

# Supporting Growth in Small Businesses

## *Developing and Testing an Integrated Management Tool to Support Start-Up Businesses in their Transition to Becoming Consolidated Medium-Sized Businesses.*

Anne WEBER • Paul FLACHSKAMPF • Christine HAWDON • Nikolai KRAMBROCK • Dietmar KOPPERGER • Mirjana STANIŠIĆ-PETROVIĆ • Oliver STRAUß •

**ABSTRACT:** 3.33 million companies make up the German economy. Of these, only around 5,800 have more than 500 employees. The rest can be defined as ‘medium-sized’ and are characterised by having fewer than 500 employees and annual sales totalling under € 50 million. According to new research, however, the number of business start-ups is declining year after year and worse still for the German economy, which relies heavily upon successful and stable medium-sized businesses, the number of small companies that reach consolidated, medium-sized status is also diminishing. After analysing the reasons for such negative trends, this research paper describes the process of developing and testing an integrated management tool to support small businesses in the period after start-up and before consolidation; the transition phase.

**Key Words:** *Transition phase; small businesses; stabilisation; consolidation; Germany*

### 1. Introduction

The process of starting-up a new business follows four basic stages: the creation of an idea, planning, integration and probation (Kaiser & Gläser, 1999 p.15). However, during the period of business growth between establishment and consolidation, i.e. the transition period (see Appendix 1), many start-up companies fail (Bartley et al., 1981). Despite the fact that many of these young companies are not yet fully established, let alone stabilised within their respective markets, the numerous support programmes for business founders (such as start-up grants or entrepreneurial training)

are frequently discontinued at this time. But if these companies are to reach medium-sized status, they must grow and for this they need support, because whilst ‘the reward of growth is success; the risk of growth is failure’ (Bartley et al., 1981). Until now, only selective and inadequate offers of support and advice for this highly difficult phase of the business life-cycle have been given. As a result, a succession of promising business start-ups must face the threat of bankruptcy. Considering that the number of business bankruptcies far exceeds the number of successful business start-ups each year, this challenge is not easy to overcome (BMWA, 2003).

In order to understand why small businesses often fail as they seek to grow and stabilise themselves on the market, this paper will investigate the case of small businesses in Germany.

In Germany, ninety-nine per cent of all businesses are medium-sized and they employ over seventy per cent of the nation’s employees (IfM Bonn, 2007). It is therefore fair to say that medium-sized businesses are ‘the core of the German economy’ (Frommann, 2006 p.19), indeed only 13,000 of the country’s businesses are not medium-sized (Frommann, 2006). Such companies are clearly of great importance to the German economy. However, in order for this trend to continue, the number of small business failures must be reduced and programmes should be established which support small businesses in the period of growth following start-up and prior to consolidation. The aim of this research paper is, therefore, not to conceptualise yet another support programme for business start-ups, but rather to develop and test integrated methods and instruments to success-

fully guide businesses through the transition phase which leads them to medium-sized status.

In this paper, small businesses are understood as those businesses with up to nine employees and a net annual turnover of under €1million. Medium-sized businesses are understood, as defined by the IfM Bonn (2007), as those companies with fewer than 500 employees and a net annual turnover of less than €50million. The transition phase is defined here as the phase between firm establishment and consolidation, where growth and stabilisation are sought.

Firstly, this text analyses the current economic situation for small and medium-sized businesses in Germany by studying existing research and literature on the topic. On the basis of this research it was possible to identify certain failings and gaps in existing research, thus enabling us to identify what had to be done to support small businesses in transition. With this knowledge at hand we were then able to develop an overall concept for a support mechanism for small enterprises. Having decided upon a concept, we were able to set about achieving this through three practical stages of analysing small businesses: the creation of a business typology, the identification of critical success factors, and the development of an early warning system. After introducing these methods of analysis and describing how and why they should be implemented, the paper then discusses their practical implications. Following from this, a conclusion brings all three analysis methods together and discusses how they can be combined to create an integrated management tool that will support small businesses in their transition to becoming medium-sized, consolidated enterprises.

## **2. Small and Medium-Sized Businesses in Germany**

According to the latest calculations, the number of business-start-ups in Germany in 2006 showed a sharp decrease in comparison to that of 2005. The number of business start-ups in Germany totalled 471,000 in 2006, which represented a drop of 24,000 in comparison to 2005 (IfM Bonn, 2007). This sharp decline can primarily be attributed to changes in the basics of unemployment in Germany, whereby people who are out of work attempt to set up their own small

businesses. These self-made entrepreneurs are encouraged and supported by Germany's economic situation which is currently very strong (IfM Bonn, 2007).

In 2006, 431,000 businesses were forced into liquidation which constituted an increase of 10,000 businesses from 2005. As a consequence of the drop in the number of business start-ups and a marginally higher number of business failures, 2006 saw a start-up balance (the difference between the number of business start-ups and business failures) of 40,500. This represents a downturn of around 13,500 businesses in comparison to the previous year and corresponds rather ominously with the fact that almost fifty per cent of new businesses do not survive the first five years in operation (BMWA, 2003; NZZ, 2003).

These statistics show that the chance of a start-up business succeeding in Germany diminishes each year. Whilst economic performance 'has not been dynamic over the last five years' (Economy, 2007 p.10), the German state continues to promote competition and free enterprise. With a relatively stable economy and state support (Economy, 2007), why then does the number of start-up businesses continue to fall? Research shows that 'regions that are open and creative and attract human capital enjoy more than dynamic entrepreneurship' (Lee et al, 2004 p.890). In Germany, heavy bureaucratic regulations act as a burden on the process of starting a new business, thus creating a cultural climate that is not particularly conducive to entrepreneurship (Economy, 2007 p.10). A study by Weber & Hsee (1998) compared individuals' perception of risk in Poland, the United States, Germany and China. Along with American participants, German respondents offered the lowest prices for hypothetical investments, thus showing that they are more risk averse. This tendency to be risk averse can be partially attributed to the fact that Germany is an individualist nation, meaning that the individual is expected to bear the (possibly adverse) consequences of their actions. This is the opposite of collectivist cultures, such as China, where the 'cushion hypothesis' (i.e. the 'stepping-in' of family or in-group members to share the consequences of a decision) takes effect (Hofstede, 1980). Without this so called 'cushion-effect', 'German employers, even

during periods of relatively fast growth, say they often prefer to invest overseas or install more machinery, rather than make job-creating investments at their domestic facilities' (Economy, 2007 p.10).

So, Germany's bureaucratic system and economic state act as deterrents to entrepreneurs who want to set up their own businesses – but what actually causes them to fail? We will now investigate management practices within start-up business in an effort to establish whether their inability to reach a medium-sized, consolidated status is hindered not only by external economic factors, but also by internal managerial factors.

### **3. Management in Start-up Enterprises**

From literature research, it was possible to establish the following factors as reasons for the failure of start-up businesses (these were factors that occurred repeatedly in literature with regard to business failure):

- Management error
- Neglect of an integrated control system
- Inadequate market orientation and lack of experience
- Lack of willingness to co-operate
- Financial problems

Each of the aforementioned factors shall now be elaborated upon.

In the field of management, the personality of the entrepreneur has a significant effect on the success of the firm. Indeed, 'successful entrepreneurs share a number of common personality traits, and these traits are predominant indicators of their success' (Wagner, 2006 p.94). However, difficulties arise in the relationship between entrepreneurship and success because entrepreneurs tend to overestimate themselves, lack experience, have unrealisable goal concepts, and neglect to adjust strategies for the benefit of day-to-day business. Misconceptions such as these often have an adverse effect on the firm (Ganz, 2001). The most successful entrepreneurs are those who 'understand how to make the best of their talents and manage or compensate for their weaknesses or potential limitations' (Wagner, 2006 p. 104)

With regard to the problems of an integrated control system, many start-up businesses lack a solid financial plan and a systematic approach to risk management (Fügner, 2001). Concerning the lack of

market orientation and experience, business founders often do not know enough about market developments and lack sufficient business knowledge – with the result that they often misjudge developments. Demands and competitors are often underestimated and a benchmark is not set. Linked to this is one of the grossest (and most common) errors that a business can make with regard to market orientation; the failure to orientate marketing activities towards a specific group (BMW, 2001).

A further problem lies in entrepreneurs' lack of willingness to co-operate, because they often overestimate their capabilities and want to achieve everything under their own steam. The need to co-operate with others is often left unnoticed, and even when the importance of co-operation is noticed, the way in which to approach it remains unclear (Meyer et al., 2001; EU, 2002).

Financial problems are often named as the main reasons for why businesses fail. However, it is commonly found that financial problems are, in reality, merely the results of pre-existing problems (EU, 2002).

The research has shown that start-up business failure is often linked not so much to management error, but to a lack of understanding of basic management principles. According to Wagner (2006), entrepreneurs who prove to be most successful are those who understand their own personality, thus enabling them to leverage their strengths, work to improve their weaknesses and limitations, and discover the type of business that will best work for them. This depth of understanding should not only be achieved with regard to the personality of the entrepreneur, but also with regard to the small business in question. Due to the complexity of such a task, entrepreneurs should be given guidance in assessing both themselves and their firms. However, the literature research exposed a distinct lack of existing support programmes and practical methods to help entrepreneurs as they seek to understand and rationally evaluate their highly complex surroundings.

A further problem lies in the fact that 'those small businesses that have the best chance of passing the two-year mark are generally helmed by people who have education and background in the type of busi-

ness they are launching' (Penman, 2007 p.18). However, the economic situation in Germany described in section two of this paper (whereby recently unemployed people seek self-employment through the creation of their own enterprises (IfM Bonn, 2007)) is not conducive to this. If this continues to be the case, Germany will continue to see the failure of many potentially successful small businesses. In order to prevent this, this paper suggests the creation of an integrated management tool which can support entrepreneurs as they try to establish their businesses on the market.

#### 4. Direction of Investigation

Through analysis of literature and the latest statistics it has been established that there is very little support for start-up businesses in terms of economic encouragement and managerial guidance. At present, offers of support to start-up businesses in transition lack the following:

- **Specificity:** Many programmes on state and national levels do indeed have a view to start-up businesses but fail to cater for their specific problems and requirements. They tend to focus on investment support and on only a section of the problem portfolio, making their content insufficient to cover any real problems. The consequences of this are first recognised in a crisis situation.

- **Aids to Stabilisation:** Many existing programmes and support programmes focus primarily on the establishment phase of young businesses. This leads to an undue emphasis on establishment or on the 'life-threatening' crises instead of on the preservation and promotion of developing small- and medium-sized businesses. Failed businesses are largely replaced by new businesses.

- **An interdisciplinary approach:** Existing knowledge and critical success factors in observable areas are too specific and their structures do not allow for an interdisciplinary approach to be taken. Information is therefore limited to individual business areas or fails to incorporate the market or product development stages and the relationship of these factors with one another. New research and development findings in the field of management organisation are not sufficiently integrated into existing concepts.

Although economic factors undoubtedly play a major role in the life of a start-up business, it would be impossible to address them fully. It must also be noted that economic factors themselves are not the causes for the failure of start-up businesses. Rather, start-up business failure is linked to managerial inadequacies. For this reason, this paper shall now focus on creating a guide for the managers of small businesses to support them in the transition to consolidation.

The aim of the research, to develop and test integrated methods and instruments to support businesses in the transition phase, will be achieved by the creation of an integrated management tool. The tool will enable entrepreneurs to gain a comprehensive overview of their company and information on the following business aspects which can determine success:

- The ability to assess and identify what type of management style the entrepreneur has in order to realise where their strengths and weaknesses lie.
- Key data that the business requires to assess its current position.
- Factors that could potentially pose challenges to the organisation.

This objective shall be achieved by means of the methods described in the following section. These preliminary methods of analysing businesses were devised and tested prior to, but in line with, the concept of an integrated management tool.

#### 5. Preliminary Research and Analysis

The overall objective of this research activity was to develop and test an integrated management tool to support small businesses as they grow. The main aims of the integrated management tool are to:

- Encourage self awareness and the ability for a start-up business to help itself in all relevant business areas (from product creation to customer care).
- Improve small businesses' structural capabilities.
- Create basic principles for an easy valuation scenario (benchmarking system) for start-up businesses.
- Improve network alliances to business partners and networks.

With the aid of this integrated management tool, start-up businesses should be empowered to move beyond the start-up

period and market entry, and to meet the demands of growth and consolidation. In order to successfully achieve this goal, start-up businesses must be thoroughly analysed. Methods for such analysis are outlined in sections 5.1-5.3.

All research was conducted on young businesses within the IT and telecommunications sectors. This was because the short product life cycles and high numbers of bankruptcies (as well as business start-ups) that these industries have experienced over the last few years enable a comprehensive set of results to be acquired over a relatively short period of time (Fine, 1998)

### *5.1 Analysing the Business as a Whole: Distinguishing the Typology of the Business*

In order to fully understand the business type and the manager's management style, the firm must be able to look at itself from an outsider's perspective. Through such observation, the firm managers are enabled to sufficiently distance themselves from the organisation in order to gain a more objective overview. This coincides with a cybernetic approach to business (for further information on cybernetic approaches to business management, the works of Stafford Beer and Heinz von Foerster are recommended).

In line with developing a method to support entrepreneurs in this analysis, a questionnaire activity was carried out on 1400 businesses in the IT industry. 149 questionnaires were returned so the net participation yielded 10.45 per cent. Of these returned questionnaires, however, only sixty-eight were considered eligible for final evaluation.

In the questionnaire, approximately 200 characteristics of businesses were polled. For every characteristic the participants were given the opportunity to select the form of progression that best described the experiences of their firm from a list of options. The data collected from participants were then encoded according to individual characteristics. From the results of the sixty-eight respondents, more than seventy dimensions of start-up business development were discovered. These were listed in a morphological box which enabled the sorting of enterprises based on their characteristics (see Appendix 2). The respondents

represented enterprises and the dimensions represented their individual characteristics.

The organisation of start-up businesses into this morphological box allows a basic understanding of each business' type and their characteristics. It also provides a basic overview of how they may develop. However, in order to further analyse start-up businesses and to make this analysis easier for managers to understand and use practically, the host of data attained from the questionnaire was valued by means of data mining techniques. By applying the K-means algorithm, which calculates the interval between two variables and creates clusters of variables which aid the classification of data sets, four individual types of business with different characteristics emerged.

The average value of every progression of every characteristic found in the morphological box delivers a characterised development specific to the business type. The extent to which this average was representative could be measured by calculating the standard deviation. The smaller the value of the standard deviation was, the more significant the characteristic to the typology. In addition, the calculation of correlation was enhanced by providing connections between the different characteristics.

As a result of such valuations, four types of business were identified (see Figures I-IV).

By comparing the business types with one another, a few important similarities have arisen. These similarities appear to constitute the basic characteristics of today's young businesses.

Above all the way in which personal networks are used should be noted. In the majority of cases, established, formal

***Type I: The Indifferent Individualist***

Sixteen of the respondent businesses were ordered into this category. The formative characteristic of this category showed a standard deviation of a little less than 0.58.

The work of an indifferent individualist is characterised by an independent style of work. They are neither involved in further education programmes offered by adult education centres or chambers of commerce, nor do they show an interest in the work of start-up business organisations. Furthermore, these businesses show very shallow structures which means that they do not possess organised departments and that most business issues are dealt with centrally by the business leader. However, such characteristics cause a plethora of problems for this type of business.

The entrepreneur's love of freedom and poor communication within the firm contribute to the fact that responsibilities and roles within the business are not clear cut. This in turn is passed onto the customer in a negative sense because they feel they cannot find a fitting contact person for their problems.

Based on the lack of team capabilities and the avoidance of networks, the business therefore fails to achieve a regulated network management system.

This also has repercussions for innovation management. Due to the fact that Individualists mostly try to avoid cooperation and do not attain a 'breath of fresh air' by employing new members of staff, the development of new ideas and the discovery of new systems poses great difficulty.

**Figure I:**

*Type 1; The Indifferent Individualist*

***Type II: The Networked Micro-Entrepreneur***

Three of the respondent businesses fell into this category. The standard deviation of this characteristic was 0.

Businesses of this type distinguish themselves through the low number of employees that they have. A maximum of one employee working alongside the entrepreneur is involved in the business.

The businesses are active in IT Development and Consultancy, where focus lies on the economic increase of customers. They mostly cooperate with acquaintances, friends and other, less traditional networks. Furthermore, they are characterised by a relatively low reaction time to customer wishes.

The problems concerning these businesses are primarily caused by the chronic shortage of critical resources such as time and qualified personnel as well as financial resources. Due to the low staffing numbers and the lack of support that results from this, these businesses are stretched to their limits in terms of time, placing a high burden on the entrepreneur. With this burden, the entrepreneur's development (both personally and in terms of skill acquirement) comes to a standstill.

The level of innovation also suffers due to the shortage of resources and the overburdening of the entrepreneur. These problems contribute to the fact that such businesses often require managerial support.

**Figure II:**

*Type 2; The Networked Micro-Entrepreneur*

### **Type III: The Customer-Orientated Manager**

Twenty-seven of the respondent enterprises represented this type of business. The standard deviation of the most important characteristic amounted to less than 0.5.

The focus of entrepreneurs in this category lies in customer care. The intensity of customer contact is above average with more than five direct, personal connections made each month. This strategy appears to pay off for businesses because all enterprises which fell into this category found themselves in the growth phase. At the same time, they had a clear awareness of internal business processes. Managing marketing, quality, knowledge, technology and innovation were all recognised as important operations for the businesses and embedded internally. However, the structures of the businesses are not able to keep up with growth and increasing complexity.

This is again reflected in problems encountered with human resources and organisation development. These businesses show a relatively slow reaction time to customer demands, which can presumably be linked to the intensity of the personal care consigned to making customer contact. In addition, the number of complaints is above average.

#### **Figure III:**

*Type 3: The Customer-Orientated Manager*

### **Type IV: The Growth-Orientated Team player**

Nineteen of the respondent businesses proved to be this type of business. The most significant characteristics had a standard deviation of less than 0.5.

The teams of these businesses comprise both of subject specialists as well as all-rounders with various competencies. Alongside this the enterprises are mainly concentrated on the business of IT consultancy and development. As in Type III, value is placed upon those processes which occur internally, such as marketing, quality, technology and innovation management – although in this case they generally appear in weak internal structures. All businesses find themselves in the growth phase whereby they favour an informal network of friends and acquaintances as opposed to an established institution.

However, a well balanced team structure and a focus on team work can lead to problems. As a consequence of such an approach, businesses enter themselves into a basic democracy which can have a negative effect on employee identification. In order to promote the community of a business and with it its success, the creation of an integrated identification opportunity is a decisive factor. This serves to give all those concerned an expressive scope to their work in the form of a handbook. It also provides them with something on which they can orientate themselves.

An orientation towards growth opposes an infrastructure that is insufficient and through which the business is not always able to act appropriately.

#### **Figure IV:**

*Type 4: The Growth-Orientated Team Player*

networks are not taken on in the first few years of a start-up business' life. Rather, they are substituted instead by less formal networks which consist of friends and acquaintances. A further aspect that should receive attention is the weak business structure that more or less all businesses show. Finally, it became evident from the correlation of data that challenging tasks within business are often accompanied by business participation and monetary incentives.

The typology encompasses the main characteristics of businesses; character traits of the business leader, business/team, controlling/financial planning, products, marketing, customers and environment. The fundamental breakdown within these areas develops approaches to classifying types of business leaders as well as types of businesses (Vesper, Cooper&Dunkelberg, Miner in Lang-von Wins (2004) ; Hannan, Burton&Baron in Renz (2001)). With the knowledge of where strengths and weaknesses lie, those factors which will influence a business' success can be determined as a result of further analysis. This process shall now be described.

### *5.2 Analysing Key Data: Identifying Critical Success Factors*

Despite the complexities of business success, it has become apparent that only a few factors actually need to be present to strongly influence and determine success (Hoffmann, 1986). These are known as critical success factors. 'When describing a critical success factor, one refers to a common, specific success factor whose fulfilment is inescapable and urgent in order to enable the achievement of business goals. This means that business goals must be established before the identification of success factors' (Thürbach, 1991).

Having conducted extensive research on over ninety studies on small businesses (see Appendix 3), a list of factors deemed crucial to the success of a firm was compiled. This list encompasses the following aspects: customer contact/acquisition, customer service, product/services innovation, product quality, marketing success, employee know-how, skill management and qualifications, distribution, competition, market potential, leadership, strategy, entrepreneur's personality, reason for exis-

tence, size of the business, flexibility, process quality, infrastructure, capital resources, controlling, and financial attractiveness.

Each success factor identified within the list was then assigned to one of the four typologies defined earlier. Therefore, once the small business has been categorised into a specific typology, they are automatically presented with a list of factors that they should monitor and work upon if they are to succeed. This personalised list of critical success factors shall be known as the entrepreneur's key data.

In line with a long term perspective this provides small business leaders with a view to those factors which may influence the future of their business. However, monitoring factors which will increase the likelihood of success does not guarantee stability. Furthermore, entrepreneurs should not only be monitoring internal factors that could lead to success, but they must also be aware of external factors that could pose as challenges to their firm. It is also essential they be given practical guidance as to how to efficiently monitor key data and challenges. These topics shall be discussed in the following section.

### *5.3Analysing Potential Business Challenges: The Early-Warning System*

Although it was established that trying to solve all the external economic factors that challenge small businesses would be too great a task, it would be foolhardy to ignore them completely. The business environment is constantly changing and understanding it is of 'crucial importance to business' (Begg&Ward, 2004 p.208). Thus, the proposed early-warning system does not seek to actively tackle macroeconomic factors but rather act as a guide to small business leaders to help them understand and manage them.

In order to support start-up business managers as they seek to understand their surroundings, the early-warning system should enable the identification and realisation of risk and success factors in the areas of finance/capital, human resources, organisation and technology.

The basis of the early-warning system is a method map which provides a portfolio of techniques by which a small business manager can conduct a comprehensive analysis of their situation and act on the

findings. The basic conditions of the method map arise from its form and content. The form represents a modular portfolio of methods with a unified core (the fundamental methods) and modules of type-specific, adaptable methods. The content consists of a combination of approved methods and the methods and instruments discovered by new research and development. A comprehensive overview of the method map can be found in Appendix 4.

Many of the new research methods encompassed in the method map are based on cybernetic theory. This approach to business management seeks to reduce complexity in everyday situations by viewing reality “from a level that is high enough to allow all the factors that operate in complex systems to be separated out and presented in a form in which they are clearly recognizable and comprehensible to anyone who is curious” (Cwarel Isaf Institute, 2002). Perceiving businesses situations in this way automatically enables managers to take the right approach to understanding complex situations.

Approved methods include, among others, business excellence models (e.g. Bellabarba, 2003), design and redesign of achievement and business models, [e.g. „House of value creation“, (Bleck et al., 2002), methods for the extension of economic appraisal and performance monitoring (e.g. Weydandt, 2000; Petztolt, 2001; Strina, 2003a), methods for services management (e.g. Bullinger, 2003; Herrmann, 2003; Spath, 2003), methods for the creation and application of knowledge management in organisations (e.g. Bullinger, 2001; Ganz, 2001; Ohlhausen, 2003), methods for innovations management (e.g. Strina, 2003b), methods for network and co-operations management (e.g. Henning et al., 2003), and methods for risk management (e.g. Scheve et al., 2003). For further information about the method map and the theories that form it, visit the project home page ([www.j-unternehmen.de](http://www.j-unternehmen.de)).

In principal, the creation of the early-warning system should function in the same way as the identification of critical success factors.

The information that the firms provide for the typology is assessed in order to estimate potential challenges and risks that the firm may face in the future. Following

the categorisation of the small business into a specific typology, selected methods from the method map are presented to the business. Businesses are thus presented with a personalised portfolio of practical methods which they can undertake to avoid future risks.

With access to this portfolio of analysis techniques, managers can select and conduct the methods most appropriate to their situation and thus gain a new perspective of their business. With a solid understanding of the business, managers can move forward and select the most appropriate courses of action for the business.

Through access to the early-warning system, business managers are supported in understanding their circumstances. However, this approach looks to the past and successful managers must be able to look to the future. This can be achieved by combining and integrating all three of the analysis methods that were previously discussed.

## **6. Integrated Analysis and Integrated Support**

By combining all three methods of analysis mentioned above, an integrated approach to managing start-up business is enabled. Gaining a comprehensive and objective overview of the business, enables entrepreneurs to fully understand their surroundings and make rational, supported decisions about future actions.

In order to successfully combine these three forms of analysis, a web platform was created, acting as an integrated management tool to support young businesses. The basic functioning of this web platform is depicted in Appendix 5. Essentially, entrepreneurs must enter data about their business into the web platform. This data is then processed in three stages; (i) The data is correlated and the business is categorised into the typology that best describes its characteristics; (ii) On the basis of the typology, critical success factors are identified; (iii) Potential challenges are highlighted by analysing the results of the questionnaire. As a result, young businesses are given information as to what type of business they are, possible challenges they may face, and the data that they should be careful to monitor. Furthermore, the young business is provided with, a portfolio of methods with which deeper

analysis of the business can be achieved. This method map acts as a practical guide to help small businesses through the transition period.

## 7. Implications

This research paper has analysed both internal and external factors that lead to the failure of start-up businesses. From this, it was clear that entrepreneurs require guidance as they seek to stabilise their firms on the market. This has been provided in the form of an integrated management tool which firstly categorises small businesses into a specific type, secondly identifies their critical success factors, and thirdly warns them in advance of challenges that they may face. In addition, the tool provides entrepreneurs with a method portfolio which acts as practical guidance through the transition from new firm start-up to consolidation.

Two positive outcomes have emerged as a result of this research project: On the one hand, attention has been drawn to the lack of support that exists for start-up businesses in their transition to consolidated enterprises, and on the other hand, a support mechanism to help start-up businesses has been created.

By purely focussing on the case of small businesses in Germany, the research activity has been able to conduct specific, directed research. Although this has aided the project by narrowing the tool's target market, further paths for research could look at the transferability of the management tool across nations.

The integrated management tool has already successfully been put to use in several start-up businesses. More information about the management tool can be accessed at [www.j-unternehmen.de](http://www.j-unternehmen.de)

## 8. Acknowledgements

This paper was based on the research project 'Young Enterprises' from the Association of Industrial Research Organisations in Germany (AIF) and was supplemented by work from the Institute for Entrepreneurial Cybernetics (IfU), the Institute for Industrial Science and Technology Transfer (IAT) and the Research Institute for Operations Research (FIR). The project began in February 2005 and is due to run until October 2007.

We would like to thank the German Federation of Industrial Research Associations (AIF) for supporting the research with funds from the Federal Ministry of Economics and Technology.

## Bibliography

- BACKGROUND NOTES ON COUNTRIES OF THE WORLD: GERMANY (2007), *Economy*, pp.10-14
- BARTLEY, J., BOARDMAN, C., RATLIFF, R. (1981) 'Small Business Growth Characteristics' *American Journal of Small Business Economics*, Vol. 5, Issue 3 pp.33-45
- BEGG, D., WARD, D. (2004) *Economics for Business*, McGraw Hill Education, Maidenhead
- BELLABARBA, A. (2003) *Entwicklung eines prozessorientierten Modells zur Umsetzung von Business Excellence im Rahmen von Unternehmensgründungen*, Springer Verlag, Berlin
- BLECK, S.; FORZI, T.; LAING., P.; STICH, V. (2002) 'The Path from Business Modelling to Technology Management', *Proceedings of the International Conference on Advanced Production Management Systems*, APMS 2002, Eindhoven (NL), 8-13<sup>th</sup> September 2002, pp. 34-46.
- BUNDESMINISTERIUM FÜR WIRTSCHAFT UND ARBEIT (2003) *Warum scheitern Start-Ups?* Retrieved 31<sup>st</sup> October 2002, from, <http://focus.msn.de/D/DB/DBY/DBY38/D/DBY38B/dby38b.htm>
- BUNDESMINISTERIUM FÜR WIRTSCHAFT UND TECHNOLOGIE (2001) *Junge Unternehmen – Die Schritte nach dem Start. Probleme und Lösungen bei der Existenzfestigung*, 6<sup>th</sup> edn, Westermann Druck GmbH, Braunschweig
- BULLINGER, H.-J. (HRSG.); BUCHER, M.; KOPFERGER, D. U. A. (2001) *Knowledge meets Process - Wissen und Prozesse managen im Intranet*, IRB-Verlag, Stuttgart
- BULLINGER, H.-J.; SCHREINER, P. (2003) 'Service Engineering – Ein Rahmenkonzept für systematische Entwicklung von Dienstleistungen', in Bullinger, H.-J.; Scheer, A.-W. (2003) *Service Engineering*, Springer Verlag, Berlin, pp. 51-82
- CWAREL ISAF INSTITUTE (2002), *Methods and Models*, Retrieved 26th July 2007 from [http://www.staffordbeer.com/en/fs\\_method.html](http://www.staffordbeer.com/en/fs_method.html)

- EUROPEAN UNION (2002) *EU, Generaldirektion Unternehmen (Hrsg.): Unternehmensdemographie in Europa*. Beobachtungsnetz der europäischen KMU, Nr. 5
- FINE, C. (1998) *Clockspeed: Winning Industry Control in the Age of Temporary Advantage*, Basic Books, New York
- FRITZ, W. (1992) *Marktorientierte Unternehmensführung und Unternehmenserfolg: Grundlagen und Ergebnisse einer empirischen Untersuchung*, Verlag Schäffer-Poeschel, Stuttgart
- FRORMANN, D. (2006) 'Medium-sized Business in Germany', *International Journal of Entrepreneurship and Innovation Management*, Vol. 6, Issues 1/2
- GANZ, W. (HRSG.) (2001) *Das Management von Erfolg und Wachstum*, Fraunhofer-Institut für Arbeitswirtschaft und Organisation, Stuttgart
- HAENDL, K. (2001) *Insolvenzursachenanalyse 2000*, Presseabteilung des Kredit-schutzverbands von 1870 (KSV), Wien
- HENNING, K.; OERTEL, R.; ISENHARDT, I. (HRSG.) (2003) *Wissen – Innovation – Netzwerke. Wege zur Zukunftsfähigkeit*, Springer Verlag, Berlin
- HERRMANN, K.; KLEIN, R.; THE, T.-S. (2003) 'Computer Aided Service Engineering Tool – Ein Rahmenkonzept für das IT-gestützte Service Engineering', in: Bullinger, H.-J.; Scheer, A.-W. (Hrsg.) (2003) *Service Engineering*, Springer Verlag, Berlin, pp.647-677
- HOFFMANN, F. (1986) 'Kritische Erfolgsfaktoren: Erfahrungen in großen und mittelständischen Unternehmungen', *Zeitschrift für betriebswirtschaftliche Forschung*, vol 38, no. 10, pp.831 – 843
- HOFSTEDE, G. (1980) *Culture's Consequences*, Sage Publications, Beverly Hills
- HSEE, C., WEBER E. (1998) 'Cross-Cultural Differences in Risk Perception, but Cross-Cultural Similarities in Attitudes Towards Perceived Risk', *Management Science*, Vol. 44, Issue 9, pp.481-498
- INSTITUT FÜR MITTELLSTANDSFORSCHUNG BONN (2007) 'Der Mittelstand in der Bundesrepublik Deutschland: Eine Volkswirtschaftliche Bestandsaufnahme. Retrieved 13<sup>th</sup> September 2007, from <http://www.ifm-bonn.de>
- JACKSON, J., RODKEY, G. (1994) 'The Attitudinal Climate for Entrepreneurial Activity', *Public Opinion Quarterly*, Vol. 58, Issue 3, pp.358-380
- KEEBLE, D., WALKER, S. UND ROBSON, M. (1993) 'New Firm Formation and Small business Growth in the United Kingdom: spatial and temporal variations and determinants', *Research Series*, No.15, Employment Department, London
- LANG\_VON WINS, T. (2004) *Der Unternehmer: Arbeits- und organisationspsychologische Grundlagen*. Springer Verlag, Berlin
- LEE, S., FLORIDA, R., ACS, Z. (2004) 'Creativity and Entrepreneurship: A Regional Analysis of New Firm Formation', *Regional Studies*, Vol. 38.8, pp.879-891
- MEYER, R.; NAJIB, H.; NIEDERER, R. (2001) 'Der Einfluss der Beratung, Weiterbildung und des Beziehungsnetzes auf den Erfolg junger Unternehmen', *Discussion Paper 2001-01*, Fachhochschule Solothurn Nordwestschweiz, Olten
- MÜLLER (2003): MÜLLER, C. A.: Business Plan. Vorlesung Universität Hohenheim, SS 2003. [http://www.uni-hohenheim.de/seh/studium/downloads/unistuttgart/bp\\_unistgt.pdf](http://www.uni-hohenheim.de/seh/studium/downloads/unistuttgart/bp_unistgt.pdf)
- NEUE ZÜRICHER ZEITUNG (2003) 'Arm, aber glücklich? Über den Schritt in die Selbständigkeit', *Neue Züricher Zeitung*, Nr. 162, 16<sup>th</sup> July 2003, pp. 51
- OHLHAUSEN, P.; RÜGER, M.; MÜLLER, M.; BUCHER, M. (2003) 'Wissensmanagement', in Bullinger, H.-J. ; Warnecke, H.-J. ; Westkämper, E., *Neue Organisationsformen im Unternehmen*, 2<sup>nd</sup> edn und erw. Aufl. : Ein Handbuch für das moderne Management, Springer, Berlin, pp.361-369
- PENMAN, S (2007) 'From Startup to Success Story', *Business Week Online*, 16th April 2007, p.18
- PETZOLT, S.(2001) 'Einführung der Balance Scorecard als Performance-Meß-System für systemische Organisationsentwicklungsprozesse', in *Unternehmenskybernetik in der Praxis*, 4<sup>th</sup> edn., Shaker Verlag, Aachen
- RENZ, K. (2001) *Das Management von Wachstum und Erfolg*, Walter Ganz, Stuttgart
- SCHEVE, P.; HENNING, K.; STRINA, G. (2003) *Leitfaden Risikomanagementsystem*. Institut für Unternehmenskybernetik, Heft 7. Mülheim, 2003
- SPATH, D. (2003) *Dienstleistungsmanagement [Seminar 2003] - Dienstleistungen*

kundenorientiert gestalten. Seminarunterlagen Stuttgart 21.Mai 2003, Fraunhofer IAO, Stuttgart, 2003

STATISTISCHES BUNDESAMT

DEUTSCHLAND (2007) ‚Mittelstand‘  
Retrieved 13<sup>th</sup> September 2007, from  
[http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Content/InfoService/UnsereAngebote/content75/Themenblatt\\_Mittelstand.psmL](http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Content/InfoService/UnsereAngebote/content75/Themenblatt_Mittelstand.psmL)

STRINA, G.; URIBE, J. (2003a) ‚Innovationsmanagement – Stand der Forschung, Praxisbeispiele und Perspektiven‘, in Henning, K./ Oertel, R./ Isenhardt, I. (Hrsg.) *Wissen – Innovation – Netzwerke. Wege zur Zukunftsfähigkeit*, Springer, Berlin pp. 95-134

STRINA, G. (2003b) ‚Zur betrieblichen Bewertung von Lernen und Kompetenzentwicklung‘, in Arbeitsgemeinschaft Betriebliche Weiterbildungsforschung (ABWF) e. V. (Hrsg.), *Kompetenzentwicklung*, Waxmann, New York, pp. 162-172

THÜRNBACH, R.-P. (1991) ‚Mittelständisches Überlegenheitspotential sichern und ausbauen‘, in Zahn, E. (Hrsg.): *Auf der Suche nach Erfolgspotentialen: Strategische Optionen in turbulenter Zeit*, Poeschel, Stuttgart, pp.95 – 111

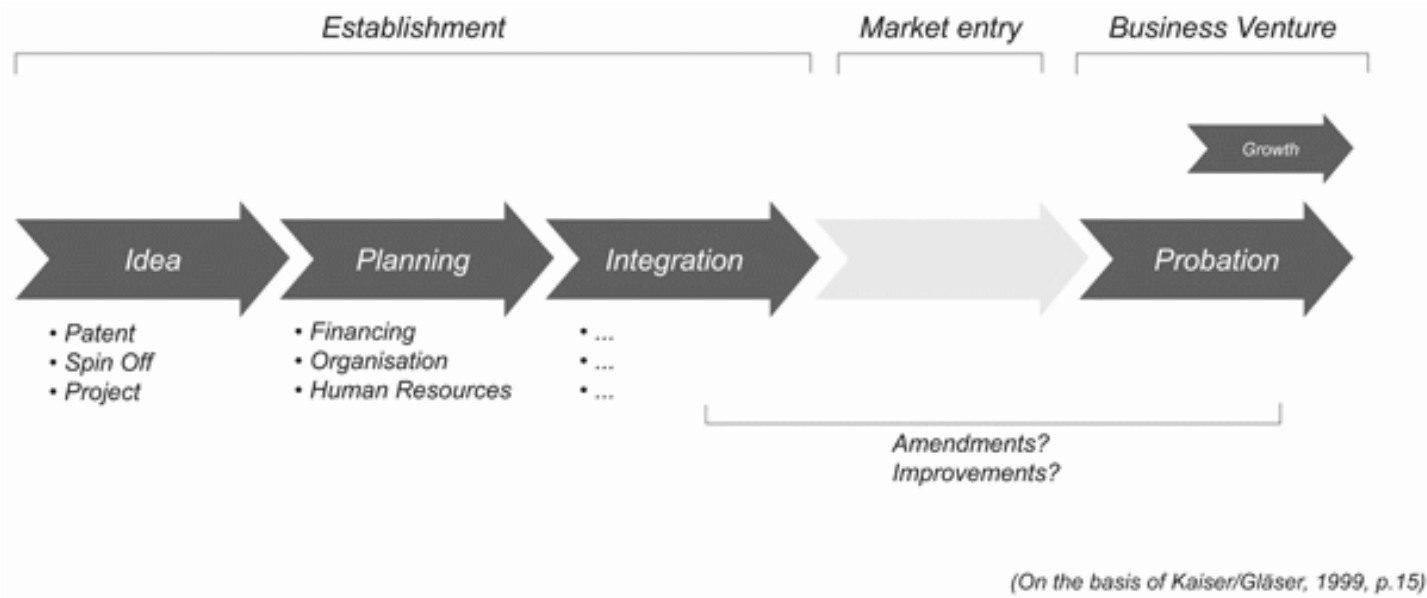
VERBAND DER VEREINE CREDITRE-FORM e.V. (2004) *Insolvenzen Neugründungen Lösungen 1. Halbjahr 2004*. Retrieved November 2004, from [http://www.firmenwissen.de/psfiwi/fn/picshow/sfn/fiwi/pic\\_id/50888](http://www.firmenwissen.de/psfiwi/fn/picshow/sfn/fiwi/pic_id/50888)

WAGNER, B. (2006) ‚What’s your type?‘, *Entrepreneur*, Vol. 34, Issue 4 pp.94-104

WEYDANDT, D. (2000) ‚Beteiligungsorientierte wirtschaftliche Bewertung von technischen Investitionen für prozessorientierte Fertigungsinseln‘, in *Unternehmenskybernetik in der Praxis*, 2<sup>nd</sup> edn., Shaker Verlag, Aachen

ZWICK, M. (2005) ‚Risk as Perceived by the German Public: Pervasive Risks and “Switching” Risks‘, *Journal of Risk Research*, Vol. 8 Issue 6, pp.481-498

Appendix 1: The Process of New Firm Start-Ups



Appendix 2: Morphological Box to Categorise Small Businesses

Characteristic	Development				
<b>Entrepreneur</b>	High Achiever	Born Manager	Independent Innovator	Insightful Salesman	Canvasser
<b>Business/Team</b>	Mostly Specialists		Specialists and All-rounders		Mostly All-rounders
	1-2 new employees last year	3-5 new employees last year	>5 new employees last year	none	
	1-2 employees left last year	3-5 employees left last year	>5 employees left last year	none	
	1 Founder	2-3 Founders	>3 Founders		
<b>Controlling/Financial Planning</b>	Internal	Advised	Out-sourced	Non-existent	
	Yearly	Quarterly	Monthly	Non-existent	Once (when established)
<b>Product</b>	1 Product		2-4 Products		>4 Products
	Advised	Technology Business	Technology Development	Other	
<b>Marketing</b>	Internal		Out-sourced	Non-existent	
<b>Customers</b>	1 Customer		2-4 Customer		>4 Customer
	1-2 new customers last year	3-5 new customers last year	>5 new customers last year	none	
	1-2 customers last year	3-5 customers last year	>5 customers last year	none	
	Increased Profitability		Increased Comfort	Knowledge Growth	Acquisition of Experience
<b>Environment</b>	Local Sales	Regional Sales	National Sales	International Sales	
	Co-operation with Suppliers	Co-operation with Businesses in the Same Branch		Co-operation with Both	No Co-operation
	Market Growth >5%	Market Growth >10%	Market Growth >20%	Negative Market Growth	
	Equity/Venture Capital >10%		Equity/Venture Capital 20-30%	Equity/Venture Capital 30-50%	Equity/Venture Capital >50%

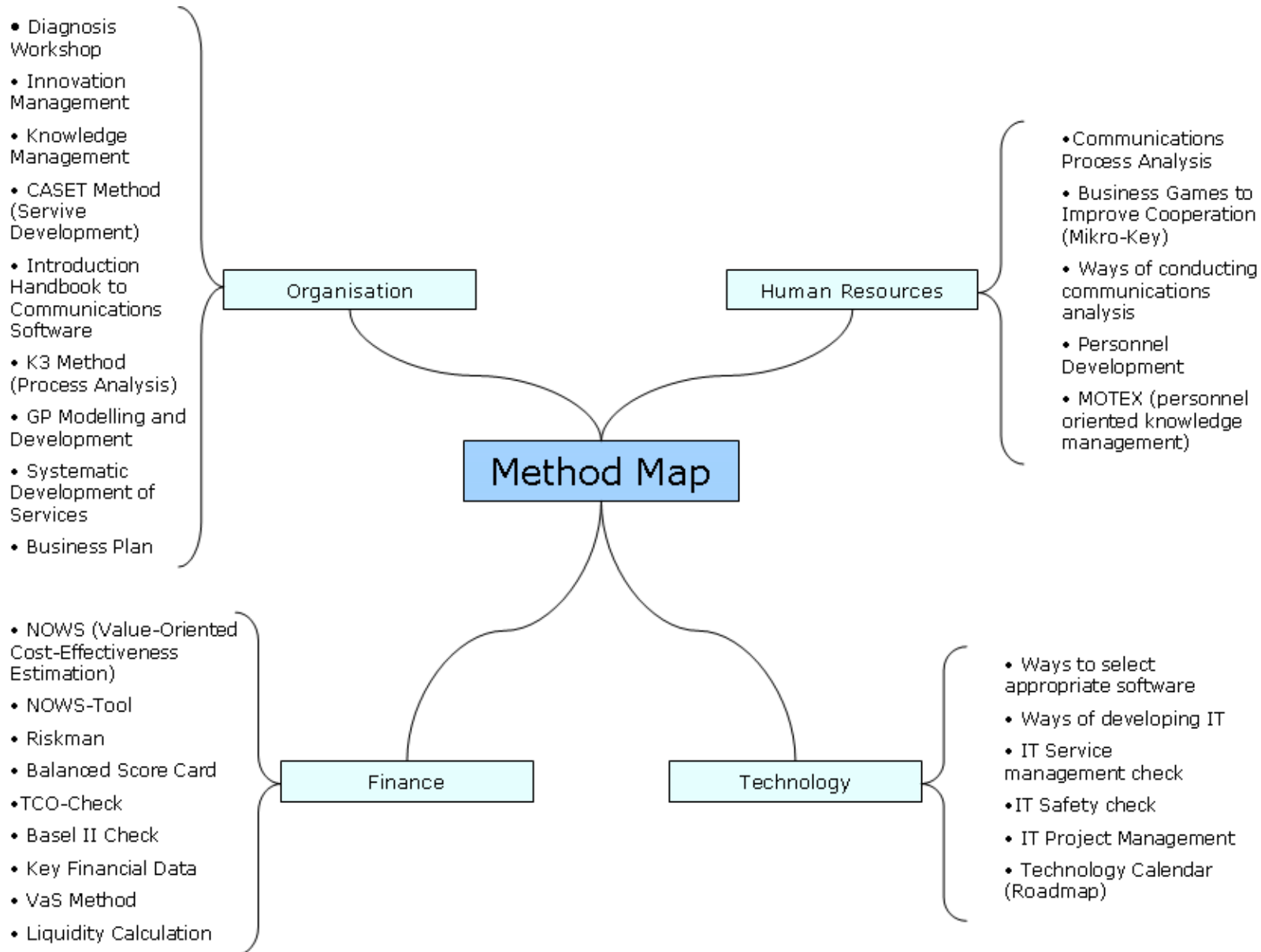
NB: Where a characteristic has more than one sub-item, each different sub-item is marked in a different colour.

Appendix 3: Literature study to determine critical success factors

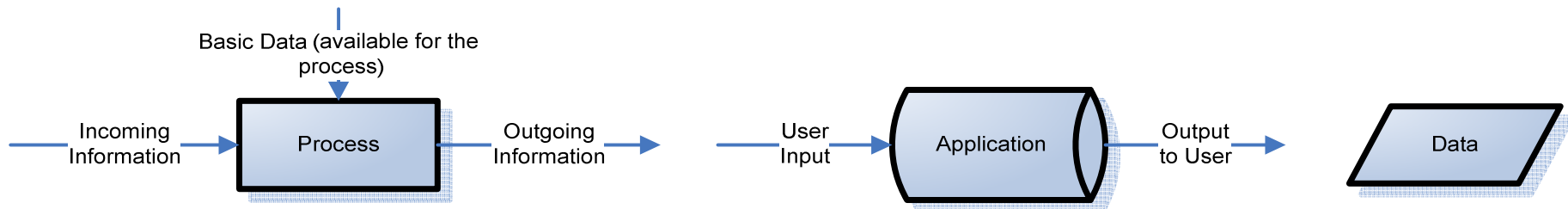
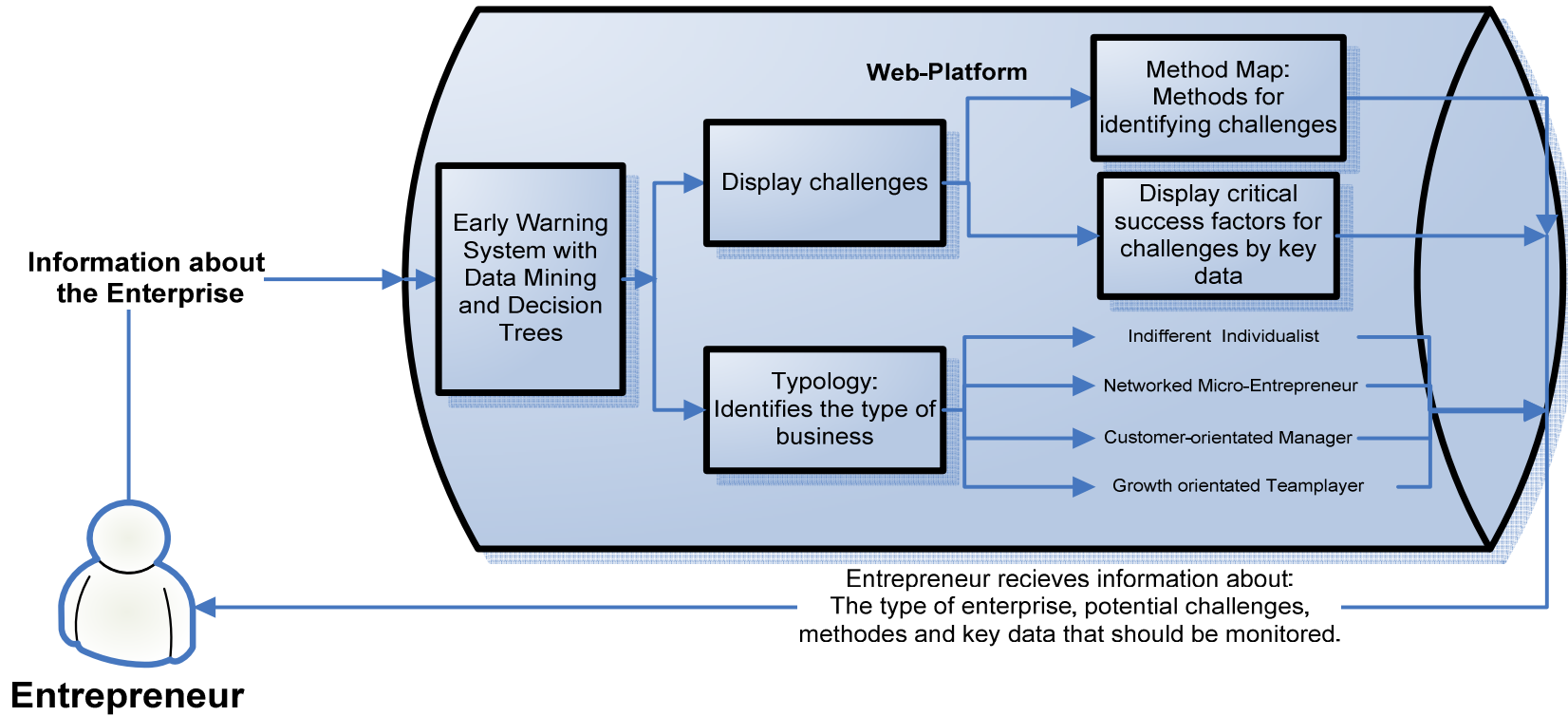
	<b>General Empirical Studies</b>	<b>IT based studies</b>	<b>IT and Marketing based studies</b>	<b>Project Management studies</b>	<b>Number of mentions</b>
Customers	32	5	3	2	42
Market	23		1		24
Business Culture (inc. leadership)	35	2		4	41
Employees	19	4	3	9	37
Innovation/Quality	58	6	6	3	73
Organisation	16	5	4	5	30
Investment/Finance	26	2	3	3	34

Based on over 90 studies

Appendix 4: Method Map: Methods to analyse potential business challenges



Appendix 5: An Integrated Management Tool to Support Start-Up Businesses in Transition



## **Contributing Authors**

### **FLACHSKAMPF, Paul**

Paul Flachskampf was born in 1978 and studied International Business Studies at the University of Maastricht. His dissertation was concerned with finding a solution as to how logistical internal business networks could be integrated and optimised alongside the methods and concepts of supply chain management (Degree completed in 2002).

Following his studies, Paul Flachskampf worked as a management consultant at P3 Engineering Society for Management and Organisation. There he led several projects in the field of aeronautics. Above all his focus lay on project management consultancy in product development, supply chain management in the stages of purchase, engineering and production and quality management consultancy.

Since 1st April 2005 Paul Flachskampf has been employed at the Institute for Entrepreneurial Cybernetics as an academic associate where his main responsibilities comprise the completion of research and development projects. His key areas of activity incorporate above all: operating the extended economic analysis, managerial valuation of technical development processes, and the co-supervision of a university course in economic engineering (Introduction to Computing and Information Systems).

Contact Information: Telephone: +49 (0)241 51 54 28 82  
Fax: +49 (0)241 51 54 28 76  
E-Mail: [paul.flachskampf@ifu.rwth-aachen.de](mailto:paul.flachskampf@ifu.rwth-aachen.de)

### **KOPPERGER, Dietmar**

Dietmar Kopperger studied the University of Stuttgart where he took Technically-Orientated Economics as his main subject and Informatics as his subsidiary subject.

Following the completion of his studies, he operated under self-employment in the area of data processing, focussing particularly on thematic documents, business processes, workflow management and organisation. Since March 1995, Dietmar Kopperger has been working at the Fraunhofer Institute for Industrial Engineering where he operates in CC Software Management. Activities within his field of work include the processing of documents and work-flow management in organisational and business management projects, research and in industry. Within his job, Dietmar Kopperger has led and worked on projects in branches of public services, financial services and industry.

Contact Information: Telephone: +49 (0) 711 970 - 2429  
E-Mail: [dietmar.kopperger@iao.fraunhofer.de](mailto:dietmar.kopperger@iao.fraunhofer.de)

### **KRAMBROCK, Nikolai**

Nikolai Krambrock was born in 1978 and studied at the Aachen University and the University of Kent from 1997-2002. He successfully graduated with a degree in Informatics. During his studies, Krambrock established his own business which was concerned with the development

of individual, managerial software. Customers included medium-sized firms as well as Allianz Plc.

From 2002 – 2004 he worked in IT auditing and risk management for PriceWaterhouseCoopers where he gained an insight into management, controlling and financial accounting in large corporations. Since 2004 Krambrock has been working as an academic associate at the Research Institute for Rationalisation where he focuses on business organisation and risk management in young businesses – particularly within the IT sector. In consultancy projects he helps medium-sized and (sometimes) young businesses restructure their IT departments and introduce ITIL.

Krambrock's areas of expertise not only cover the IT sector but he also has experience in mechanical and plant engineering and the pharmaceutical industry.

Contact Information: Telephone: +49 241 47705-509  
E-Mail: [Nikolai.Krambrock@fir.rwth-aachen.de](mailto:Nikolai.Krambrock@fir.rwth-aachen.de)

### **STANISIC-PETROVIC, Mirjana**

Mirjana Stanistic-Petrovic studied English, American and Romance Studies with a focus on Natural Language Processing at the Eberhards Karls Univeristy, Tübingen.

Since February 1997, Mirjana Stanistic-Petrovic has been employed as an academic associate at the Fraunhofer Institute for Industrial Engineering (IAO) where she works in CC Software Management. She is deputy manager of the IAO's document and workflow management centre. Activities within her field of work include implementing and leading projects in the subject area of documentation and work-flow management. These projects are related to both research and the industry itself, whereby both public service organisations and production companies are customers.

Mirjana Stanistic-Petrovic is the author and co-author of numerous books and publications.

Contact Information: Telephone: +49 (0) 711 970 - 2413  
E-Mail: [mirjana.stanistic@iao.fraunhofer.de](mailto:mirjana.stanistic@iao.fraunhofer.de)

### **STRAUB, Oliver**

Oliver Strauß studied Physics at the Universtiy of Stuttgart and the University of Massachusetts (Amherst, USA).

Since 2000 he has been working at the Fraunhofer Institute for Industrial Engineering as a member of the Marketing Strategy Team for Software Technology. Here he is heavily involved in the following areas: Software Engineering, Mobile Applications and Grid Computing. Within his field of work his activities include implementing and leading projects in the areas of software management and software technology. Such projects are as much from the field of research as they are from the field of industry.

Contact Information: Telephone: +49 (0) 711 970 - 2406  
E-mail: [oliver.strauss@iao.fraunhofer.de](mailto:oliver.strauss@iao.fraunhofer.de).

## **WEBER, Anne**

Dr. Anne Weber was born in 1977 and studied Dentistry at the RWTH Aachen University, taking her final examinations at the end of 2002. In her dissertation she focussed on the theme 'Clinical Experiences with Two Root Canal Systems consisting of Composite' (Thesis advisors: Professor D.Edelhoff and Professor H Spiekermann). As of October 2003 she has been studying Economics at the Polytechnic University in Aachen.

Following the completion of her first degree, Dr Weber worked at INPUT Clinical Research Ltd. for two years. Here, she worked on medical tasks in order to ensure the validity, plausibility and quality of data. Further to this, she worked as a freelance associate to MAIX Market Research and Consulting Ltd. in Aachen for one year.

Since July 2005 Anne Weber has been an academic associate at the Institute for Entrepreneurial Cybernetics.

**Contact Information:** Telephone: +49 (0)173 484 5756  
Fax: +49 (0)241 51 54 28 76  
E-Mail: [anne.weber@ifu.rwth-aachen.de](mailto:anne.weber@ifu.rwth-aachen.de)

## **Translator**

## **HAWDON, Christine**

Christine Hawdon was born in 1985 and is currently studying Management Studies with German at the University of Nottingham, UK. Since March 2007 she has been undertaking an internship at the Institute for Entrepreneurial Cybernetics where her main work activities include translating texts from German to English and doing initial research for projects. She has recently become involved with the Institute's newest project, 'Arbeitsgruppenassistent' which is concerned with the development of an information system which will support group work in industrial businesses.

**Contact Information:** Telephone: +49 176 66155 408  
E-Mail: [christine.hawdon@ifu.rwth-aachen.de](mailto:christine.hawdon@ifu.rwth-aachen.de)