CREATING ENTREPRENEURIAL VALUE THROUGH UNIVERSITY-INDUSTRY INTERACTION: HOW UNIVERSITIES CAN ACQUIRE AND SATISFY BUSINESS PARTNERS TO EXPLOIT THEIR ENTREPRENEURIAL POTENTIAL

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This paper employs two major topics with respect to university-industry interaction. First, it looks at the people within an organisation which make or influence the decision whether or not a research & development (R&D) project is given to an external institution and, if so, to which one. Second, the paper determines the dimensions and factors having an impact on customer satisfaction in university-industry relationships. Using the customer satisfaction/dissatisfaction (CS/D) model as the theoretical basis, the paper shows which dimensions and factors should be of high priority for universities willing to successfully interact with industry in order to extract entrepreneurial value.

1 INTRODUCTION

In today’s economic setting, the progression of globalisation (Gummesson, 2002) and continuously faster technological development (Santoro & Chakrabarti, 2002) has lead to an intensification of the competitive landscape (Siguaw, 2003). This in turn has placed significant pressure on organisations worldwide and put firms under significant pressure to continually seek new areas of competitive advantage through the creation and extraction of entrepreneurial value. While Schumpeter’s (1934) work is most often seen as the origin of entrepreneurship and the merits of different scholars such as Drucker (1985) are widely acknowledged, today many varying, non-consistent approaches towards entrepreneurship exist (Maes, 2003). If entrepreneurship is understood as “the process of uncovering and developing an opportunity to create value through innovation” (Antonicc and Hisrich, 2001), entrepreneurship can be distinguished in three different types by using the entrepreneurial person/organisation as the classification criteria. (1) Classical entrepreneurship refers to individuals launching a new company (Szerb, 2003) while (2) corporate entrepreneurship, also called intrapreneurship (Pinchot, 1985) or corporate venturing (Stopford and Baden-Fuller, 1994), refers to entrepreneurship within existing organisations (primary private business organisations) (Zahra, 1991). Lastly, (3) university entrepreneurship refers to higher education institutions undertaking entrepreneurial activities to exploit the market potential of their knowledge and technologies (Shane, 2004).

While classical entrepreneurship has gained significant interest over the past decades (Szerb, 2003) with corporate (Dess et. al., 2003) and university entrepreneurship (Rothermael et. al., 2007) following more recently, less attention has been paid to interpreneurship/joint entrepreneurship. Interpreneurship can be understood as entrepreneurship accomplished in networks (Szerb, 2003) or partnerships whereby participating organisations contribute resources and share the benefits proportionally to their contributions. This form of entrepreneurship especially is becoming more and more important because barely any organisation owns all required resourced to successfully develop and commercialise innovations (Smith, 2007). As a result private organisations start opening their research and innovation processes in order enhance their innovation potential by integrating external resources (Laursen & Salter, 2006; Chesbrough, 2006). On the other hand, universities are becoming more and more market-oriented and offer their research competencies, capacities and results (Baaken, 1999) to raise their third-party funds and to internalize practical knowledge (Bozemann, 2000; Carayol, 2003).

In this context, the number of established university-industry partnerships and networks has increased significantly in recent years (Poyago-Theotoky et al., 2002). While more and more academic and business organisations now jointly create and exploit entrepreneurial value, research on university-
industry relationships is still on an early stage with a gap in knowledge on how partnerships can be established and lead to a success.

Therefore, this paper aims to contribute to this research stream by taking a closer look how universities can acquire and satisfy their business partners in order to extract entrepreneurial value. More precisely, the paper aims (1) to identify who is influencing and who is making the decision whether or not research assignments are given to an external institution, (2) to determine who is influencing and who is making the decision which institute receives external research assignments, and (3) to investigate which requirements university research institutions have to meet, and (4) which factors influence the research customers’ expectations level.

The paper is structured as follows: First, a literature review on knowledge markets, customer satisfaction and customer satisfaction measurement is provided. Following a description of the research materials and methodology, empirical results are presented and discussed. The paper finishes with a conclusion including the research’s limitations as well as directions for future research.

2 THEORETICAL FRAMEWORK

Since a basis of legitimacy is required to apply marketing models, instruments and proceedings in university research commercialization, this chapter discusses the existence of knowledge markets and the market mechanisms being present on these markets. Following this, a conceptual framework of customer satisfaction, namely the customer satisfaction/dissatisfaction model (CS/D), which serves as the theoretical basis for the empirical study is presented.

2.1 Knowledge Markets

The basis of legitimacy of marketing activities in research commercialisation is given in knowledge markets which bring intellectual offerings and corresponding demand together (Luke, 2005; Rausser 1999). In this context, the term knowledge also includes technologies which can be understood as methodical knowledge embedded in products and processes (Boer et. al., 2006; Kersten et. al., 2002). As with every market, a knowledge market consists of knowledge providers (sellers) and knowledge customers (buyers) (Meffert, 2005).

With respect to university-industry relationships, this means that industrial organisations, acting as knowledge customers, encounter a problem which they cannot or do not want so solve themselves and assign it to an external resource (Kuhn, 2003). On the contrary, research organisations, acting as knowledge providers, offer their research competencies, capacities and results to solve industrial problems (Baaken, 1999). Consequently, a market of knowledge exists “where buyers and sellers can engage in order to exchange knowledge products and services” (Desouza & Awazu, 2004, p. 60).

Davenport and Prusak (1998) assume that exchange processes on these knowledge markets are based on general market principles. According to this, knowledge markets would behave equally to markets of tangible goods (Kuhn, 2003; Teece, 1998). Against this, critics argue that market mechanisms cannot be adopted without further ado (Kuhn, 2003) since market mechanisms on conventional markets are based on the lack and consumption of goods (Fehl & Oberender, 1990). These constraints could not be considered as valid in knowledge markets since after disposal and transmission, knowledge still remains available for sellers (Kuhn, 2003). However, knowledge markets are working according to the principle of information advantages (Kuhn, 2003) which means that profit can only be realised by an imbalance of information/knowledge (von Hayak, 1945). Therefore, the economic value of knowledge depreciates since sellers lose their advantage when sharing/selling their knowledge (Jaros, 2004). As a result, knowledge markets underlie market mechanisms just as conventional markets of goods and services (Kuhn, 2003). Recognising this fact, universities need to act market-oriented in order to create value for their customers. This, in turn, requires applying marketing models, instruments and proceedings – with customer satisfaction measurement being one of them (Baaken, 2007; von Hagen et. al., 2006).

2.2 Customer Satisfaction and Its Measurement

In literature, customer satisfaction is defined in two different ways – as either an outcome or as a process (Hahn, 2002; Schütze, 1992). The outcome definition characterises satisfaction as the result of
an evaluation process (Vavra, 1997). Howard and Sheth, for example, define satisfaction in their model of a purchasing decision process as “the buyer’s cognitive state of being adequately or inadequately rewarded for the sacrifices he has undergone” (Howard & Sheth, 1969, p. 145). On the contrary, also the process itself can take centre stage in a definition of satisfaction (Hahn, 2002). Thereby, “perceptual, evaluative and psychological processes” (Vavra, 1997, p. 4) which contribute to satisfaction are accentuated (Hunt, 1977; Engel & Blackwell, 1982).

Most definitions of satisfaction are based on the outcome approach, however, researcher’s perceptions differ in terms of how the result comes about (Hahn, 2002): For example as “overall evaluation” (Fornell, 1992, p. 11), as “psycho-logical state” (Howard & Sheth, 1969, p. 145), as “global evaluative judgement” (Westbrook, 1987, p. 260) or as “summary attribute phenomenon” (Oliver, 1992, p. 242). Furthermore, there is no consent if satisfaction results from cognitive and/or affective processes (Homburg/Giering, 1999).

The customer satisfaction/dissatisfaction model (CS/D) is the most prevalent (Yi, 1990; Roest, 1999; Homburg& Stock, 2003) and defines satisfaction as an “outcome of a complex [post-choice] information processing process” (Herrmann et. al., 1997, p. 100) concerning a specific purchase decision (Vavra, 1997). The model is based on the assumption that customers evaluate their satisfaction with a product or service by comparing perceived performance with expected performance (Gerson, 1994; Anton, 1997). Figure 1 shows the CS/D model graphically.

![Figure 1: The CS/D model (Following Homburg & Stock, 2003, p. 21)](attachment:image)

The above figure shows the two determinants having an effect on the perceived and expected performance, namely the dimensions of customer satisfaction as well as the factors influencing customer expectations. These two components are the subject studied in this paper. In order to understand their influence on customer satisfaction, the five other building blocks will be detailed below.

First, expected performance is understood as a customer’s set of assumptions regarding a product or service performance (Homburg & Stock, 2003). Customers use expectations as a reference point (comparison standard) on which perceived performance will be measured (Ölander, 1977). However, to date there is no consent which standards (dimensions) customers apply. Due to this, several approaches are found in literature, e.g. from Miller (1977), Rudolph (1998) or Fournier & Mick (1999) just to name some. Although comparison standards cannot be determined without fail, it can be assumed that customers take into account several standards simultaneous or successive (Tse & Wilton, 1988). Because integration and weighting of these standards change according to the customer’s circumstances (Herrmann, 1998), the construct can be regarded as dynamic (Schütze, 1992). As a result, expectations can be raised and influenced e.g. by personal needs, experiences or even by corporate communication strategies (expectation management) (Bidmon, 2004). Especially in research commercialisation, the customer’s expectation formation is of high relevance, because results of research projects are difficult to assess. Therefore, expectations can differ extremely from perceived performance and need to be managed strategically.
Second, perceived performance acts as the other building block having an effect on the comparison process. Contrary to expected performance, literature pays less attention to this component (Hahn, 2002). Just as expected performance, the overall perceived performance is a construct of differently weighted elements (Schütze, 1992; Borth, 2004). Perceived performance reflects the performance level of a product or service and can be differentiated in objective and subjective (Tse & Wilton, 1988). However, researchers as well as practitioners agree that only the subjective perception is relevant for customer satisfaction (Borth, 2004). Due to the fact that the expectation is one of several factors (Schütze, 1992; Borth, 2004) which influence the subjective perception, perceived performance should only be dissociated from expected performance on the conceptual level (Hahn, 2002). Particularly in research commercialisation, the subjective performance can be perceived much lower than the objective one, since research results are mostly complex and the benefit is consequently difficult to evaluate. Therefore, e.g. explanatory documentations, technology studies and further instruments used to objectify results can be assumed to be of high relevance.

Third, the comparison component compares perceived performance with expected performance in order to evaluate the performance of a product or service (Gerson, 1994; Anton, 1997). The resultant congruence or divergence is expressed as customer’s confirmation, or positive or negative disconfirmation (Hermann et. al., 1997). Positive disconfirmation occurs when perceived performance exceeds expected performance, whereas negative disconfirmation occurs when perceived performance does not meet the customer’s expectations (Homburg & Rudolph, 1997). Confirmation, on the other hand, takes place when expected performance is matched by perceived performance (Homburg & Rudolph, 1997). Woodruff & Gardial (1996) also refer to a “zone of indifference” which means that the comparison standard does not have to be matched exactly. Lindenfelder et. al. (2000) agree with this and refer to a zone of tolerance in which customers confirm their expectations. But ambiguity remained on the way how customers draw the comparison (Bidmon, 2004). While some researchers assume that customers compare perceived and expected performance unconsciously (latent), others believe in a conscious (manifest) process (Hahn, 2002). Pieters et. al. (1995), for example, assent to the second view and developed the “customer-as-a-bookkeeper model” (Pieters et. al., 1995, p. 30 cited through Bidmon, 2004, p. 60). It can be assumed that manifest processes take place in research commercialisation, since research projects are mostly expensive and essential for the company’s success. Therefore, research customers will evaluate the project conscious and in a rational way (Homburg et. al., 1995).

Fourth, in addition to the result of the comparison process, a lot of other external factors influence the satisfaction decision (Hahn, 2002). Recommendations, for example, are able to remove doubts (cognitive dissonances) after the decision-making process and have therefore a positive impact (von Wangenheim, 2003). Furthermore, the perceived justice, emotions and situational circumstances are regarded as magnitudes of influence in literature (Hahn, 2002). Therefore, the result of the comparison process cannot be equated with customer satisfaction/dissatisfaction and is, hence, understood as a pre-stage of building customer satisfaction (Hahn, 2002)

Fifth, combining the results of the comparison process with the influencing external factors, customers get to a result of satisfaction, indifference or dissatisfaction. The majority of researchers in the area of satisfaction and quality measurement accept the basic statements of this model as true. However, there are different views whether the confirmation of expectations is sufficient or if expectations have to be exceeded (Richter, 2005). Therefore, some researchers speculate that satisfaction would only occur when a provider outperforms (Kaiser, 2002) and awakes enthusiasm (Lindenfelder et. al., 2000).

3 RESEARCH DESIGN

Aiming to contribute to the research stream on university-industry relationships, this paper looks closer at how universities and other higher education institutions can acquire and satisfy business partners. With the purpose of establishing and maximising joint creation of entrepreneurial value, this paper focuses on who should be addressed within private businesses in the acquisition phase, and how these businesses can be satisfied by meeting their expectations. This leads to the following four research questions:

Research questions with respect to acquisition:
- Who is influencing and who is making the decision whether or not a research assignment is given to an external institution?
Who is influencing and who is making the decision which institute receives the external research assignment?

Research questions with respect to customer satisfaction:
- Which requirements do university research institutions have to meet in relationships with industry, how important are these requirements and to what extend are these requirements fulfilled at the moment?
- Which determinants influence the research customers’ expectations level on these requirements?

In order to answer these research questions, a descriptive method was chosen to be the most suitable. While exploratory and causal research explores circumstances/coherencies, descriptive research pictures “specific details of a situation, social setting or relationship” (Neumann, 2000, p. 21). In order to illustrate the current situation (status quo) of university-industry relationships, a quantitative design was chosen whereby statements (variables) were measured with numbers and analysed by statistical methods (De Vos et al., 2005). Due to the goal to undertake a worldwide study, an online survey with open questions served as the data collection tool. The survey was pre-tested by six independent respondents in order to find an eliminate weaknesses in functionality and comprehensibility.

The target to which the results should be generalised and therewith the subject to be studied (Welman & Kruger, 1999) included all current and potential university research customers worldwide. Due to a missing directory, convenience sampling (Cooper & Schindler, 2003) was applied meaning that research customers were identified on one hand by internet research and on the other hand through XING and LinkedIn – two worldwide networks for business professionals. In total, 813 university research customers were identified, primary being Research and Development (R&D) managers/engineers, corporate scientists/researchers, Chief Technology Officers (CTOs) and innovation managers.

The data collection period started on the 5th June 2008 ending on the 22nd of the same month when no further response has been expected. Overall, 94 responses (109 uncleaned) were received resulting in a response rate of 11.6%. Key characteristics of the respondent’s were as follows: The studied companies came from 23 countries with Western Europe overrepresented in the sample. 13.8% of the companies had less than 10 employees, 10.6% between 10 and 50 employees, 18.1% between 51 and 250 employees, 14.9% between 250 and 1,000 employees, and 42.5% more than 1,000 employees. Nearly all companies (97.1%) had their own R&D department.

Table 1 and 2 show further key characteristics of the persons/organisations studied, namely their current status of collaboration and their experience with university research institutions.

Table 1: Respondent’s status of collaboration with university research institutions

<table>
<thead>
<tr>
<th>Yes, currently</th>
<th>Yes, in the past</th>
<th>No, but planned</th>
<th>No, and not planned</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>72</td>
<td>9</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>%</td>
<td>76.6%</td>
<td>9.6%</td>
<td>2.1%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Table 2: Respondent’s experience with university research institutions

<table>
<thead>
<tr>
<th>No experience</th>
<th>Less than a year</th>
<th>1 to 2 years</th>
<th>3 to 5 years</th>
<th>6 to 10 years</th>
<th>11 to 20 years</th>
<th>More than 20 years</th>
<th>Missing</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>10</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>26</td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td>%</td>
<td>10.6%</td>
<td>2.1%</td>
<td>8.5%</td>
<td>10.6%</td>
<td>27.7%</td>
<td>9.6%</td>
<td>29.8%</td>
</tr>
</tbody>
</table>

70.2% of the respondent’s also had current collaborations with non-university institutions, 7.4% collaborated in the past, 11.7% had not other connections but are in the planning phase and 4.3% had no other connections and do not plan to establish one (6.4% not stated).

4 RESULTS

Divided into three parts, this chapter outlines the questions asked within, and the results gained through, the online survey among current and potential university research customers. First, decision
makers and influencers involved in the questions whether or not a research project is given to an external party, and if so which external party receives the offer are detailed. Second, results with respect to the dimensions of customer satisfaction in university-industry relationships are presented. Third, factors influencing the customer’s expectations are detailed.

4.1 Decision Maker and Influencer

*Please state who is influencing and who is making the decision whether or not a research assignment is given to an external institution.*

Figure 2 presents in what percentage of cases manager/employees are involved in making or influencing decisions on whether or not a research assignment is given to an external party.

![Figure 2: Decision one - Internal or external research project](image)

*Please state who is influencing and who is making the decision which institute receives the external research assignment. (Multiple answers possible)*

Figure 3 shows the percentage of decisions a manager/employee is involved in with respect to the decision which external party received the order.

![Figure 3: Decision two – Which external institution](image)
4.2 Determinants of customer satisfaction

Which requirements do university research institutions have to meet? Please state as well: (a) How important are these requirements for you? (b) To what extent are these requirements fulfilled at the moment?

Table 3 shows the requirements stated by the interviewees, the quantity of statements (QUA) as well as the requirement’s importance (IMP) and fulfilment (FUL). Furthermore, the table presents numbers generated during the data analysis process. First, GAP shows the level of fulfilment by building the difference between importance and fulfilment. Second, Q*I refers to a calculated coefficient multiplying the unweighted importance with the quantity of statements given in order to build one factor showing the requirement’s weighted significance in customer satisfaction. Third, the G*I factor illustrates by multiplying a requirement’s gap with its importance on which gap universities have to work on first.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Quantity (QUA)</th>
<th>Importance (IMP)</th>
<th>Fulfilment (FUL)</th>
<th>IMP - FUL (GAP)</th>
<th>QUA * IMP (Q*I)</th>
<th>GAP * IMP (G*I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competence</td>
<td>46</td>
<td>4,54</td>
<td>3,65</td>
<td>0,89</td>
<td>208,84</td>
<td>4,04</td>
</tr>
<tr>
<td>Outcome</td>
<td>45</td>
<td>4,51</td>
<td>3,44</td>
<td>1,07</td>
<td>202,95</td>
<td>4,83</td>
</tr>
<tr>
<td>Communication / documentation</td>
<td>23</td>
<td>4,57</td>
<td>3,59</td>
<td>0,98</td>
<td>105,11</td>
<td>4,48</td>
</tr>
<tr>
<td>Project management</td>
<td>21</td>
<td>4,43</td>
<td>2,90</td>
<td>1,53</td>
<td>93,03</td>
<td>6,78</td>
</tr>
<tr>
<td>Project management (includes speed and the awareness of timelines)</td>
<td>11</td>
<td>4,64</td>
<td>3,67</td>
<td>0,97</td>
<td>51,04</td>
<td>4,50</td>
</tr>
<tr>
<td>Intellectual property/ non-disclosure</td>
<td>7</td>
<td>4,00</td>
<td>3,67</td>
<td>0,33</td>
<td>28,00</td>
<td>1,32</td>
</tr>
<tr>
<td>Facilities</td>
<td>4</td>
<td>4,25</td>
<td>2,67</td>
<td>1,58</td>
<td>17,00</td>
<td>6,72</td>
</tr>
<tr>
<td>Costs</td>
<td>16</td>
<td>4,38</td>
<td>3,47</td>
<td>0,91</td>
<td>70,08</td>
<td>3,99</td>
</tr>
</tbody>
</table>

Table 3: Dimensions of customer satisfaction in university-industry relationships

4.2 Factors Influencing the Customer’s Expectations

Regarding the performance/fulfilment of your requirements, you develop expectations. Which factors influence the level of your expectations?

Table 4 shows the factors stated, the quantity of statements (QUA) and the expressed level of influence on the expectations (LOI). Furthermore, the table outlines the Q*L factor which is the factor’s weighed significance in customer satisfaction (quantity multiplied with level of influence).

<table>
<thead>
<tr>
<th>Factor</th>
<th>Quantity (QUA)</th>
<th>Level of influence (LOI)</th>
<th>QUA * LOI (Q*L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>17</td>
<td>4,08</td>
<td>69,36</td>
</tr>
<tr>
<td>Competence</td>
<td>13</td>
<td>4,42</td>
<td>57,46</td>
</tr>
<tr>
<td>Communication</td>
<td>10</td>
<td>4,10</td>
<td>41,00</td>
</tr>
<tr>
<td>Complexity of research</td>
<td>9</td>
<td>4,33</td>
<td>38,97</td>
</tr>
<tr>
<td>Reputation / publications</td>
<td>8</td>
<td>4,00</td>
<td>32,00</td>
</tr>
<tr>
<td>Priority / time pressure</td>
<td>7</td>
<td>4,43</td>
<td>31,01</td>
</tr>
<tr>
<td>Costs</td>
<td>5</td>
<td>4,00</td>
<td>20,00</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>3,00</td>
<td>6,00</td>
</tr>
</tbody>
</table>

Table 4: Factors influencing customer satisfaction in university-industry relationships

5 DISCUSSION AND IMPLICATIONS

Acquiring business partners

The results show that R&D managers are involved in 95.7%, project managers in 89.4% and general managers/owner in 86.2% of the decision whether or not a research assignment is given to an external party. On the other hand, employees of the R&D department and operating managers are only
considered in two-thirds of the decisions. While the involvement of all managers/employees is quite high, significant differences exist in the type of involvement. R&D manager as well as general manager/owner are primary decision makers, whereas operating managers, project managers as well as employees of the R&D department are mainly influencing the final decisions, but not actively making them.

With respect to the decision of who receives the external research assignment R&D managers take first place being involved in nearly 95% of the decisions followed by project managers (85.2%) and general managers/owners (75.5%). Compared with this, operating managers as well as employees are only involved in about 60% of the decisions. Looking closer at the type of involvement, results show that R&D manager and general manager/owner are again primary decision makers while the resulting three (operating manager, project manager, employees of the R&D department) are again mainly acting as influencers.

Overall, research on the decision making process showed that the head of R&D (the manager) as well as the head of the company (general manager/owner) are – as expected – the primary decision maker. However, operating manager, project manager and even employees of the R&D departments are also involved in many decisions and should therefore also be targeted in a university’s communication activities when trying to convince private businesses to partner.

Satisfying business partners
Furthermore, exploratory research has determined the requirements of research customers on universities with competence, outcome, communication/documentation and project management being the central. A number of similarities between these dimensions of customer satisfaction and approaches in literature were found. Competence for example refers to the resources of universities and belongs to Donebedian’s first performance indicator – structure. Donebedian (1980) outlines that “structure” is the basis of service quality, because it influences the process and the process again has an impact on the outcome. On the other hand, communication/documentation refers to the approach of Grönroos (1982) who particularly mentioned the process view. The research process attaches high importance, because the way how research is conducted influences the validity and therefore also the result’s value. Due to this, research customers require detailed documentation and continuous communication. Communication/documentation has also been found in the seven-dimensional construct of Rudolph (1998). The outcome of research (knowledge) corresponds with the satisfaction of products in the INDSAT scale, because both are deliverables (Rudolph 1998). Surprisingly, intellectual property/non-disclosure has not been found to be significant in general (weighted importance). This was rather unexpected since it refers to principle of information advantages in knowledge markets which implies that profit can only be realised by an unbalance of information/knowledge (compare chapter 2.1). However, taking a closer look it has to be noted that the unweighted importance was stated with the highest number (4.64) whereas the quantity of statements was very low (leading to a low weighted significance). As a result, intellectual property/non-disclosure can be assumed to be very important, but only for a certain customer group.

With respect to the dimension’s gaps between importance and fulfilment, research has highlighted that universities especially underperform in terms of costs and project management (which includes speed and the awareness of timelines) followed by outcome, communication/documentation and intellectual property/non-disclosure. Weighted by the dimensions importance, project management and costs keep on top and should therefore be examined by universities in order to increase customer satisfaction.

With regard to the factors influencing the expectation formation of university research customers, exploratory research identified experience, competence, communication and the research’s complexity being the most important ones.

Based on the exploratory research described above, the customer satisfaction model presented in chapter 2.2 has been adapted to university-industry collaborations. Figure 4 shows the new developed model.
6 CONCLUSION

In today’s competitive economic environment universities and private businesses are forced to work together in order to successfully develop and commercialise innovations to extract their entrepreneurial benefit. Following an empirical research approach, this paper looked at these relationships, investigated the decision making process, determined the different dimensions of customer satisfaction, outlined the factors influencing customer expectations and uncovered the most significant performance gaps. The results have been integrated in the CS/D model now showing how universities can influence their business customer’s satisfaction to create a continuous innovation environment.

While this paper provided empirical results about the decision making process as well as dimensions and factors influencing customer satisfaction in university-industry relationships, the findings should be considered in the light of different limitations. First, results are based on a small, geographically widely spread sample. Second, the sample was not representative due to the usage of convenience sampling. Third, as a result of convenience sampling, respondents from Western Europe have been significantly overrepresented in the sample.

While this study contributes to the research stream of university-industry interaction, different recommendations for further research can be given. First, with respect to the decision making process, research on the influencers’ type of involvement as well as the effect on the later decision would be of high interest to better allocate resources in the process of convincing potential business partners. Second, future research is needed to investigate how the dimensions of customer satisfaction and factors influencing customer satisfaction in university-industry relationships differ in various countries and industry sectors. Third, further research is required to determine interdependencies of the single factors. Lastly, investigating (on a large sample) which factors have the highest influence on the overall satisfaction would be of high value for theory and practice.

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