



IST

Fallstudienreihe

Innovation, Servicedienstleistungen und
Technologie

Case Studies on

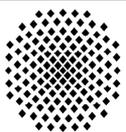
Innovation, Services and Technology

**Mechanical engineering as a
service**

Ute Reuter

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© Prof. Dr. Wolfgang Burr
Betriebswirtschaftliches Institut
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Herausgeber

Wolfgang Burr

Betriebswirtschaftliches Institut der Universität Stuttgart
Lehrstuhl für ABWL, Forschungs-, Entwicklungs- und
Innovationsmanagement

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70174 Stuttgart

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Mechanical engineering as a service

Dipl. Oec. Ute Reuter

Chair of General Business Administration, Research & Development and Innovation Management

Prof. Dr. Wolfgang Burr

University of Stuttgart

Keplerstrasse 17, 70174 Stuttgart

<http://www.uni-stuttgart.de/innovation>

e-mail: ute.reuter@bwi.uni-stuttgart.de

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1 Introduction

Services play an ever increasing role in the value creation processes of manufacturing companies. An interlinkage of service and production offers significant advantages: services are often more profitable than products; customer loyalty can be strengthened by an additional supply of services, which makes it easier to detect customers' needs earlier and to provide for a better pricing and product differentiation. In particular, companies which adjust their organizational framework conditions to integrate production and provision of services are more successful than their competitors.¹

High potential is especially attributed to productivity services. These are service offers that aim at increasing "the productivity of machinery use with the customer". This, for example, can be achieved by automation of upstream and downstream processes or by telematics and information services for machine utilization. Equally high potential is attributed to services that increase the availability of machine use. These could include intelligent service and maintenance systems, but also service level agreements agreed upon in the contract.²

2 Case study

One example for a mechanical engineering company offering services is 3win Maschinenbau GmbH (3win)³. The company founded by Ms. Dagmar Wirtz in 1999⁴ was born from the idea to pave the way from conventional engineering to the services sector, which means to offer system solutions ranging from development, implementation and commissioning all the way to services.⁵ The

¹ Cf. Schreier 2008, for URL see bibliography

² Bienzeisler 2009, p. 2

³ Data on the actually existing 3win Maschinenbau GmbH was used as the basis for the preparation of the case study. Some of the task-relevant information necessary for the processing was, however, not found in publicly available sources on 3win and was therefore freely supplemented. Certain differences between the real situation within 3win and statements made in the case study are therefore inevitable.

⁴ Cf. IHK Aachen 2003, for URL see bibliography

⁵ Cf. Boehl 2006, for URL see bibliography and Hartmann 2007, for URL see bibliography

company concept is well received in the market, which is reflected in the capacity utilization of 3win.

The increase in sales is evident: after all, within only seven years the annual sales increased from 56,000 Euros in 1999 to 3 million Euros in 2006.⁶

True to its name, the company committed itself to the motto that a good deal always brings out three winners: the customer, the supplier and the company itself.⁷ Consequently, the involvement of customer experiences in the company is as important as communicating product and service quality to existing and potential customers. Nevertheless, in the past it has not been possible to entirely satisfy every customer.

While 3win had only 3 employees upon its establishment in 1999, in the year 2006 it already had 41 employees,⁸ who were deployed very flexibly for routine tasks and within innovation projects. Particular attention is paid to the contribution of the employees' own ideas, which are strongly supported in the initial phase of innovation processes.

The increase in employee motivation through short communication channels, quick decision making⁹ and interdisciplinary approaches is expected to lead to greater efficiency in production. Great value is attached to ensuring that all employees can bring in their opinion in the company and that status differences do not create a threshold.

3win is an expert in special purpose machines and system solutions for mechanical engineering. The company carries out not only the development, but also the production and assembly of components and systems. Ms. Wirtz' success in the management of 3win won her the Aachen „VisionPlus“ Award for Female Entrepreneurs of the Aachen region¹⁰ Ms. Wirtz places great emphasis

⁶ Cf. Hartmann 2007, for URL see bibliography

⁷ Cf. Ibidem.

⁸ Cf. Founder's region of Aachen 2006, for URL see bibliography as well as Hartmann 2007

⁹ Cf. 3win 2009a, for URL see bibliography

¹⁰ Cf. Hartmann 2007, for URL see bibliography

on the fact that all three sites of the medium-sized business are linked together and that the company server stores more than 200,000 drawings, which can be accessed at any time. This way, everyday work can be done almost entirely without paper.¹¹ In addition, even two or more complex projects can also be managed at the same time.

The company is distinguished by its expertise in the field of machinery and plant engineering, as well as in the assembly of technically sophisticated components.¹² The company's strengths lie in the fields of assembly of individual components or complete machines, production, service and information management. A software program called „Fuxx“ has been specifically designed for the field of information management.¹³ Fuxx significantly facilitates the processing of complex information.

The prototype production comprises feasibility study, procurement, manufacturing, controlling, and suggestions for improvement,¹⁴ and is generally characterized by medium maturity and medium risk.

A quality debate is being carried out in the company as well. On that subject, the following entry can be found on the 3win corporate homepage: “To 3win quality means meeting the requirements based on high precision, flexible customer orientation, creativity and mandatorily short lead times. The corporate culture characterized by open dialogue and clearly defined responsibilities contributes to this, as does a regular TÜV certification. To ensure that there are enough qualified specialists, we train them ourselves. For us, this holds the prospect of offering our customers product quality as well as service on a constantly high level. It is our declared aim to provide a customer with the best product and the best service.”¹⁵

¹¹ Cf. Hartmann 2007, for URL see bibliography

¹² Cf. 3win 2009c, for URL see bibliography

¹³ Cf. 3win 2009a, for URL see bibliography

¹⁴ Cf. Ibidem

¹⁵ Cf. 3win 2009b, for URL see bibliography

3 Assignment of Tasks

After completing your studies at the University of Stuttgart, you are employed by Ms. Wirtz as an assistant to the management board of 3win Maschinenbau GmbH. Since the special focus of the company founder and chairman is on generating and implementing new service ideas on the one hand, and on quality assurance of already existing services on the other hand, it does not come as a surprise that you are asked by Ms. Wirtz to tackle the following challenges:

3.1 Idea Generation

Ms. Wirtz wants to expand the range of services of 3win. New ideas for innovative services that lead to shorter delivery times are to be generated. From your studies, you still remember well how the process of generating ideas ideally works and how creativity techniques for generating ideas can be utilized.

At first, please describe the phases of the idea generation process in theory. In doing so, differentiate between gathering ideas and generating ideas, and briefly describe what organizational requirements have to be met so that creativity techniques can be successfully applied.

Based on the case study, please analyze possible sources to gather ideas with regard to this specific case. With reference to the case study and focused on the problem, select one creativity technique and explain its possible usage extensively. When selecting the creativity technique, please take into consideration the relevant hypotheses about the appropriate situations in which a creativity technique can be applied. Explain and justify your choice accordingly.

3.2 Implementation of Innovation Tasks with Project Management

In future, innovation tasks at 3win are to be regarded as projects. At first, please describe in theory, how innovation tasks can be implemented in a service company in accordance with their limitation, define the term “project” and name the general success factors of project organizations.

From your studies at the University of Stuttgart, you still remember well that there are different forms of project organization for the realization of project management. As regards the case study, please describe whether a staff line project organization, matrix project organization or a pure project organization is suitable for being applied at 3win and justify your decision in detail by analyzing at least eight out of thirteen possible eligibility criteria. Explain the organizational form of project management chosen by you in terms of the case study company.

In doing so, underpin your statements by a case study-based diagram of the appropriate project management form.

3.3 Quality assurance

In applying the model for the continuous improvement of service quality according to Zeithaml et al. (1990) you see a good way to uncover possibly existing deficits in the quality of services at 3win. Since Ms. Wirtz is not familiar with the model yet, briefly outline it in theory and demonstrate which deficits/gaps may arise in the service quality.

Apply the model to this specific case by asking five suitable and consecutive key questions and answering them in detail based on the case study.

Also describe what specific measures can be taken to close the gaps found.

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