IPS² in China – A Systematic Approach for Market Entry

R. Schmitt, S. Schumacher

Department of Production Quality and Metrology, Fraunhofer Institute for Production Technology IPT,
Steinbachstr. 17, 52074 Aachen, Germany
{robert.schmitt, sven.schumacher}@ipt.fraunhofer.de

Abstract
When establishing a service business in China, especially western small and medium-sized enterprises face several challenges. Therefore, an approach has been developed within a research project, which aims to support western industrial service suppliers in realizing their market entry in China successfully by offering methods and tools for the most challenging aspects of the process of internationalization on a web-based knowledge platform. The paper will focus on a self-assessment tool for companies’ competencies in the process of internationalization and a tool which supports in choosing the adequate organizational form for a market entry in China.

Keywords
Internationalization, Self-Assessment, Organizational form, Industrial Service, China, Industrial Product-Service System

1 INTRODUCTION
Until recently, China had failed to recognize the important role service can play in economic development. As a result, the service industry has remained relatively underdeveloped compared to other fields of industry. In 2008 the portion of the service sector of China’s gross domestic product accounted for 39% [1]. Compared to Germany, with a proportion of the service sector of nearly 70%, the portion of the service sector to China’s GDP is still low [2].

This huge potential of the Chinese service market together with the various reforms and the opening-up policy of the Chinese government offers enormous market opportunities and therefore attracts many multinational companies including German providers of Industrial Product-Service Systems (IPS²) [3, 4].

Although German manufacturing companies have obtained a lot of experience in entering the Chinese market, this remains a relatively new topic for industrial service providers. They face different problems when establishing a business in the Chinese service markets. Product piracy, employee qualifications, formalities and laws, cultural differences, service quality, fitting target market’s requirements as well as choosing the optimal legal form for market entry are only a few examples of often named challenges, especially small and medium-sized enterprises seem to suffer from [5]. They can mean substantial risks and may lead to a loss in profitability.

Therefore, a procedure model that allows, especially small and medium-sized providers of Industrial Product-Service Systems, a successful entry into the Chinese service market was developed within a joint research project of research institutes and industrial partners.

This procedure model offers information, methods and tools for the most challenging aspects of the process of internationalization. Meeting the demands of SME, the approach with all developed methods, instruments and case studies is provided on a web-based knowledge platform, which will be presented in this paper.

The focus of this paper lays on two essential elements of this procedure model. The first one is a self-assessment tool for companies’ competencies and status of preparation for the process of internationalization. The second tool supports service companies in choosing the adequate form of organization when entering the Chinese service market.

2 THE CHINESE SERVICE MARKET
2.1 Opportunities and Outlook
Since a fairly long time industrial enterprises are attracted by China’s enormous economic growth. Despite the effects of the current financial and economic crisis, which China hasn’t escaped unscathed either, China’s gross domestic product (GDP) increased in the first six months of 2009 by 7,1% year-on-year [6].

Because of the continuously increasing volume of goods production, manufacturing companies more and more seize the chance of supporting their product’s life cycle by a wide range of industrial services [7], which leads to Industrial Product-Service Systems. Driven by this trend, the service sector is emerging as the new key engine of Chinese economy [8], as services will provide a solution to China’s serious employment challenges, sustain economic growth and raise living standards.

This development is also partially reasoned in the stimulation of economy through higher per-capita incomes and especially by the drastic liberalization of China’s service sector [4]. The implementation of China’s WTO commitments as to the amenability of their service sector slowly but steadily pays its tribute to economic growth. The cutback of service-related restrictions enables Chinese and foreign companies to benefit from formerly limited levels of the value-chain. However even the complete implementation of these WTO commitments is not capable of unleashing all economic potentials of China’s service sector, with the consequence of limited international service trades and less foreign investments [8]. Regarding the service sector, The European Union Chamber of Commerce in China (EUCCC) emphasizes the necessity of an additional comprehensive reform in their „European Business in China Position Paper 2009/2010“ [6].

China has already acknowledged the importance of services, which follows from its 10th (2001–2005) and its
11th Five-Year Plan (2006–2010). According to the government’s plans further opening up and supporting of the service sector are going to contribute essentially to the expansion of its presence in the national economy.

Against the background of this development it can prospectively be assumed that the implementation of industrial services will become more and more important to assure satisfying product sales. This forecast is also verified by the empirical survey “Industrial services in China” conducted by Meier et al. [11]. This survey indicates that German service providers can reckon a duplication of the Chinese service market demand within ten years (Figure 1).

Furthermore the study shows that service providing companies are going to furnish a wider range of market development strategies. While currently Industrial Product-Service Systems are limited to function-oriented basic services like spare parts, documentations, instructions, guarantee/warranty or repairing, future Industrial Product-Service Systems will be far more customized (e.g. availability-or result-orientation) (Figure 2) [7].

Availability-oriented services guarantee for the runtime of a certain product, while result-oriented services (e.g. operator models) take responsibility for the whole production process as well as for the allocation of production resources and its need in workforce. The customer only has to pay for the output of the machine.

In conclusion, China’s service sector is seen as the next target for international business efforts as the opening of the sector and its increasing demand outlook offers enormous market opportunities independently from the company’s strategy for internationalization (market-seeking or following customer).

In the survey “Service within the mechanical engineering industry”, conducted by the Fraunhofer Institute for Production Technology, 70% of the respondents estimate China to be the market with the highest potential for growth of the industrial service sector in the Asian market [5]. In addition, a survey, conducted by the European Union Chamber of Commerce in China and Roland Berger Strategy Consultants shows that 83% of the respondents (companies, which are already present in China) are optimistic about the growth of the service sector in China over the next years [12].

2.2 Risks and Challenges

Anyhow the opportunities provided by the Chinese service market, harbor high challenges and risks. An empirical survey named “Growth through services” by Gebauer and Meier shows that the majority of industrial companies struggle to perform services in China sustainably profitable. Only 14% of the consulted companies confirm to cash in on their China investment, while 68% negate it [13]. This is underlined by the survey of the European Union Chamber of Commerce in China, which states that only 26% of the companies with a presence in China for less than 2 years are profitable in their China business [14].

According to these facts, the study by Meier et al. analyzed constraints of industrial service providing processes (Figure 3), considering the German suppliers’ as well as the Chinese customers’ point of view. Thus the biggest discrepancies derive from cultural clashes and thus communication problems, neglected face-to-face contact and the unavailability of qualified Chinese workforce[11].

Beyond that, the study compares the requirements for a successful service delivery on the supply side and demand side. As Figure 4 shows, the requirement profile of both involved parties’ matches very well in every considered aspect, which leads to the conclusion that both sides share a similar attitude. Additionally to requests like attractive price conditions, short reaction time/response time or high service quality, face-to-face contact and local presents/customer support by the industrial service providing company are critical factors for success for good business relations [11].
In this regard, the way of entering and especially dealing with the target market, such as the best possible cooperation between the German and Chinese business partner, play a decisive role. Particularly the form of organization for a market entry in China affects the whole business venture. The strategy of the market access depends on many internal and external parameters and has to be worked out company-specific [15].

The most common legal forms for a market entry of IPS² providers in China are:

- Export
- Representative office
- Licensing & Franchising
- Strategic alliance
- Joint Venture
- Wholly Foreign-Owned Enterprise (WFOE)

Even if decisions on market access strategies aren’t necessarily irreversible, misconceptions often lead to uneconomical loss of resources and time due to long-term commitments [16]. While big established companies are able to face these difficulties, especially small and medium-sized service providing enterprises are overstrained by these challenges since their options are far more limited. For this reason support is strongly required.

Due to the fact that literature research showed no results for a support in the describes aspects, an approach has been developed within a joint research project of research institutes and industrial partners, which aims to support western integrated solution suppliers as well as pure institutes and industrial partners, which aims to support these enterprises in planning and successfully realizing a service market entry in China. The main focus of the approach is on the initial project phase, trying to avoid early failures and to ensure an efficient decision making at the project start.

Before accomplishing the entry into the Chinese service market a detailed analysis about the market and the process of internationalization with its requirements has to be initiated and compared with the company’s already built-up competencies and the status of preparation for the process of internationalization. Thus, the developed procedure model envisions to apply a provided self-assessment tool for identifying deficiencies and potentials for improvement with regard to the readiness for an internationalization.

In order to handle the problem of choosing the adequate form of organization for a successful market entry in China the procedure model provides a proper tool, which offers suggestions for the optimal legal form for a market entry by considering all relevant aspects and conditions for this decision.

### 3 THE CHINA STAR – KNOWLEDGE PLATFORM

The procedure model or rather reference model, which was developed within the research project is structured in three phases.

![Three-phase procedure model](image)

**Figure 5:** Three-phase procedure model.

Beginning with the initial phase the procedure model envisages that the phases are run through one after the other. Within each phase the modules for the different fields of action are arranged in a reasonable way, but the order can be adapted to the specific situation and individual needs of a company and its aspired China business. Furthermore single modules can also be left out. Depending on a company’s plans in China, certain topics are not covered by the procedure model and have to be reprocessed by the company itself.

The developed procedure model can be used as a blueprint for companies’ individual process of IPS² internationalization to China. It addresses all levels and business fields of enterprises. Regarded as a reference model it is a generic conceptual model that provides common or rather recommended practices for small and medium-sized enterprises who want to export their service portfolio to China and is motivated by the ‘Design by Reuse’ paradigm. It captures reusable efficient state-of-the-art practices, methods and tools and has the main objective in supporting the design of company individual models by providing a generic solution. It accelerates and simplifies the process of internationalization by providing a repository of potentially relevant information, business processes, methods and structures. Thus it allows for reducing the costs of developing individual procedure models and facilitates the management of the enterprise.

**[17]**

Elements of the first phase are initial activities for preparing a possible China engagement and provide a basis for subsequent activities. For example, the analysis of the target market, an evaluation of market chances and risks, as well as the contacting of potential clients and business partners belong to this phase. Furthermore the identification of potential locations for a subsidiary fit in this first phase. A step which is intensively influenced by the choice of the legal form of organization. The objective of the phase is to establish a solid information basis for further decision making with regard to a China engagement. As a tool for determining the status quo of
the companies’ competencies and preparation progress in the process of internationalization, the self-assessment as the first step of the whole reference model can be applied. In addition a tool is provided for supporting the decision for the adequate form of organization in the Chinese market. The next chapters will focus on a detailed description of these tools.

The detailed planning of the internationalization process is accomplished within the second phase of the procedure model. For example, the organizational structures, concepts for marketing, services tailored to the target market requirements are developed and, together with the results of the first phase, lead to a business plan for the China engagement. Moreover the aspects like recruiting and qualifying Chinese personal as well as preparing German managers for their mission as expatriate are essential elements of the field “Human Resources”, which is represented by a separate module in this phase. The module “Cultural aspects” covers different cultural characteristics, which are of interest for the whole internationalization process and the future business activities in China.

With regard to the intercultural cooperation and the establishment of an organizational culture, the objective of the third phase is to ensure a successful start of the new service business in China. It compasses also aspects like sales and distribution, finance and taxes, quality management and continuous improvements, which are important for a running business.

Meeting the demands of small and medium-sized enterprises, the whole reference process with all information and further sources for information, relevant contacts, developed methods, tools and case studies is provided on a web-based knowledge platform (www.service-in-china.de) and is therefore accessible for the public. Thereby the characteristic of this platform is similar to the Wikipedia-principle, which means it supports changes and supplementations of selected authors using the browser only. The content-management-system behind was programmed from scratch to allow for the needed functionalities.

3.1 Self-Assessment tool for the process of internationalization

The procedure model envisages that the self-assessment tool is applied as the very first step of the process of internationalization. Thus, a company can evaluate its status-quo with regard to the competencies needed for internationalization. At the same time it is possible to check the current status of preparation in the different fields of action, which are based on the modules of the procedure model (Figure 5). This should allow for a systematic consideration and execution of the modules.

The self-assessment tool should minimize the risk that the company’s step to internationalize its Industrial Product-Service System by exporting it to China will fail or relapse due to a misjudgment of the necessary efforts which have to be accomplished by the exporting company. Thus the self-assessment tool can be seen as a kind of checklist which points out the important aspects and factors of success for the internationalization project that companies should be made aware of.

For the development of the self-assessment tool the following requirements had been defined:

- The status-quo of companies with the intention to internationalize their service business with regard to their competencies and progress of preparation should be assessable at the beginning.
- A repeated utilization of the self-assessment tool should allow for a continuous monitoring of the built-up competencies and the progress of preparation in the different fields of action.
- The duration for an application of the tool should be as short as possible.
- All relevant aspects of the internationalization process should be considered.
- The feedback of the status-quo and possible advisory actions should be in immediate timely relation to the completion of the self-assessment.

In order to meet the first and second requirement, the first step of the self-assessment tool allows for choosing the field of actions of the internationalization process which should be evaluated. Therefore, it is possible to select all fields of action when using the tool for the first time with the intention of determining the status-quo at the beginning of the process of internationalization. When using the self-assessment tool regularly for monitoring the process of internationalization with regard to the status of preparation in the different fields of action and the built-up competencies, it is possible to select only the fields of action, which are relevant at this special point in time. This means that already completed fields of action do not need to be run through again and fields of action, which are not of interest to the company or lie ahead in time can be deselected and run through in a later appliance of the self-assessment tool.

Two aspects account for fulfilling the third requirement. First, the possibility to select the fields of action, which should be considered for the appliance of the self-assessment tool (Already described in the previous paragraph.). Second, all fields of action can be assessed by answering 4-6 questions concentrating only on the most relevant aspects while all insignificant aspects are omitted.

All fields of action of the self-assessment tool correspond to the modules of the procedure model. Thus, it can be assumed that all relevant aspects for the process of internationalization have been considered in the self-assessment tool. Furthermore, plenty of studies and literature as well as the experience of the industrial partners of the research project had been analyzed and taken into consideration within the development of the self-assessment tool.

Since the self-assessment is a web-based tool, the feedback is given directly after answering all questions. As mentioned above, 4-6 questions must be answered in every field of action. Therefore, each question provides for possible answers. This 4-point scale should prohibit values in the middle of the answer continuum, which is a noticeable effect when using a uneven number of possible answers.

Each possible answer of every question represents a specific degree of maturity with regard to the topic of the related question. For the later calculation of the results the degree of maturity is represented in percentages in the database. The answering continuum thus ranges from 0% to 100% for each question. Additionally, each question is weighted within its related field of action. By multiplying the weighting of the question with the degree of maturity for the given answer and adding these results, a final result for each field of action can be given. The values in the database for these final results also range from 0% to 100%. These values are the basis for the feedback for each field of action, which is given in form of three possible levels of maturity. Oriented on the traffic light scheme the levels of maturity are:

- RED: 0-60%
- YELLOW: 61-80%
- GREEN: 81-100%
The feedback for each field of action comprises a short text describing the status-quo, giving advisories for further actions and pointing out possible risks. This text depends on the achieved level of maturity, which means that there exist three prepared texts for each field of action.

Moreover, the level of maturity will be visualized by an icon illustrating a traffic light with the corresponding light illuminated. In addition to the feedback for each field of action a radar chart, in which each axis represents one field of action, summarizes the single results.

3.2 Market-entry tool for identifying the optimal organizational form for a market entry in China

Very early in the process of IPS² internationalization the decision about the legal form of organization – a company wants to start its China business with – must be taken. Until the year of 1986 Joint Ventures and Representative Offices had been the only form of organization for foreign companies in China. Today there are many more possibilities for starting and building-up a business in China. The most important legal forms of organization in China considered within the research project are:

- **Export**
  Temporally presence of natural persons in China; IT-based services

- **Representative office**
  Permanent representation of a company in China; secretary and supporting activities (contacting, marketing, market research, etc.); direct business prohibited (signing contracts, building up production)

- **Licensing**
  Contract-based provision of patents, brands, intellectual property rights or know-how to a Chinese company

- **Franchising**
  Contract-based provision of an extensive and well-proven concept for procurement, sales, organization and marketing to a Chinese company

- **Strategic alliance**
  Co-operation of at least two companies in an exactly defined domain without setting-up a new company

- **Joint Venture**
  New company founded by at least to companies; they yield capital, know-how and personnel

- **Wholly Foreign-Owned Enterprise (WFOE)**
  Legally independent subsidiary without a participation of a Chinese company and limited liability

Each of the organizational forms described above has advantages and disadvantages that need to be considered and is subject to legal restrictions that have to be met. Hence, especially for novices it is difficult to choose the adequate legal form of organization for a successful start of the China business.

Even if the chosen form of organization is not irreversible, wrong decisions often lead to considerable losses of resources and time. Therefore it is important to choose the optimal form of organization right at the beginning of the China engagement. After a possibly small and careful start of the China business the organizational form should be changed when the business is stabilized and profitable or demands for another legal form because restrictions of the current legal form constitute a handicap for a successful business.

In order to support companies within the scope of the procedure model in choosing the adequate legal form of organization for their entry into the Chinese market a tool was developed within the research project, which provides a recommendation for the appropriate form of organization after answering 25 questions.

This catalog of questions covers the decisive aspects, ancillary conditions and preferences of a company that affect the choice of the organizational form.

Subsequently, following aspects are considered:

- Readiness to assume financial risk
- Control of business activities
- Provision of human resources
- Type of service
- Experience in the process of internationalization
- Experience in international business
- Skills of personnel with regard to language/culture
- Appraisement of the home and the Chinese market
- Basic data of the company

These aspects and the according questions have been chosen on the basis of an intensive analysis of studies and literature as well as the through the experience of the industrial partners of the research project.

The predominant part of the questions provides four possible answers that are written in prose. Additionally, a few closed questions provide the possible answers yes/no.

Related to each possible answer values for each form of organization are stored in a database. The higher a value the more the organizational form matches the related answer. The lower a value the less the organizational form matches the related answer. Negative values mean that the related organizational form would have a converse effect to the meaning of the associated answer.

In addition, the questions are weighted according to their impact for the choice of the legal form of organization.
The final result is generated by first multiplying the weighting of each question with the values of the related answer. In the next step the obtained results for each form of organization are added and then normalized. Finally, a pie chart with a percentage value for each form of organization is generated. The higher the percentage value the more the related organizational form is the adequate one for the intended China business (Figure 7).

Figure 7: Recommendation of organizational forms.

Of course, the result is only a supporting recommendation, which can not substitute an intensive consideration of all aspects. With answering the question catalog of 25 questions it is not possible to include all company specific aspects that affect the choice of an organizational form.

4 SUMMARY

This paper describes the present situation of German service providing companies and their internationalization efforts with special focus on the target market China. The attractiveness of the Chinese service market, due to its immense growth potential, is counter-balanced by several problems and risks especially small and medium-sized IPS² providers have to face when trying to establish a business in China. Subsequently, two selected tools of a procedure model, which were developed within a joint research project of research institutes and industrial partners, are presented. This procedure model aims to support both western Industrial Product-Service System suppliers as well as pure industrial service providers in planning and realizing a successful service market entry in China.

Being the very first step of the developed procedure model, a self-assessment tool enables companies to evaluate their competencies and status of preparation for the process of service internationalization. Thus it allows for building up the necessary skills and expertise systematically and for correcting a possibly wrong perception of the own capabilities for the process of internationalization.

Choosing the optimal legal form of organization when entering the Chinese service market represents a challenge for the most small and medium-sized enterprises. A tool which considers the conditions and constraints of the company and the service products that are to be exported, delivers a recommendation for an adequate form of organization after answering questions about the influencing aspects. The presented tools have been successfully verified by the industrial partners of the research project, but continuous improvement and detailing is still subject to further research.

5 ACKNOWLEDGMENTS

The support of the German Federal Ministry of Education and Research (BMBF) as well as the Project Management Agency – part of the German Aerospace Center (PT-DLR) is greatly acknowledged.

6 REFERENCES

[4] Australian Government, Department of Foreign Affairs and Trade, 2005, Unlocking China’s Services Sector, Adcorp Canberra