

DOCTORAL (PhD) THESES

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Knowledge transfer in service research - Service engineering in startup companies

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1. Starting point and Objectives of the dissertation

The systematic development of new services today represents a key success factor for companies in the manufacturing sector. Innovation in the service sector constitutes an important basis for the acquisition and development of competitive advantages. This applies first of all to product-related services, which companies provide for their customers and completing their performance bundle designing hybrid products. Frequently, however, companies are not able or only in a comparatively inefficient or ineffective way able to provide all the services required for own and research use so that they acquire or have to acquire these services from other specialised service companies, (so called "business-related" services). Especially in the field of small and medium-sized enterprises (SMEs), however, the problem often arises that they have not yet recognized the importance of services for their competitiveness or – insofar as they are aware of their relevance – are not able to promote development and maintenance of their service program systematically. In both cases the result is that the now abundantly existing findings from research services in the field of SMEs have found far too little dissemination: There is a gap between scientific knowledge and enterprise practice, which must be closed to improve the innovative capacity and competitiveness of the numerous SMEs in the manufacturing sector in Baden-Württemberg. Targeted service engineering taking into account customer needs and the competitive conditions of the SMEs in the manufacturing sector itself, but also of the companies in the tertiary sector supplying them with the necessary corporate-related services can be seen as a key to success. Therefore, service engineering is at the centre of the planned project.

The objectives of this thesis are the derivation of approaches to strategic planning and service engineering from literature and empirical research, the application of which can increase the efficiency and success rate for young SMEs. A case study based on strategic corporate planning instruments that can be implemented and applied by young SMEs is to be performed as a practice test and proof of success. *In summary*, two research objectives are being pursued.

The *content objective* of the thesis is to come up with copyable approaches for the implementation and application of strategic business planning tools for service engineering. The *methodological objective* of the thesis is to develop the theory and concepts for strategic planning and service engineering, to test and explore its concrete application in young SMEs, in order to produce knowledge for other young SMEs.

The *structure of the thesis* is based on the philosophy of applied science according to ULRICH (2001). However, this is not about basic sciences to the pursuit of general theories to explain existing realities, but about the development of practical and active design rules and models for the future to support the successful development and growth of young SMEs [Ulrich 2001, p. 19ff]. At the beginning, the operational problems are recorded and typed. Then, the collection, interpretation and specification of problem-relevant theories to the fundamental and formal sciences take place in the research process. In the next step, the application contexts are recorded and examined in order to derive from them the practical design models and recommendations for action. With these models and rules, a practical implementation in case studies is carried out to determine the suitability for use. As a result, several recommendations for the practice arise.

Conclusions from these versions of the research process in applied science are at the same time the cornerstones to the methodological approach:

- The practical relevance is constitutive for the determination of the methodical approach in the investigation. This requires that relevant problems taken from practice are worked out, and that practical information during the analysis and synthesis work is incorporated into the research process.
- A study of the influences of the business environment and the company itself is carried out on the basis of the analysis of the application context (strategic planning by young SMEs).

Against this background, the previously outlined problems and the mentioned research objectives, the following *research questions arise* that must be answered in the literature-study analysis, i.e. the secondary data and the case study as well as the primary data:

1. Do young SMEs use strategic business planning concepts?

(secondary data from literature and study analysis)

2. What conditions apply to young SMEs in the case of strategic business planning?

3. Which applicable and feasible instruments do young SMEs use in strategic business planning?

(primary data from the expert interview and the case study)

Using the secondary analysis performed in *Chapter 2* the following hypotheses are developed:

- SMEs need the strategic development of services in terms of service engineering to grow in the market.
- SMEs develop certain qualities when maturing the strategic orientation is related to the age and size of SMEs.
- The importance of long-term planning is due to the strategic use of control instruments.
- The strategic approaches and conceptual design of engineering services in the start-ups are dependent on the skills of the entrepreneur.

These causal hypotheses can be accepted as a basis at an early stage of the empirical study. In the course of the case study, it will be determined if these predictions can be confirmed.

2. Methodology

Due to the influence of economic changes, young SMEs which are at the corporate identification stage of development must pay particular attention to general conditions such as the micro and macro environment. These often difficult starting points and *problem situations* make adjustment processes essential as there is freedom to act and the pursued strategies need to be reconsidered. Priority for all young SMEs is stable, sustainable and healthy growth. Therefore, it is a key management task to deal with the definition, planning and implementation of strategies.

The *objective* of this thesis was to generate practical knowledge for young SMEs in the area of strategic corporate planning and service engineering and establish a workable and applicable phase approach for management.

Therefore, the *research methodology* used in this thesis is based on the guiding principles of applied research. Due to their economic importance, the focus was on SMEs, as in the case of young SMEs the entrepreneurial challenges of the future are great.

The envisaged *structure of the work* was to analyse the theory and existing studies in the form of *secondary research*. A concept of the necessary strategic corporate planning instruments by means of service engineering was created using the theory part. This means that the relevant science findings were derived using *primary research* with respect to knowledge transfer. The research results were systematized and evaluated to an action plan for a solution of the problem. The applications of the different instruments have been evaluated for their practicality using *primary research* in 17 multiple case studies over a two-year period. The evaluations of these case studies highlight the applicability of instruments in

young SMEs. Based on these results, consequences were derived and future strategic challenges were pointed out.

In total, over 234 sources were considered for the *literature/study and document analysis* presented in this study.

3. Concept

Research on service engineering usually assumes the composition of a performance from three dimensions known from the service marketing [Engelhardt et al. 1993, p. 398]: service provision, service creation process and service results.

In this respect, it should be noted that systematic method-based service engineering must consider all three dimensions, which results in product models, process models, and resource models being used, which together represent *development methodology* [Fährnich/Opitz 2003, p. 95].

An especially important role in the development of new services is played by **process models** that divide the process of developing a service into various phases, from the initial idea to the final realization, that have to be gone through systematically. The literature provides here a variety of concepts which can be broken down into process models, iterative process models and prototyping models [Schneider et al. 2006, p. 117].

In the various stages that are described by process models, different **methods and instruments** of service engineering may be used. In the course of time, a considerable range of those has developed in service research. The methods discussed are in part phase-specific, but also cross phase methods are considered. With regard to the performance dimensions similar can be said: The methods refer in part only to the three service dimensions but they also help in the design of two or even all three dimensions and thus contribute to the product, process and/ or resource modelling. A comprehensive, but somewhat older empirical study method used in practice can be found at FÄHNRICH et al. (1999). Exemplary methods and instruments of service development, which cannot be discussed in

detail at this point, include: Cost-effectiveness analysis, cost-benefit analyses, requirement analysis, strengths- weaknesses - and opportunities-risks analysis, prototyping methods, target costing, analysis and effect analysis (FMEA), quality function deployment (QFD), service blueprinting, lead user concept, roadmapping, modularization/modular design principle and morphological box. This list is not exhaustive, and there can be overlaps in the content of these methods. The compilation shows what wealth of knowledge services research can now provide to service engineering in methodological terms.

Without a doubt, the **participation and integration of customers** plays a central role within the framework of service engineering. It runs through all phases of service development, and different phase-specific forms of customer integration can be used, RECKENFELDERBÄUMER/BUSSE (2006). In most cases this customer involvement also becomes apparent in the application of the above methods and instruments.

The outlined procedure models, methods and instruments which brought forth service research are therefore extremely varied.

By asking for a (cyclic) improvement of the services offered, the model supports the innovation approach of service development.

Due to the previously analysed process models, the following procedure model can be developed to handle all relevant aspects, especially for start-ups, see **Figure 1**. The process model formed a matrix and has a total of six phases. In each case three of them can be related to service design (definition, requirements, design) and service management (implementation, launch, control) respectively. During the various phases, tools that are relevant for SMEs are used over a period of several weeks taking into account the individual dimensions of the potential,

the processes, and the results of the market. Each phase must be executed before the next begins.

Ramaswami-Zyklus

	1	2	3	4	5	6
	Definition	Requirement	Conception	Realisation	Market Implementation	Evaluation
Potential Dimensions	External/Internal Analyse	Ressources Competencies	concept, Project decicion	Employees, Facilities	Test	Benchmark
Process Dimensions	Ideamanagement , Feasibility	Specification	Service Development	Organisation, Processes	Controlling	Benchmark
Result Dimensions	Market Target	Requirements	Development	Acceptance, Usibility	Measurement	Optimization
Market Dimensions	Market View, Strategic Fit	Market Requirements, Prices	Offer Evaluation	Forecasting	Review Market Implementation	New Definition
	Service Design			Service Management		

Fig. 1: Applied process model for service development [own research]

The exact description of the process and the basis for planning the service engineering concept can be illustrated as follows:

Process description and basis for planning

For the actual implementation of the process model it is necessary to define the work packages within the phases, as well as to translate their planning into a real-time model. The proposed process model will help both to clarify the content and to ensure the consideration of all factors (described by the dimensional analysis).

Definition phase (6-8 weeks)

The results of the internal and external situation analysis define the search area for possible service offerings, which are then searched and evaluated. In this case, a feasibility check is just as necessary as the verification of compliance with the corporate goals. Thereafter, appropriate marketing objectives and the derived policy options can be limited.

Requirements analysis (4-6 weeks)

In the second phase, the market performance is described and verified in the form of a "preliminary" study in terms of the resources and expertise needed. Previously, the significant value attributes must be defined with regard to content and predetermined regarding their characteristics. Then a comparison with the anticipated market requirements and the company's strategic goals has to be made. First price proposals are derived from the requirements of the service. Data and descriptions are based initially on solid estimates.

Service conception (8-12 weeks)

This phase corresponds to the detailed study. It begins with the project approval for the development of services. Requirements (for Service design and process) and the need for resources are recorded in requirement and functional specifications. The business model is based on facts and figures, in particular, market opportunities must be analyzed and a conception of market development must be designed. This is possibly the last chance to establish contacts with external partners.

The quality of the work of this phase largely determines the success of the project.

Service realisation (6-8 weeks)

In this phase implementation begins. The more precisely the work packages and the process were planned, the easier and more accurate the implementation will be. A critical success factor in this phase is the consistent provision of necessary resources, and the use of internal or external expertise. Once the processes have been implemented, they must be verified by simulation. In parallel, (based on prototypes or with lead users) the acceptance of the offer and the use processes can be submitted to an initial assessment.

The planning of the launch must be concretized and the organization of acceptance tests must start.

Market launch of the service (8-10 weeks)

The market launch begins with a validation of customer requirements. For this purpose, an appropriate customer group must be selected that participates especially in the service and is willing to be involved in the elimination of start-up problems. Those customers should then be used in the general market launch as opinion-formers or at least as testimonials.

The actual launch is accompanied by a systematic strategic planning, which can quickly respond to potential problems, and immediately collect data for future performance increases.

Service replacement (15-20 weeks after the market launch)

From the outset, it must be made clear that service offerings need to be developed further just like physical products. The controlling system provides data, by firstly performing an comparison of targets and actual figures with the intended project objectives, while additionally organizing a performance-enhancing benchmarking. The results of these processes provide opportunities for decision templates for

possible performance improvement, or even for a replacement of the service if an improvement cannot deliver the desired results.

This approach was also implemented in the research project, shown in **Figure 2**.

	1	2	3	4	5	6
	Definition	Requirement	Conception	Realisation	Market Implementation	Evaluation
Duration	6-8 weeks	4-6 weeks	8-12 weeks	6-8 weeks	8-10 weeks	15-20 weeks after Market Implementation
Timetable	01.11.-18.12.2009	21.12.-22.01.2010	25.01.-02.04.2010	05.04.-21.05.2010	24.05.2010-23.07.2010	between 08.11 and 17.12.2010
Activities	Information Seminar, Seminar 1	Seminar 2, Workshop 1	Seminar 2 and 3, Workshop 2 and 3	Project 1	Project 2	Workshop 4
Surrender	Analyse, Ideas, Target, Strategies	Ressources, Competencies	Study, Design, Process, Organisation	Implementation, Simulation, Acceptance	controlled Market Implementation	Evaluation, Decision
	Service Design			Service Management		

Fig. 2: Plan of action of the research project [own research]

The implementation of the strategic development of services was carried out as follows. After the preparation and the analysis of the state of service engineering research, the identified process models and strategic tools/methods were concretized in terms of the interests of young SMEs in the research project. This was used to develop the method toolbox and to establish action guidelines for the introduction and application of different methods and the training and evaluation materials for implementation success. Moreover, a modular seminar and workshop offer was created. In this context, information and training events/**project meetings were carried out** for the transfer facilities/technology centres to impart the know-how of models and methods. The information

events/**seminars** for young SMEs were held to impart basic knowledge for the use of strategic instruments. All the young SMEs took part in these seminars to create a communicative exchange and hence a networking. Based on the strategic instruments previously taught in the seminars, their implementation and application was then trained in individual **workshops**. Here, the strategic planning was defined and the projects were implemented. Before and after the individual events there were briefings and evaluations by the young SMEs with regard to the assessment of the overall project. The results were presented in the final symposium with the promoter, the Ministry as well as the participating SMEs and the transfer institutions involved.

4. Case Study

The research project started on 1 January 2009 with 17 SMEs initially and ended successfully on 31 July 2011 with 14 SMEs.

The project will use a **four-step** approach:

- 1st step: Evaluation of the state of services research on the topic of service development/service engineering: Procedure models, methods and tools
- 2nd step: Revision and adaptation of the instruments combining them in a method toolbox according to the modular principle, incl. documentation (checklists, guides etc.) and transfer events
- 3rd step: Practical implementation
 - Implementation at the transfer institutions: Information and qualification events, incl. evaluation
 - Implementation at the pilot companies: Preliminary talks and workshops, implementation, testing and evaluation of appropriate models and methods
- 4th step: Analysis of results; modification of the method toolbox if necessary; complete documentation for the transfer of findings and final symposium

The individual steps are explained in detail as follows.

In the **first step**, the state of research on service engineering is fundamentally evaluated and analysed. First, the existing process models are identified and compared with regard to their similarities and differences. Next the essential stages of service development must be identified and concretized in terms of the

tasks to be performed at the various stages. Also in the first step, the methods and instruments developed by the service research for service engineering have to be prepared in a structured form. This includes, apart from a continental description of their application, especially the elaboration of the purpose specifically associated with their use within service engineering. Moreover the evaluation should also determine what time and financial effort can be expected when using the respective methods. Sources of information that can be used in this first step are, in particular, written service research publications arising from research projects funded by the BMBF and other institutions, but also independent ones as well as Internet sources, not least those regarding development programs and projects. It must also be clarified what models and instruments of the involved transfer facilities and pilot companies are currently already known, and which may be or may have already been used with what experience. A period of three months is provided for this phase of the project.

The **second step** includes the revision and adaptation of the identified models and methods relating to the further development of SMEs. In this case it is particularly important to reduce the complexity of the concepts as well as to flesh out the steps involved. The objective is a method toolbox designed according to the modular principle, which should serve as a basis for the implementation phase following in step 3. This toolbox aims at enabling transfer institutions and pilot operations to make use of the most appropriate tools of service engineering for a given situation. For this purpose, three types of ways to implement the research findings into company practice are prepared, in whose drafting the needs of the practice partners involved are taken into account:

- Development of *written implementation aids* for the transfer facilities and pilot companies, amongst others:

- Action guidelines that describe the procedure when introducing and applying the various methods of service engineering,
 - Checklists containing the points to be observed when introducing the different methods,
 - Training materials on the models and methods that can be used in the context of seminars and workshops,
 - Evaluation documents that can be used for the review of the implementation success of service engineering.
- Design and construction of a modular *seminar offer* at two levels:
 - Information and qualification events for the transfer institution to provide the required know-how regarding models and methods to support SMEs,
 - Information events for the pilot companies (and, where appropriate, other interested SMEs) conducted along with the transfer facilities to create basic knowledge on the importance of the customer-oriented design of value offerings with the help of instruments of service engineering.
 - Planning a *workshop concept* for the pilot companies, including preliminary consultations, implementation consulting and follow-up, each involving the transfer facilities.

This phase will take a total of three months and will therefore be completed six months after the project started.

The **third step** and the third phase of the project will be entirely devoted to the implementation and requires a particularly high time demand, which is estimated at a total of twelve months. In this period, the implementation at the transfer

institutions as well as in the pilot companies should take place, including the evaluation of the implementation results.

To begin with, the implementation activities at the *incubators/transfer facilities* incorporate preliminary discussions, in which the need for training and the concrete qualification goals are defined. This should be followed by eight half-day information and training events for the transfer institutions. In the first event, the know-how to plan service engineering projects on the basis of process models is provided. The following six events serve to impart knowledge on the various methods and instruments of service engineering. The eighth and final event deals with the evaluation process of service engineering projects on the subject. The events take place on a monthly basis in the project months 8 to 15 with the participation of both transfer facilities involved. After the third and sixth event, there will be an intermediate evaluation followed by a final evaluation at the end of the series.

The implementation in the *pilot companies* comprises two areas: a modular series of seminars on the one hand and workshops with consulting parts on the other hand:

- The series of seminars themed "creating customer-focused value proposition as a growth engine" begins with a three-hour opening ceremony for all pilot companies, in which they are acquainted with the contents of the seminar series and the workshops. In preliminary discussions, it will subsequently be settled which participating SMEs are interested in the complementary implementation workshops. The training modules of the seminar series are logically put together and build upon each other. They should enable enterprises to independently evaluate their existing market offerings and diagnose in this way the need for further and new development with the help

of service engineering. They also have to acquire the know-how to generate ideas for new service-oriented value propositions more quickly, to estimate the market value of those ideas and to turn them into successful value propositions. The modules are structured in a way that each single event will be understandable and useful on its own. Each event is supposed to last two hours, during which 90 minutes are devoted to the given special topic, while the first 30 minutes are dedicated to classifying the special topic in the overall context of the qualification series. Six different training modules are planned that will be offered with each transfer facility to each pilot company and to other possibly interested companies that are involved. The seminars will take place in the project months 9 to 14.

- On top of the seminar series, up to ten pilot companies will have the opportunity to participate in additional, customized workshops in the future, in order to assist them in the implementation of service engineering. Each interested pilot company will take part in two half-day workshops in which methods are selected from the toolbox and tailored for use in the companies (first workshop). On this occasion, the question will also be included in the analysis, whether the services should be performed by the SME itself or purchased from a specialized service. Followed by an approximately three-month trial period, this ends with an appraisal and the development of methods (second workshop). The transfer institutions will also be involved in the workshops so that they have the opportunity to acquire practical implementation know-how. The workshops will take place in the project months 13 to 18 followed by the evaluation of the implementation successes in the pilot companies.

In the last seven months of the project period, the fourth and last step is planned: the analysis of the results, including the resulting consequences for the method toolbox and the transfer of results. Based on the experiences gained in the pilot companies, the method toolbox must be revised and adapted to the practical requirements. The transfer of the results should be done by means of a written document and a final symposium, to which all participants in the project (from among the pilot companies at least those who have used the workshop program) should contribute. The symposium is intended for the purposes of the broadest possible transfer of the results the symposium should, however, also be, open to interested third parties. The presentation of the results includes a systematic exposition of the methods and instruments of service engineering tailored to the purposes of SMEs., including the developed action guides and checklists, so that further use is possible in the participating transfer facilities as well as in others, as well as a documentation of the activities in the pilot companies in the form of case studies. In addition to hands-on evaluation findings, however, the goal of a scientific exploitation of findings in the form of contributions to the Service Management in SMEs will also be pursued.

For the entire lifetime of the project, a systematic **project management** is planned covering the coordination between the project partners from academia, transfer facilities and the pilot companies.

A milestone schedule, see *Annex 2* in the dissertation, demonstrates the organized approach.

5. Results

The goal of the present thesis regarding contents and methodology was, to investigate the practice of strategic planning and the implementation and application of service engineering in young SMEs on the one hand and on the other hand specifically for young SMEs, whose performance and the probability of success can be increased by its application. These two goals have been achieved.

The generation of action-relevant knowledge for young SMEs in terms of strategic corporate planning is modelled on the approach of ULRICH (2001, p. 19ff), the philosophy of applied research. It was about designing rules suited to be applied in practice, to provide a vision of a reality to be created. The starting points were the operational circumstances of SMEs that do not necessarily orientate themselves towards the respective basic sciences, but to those which are usually not disciplinary.

Therefore the applied methods mix with secondary research as theory reference and existing studies, conducted expert interviews, identifying challenges, a set of recommendations for action and ultimately the proof of a successful implementation and application of all featured strategic corporate planning tools on the basis of a primary research used in a two-year case study in a third project was used.

In summary, it can be observed that in addition to the existing theoretical approaches of strategic corporate planning and service engineering, *Chapter 2* provided new impulses for the further development of the theory, because many concepts have been developed primarily for large companies and can therefore not automatically be used for young SMEs. Yet, the focus was on the simplicity of

application to increase acceptance. The case study, which was carried out over a two year period in young SMEs, proved that young SMEs are able to plan strategically. Prerequisites for this are systematical and controlled coaching and the introduction of entrepreneurs to the use of these instruments. The strategic process is a learning process and it became evident that it converges with increasing age and an increasing size of the company. In addition to staff, time is an important resource must therefore lead to a

**Flexible iterative approach
of strategic corporate planning
in young SMEs for the successful use of service engineering**

Strategic planning and service engineering are highly heterogeneous. This result had already been there at the beginning of this research project, and was confirmed in the course of the thesis project with the exploratory survey of experts and the conducted case study.

Which methodological implications for practice and research can be derived from the present work?

- Especially for young SMEs, the concepts must be prepared in a simple and understandable way.
- Over a long period of time, the entrepreneur must be made familiar with strategic corporate planning and service engineering.
- Coaching in the form of seminars and workshops will ensure a sustainable application of strategic business planning.
- The relevant staff must be integrated into the planning processes.

- There must be a documentation of the results to make these available for use in other instruments too.
- As a basic principle, a certain degree of flexibility must always be possible in the procedure.

The strategic challenges for young SMEs are:

- The task of the company is to keep analysing the environment critically, especially in terms of the changes and their effects on the respective SMEs.
- Especially while growing and establishing themselves, young SMEs must be prepared to face changes with the highest corporate flexibility possible.
- Business opportunities must be recognized quickly and the potential must be focused on these markets.
- Restructuring measures can be regarded as a chance and exit scenarios must be debated and implemented too.
- It is the task of the entrepreneur to establish the strategic orientation and the structure within the company.
- All employees in key positions must be included in the strategic discussions.
- Basic knowledge in the implementation of strategic business planning instruments must be provided for the employees.

6. Outlook

Starting from the dominance of the production of physical goods, or the dichotomy of product and service, service research reaches an equal consideration of both phenomena to begin with. On this basis, one can establish the concepts of a "hybrid value creation" based on "value-in-use". Added value therefore arises from the combination of a physical good and a service, in which the physical good has no value without the service and the service cannot be provided without an object. Therefore, service research should be seen as an exploration of both fields up to a science of service. Networks of multidisciplinary expert cultures combining these fields are required. "Customers do not look for goods or services per se;" "they look for solutions that serve their own value-generating processes [Grönroos 2000, p. 4]." To date, service engineering and strategic planning have made a significant contribution to the systematization and professionalization of service development. Services and goods cannot be considered apart from one another

anymore, when it comes to their development. The customer is the focal point and expects a performance bundle of products and services.

This thesis could give an insight into the strategic work and the use of strategic business planning and service engineering in start-ups. As the findings raise new questions, new impulses will be given to new focuses of research.

On the one hand, it is necessary to deal with the strategic direction and viability of start-ups and the use of strategic planning, on the other hand, it is important to deal with the following research questions:

- Is there a strategic realignment of national advice organisations due to a changing environment?

- Are there ways of political action for the sustainable preservation of European competitiveness in the globalised environment of start-ups?

Further research questions arise from foundation research:

- Can start-ups develop positive employment impacts over a longer period and does this support the sustainability of foundation support?

For the continuation of the present case study, the following procedure appears possible after analyzing the results to promote innovative services using strategic business planning for start-ups.

7. Scientific Publications on the PhD Topic

Publications connected to the dissertation:

2012: SIEGFRIED, Patrick: Strategic Business Planning in Young Small and Medium Enterprises, Publishing House of Wroclaw University of Economics, ISSN 1899-3192, p. 75-84.

2010: SIEGFRIED, Patrick: Applied service engineering for SME, scientific Writings of the WHL, ISBN: 978-3-86692-175-7, 55 pages.

2010: SIEGFRIED, Patrick: Applied service engineering for SME, GRIN publishing company, ISBN: 978-3-640-64252-6, 60 pages.

Conference and Workshop Papers connected to the dissertation:

2013: Internationalisation, International Research Conference, 20.03.2013 University of Volgograd/Russia.

2012: Using controlling in German companies, 17. Polish scientific conference controlling, 15.-17.10.2012 University of Wroclaw/Poland.

2012: Service engineering in Start-ups, 2. International Summer School, 04.-18.08.2012 University of Kaposvár/Hungary.

2011: Success with services-Applied service engineering in young SMEs, 16. Polish scientific conference controlling, 10.-12.10.2011 University of Wroclaw/Poland

2011: Success factors in SME, economic jurors Offenburg, 05.10.2011.

2011: Applied service engineering in young SMEs, 8. ESU-European University Network on Entrepreneurship, 12.-17.09.2011 University of Seville/Spain.

- 2011: EDDI-success by services – Closing workshop, knowledge transfer service research, WHL academic Business School Lahr, 23.05.-12.07.2011, Karlsruhe, Saint Georgen, Tuttlingen/Germany.
- 2011: EDDI-success by services conclusion symposium knowledge transfer service research-land foundation Baden-Wurttemberg, 03.10.2011, WHL academic Business School Lahr/Germany.
- 2010: EDDI-success by services-Workshop 3+4, knowledge transfer service research, WHL academic Business School Lahr, 27.09.-05.11.2010, Karlsruhe, Saint Georgen, Tuttlingen/Germany.
- 2010: Strategic business planning in young small and medium Enterprises, 7. ESU-European University Network on Entrepreneurship, 22.-28.08.2010 University of Tartu/Estonia.
- 2010: EDDI-success by services-seminar 4, knowledge transfer service research, WHL academic Business School Lahr, 28.04. + 11.05.2010, Karlsruhe, Tuttlingen/Germany.
- 2010: EDDI-success by services-seminar 3, knowledge transfer service research, WHL academic Business School Lahr, 30.-31.03.2010, Karlsruhe, Tuttlingen/Germany.
- 2010: EDDI-success by services-Workshop 2, knowledge transfer service research, WHL academic Business School Lahr, 01.03.-29.03.2010, Karlsruhe, Saint Georgen, Tuttlingen/Germany.
- 2010: EDDI-success by services-seminar 2, knowledge transfer service research, WHL academic Business School Lahr, 03.02. + 02.10.2010, Karlsruhe, Saint Georgen/Germany.

- 2010: EDDI-success by services-Workshop 1, knowledge transfer service research, WHL academic Business School Lahr, 07.01.-02.02.2010, Karlsruhe, Saint Georgen, Tuttlingen/Germany.
- 2009: EDDI-success by services-seminar 1, knowledge transfer service research, WHL academic Business School Lahr, 25.-26.11.2009, Karlsruhe, Tuttlingen/Germany.
- 2009: EDDI-success by services, prelude symposium knowledge transfer service research-land foundation Baden-Wurttemberg, 11.12.2009, Stuttgart/Germany.
- 2009: EDDI-success by services, prelude event knowledge transfer service research, WHL academic Business School Lahr, 22.-23.09.2009, Karlsruhe, Lahr, Tuttlingen/Germany.
- 2009: Strategic business planning in young small and medium Enterprises-problem and Solutions-6. ESU-European University Network on Entrepreneurship, 08.-13.09.2009 University of Sannio/Italy.

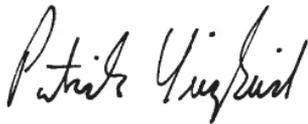
Doctorate colloquiums connected to the dissertation:

- 2010: Applied service engineering for SME, HHL Graduate School of Management Leipzig, 19.05.2010, Leipzig/Germany.
- 2009: Applied service engineering in company, WHL academic Business School Lahr, 22.07.2009, Lahr/Germany.
- 2009: Strategic corporate planning in young KMU's-problem fields and solution attempts-HHL Graduate School of Management Leipzig, 24.04.2009, Leipzig/Germany.

2009: Strategic corporate planning in young KMU's-problem fields and solution attempts, WHL academic Business School Lahr, 04.03.2009, Lahr/Germany.

Research Project Participation connected to the dissertation:

2009-2011: Research project „Knowledge transfer of service research“ of the county foundation Baden-Wurtemberg gGmbH, from 01.05.2009-31.07.2011.

A handwritten signature in black ink, reading "Patrick Siegfried". The signature is written in a cursive style with a large initial 'P'.

Dr. Patrick Siegfried

Kaposvár, den 31.03.2013