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## Service planning as support process for a Lean After Sales Service

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### Abstract

Many producing companies increase their focus on the After Sales Service. In this business sector, companies can generate high margins compared to the primary product business. This is based on the fact that the After Sales Service is responsible for only 20 % of the turnover of producing companies, but the After Sales Service is able to generate around 80 % of the company's profits. To ensure that After Sales Service continues to be a profitable business area for companies, it is necessary that the After Sales Service processes are geared to the customer. The use of principles, methods and tools of Lean Production Systems can be suitable for this purpose. The use of these principles should already be taken into account during the service planning. Therefore, a literature review of existing service planning processes and a methodological approach is presented in this paper (based on a research project funded by the German Research Foundation „Systematic adaption of Lean Production System Principles to After Sales Service for Customer focusing and Waste reduction“ (DO 750/25-1)) how the principles, methods and tools of Lean Production Systems can be integrated into the After Sales Service by means of service planning. With the help of this methodological guideline, companies can be enabled to integrate Lean Production System principles into the After Sales Service.

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### 1. After Sales Service

The business sector of After Sales Service is characterized by a number of special characteristics. It includes economic dependency, high margins, growth and innovation potential, long service cycles as well as intensive and long-term customer contact. [1] Likewise, a volatile and therefore poorly predictable demand concerning the offered services, a high degree of individuality and non-standardized customer orders are among the biggest challenges in the After Sales Service. [2] The After Sales Service of producing companies has to face these challenges and customer's requirements (e.g. prevention of the downtimes). Moreover, short reaction times are demanded at the highest quality requirements of Customer Service and Spare parts delivery. [1]

Therefore, companies attach importance to customer orientation and, with this, to Customer Service in order to differentiate themselves from competitors. The sole offer of primary products is becoming increasingly exchangeable.

Hence, the focus on the After Sales Service is necessary as the primary products are getting more and more equal in terms of quality, price, functionality and technical features. [3, 4] Therefore, companies offer various as well as new services in the field of After Sales Services in order to achieve a competitive advantage. This is mainly based on the fact that services that complement the primary product are responsible for 75-80 % of the company profit. [5] Therefore, it is necessary to secure the profits gained by the After Sales Service.

The After Sales Service can be divided into three sections. This includes the Spare parts service, Customer Service and Accessories Business [6]. The Spare Parts Service covers the areas of demand forecasting, spare part management, spare part production, spare part distribution and spare parts management [1]. The areas of maintenance, repair, overhaul, financial services, trainings, instructions and installation are parts of the Customer Service. [6] The Accessories Business focuses on the areas of merchandise, equipment and

individualization of products. [7] Within the scope of this paper, the focus is primarily on the Customer Service.

Customer loyalty can be increased by appropriate Customer Services if customers are satisfied with the manufacturer in the course of the product life cycle. This loyalty can be established during the life cycle phase in which generally no further investments are made by the customers. In addition to that, the After Sales Service division is insensitive to cyclical fluctuations. [8] On the one hand, this becomes evident due to the fact that maintenance and service contracts are concluded on a long-term basis. On the other hand, repairs or the fulfilment of service intervals or contracts are also necessary during economically difficult times. [1] As a result, the After Sales Service helps manufacturers to overcome cyclical fluctuations by reducing the dependency on the primary product and generating revenue from other business areas [8]. In order to show the differences between Production or respectively Product Sales and After Sales Service, a comparison between the Product Sales and the After Sales Service is given in Fig 1.

	Product Sales	After Sales Service
Independency of economic situation	Low	Very high
Margin	Low	High
Behavior in times of crisis	Profit and sales collapse	Stable or growth
Forecast horizon	Short product life cycles	Long service intervals / contracts
Contact to customer	Singular customer contact	Intensive, long lasting contact
Gathering customers needs	Limited	Good, due to intensive contact with the customer
Growth and innovation potential	Often already limited	High

Fig. 1. Comparison between Sales and Service [5]

To create appropriate arrangements for a process-oriented, waste-free After Sales Service should already be made in the service planning of the After Sales Service. In the field of service planning, the development and documentation of service processes (process visualization and process definition, reporting guidelines, process descriptions and repair instructions or process managers), technical instructions and drawings, development of country-specific guidelines, provisioning of spare parts or spare parts pricing are carried out, in order to provide After Sales Service employees with necessary tools and instructions for solving customer problems. In this area, it is therefore also necessary to implement process-oriented procedures of the After Sales Service so that defined internal customer-supplier relationships result from this planning. As a result, service planning is the earliest stage in the After Sales Service. New processes can be designed and in this phase a high optimization potential exists so that the processes do not have to be fundamentally changed during operation. Hence, the service planning should be operated in a proactive and objective-oriented manner.

## 2. Lean Production Systems

The origins of Lean Production Systems (LPS) can be found in Lean Production, Taylorism and Innovative Working Models [9]. The objective is to combine the strengths of all three models and to eliminate the specific weaknesses [10]. By this combination, LPS allow companies to focus on activities that enhance the value of the product for the customer, by creating value and avoiding waste in the processes [11]. Through a successful, sustainable implementation of a Lean Production Systems in a company, they can act more responsibly, faster, closer to the customer and transparently in the market. At the same time, productivity, quality and flexibility can be increased and customer-specific services can be manufactured under high-quality standards. [10]

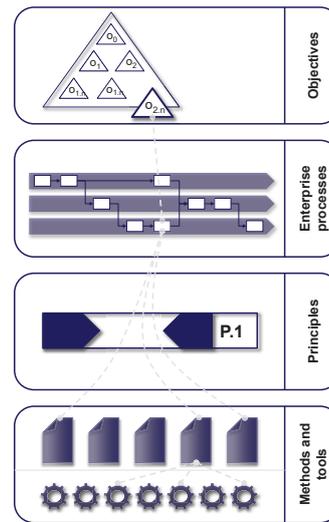


Fig. 2. Structure of Lean Production Systems [12]

For this purpose, company objectives, processes, principles, methods and tools are defined and implemented in a company. [12] Fig. 2 shows an exemplary structure of Lean Production Systems. The LPS principles serve as company-individual combinations of the methods and tools to be used. Thus, methods and tools in Lean Production Systems thus represent the implementable elements which are meant to serve directly to improve the processes. A general summary is given in the VDI Guideline 2870 [12]:

- Standardisation: Implementation of stable, repeatable workflows to achieve safe and stable processes [13]. Troubleshooting and revision of the standards in case of deficient products or customer complaints are necessary [14].
- Zero defects principle: Introduction of process analyzes and defects prevention as well as measurement of performance data to optimize the process quality [14].
- Flow principle: Installation of a continuous material flow within production. Direct transfer of the products after

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