages between the six antecedent factors and internationalization propensity exist; what is more it is based on four groups of entrepreneurs with varying degrees of EO. The data showed relationships between the EO of the entrepreneurs and the internationalization propensity. Moreover, associations between the year of establishment and the internationalization propensity, but also the business models and the internationalization propensity were established. In summary, the utility models of entrepreneurs in the Net Economy can be described as follows: The high attribute levels hold a positive contribution, the low levels negative, while the medium levels, with exceptions are insignificant in comparison. A high degree of resource commitment is perceived as unfavorable, while a low degree contributes positively.

However, it has also been shown that the results are subject to major limitations and- as an exploratory rather than confirmatory study- the results may adhere to this group of sampled firms only. What became clear is that the ICT antecedents affected all groups leading to insights that the founders of E-Ventures are impacted by the industry and the business model in their decision-making, even if the firms in the sample are per se not born global. These findings contributed to the state of knowledge in both research and management; however, further research by applying different empirical methods is needed.

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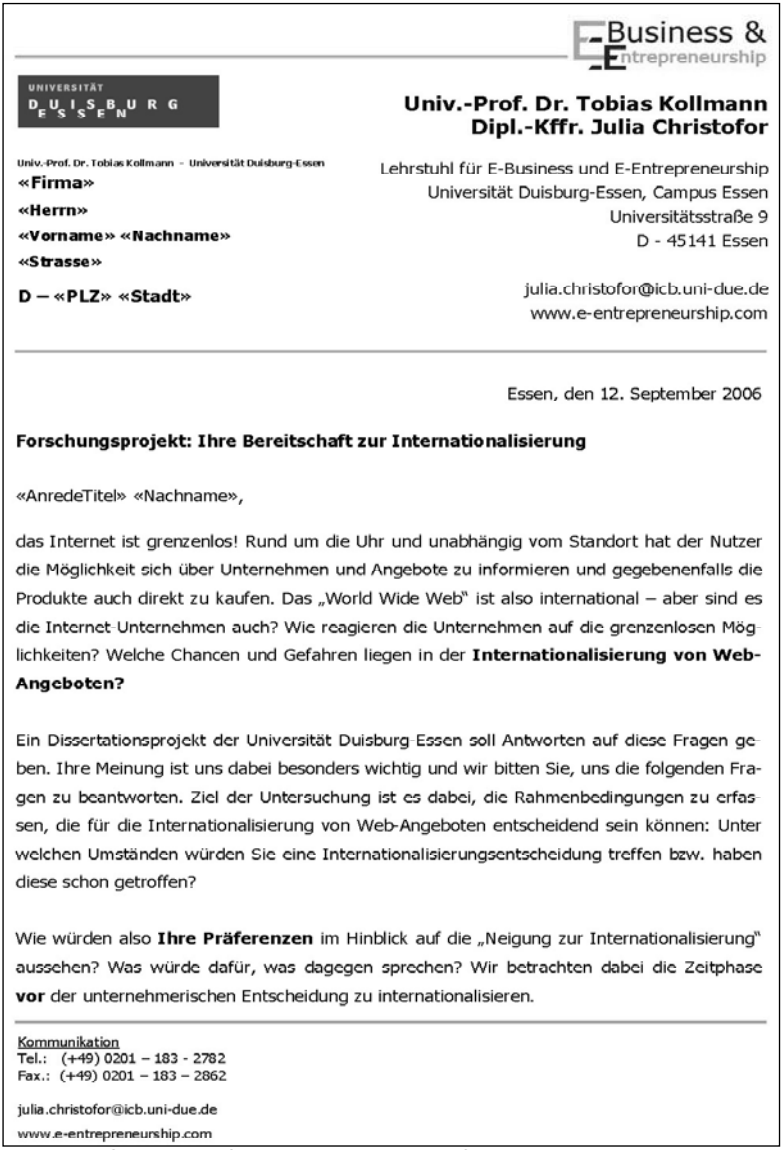
Appendix



E-Business & Entrepreneurship

UNIVERSITÄT DUISBURG ESSEN

Univ.-Prof. Dr. Tobias Kollmann
Dipl.-Kffr. Julia Christofor

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«Firma»
«Herrn»
«Vorname» «Nachname»
«Strasse»
D – «PLZ» «Stadt»

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www.e-entrepreneurship.com

Essen, den 12. September 2006

Forschungsprojekt: Ihre Bereitschaft zur Internationalisierung

«AnredeTitel» «Nachname»,

das Internet ist grenzenlos! Rund um die Uhr und unabhängig vom Standort hat der Nutzer die Möglichkeit sich über Unternehmen und Angebote zu informieren und gegebenenfalls die Produkte auch direkt zu kaufen. Das „World Wide Web" ist also international – aber sind es die Internet-Unternehmen auch? Wie reagieren die Unternehmen auf die grenzenlosen Möglichkeiten? Welche Chancen und Gefahren liegen in der **Internationalisierung von Web-Angeboten?**

Ein Dissertationsprojekt der Universität Duisburg-Essen soll Antworten auf diese Fragen geben. Ihre Meinung ist uns dabei besonders wichtig und wir bitten Sie, uns die folgenden Fragen zu beantworten. Ziel der Untersuchung ist es dabei, die Rahmenbedingungen zu erfassen, die für die Internationalisierung von Web-Angeboten entscheidend sein können: Unter welchen Umständen würden Sie eine Internationalisierungsentscheidung treffen bzw. haben diese schon getroffen?

Wie würden also **Ihre Präferenzen** im Hinblick auf die „Neigung zur Internationalisierung" aussehen? Was würde dafür, was dagegen sprechen? Wir betrachten dabei die Zeitphase **vor** der unternehmerischen Entscheidung zu internationalisieren.

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Figure 29: Cover letter for the survey (Page 1 of 2)

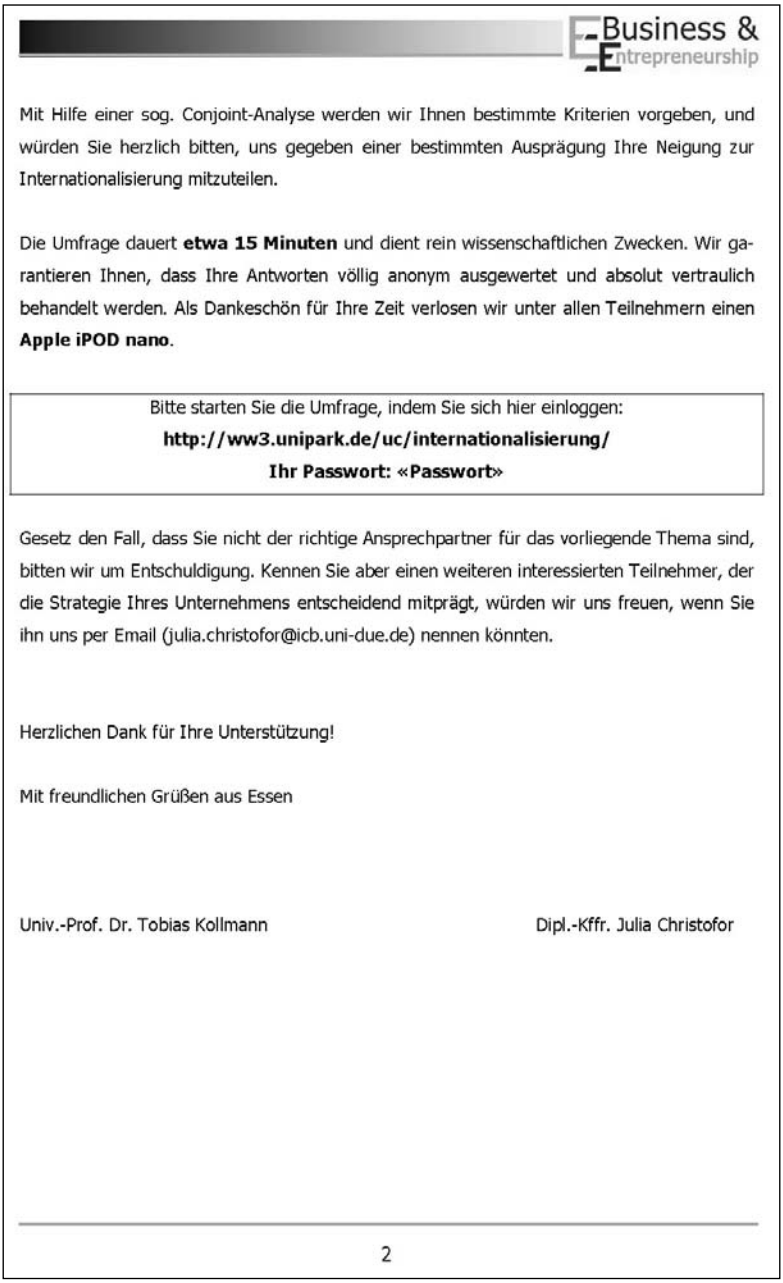

Figure 30: Cover letter for the survey (Page 2 of 2)

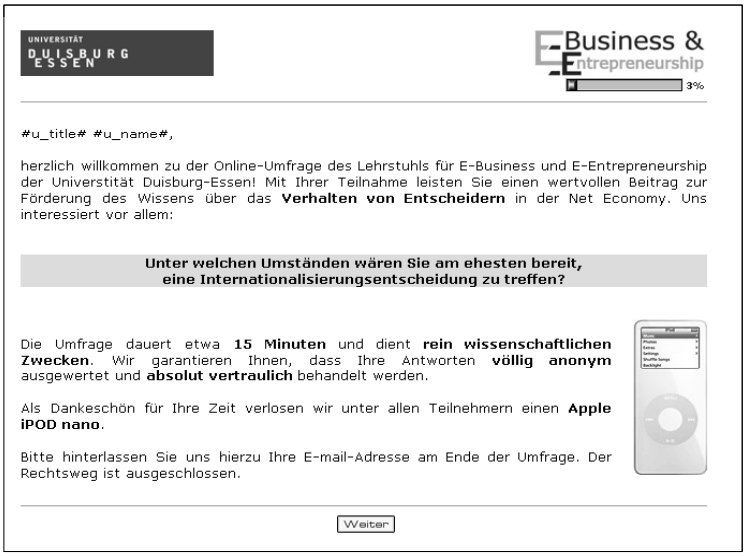

Figure 31: Screenshot of the first survey page

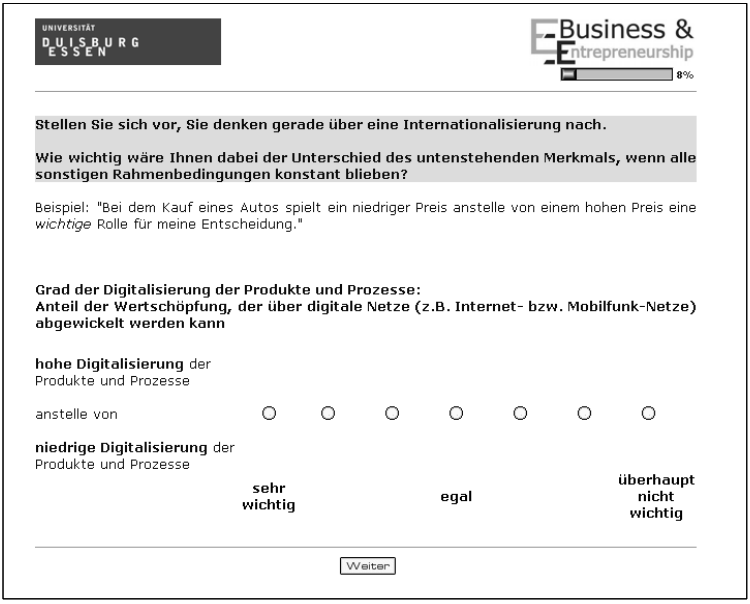

Figure 32: Example of an adaptive conjoint analysis question of phase 1

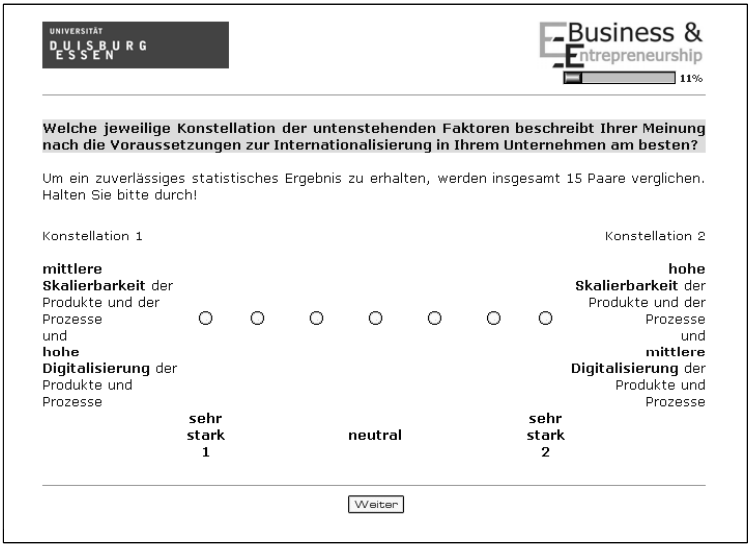

Figure 33: Example of an adaptive conjoint analysis question of phase 2

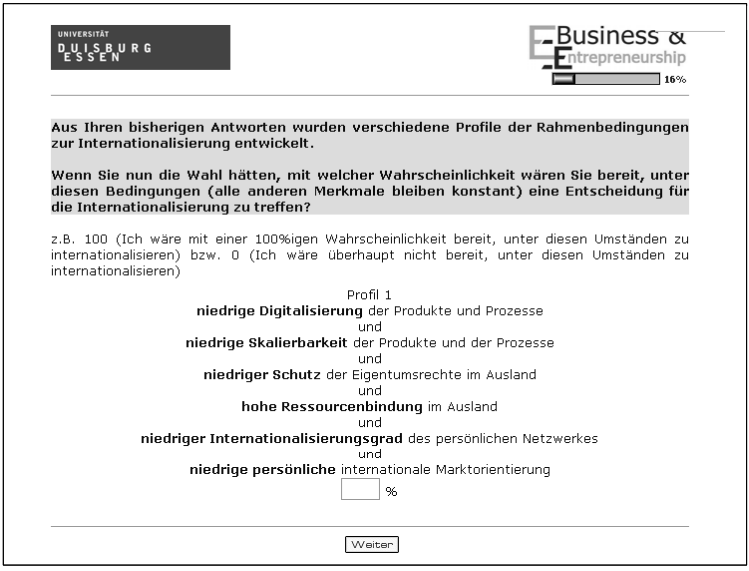

Figure 34: Example of an adaptive conjoint analysis question of phase 3

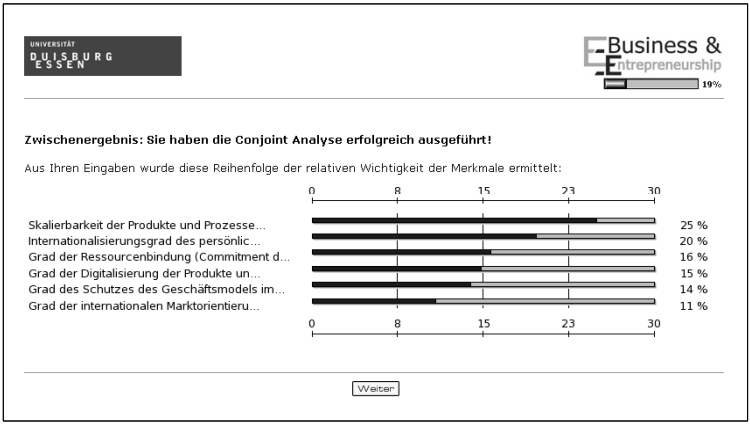

Figure 35: Example of the data analysis at the end of the conjoint experiment

The post- experiment questionnaire

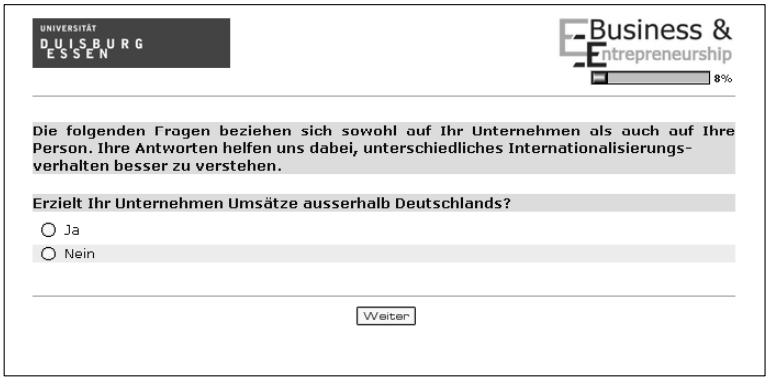

Figure 36: Screenshot of post-experiment questionnaire (1)

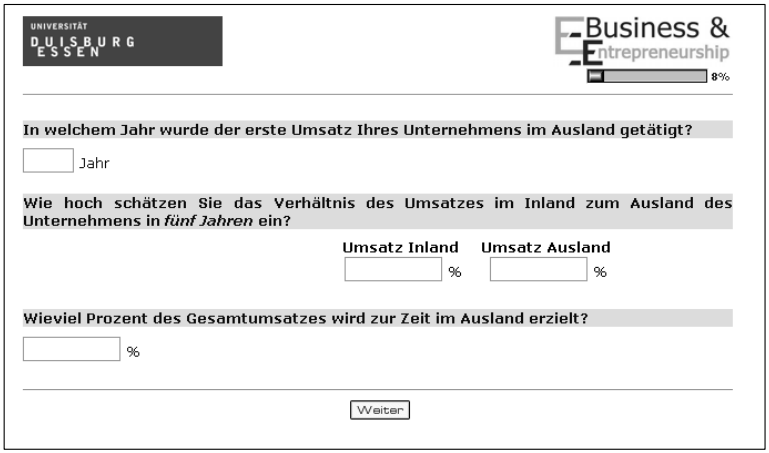

Figure 37: Screenshot of post-experiment questionnaire (2)

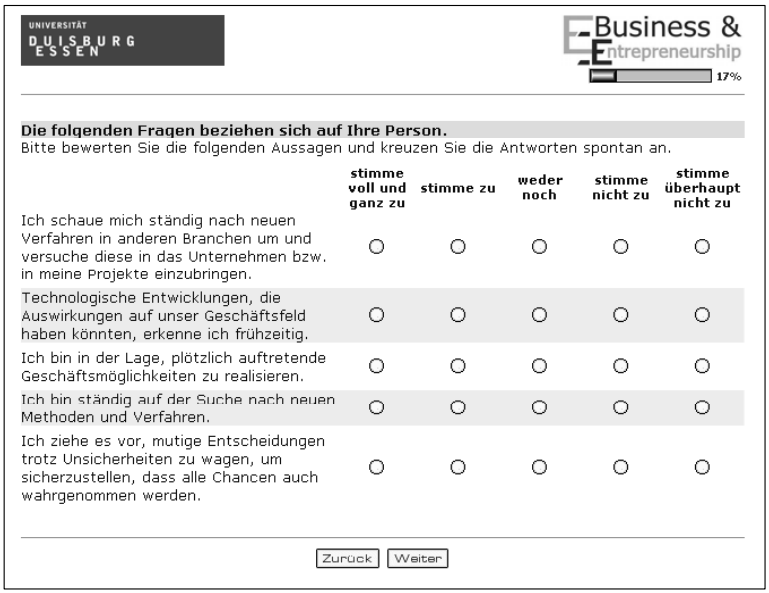

Figure 38: Screenshot of post-experiment questionnaire (3)

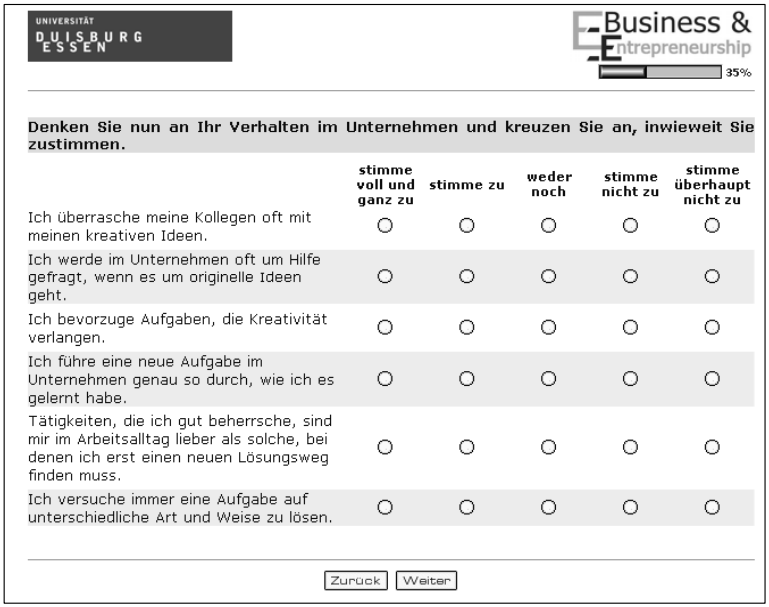

Figure 39: Screenshot of post-experiment questionnaire (5)

Figure 40: Screenshot of post-experiment questionnaire (6)

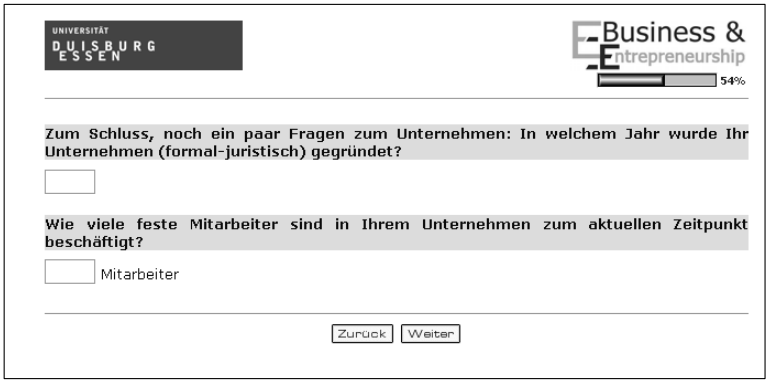

Figure 41: Screenshot of post-experiment questionnaire (7)

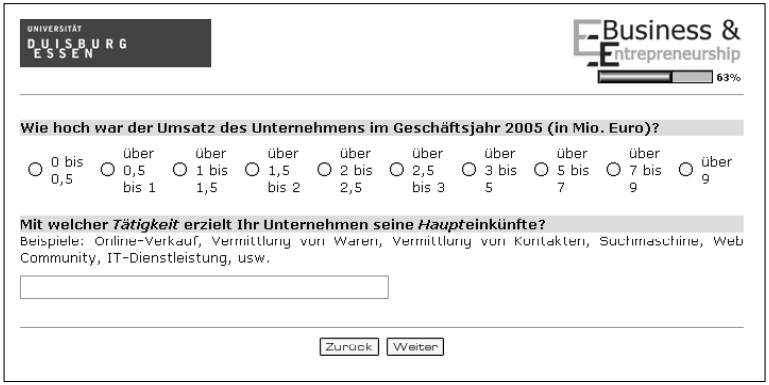

Figure 42: Screenshot of post-experiment questionnaire (8)

Figure 43: Screenshot of post-experiment questionnaire (9)

Figure 44: Screenshot of post-experiment questionnaire (10)

Table 18: Non response bias

Variable	Early wave mean	Late wave mean	df	2-tail significance
Age of respondent	39.84	40.54	-0.70	0.75
Sales 2005	2.74	3.13	-0.39	0.62
Number of employees	116.00	23.80	92.20	0.10
Year of foundation	1992.46	1994.99	-2.53	0.86

Table 19: Frequencies of firm age at internationalization

Attribute	Years	n	Cum %
Age	0	13	31.0
	1	11	57.1
	2	5	69.0
	3	5	81.0
	4	3	88.1
	5	3	95.2
	6	1	97.6
	7	1	100.0
		Sum 42	

Table 20: Frequencies of degree of internationalization*

Attribute	% of company sales outside of the home market	n	%
	0	1	1.5
	1	2	3.0
	2	4	6.1
	3	1	1.5
	4	1	1.5
	5	6	9.1
	10	9	13.6
	12	1	1.5
	15	4	6.1
	16	1	1.5
	18	1	1.5
	20	2	3.0
	25	1	1.5
	30	3	4.5
	40	1	1.5
	45	1	1.5
	50	1	1.5
	90	1	1.5
	95	1	1.5
		Sum = 42	

Table 21: Correlation matrix (a)

	Proactiveness	Risk-taking	Innovativeness
Proactiveness	1.000	.491	.306
Risk-taking	.491	1.000	.365
Innovativeness	.306	.365	1.000

(a) Determinant = .642

Table 22: Anti-image correlation matrix

		Proactiveness	Risk-taking	Innovativeness
Anti-Image-covariance	Proactiveness	.740	-.310	-.124
	Risk-taking	-.310	.708	-.200
	Innovativeness	-.124	-.200	.846
Anti-Image-correlation	Proactiveness	.617(a)	-.428	-.157
	Risk-taking	-.428	.600(a)	-.258
	Innovativeness	-.157	-.258	.713(a)

(a) Measure of sampling adequacy

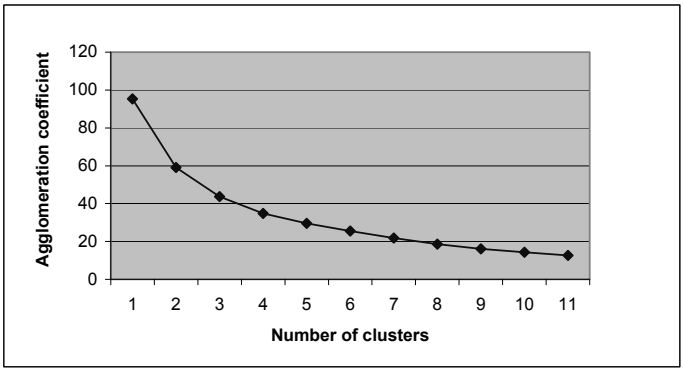

Figure 45: Scree-Plot using Ward's method of minimum variance

Table 23: Eigenvalue of the discriminant function analysis

Function	Eigenvalue	% of variance	Cumulated %	Canonical correlation
1	5.020	82.6	82.6	.913
2	.706	11.6	94.2	.643
3	.353	5.8	100.0	.511

Table 24: One-way ANOVA of passive cluster variables (metric scaled)

		Sum of Squares	df	Mean of Squares	F	Signi-ficance
Year of establishment	Between the groups	158.9	3	53.0	8.534	.000
	Within the groups	924.8	149	6.2		
	Total	1083.7	152			
Age	Between the groups	378.7	3	126.2	1.877	.136
	Within the groups	10020.4	149	67.3		
	Total	10399.1	152			
Employees	Between the groups	9282.8	3	3094.3	5.536	.001
	Within the groups	83276.3	149	558.9		
	Total	92559.1	152			

Table 25: ANOVA of relative attribute importance

		Sum of Squares	df	Mean of Squares	F	Signi-ficance
importance of attribute digitalization	Between the groups	.010	3	.003	.948	.423
	Within the groups	.208	60	.003		
	Total	.218	63			
importance of attribute scalability	Between the groups	.027	3	.009	2.471	.070
	Within the groups	.216	60	.004		
	Total	.243	63			
importance of attribute protection	Between the groups	.016	3	.005	1.010	.394
	Within the groups	.314	60	.005		
	Total	.330	63			
importance of attribute resource commitment	Between the groups	.010	3	.003	.724	.542

	Within the groups	.274	60	.005		
	Total	.283	63			
importance of attribute personal network	Between the groups	.029	3	.010	1.947	.132
	Within the groups	.296	60	.005		
	Total	.325	63			
importance of attribute market orientation	Between the groups	.010	3	.003	1.009	.395
	Within the groups	.197	60	.003		
	Total	.207	63			

Table 26: ANOVA of zero centered utility differences of attributes

		Sum of Squares	df	Mean of Squares	F	Signi-ficance
zero centered utility difference of attribute level high digitalization	Between the groups	1166.415	3	388.805	.788	.505
	Within the groups	29587.060	60	493.118		
	Total	30753.476	63			
zero centered utility difference of attribute level medium digitalization	Between the groups	1019.804	3	339.935	.727	.540
	Within the groups	28072.314	60	467.872		
	Total	29092.118	63			
zero centered utility difference of attribute level low digitalization	Between the groups	670.792	3	223.597	.472	.703
	Within the groups	28410.317	60	473.505		
	Total	29081.110	63			
zero centered utility difference of attribute level high scalability	Between the groups	2944.355	3	981.452	1.756	.165
	Within the groups	33527.082	60	558.785		
	Total	36471.437	63			

zero centered utility difference of attribute level middle scalability	Between the groups	605.001	3	201.667	.525	.667
	Within the groups	23057.455	60	384.291		
	Total	23662.456	63			
zero centered utility difference of attribute level low scalability	Between the groups	2421.754	3	807.251	2.168	.101
	Within the groups	22337.209	60	372.287		
	Total	24758.963	63			
zero centered utility difference of attribute level high protection	Between the groups	4039.381	3	1346.460	2.161	.102
	Within the groups	37391.089	60	623.185		
	Total	41430.470	63			
zero centered utility difference of attribute level middle protection	Between the groups	729.029	3	243.010	.543	.654
	Within the groups	26830.118	60	447.169		
	Total	27559.147	63			
zero centered utility difference of attribute level low protection	Between the groups	1525.664	3	508.555	.903	.445
	Within the groups	33777.249	60	562.954		
	Total	35302.913	63			
zero centered utility difference of attribute level high resource commitment	Between the groups	1187.700	3	395.900	.708	.551
	Within the groups	33567.672	60	559.461		
	Total	34755.373	63			
zero centered utility difference of attribute level middle resource commitment	Between the groups	753.797	3	251.266	.984	.406
	Within the groups	15315.005	60	255.250		
	Total	16068.802	63			

zero centered utility difference of attribute level low resource commitment	Between the groups	1149.139	3	383.046	.638	.593
	Within the groups	36000.095	60	600.002		
	Total	37149.234	63			
zero centered utility difference of attribute level high international network	Between the groups	2346.522	3	782.174	1.399	.252
	Within the groups	33536.994	60	558.950		
	Total	35883.516	63			
zero centered utility difference of attribute level middle international network	Between the groups	1204.453	3	401.484	1.068	.369
	Within the groups	22552.178	60	375.870		
	Total	23756.631	63			
zero centered utility difference of attribute level low international network	Between the groups	1987.674	3	662.558	1.115	.350
	Within the groups	35639.156	60	593.986		
	Total	37626.830	63			
zero centered utility difference of attribute level high int. market	Between the groups	353.095	3	117.698	.233	.873
	Within the groups	30330.436	60	505.507		
	Total	30683.532	63			
zero centered utility difference of attribute level middle int. market	Between the groups	536.461	3	178.820	.415	.743
	Within the groups	25882.476	60	431.375		
	Total	26418.937	63			
zero centered utility difference of attribute level low int. market	Between the groups	593.830	3	197.943	.406	.749
	Within the groups	29277.380	60	487.956		
	Total	29871.210	63			