Service Export
“New opportunities for German export can be found in the services sector: its largest and most dynamic element.”

Prof. Dr. Dirk Holtbrügge
Germany is the global export champion. Classical industrial goods are the backbone of the current German national economy and its primary exports. However, opportunities for growth in German exports can be found in the service sector.

Service companies operating in various countries not only have to develop specific strategies for individual foreign markets, but must also integrate their domestic and foreign strategies to achieve cross-national competitive advantages. Competitive advantages are above all achieved by the cross-national configuration of value activities, their company-internal coordination, and the integration of customers. Diverse and innovative approaches for the internationalization of German service companies already exist, and have been reinforced by academic research. The companies and scientists involved help point the way for the German economy of the future!

Important for businesses

- Multinational service companies have to develop specific strategies for individual foreign markets and simultaneously incorporate their domestic and foreign commitments in a global corporate strategy.

- International service companies are confronted by two specific challenges: 1) achieving cost advantages through standardization and 2) adapting to national particularities. Competitive advantages for internationally operating companies meet both challenges.

- Global services companies chiefly utilize three instruments: cross-national configuration, company-internal coordination of value-creating activities, and integration of customers.
New opportunities must be created to safeguard export as the primary activity supporting the German economy. It is clear that these opportunities are primarily within the service sector – the largest and most dynamic motor of recent economic growth.

Two types of service export will be presented below. The first type, internationalization, illustrates the three instruments that service companies typically use as an internationalization strategy: cross-national configuration of activities, company-internal coordination, and integration of customers in the service process. The second type of service export, remote services, is the growing opportunity to provide services from a distance. This is a relatively new trend that harbors great potential for the German economy.

I. Internationalization of services

Service companies operating in various countries must develop specific strategies for individual foreign markets, while also integrating their domestic and foreign commitments into a global corporate strategy. Here standardization, for all its value, must not be permitted to run contrary to national particularities. However, if relevant specific national particularities are incorporated, it is possible to develop standards that help achieve cost advantages. Three instruments that are presented below create competitive advantages for internationally operating service companies: cross-national configuration, company-internal coordination of value-creating activities, and customer integration.

Cross-national configuration

At the beginning of value activity configuration, the service provider must decide how to best divide cross-national activities between various sites and locations. The possibilities range from concentration within a single value-creating activity, through scattered activities based on the geographic proximity of international locations, to mirrored activities at all sites.

The decision regarding configuration can be supported by Porter’s value-chain concept, if this concept originally created for companies creating tangible products is adapted to the specific characteristics of international services. According to Porter (1985), the achievement of economy-of-scale advantages, learning curve effects, and coordination advantages speak in favor of geographical concentration of value. Diversity of needs and desires is the deciding factor. A service company may be able to achieve comparative cost advantages and the reduction of country-specific risks through integrated configuration of activities across several similar countries.

Concentration

Concentration means that a particular activity, such as the planning of an offer, is performed at a single location. The activity can be performed regionally, perhaps for South America, or it can be performed at all locations.
Concentration is the first of several important decisions. According to Frehse (2002), a service is performed in three stages: potential, process, and result. If this phase-oriented concept is applied to services operating internationally, the characteristics of the three phases might be described as: standardization of the factors required to deliver a service at a given location, synchronization of service performance, and utilization and post-contact involvement, as shown in Figure 1.

The first phase includes upfront activities not directly connected with the customer, therefore they are not linked to customer location. For this reason, companies with strong standardization tendencies are able to hold their resources in readiness, without adapting them to the external delivery location.

Going into greater detail, it is possible to divide this first phase into three activities. Potential inbound logistics will ensure that all materials required at a later point are procured. Should the service be performed at a different location than the preparation for the service, the potential inbound logistics step is necessary to ensure that operational factors can be utilized globally, at the right time, in the right place. The international service provider signals willingness to perform the service through the procurement of the input factors. For this reason, it is necessary to undertake appropriate marketing and distribution efforts, in order to attract the attention of potential customers to their willingness to perform the service. In short, this communicates their service potential.

The combination of the willingness to perform the service, with the external signal, forms the basis of the second, process, phase of international service delivery. During this phase, the actual service is performed for the customer. Alongside the actual performance of the service, operational outbound logistics is also categorized under this process phase, as shown in Figure 1. This is necessary if performance and consumption of the service take place in separate geographical locations. Under these conditions, the service company must have the necessary external factors in readiness at the location of service consumption.

During the result phase, the consumer has the opportunity to compare the service performed with his or her expectations. This can potentially lead to customer complaints, which must be processed by the company.

**Company-internal coordination**

According to Porter (1985), the achievement of cost and coordination advantages, and learning curve effects, speak in favor of a geographical concentration of value activities. It is, however, also possible for a service company to secure competitive advantages through a configuration of activities in several different countries. Service companies that are represented in several countries with different activities have to address the issue of how the value activities undertaken in different countries should be coordinated. A variety of technocratic and person-oriented instruments are available for this coordination.

**Technocratic control instruments**

Technocratic control is characterized by periodically repeated instructions on the part of the parent company to the foreign subsidiary company. With formalization, programming, standardization, and the establishment of transfer and
Background

stock prices, operations in different countries can be
distinguished from one another. Programming involves uniform
regulations, procedures, and process guidelines, primarily
in written form. One example is the utilization of a particular
internal rate of return for investment calculation methods.

In contrast to programming, standardization is not oriented
towards processes, but the result of activities. Standardiza-
tion is primarily oriented toward achieving service quality.
This takes on a particular significance if foreign subsidiary
companies perform services within a cross-national network,
and these services are further processed by the parent com-
pany or other subsidiaries. The establishment of fixed trans-
fer and stock prices should guarantee the optimum control of
economic resources within the company in a similar manner
to national market mechanisms.

Person-oriented control instruments
Person-oriented control instruments include the limitation of
decision-making on the part of subsidiary companies to a
sole alternative that is provided by the parent company. One
relevant example is the employment of an executive man-
ger who has been selected by the parent company. Another
instrument is socialization, which includes the cognitive,
affective, and behavior-oriented assimilation of employees
through repeated deliberate and non-deliberate psychologi-
cal manipulation. The aim of socialization is to guarantee
globally uniform values and decision-making structures.

Evaluation
At present, the relevance of individual coordination instru-
ments such as planning, programming, instruction of per-
sonnel, or corporate culture for service companies has not
been addressed. Further study is needed to understand
under what conditions these processes can efficiently fulfill
coordination requirements, which are in turn dependent on
the selected form of configuration. This is a research gap
that should be closed in the near future, in close cooperation
with practical partners.

Technocratic and person-oriented
control instruments
Technocratic control instruments include
planning and formalization; person-oriented
control instruments include corporate
directives, instruction of personnel, and
socialization.
Customer integration

Customer integration, as the third internationalization instrument, targets the central characteristic of service performance, namely, direct contact between service provider and service recipient. Within this contact situation, the customer frequently plays a participating role that can take on different grades of intensity ranging from toleration and passivity, to an active participation in the creation process.

Companies can establish different degrees of cultural correspondence within the service creation process as an option within an international strategy. This decision differs from the configuration and coordination of organizational decision-making, because it concerns the detailed design of customer contacts. That requires decisions about personnel selection, training contact personnel, organization of the contact environment, and communication measures before, during, and after the performance of the service. A further field within an international context is the culturally sensitive management of customer relationships. This goes beyond the single transaction itself, to include, for example, the selection and prioritization of customer segments.

II. The new trend: remote services

Thanks to the operation of modern information and communication technologies, more companies are now able to perform services from a distance, rather than in direct contact as was traditionally necessary. For example, as described in other parts of this publication, software companies now are able to transfer updates to customers from their headquarters. More surprising perhaps, it is now possible to maintain machines at a distance. Even medical operations can be performed at a distance, which makes it possible to utilize the specific talents of surgeons and other experts in short supply at different locations with minimal time delay.

The ability to perform “remote” services has enabled more companies to operate on an international basis. This particularly applies to medium-sized businesses that have no resources with which to build up international supporting organizations. Unfortunately, however, although there is a wealth of literature on technical solutions and implementation opportunities for remote services, there is a conspicuous absence of material on the management of remote services.

Priority for remote services

EFEXD thrives on interaction between scientists and practitioners. They have undertaken a series of cooperative in-
vestigations, including the acceptance of remote services in the B2B sector and customer relationship management in remote services in the B2B sector. For example: “We’ve got many customers in remote locations, for example in Living- ton, Montana. If the customer has a high-production, very computerized, and very automated print shop, the nearest technicians are often an airplane ride away. They can’t get to the shop for 5 or 6 hours. This customer needs web-based remote service and telephone support. Because we can connect to the machine, we have a high fix rate and we fix problems over the phone.”

EFEXD – Export of Remote Services, which is supported by the German Federal Ministry of Education and Research (BMBF), focuses on the business-management of remote services. The project is investigating management-relevant particularities of remote services in a series of conceptual and empirical studies that include identification of best practice. This type of service is investigated with the aid of case studies. An accompanying Delphi Study provides information on future developments in a variety of operational areas.

Remote services not only provide a new business model for service companies, they can open new business opportun- ities for manufacturing companies. Competitive advantages can be achieved in a number of ways. First, the feedback channel between customer and provider via remote services can facilitate the collection of information on the requirements and utilization behavior of customers. Analysis of this information can lead to proactive solutions with greater cost-efficiency and higher performance. This naturally requires the permission of the customer, and therefore a correspond- ing trusting relationship.

Second, the combination of machines and remote services creates hybrid products that are a combination of physical goods and services. This business model means that the producer becomes a solution provider interested in the success of the customer. Remote services facilitate this type of business relationship, because they improve the information flow between provider and user.

**Practical example: Siemens Healthcare**

Siemens Healthcare offers numerous proactive services that permit the global minimalisation of down time for the customer through remote services, and also ensure a significant improvement in planning, security, and operational procedures in hospitals and medical practices.

High patient numbers frequently result in a permanent overload for image-guided systems operating in the medical sector. At the same time, reliability is essential for hospitals and medical practices to guarantee problem-free clinical procedures. Because the reliability of medical-technical systems is so essential for smooth operations, Siemens connects its global customers to Siemens Remote Service (SRS), which allows the early detection, or even complete prevention, of potential malfunctions.

For example, the Guardian Program offers proactive online monitoring of medical-technical systems in real time. Should system parameters exceed or go below defined threshold values, the system automatically sends a message to the Siemens Service Center. Only minutes after receipt of this message, a service technician calls the customer. The technician will accompany the customer during further diagnosis and response. The remote maintenance platform from the Service Organization at Siemens Healthcare (UPTIME Services), currently permits remote access to rectify up to 50 percent of all system malfunctions. It is frequently possible to recognize and eliminate operational dysfunctions before any problems occur.
Global Export Champion Germany – Due to the Internationalization of Services

Prof. Dr. Prof. h.c. Dr. h.c. Ralf Reichwald, TU München and CLIC, HHL, in conversation with Prof. Dr. Florian von Wangenheim, TU München, Prof. Dr. Dirk Holtbrügge, University Erlangen-Nuremberg, and Prof. Dr. Hartmut Holzmüller, TU Dortmund

Prof. Holtbrügge, what measures are necessary to ensure that Germany remains global export champion?

New opportunities must be utilized. They can be found in the service sector, the largest and most dynamic element of the economy. Within this sector, innovative concepts must be found to export German services through networks.

It is not only customers who can profit from remote services. Through continuous contact, service providers have the opportunity to recognize weaknesses in a technical system and develop and/or implement anticipatory solution strategies for potential problems. A good remote service will not merely react to error messages, but will continually analyze the operation of the system and undertake comparisons with similar systems to eliminate the possibility of larger-scale disruption or damage. A relevant example is provided by monitoring and updating programs for medical systems that are designed to maintain system operation. Customers profit from the continuous ongoing development of knowledge about the status of the system and/or system type. Maintenance procedures are thereby simplified, and risks reduced, which largely avoids costly operational interruptions.

Prof. von Wangenheim, what visions for the future of service exports are opened up by remote services?

I believe that the possibilities are greater than we can imagine today. I would like to give you an example that has perhaps not had such a high profile in the public eye. In September 2001, a team of surgeons in New York carried out an operation on the gall bladder of a patient in Strasbourg. This has naturally not yet become a standard procedure, but remote diagnosis and remote monitoring have already been utilized, and give an indication of the direction in which we are progressing with telemedicine.

In other areas such as mechanical engineering, there will be an even greater number of comparable new developments. Remote services are already in operation for maintenance purposes, ranging from the monitoring of a printing machine, to monitoring large scale industrial plants, such as an oil platform.

The possibilities within the area of remote controlled repair services also will increase rapidly. A first step in the direction of the end customer is currently being undertaken by the automotive industry. In the future, remote services will permit
remote diagnosis to be undertaken in your car when it has broken down. Maybe the fault will be able to be corrected remotely. In the future, if a mechanic is necessary, he will arrive with the required spare parts. As this type of service can in principle be offered from all around the world, this produces great potential for quality improvements and cost savings.

Prof. Holtbrügge, what instruments can companies utilize to tap the full potential of remote services?

Service companies operating with subsidiaries in a variety of countries will not only have to develop specific strategies for individual foreign markets, but must integrate their domestic and foreign commitments into a global corporate strategy to achieve cross-national competitive advantages. Three instruments are vital. First, the cross-national configuration of value activities is a decisive basis for structuring the service provider’s activities among a variety of locations. The key question is what will be done where? However, the competitive advantages of the cross-national configuration of value activities oriented towards the specific conditions of individual countries are accompanied by extreme complexity, which requires a high degree of cross-national coordination. So the second instrument is configuration and coordination within the company. Third, an important general characteristic of services is that they cannot be performed without a customer. It is, in fact, the customer who triggers value activities, and, depending on the degree of his involvement in the creation of the service, he also influences the efficiency and effectiveness of the entire process. Within an international context, customer integration will have to be harmonized by considering the cultural background of the customer. That will depend, of course, on the customer’s willingness to be integrated.

A key phrase would seem to be: “Each country has its own culture.” Prof. von Wangenheim, how does this effect service exports?

There are aspects of culture that are directly connected with the service offered. Take customer integration, for example. In different cultures we encounter different fundamental conceptions of a service provider, and different types of relationships with the customer. This has direct consequences for the involvement of the customer in the production process. It also affects how my service should be marketed and performed in the relevant culture.
“Through remote services, enormous potential is created for quality increase and cost-savings, particularly in international business.”

Prof. Florian von Wangenheim
A milestone in technical service networks at a distance was presented by Dr. Peter Hufnagel and Prof. Manfred Dietel during the Innovation Forum at the Charité in Berlin. This is the telemedicine consultation platform UICC-TPCC at the Charité.

In 1999, the International Union Against Cancer (UICC), which counts national cancer associations from 180 nations among its members, resolved to set up a worldwide counseling center for pathology (Telepathology Consultation Center – TPCC) that would be accessible via internet. The Charité in Berlin is an ideal location for the implementation of a telemedicine consultation platform, due to the hospital’s experience in diagnostics in three locations in Berlin. A closer look at the platform makes it immediately clear that this form of remote service is a great gain for both doctors and patients.

For the optimum treatment of cancer patients, it is vital to establish the degree of malignancy of the tumor. A pathologist, therefore, examines the histological structure of the tumor tissue. In order to eliminate errors, a second expert opinion is necessary with a soft tissue investigation of between 10 to 20 percent of the tumors. This second opinion is in numerous cases only possible following the postal dispatch of a sample. That is not only very circuitous, but in developing countries, virtually impossible. Telepathological consultation established at the Charité in Berlin serves this purpose, and is currently undergoing further development. Charité forms an international hub connecting the pathologist searching for a second opinion with the consultant expert.

Irrespective of the workplace location of the pathologist, he or she can send between 5 and 40 digitalized microscopic cross section pictures to the TPCC via internet with accompanying clinical information such as, the medical history, x-ray photos, etc. The next step is the TPCC’s selection of a pathologist from its global register who is a confirmed expert for this specific case. These registered experts are working on a voluntary basis, yet they commit themselves to forward their diagnosis to the enquiring pathologist within a period of three days. Because the necessary material is sent electronically, all that is necessary for the expert and the enquiring pathologist to communicate are computer, monitor, and internet access.

Service Export at the Charité – University Medicine Berlin

Kai Saeger explains the principle of virtual microscopy.
Conclusion

To achieve cross-national competitive advantages, international operating service companies will have to develop strategies for developing and performing services in individual markets, while also integrating their domestic and foreign activities in a global corporate strategy. Here, international service companies are confronted by two central challenges: first, the achievement of cost advantages through standardization, and second, adaptation to national conditions. Competitive advantages can only be created if both of these requirements are met.

To achieve the advantages of internationalization and meet the challenges faced by service companies, three instruments are vital: cross-national configuration of activities, internal coordination, and customer integration. In principle, value activities should be based in countries where they bring the greatest advantages for service companies. With a view to coordination, operations in each foreign location must correspond to the global strategy and corporate culture of the company. Due to the synchronization needed to create and consume a service, customer participation and integration also must play a central role here.

Remote services offer the possibility of performing services for the customer at a distance. This business model is on the one hand interesting for pure service companies, but is also attractive to companies that wish to offer services to accompany their existing product portfolio. These services provide an important opportunity for Germany to remain on course as the global export champion.
Hot Spots of Service Export
Management consultants arrive and organize how everything is to be done. But if problems occur later, who is then responsible? There are a few consultants who are so convinced of their concepts that they are pleased to come and help out with any unfinished business. P3-Digital Services GmbH, an outsourcing partner that realizes and controls multimillion Euro engineering projects, is a unique example of this type of service in Germany.

“The management of value creation” is the credo of P3, the Hamburg company that originated as a spin-off of the Fraunhofer Institute in Aachen. They have taken responsibility for several large-scale projects during the last few years, including construction services for the Airbus A380. The particular strengths of P3-Digital Services lie in the company’s ability in global supplier management and process integration. A network of specialized, highly qualified partner companies enables the handling of large-scale projects within the shortest possible time. This means substantial cost advantages for the customer, particularly as they do not have to concern themselves with project supervision and coordination, and are involved exclusively with a single contact partner: P3-Digital Services.

The managing Director of the company, Dr. S. Siegler, notes: “Our core innovation is actually our business model. We are not brokers for engineering services, but consultants and responsible realizers.” Turnover is growing constantly. The company achieved 30 million Euros in 2006. In addition to the aviation sector represented by Airbus, automotive companies, shipbuilders, and plant constructors other industries are increasingly turning to P3-Digital Services for the realization of their projects.

**IMK engineering GmbH**

**Engineering services export**

The underground mining sector has been hit globally, most particularly in South Africa, by increasing pressure for rationalization and mechanization. It is additionally aggravated by a critical scarcity of workers as a result of humanitarian and social changes (HIV and political influences). Export of technological solutions to South Africa is further complicated by global market fluctuations, as well as country-specific conditions such as currency decline, and variable availability of local services. On the other hand, South African companies display high standards in production technology, and are in a position to undertake important tasks in manufacturing, service, and operation, e.g. in mining technology, within a partnership in which development and engineering services remain “made in Germany”.

**Drilling vehicle**

IMK engineering in Chemnitz is currently engaged in its first innovative service project: the development and construction of a mining drilling vehicle for South Africa that represents the first step towards further successful projects. The export model of this company already demonstrates a promising path for other small companies exporting German development services.
SIEMENS – Healthcare UPTIME Services

Detect weak points before services fail

Continuing service is a vital criterion in numerous decisions – the purchase of an automobile, or a computer, for example. However, at Siemens Healthcare, service means much more than maintenance or the replacement of spare parts: Siemens Uptime Services provide a wealth of innovative and proactive services that permit potential operational problems in medical-technical systems to be recognized before any malfunctions occur. This minimizes down time for the customer, and facilitates both planning reliability and substantial improvements in working processes and medical practices. The remote maintenance platform, Siemens Remote Service (SRS), and a comprehensive training concept for customers and service technicians, make this possible.

Siemens Remote Service
A high number of patients results in a permanent overload for most image-guided systems operating in the medical sector. At the same time, reliability is essential for hospitals and medical practices to guarantee problem-free clinical procedures. For the early detection or even complete prevention of potential malfunctions, Siemens can connect the systems of its global customers to the Siemens Remote Service (SRS). This remote maintenance platform from the Service Organization at Siemens Healthcare (UPTIME Services) currently permits remote access to rectify up to 50 percent of all system malfunctions. It is frequently possible to recognize and eliminate operational dysfunctions before any problems occur.

Proactive online monitoring in real time: the Guardian Program
The Guardian Program offers proactive online monitoring of medical-technical systems in real time. System malfunctions, and possible deviations from current normal values, can be identified swiftly, and rectified before a malfunction occurs, thereby guaranteeing a high degree of reliability and availability. Should system parameters exceed or go below the defined threshold values, the system will automatically send a message to the Siemens Service Center. Only minutes after receipt of this message, a service technician will call the customer. The technician accompanies the customer during the decisive initial response, and initiates corresponding measures immediately.

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Arvato AG is the internationally networked communication service provider of the well-known German company, Bertelsmann. With over 270 subsidiaries and more than 50,000 employees worldwide, arvato is a networked media and communication service that has achieved a top position in numerous markets. Its government services portfolio ranges from back-office functions to citizen contact in call-centers or citizens’ bureaus. The company’s partnership approach ensures that economic efficiency is achieved with transparent quality standards. With the city of Würzburg, for example, the company is involved in a project called “Würzburg integrates!” The core element of this project is the integrated processing of all administrative services, and the coupling of previously isolated procedures into a central eGovernment platform. The handling time for citizens’ bureau processes has been reduced by at least 25% as a result of the project.

The eGovernment platform permits access to administration services in the city of Würzburg via a standardized user interface for citizens, companies, and administrative employees. Thanks to the integrated administrative procedures, it is possible to perform even complex services with minimum effort. A standardized information portal is available in the citizens’ bureau and on the internet for all administrative staff, companies, and citizens of Würzburg, that enables the swift procurement of advice and transparent, rapid and processing of requests. This guarantees reliable access to the city administration at all times. As a tangible example of benefits, in the near future, the citizens of Würzburg will not have to visit different offices and speak to different officials when they move house, but merely process administrative notification with one official in a single transaction. With the submission of the new address, it is possible for all documents and data banks to be altered automatically.

It is not only the citizens of Würzburg who are profiting from arvato’s services. Improvement of service quality, simplification of processes, and acceleration of administrative procedures are the targeted aims of all arvato projects, which are increasingly international. The company has been providing local government administrative support for East Riding of Yorkshire Council in England since 2005. The service includes the collection of taxes, wage and salary accounting, the management of the 14 citizens’ bureaus, and the provision of infrastructure necessary to accomplish these diverse tasks.

City hall in Würzburg
Star Alliance Services GmbH

Export of transport services

In 1997, leading airline companies joined together to establish the Star Alliance Network, at the time it was the only network of its type. The purpose of the alliance was the common utilization of airport lounges, check-in services, ticket changes, and numerous additional services to make the traveling experiences of its passengers more pleasant, and ensure the greater efficiency of airline company processes.

The Star Alliance Transfer Service is a vital basis for achieving these goals. With the aid of specialized software, responsible employees in transfer centers are able to solve problems through constant monitoring of arriving and departing aircrafts. Keeping passenger delays to an absolute minimum is achieved by identifying connecting flights that will be missed at the earliest possible stage. At selected airports, passengers are met at the gate by an employee of the Star Connection Center and accompanied directly to their connecting flight if a flight is late, and the customer risks missing a connecting flight. A problem-free baggage transfer service is also guaranteed at all airports. This is the kind of service that minimizes stress and increases passenger loyalty.

The Star Alliance Network was voted as the best airline alliance in 2003, 2006, and 2007 by the well-known Business Traveller Magazine. They also received the Market Leadership Award from specialist publication Air Transport World® in 2008, the first time that the magazine, which covers the airline industry, selected an alliance for an award.

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