

Opportunities for servitization in chemical companies

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It is the increase in the importance of services what is one of the typical features in the current stage of the development of market economies. Industrial manufacturing is thus changing. Instead of accepting the “truth passed on” that competitiveness can only be achieved through offering cheaper, faster, or better products, the manufacturers perceive themselves more and more as service providers who offer complete solutions instead of mere products. The chemical industry in the Czech Republic faces a number of global challenges. The cost of achieving harmony with newly implemented environmental and safety standards valid in the European Union make production unproportionally more expensive, and if we add to it still significantly lower labour costs in the Southeast Asia, this results in a starting handicap that companies have to compensate by some other specific advantages or competences. With a certain level of simplification, it is possible to say that, while the chemistry commodity strives to be as cheap as possible, specialized chemistry aims to be as original and flexible as possible. The possible way of how to achieve the competitive advantage can be found in the new business model of servitization. It represents a trend of moving from the traditional product-oriented marketing towards a product-service combination strategy, where a product is complemented with the respective service to increase the product added value. Therefore, this paper aims to pay attention to the possible concepts of product-and-service integration and to identify services that are suitable for servitization. This study offers the results of an analysis of the web pages concerning the chemical companies operating in the Czech Republic from the point of view of services they specify and, consequently, may offer.

Keywords: Services; Servitization; B2B; Chemical industry

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Introduction

The attractiveness of market offerings is nowadays assessed on the basis of the value customers are providing. The customer value cannot be created or upgraded without application of both tangible and intangible benefits. Such benefits facilitate the business transactions and, at the same, they strengthen relationships with customers and build up their loyalty [1]. Intangible benefits include services, relationships, and corporate reputation. It is just the increase in the importance of services what is one of the typical features of the current stage of the development of market economies [2].

Product support services provided in the B2B market are becoming the main battlefield where mutual confrontations of the competitive advantage take place [3]. The core of competitiveness is thus moving from the products themselves to supplier's abilities created by the entire logistics chain. Therefore, services can be understood as a mighty marketing tool, which very effectively forms and subsequently strengthens customer-supplier relationships [4]. It is no longer only about the quality manufacturing, but also about customer services. The industry has seen such a huge growth of services that they are also becoming a strategic target of a lot of manufacturing companies [5]. Industrial manufacturing is thus changing. There is a growing importance of supporting services to supplied products [6]. Instead of accepting the “truth passed on” that competitiveness can only be achieved through offering cheaper, faster, or better products, the manufacturers perceive themselves more and more as service providers who offer complete solutions instead of mere products. The growing competition at both local and global levels, together with depressing margins requiring new income flows and product commoditization, are thus reasons for the current revival of the interest in servitization.

Servitization, as the future of industrial manufacturing, is more and more frequently practiced issue. It represents a trend of deviation from the traditional product-oriented marketing towards a product-service combination strategy. It can be understood as a new business model, where a product is complemented with the respective service to increase the product added value. Such a product can be seen as a new one, which may result in an increase in the income and product differentiation from the competition. Vandermerwe and Rada understand servitization as a competitive tool of companies in all industrial markets worldwide, and they consider it as a tool that increases corporate turnovers and the market power [7]. Significant levels of servitization are observed in companies around the world [8].

However, services provided in the B2B market are much more complex and require administration of a larger number of parameters in order to ensure their flawless provision and achievement of the desired outcome compared to those provided in the B2C market [9].

Mostly, a service provided by a manufacturing company is specifically focused on a particular customer, and hence, it can be considered as a unique solution of a particular problem.

The above stated implies that another possible way of how to achieve competitive advantage can be found in the new business model of servitization. Therefore, this paper aims to pay attention to the possible concepts of product-and-service integration and to identify opportunities for servitization in the chemical industry. For this purpose, the research team conducted a thorough literature search having analysed the web pages of chemical companies operating in the Czech Republic with respect to the services they specify and, consequently, offer.

The current concept of services in the B2B market

Services are understood on the individual basis, depending on the market, industry, branch of business, orientation, etc. [10], and can be defined in more detail as follows:

- philosophy of business organizations representing their identification with customer requirements;
- a tool increasing the product utility value for the customer, a source of the added value and a significant competitive factor of the supply system;
- a set of activities that have to be planned and their implementation managed requiring the formation of an organizational framework in the system and a delegating competencies for their fulfilment;
- a set of indicators necessary for quantification of logistics activities within the supply system [11,12].

Kotler and Keller [3] discriminate among five offering categories, where the service component is a more or less important part of an offer – i.e., purely tangible goods, tangible goods accompanied by services, hybrid offering; i.e., services and products are of the same importance, a dominant service with accompanying less important goods, and a pure service. However, what is essential for understanding of the current concept of services is their shift from services supporting products towards services supporting customers. Leading companies, making use of servitization, often incorporate the customer into the relationship that is focused on strategic relocation and outsourcing of the business processes rather than on sale of products and services. A transition from offering the basic services, through intermediate ones, up to the advanced services requires the transfer of activities that used to be a customer's internal matter. Thus, manufacturers have to extend the range of their activities to become more and more attractive to their customers.

Identification of these activities is an important step to understand the offered services. It is obvious that customers reach a particular level of services and the results on the basis of the level of their relationship with the supplier [13]. If manufacturer is offering an availability contract, and the customer paying on that basis, than the manufacturer has to ensure that he can deliver the goods according to the contract. What he gets paid depends on what he provides. It is not a case of saying that ‘he sells the product, it breaks, and he fixes it’ – this is the old-fashioned way, which one cannot see in the modern servitized world [14]. The more advanced the service, the more value offered to the customer, for example:

- Base Services: Product Provision;
- Intermediate Services: Product Repair, Condition Monitoring, Field Service and Customer Help Desk;
- Advanced Services: Pay Per Use, Fleet Management, Availability Contract and Integrated Solution [14].

However, the fact that a manufacturer focuses on offering the significant and original services associated with a product, it does not mean that the product performance and its operational efficiency are no longer important. They just do not have to excel to the same extent in offering of services that never serve as a replacement of a product not functioning properly.

Services offered do not necessarily need to be new. Manufacturers can decide whether to offer the same services as providers of pure services — i.e., they build a wide portfolio of relatively conventional services, such as customer assistance service, repair service, and training —, or to develop / acquire new services (independent of the products of the company manufactures; an example can serve the transition of IBM, originally a manufacturing company, to general consultancy), or to extend their technological possibilities for designing and constructing the spare products and parts (advanced services closely connected with products to such an extent that they provide customers with an ability rather than with a physical value) [13].

In spite of a broader and broader application of servitization, most offerings made by manufacturers belong to the basic or medium levels of service provision. The problem is that development of the advanced services requires significant changes in the areas of technologies, social culture, organizational structure, and corporate processes based on cooperation. As an example of servitization, one can quote the CPFR (collaborative planning, forecasting and replenishment), based on the principle of enhancing information shared and an option of replacing the stock with information through modern IT and communication technologies. According to recent experience of the author from investigations and discussions with managers in many manufactures of different branches in the Czech Republic, there is, however, still a low level of common information sharing. It implicates many problems mainly for manufacturing concerns [15].

A transition of an unit toward servitization can be divided into four stages: (i) consolidation of products relating to services; (ii) entering the service market relating to products, i.e. identification of profit opportunities and specification of a process and structure for their utilization; (iii) replacement of services related to the products by services based on the relationship between the customer and the company, which are mainly focused on fulfilment of specific customer needs, and by services concentrated in processes; (iv) takeover of end user's operations, operational risks and processes [16].

Through years, a number of different terms and types of product-and-service integration strategies have been developed. Park [17] divided them into two groups – the first one (originating before 2000) contains various forms of product-service integration focused on monitoring marketing targets, i.e. on distinction of offerings made by manufacturers. They then include:

Bundling which is defined as a strategy of joining two or more products and/or services into one package; e.g., full service subscription and vehicle maintenance [18].

Systems selling: Companies sell combinations of products and services to satisfy the increased customer needs. Thus, they do not offer individual or independent components, but a system gathering e.g. hardware and software [19].

Full service represents a comprehensive package of products and/or services satisfying the customer's needs and wishes that are related to a particular event or a problem. It is an entire marketing strategy striving for full satisfaction of customer needs [20].

Service package integrates goods and services with information provided in some media (including supporting facilities, facilitation of utilization of goods, information, explicit and implicit services) [21].

Product service is a set of all possible additional services the supplier can supplement their product, offering it as being different from those offered by competitors [22].

Installed base service represents complementary services provided as a product support tool. Its main purpose is to support end users for the period of the product lifetime [23].

The second group concerns a change in the corporate strategic orientation (it did not develop until after 2000) [17]. There, the products and services are integrated in the primal stage of designing offerings to provide functions desired by customers. They are arranged in a way to be interconnected, not just added. This group includes the following forms of integration:

Solutions represent integrated combinations of products and/or services that are adjusted to result in outputs required by particular customers, to solve particular problems arising by modification and integration of products and services [24].

Integrated solutions can be defined as the combined products and services solving specific customer needs. These are not limited to a particular industry, which makes them different from the previous form connected mainly with the computer and electronics industry [16].

Product-service system (PSS) represents an offering, providing functions that satisfy customer needs through the product-service integration. It focuses on selling functions rather than on selling tangible products [25].

Functional sales consist of a supplying the comprehensive solution that combines the products and services satisfying the customer needs with respect to the entire lifetime period, from a design to the production [26].

Function product is a combination of hard and soft components. A customer buys a function provided by a functional product [27].

Integrated product and service engineering is a concept gathering the features of a functional product to be able of aiming at the functions the customer is supplied with, and at complete incorporation of various elements into corporate offerings to satisfy more the customer needs [16].

Specific attributes of servitization in Czech chemical companies

The chemical industry in the Czech Republic faces a number of global challenges. The cost of achieving harmony with newly implemented environmental and safety standards valid in the E.U. make production unproportionally more expensive, and if we add to it still significantly lower labour costs in the Southeast Asia, the result is a starting handicap which companies have to compensate by some other specific advantages or competences.

In the industry of heavy-commodity chemistry, creation of a competitive advantage is mainly built on the exclusive access to the limited sources. In contrast, it is, on one hand, rather individual managerial practices, including the ability of the company to implement these practices in time, manage them optimally, and, on the other hand, product differentiation (i.e., product specialization, niche products) and specific market development that is more and more pronounced in the industry of specialized chemistry. It is obvious that the areas, where European chemical companies have to generate competitive advantage, can be summarized under the terms of innovation and innovation cycle, strategy and strategic management, the management of implementation processes, an effective risk management process at acceptable cost, capital budgeting and management of investment processes, or some others [28].

As for heavy-commodity chemistry, innovation efforts are focused on the implementation or enhancement of technologies, which will lead to process economization, while in specialized chemistry, it is the effort to develop unique products or technologies, which will realize it on the basis of patent protection, for the owner to benefit from the exceptionality of the solutions offered. With a

certain simplification, it is possible to say that whilst the commodity chemistry strives to be as cheap as possible, specialized chemistry aims to be as original and flexible as possible [28].

Yet another possible way of how to achieve a competitive advantage can be found in servitization. A typical example is a manufacturer of chemicals providing a wide range of carefully designed lubes striving to increase performance of their clients' machines [29].

Services offered by chemical companies in the Czech Republic

The current trends in services offered by chemical companies in the Czech Republic have been identified through an analysis of web pages of 35 chemical companies selected according to the services they may offer (CZ-NACE 19 – CZ-NACE 22). For their structure, from a point of view of affiliation to the industrial sector of the heavy-commodity chemistry and specialized chemistry, the number of employees and the turnover are surveyed in Table 1.

Table 1 Structure of the analysed companies

Company size based on the number of employees	Sector of Chemistry		Total		Turnover [CZK] Average
	heavy	specialized	amount	%	
Small (less than 50)	0	7	7	20	821 337 935
Medium (50-250)	0	12	12	34	367 459 364
Large (more than 250)	5	11	16	46	18 107 071 067
Total	5	30	35	100	8 257 459 018

As for the services offered, it has been monitored whether the services are specified on the main tab or only after click opening of another page, and which particular services are being offered. In view of the fact that servitization represents significant innovations for a company, it was also identified whether corporate web-pages include information about innovations and if the respective data mention servitization or not.

Results and discussion

Our **search outcomes** can be summarized as follows. From the set chosen and studied, 8 companies do not specify any provided services on their websites at all. Other 15 provide information about the provided services on the main page.

Most often, the tabs read: services, offered services and the customer services (9 companies). Exceptionally, there were tabs of services and premises, maintenance and services, services and transport, industrial park, contractual manufacturing (1 company). In total, 21 companies only specify their services after click opening of the main menu, which means that a customer needs more time to get the desired information about services. The services offered are divided into nine basic groups, hereinafter specified in terms of their most frequent occurrence with respect to isolated service offerings, occurring at one company only:

- 1. Services of analytic, application and development laboratories:** Analytic support, analytics, custom adjustments, sample testing, assessment and evaluation of raw material and product features, provision of unbiased and highly objective tests, product attestations, long-term monitoring, detection of possible defects in technologies, in products, quality management, etc.;
- 2. Offered training:** Personal and operation hygiene principles, safety at work with chemical preparations, handling with hazardous chemicals, ensuring contact with trained implementation companies, etc.,
- 3. Consultancy and services relating to legislation:** Keeping prescribed documentation, processing safety sheets, safety marking of workplaces by specification, corporate norms, documentation for approval proceedings, information about changes in legislation, assistance with legislation when launching a product, assessment of business premises in accordance with the valid safety regulations, etc.;
- 4. Engineering services:** Equipping own companies, proposing equipment and measures, designing solutions to structural details, also directly at the construction site, drawing up technological and engineering documentation for construction and reconstruction of the current operations, technical assistance, ensuring assembly supervision for important, complex, and atypical orders or assistance/guidance offered to the starting companies, inspection and reconstruction of pipelines, design and implementation of measures taken to eliminate the identified defects, technological and technical service, etc.;
- 5. Services relating to environmental problems:** Consultancy and counselling within removal of landfill gas, emissions and waste water, chemical waste disposal, including hazardous waste, recycling and cleaning of organic solvents, waste water cleaning for different capacities and different output water quality requirements, including processing of all project documentation levels; environment-friendly cleaning of circulating systems of machining technologies, including pumping out of a used machining fluid and mediation of its disposal, ensuring complete construction or delivery of a technological part of environment-friendly buildings, water treatment, operation of degassing systems and their maintenance, air pollution monitoring, etc.;

6. **Contractual manufacturing** or customer modification of semi-finished products, finished / fine products, mixtures, custom syntheses, turnkey product development and manufacturing, special repairs and coating, chemical calcium deposits removal, cooperation in product additivities, mediation of manufacturing at the most suitable technological facilities, product utilization consultancy, supervision over material, e.g. insulation, installations, etc.;
7. **Logistics services:** Transport, waste transport, delivery of goods in tank trucks across the whole E.U., in separate or complete train units, logistics, storage of chemicals, global sourcing, supplying and selling methods, rentals, etc.;
8. **Social networks:** LinkedIn (15 companies), Facebook (15 companies), YouTube (7 companies), Twitter (4 companies), Instagram (4 companies), Google Plus (2 companies), Pinterest (1 company),
9. **Other services:** customer support centre, services at the workplace, maintenance and operational and technical services, water and energy supplies; comprehensive service system for the own manufacturing units and outside companies operating at the industrial zone premises, services offered by the other entities at the premises, research, hotline and remote data monitoring, training room and training technology rental, designing and assessing anti-radon insulations, anchor plan processing, periodical inspections of selected applications, assistance / guidance with processing or assessing price quotations, etc.

25 companies offer on their web pages information about innovations and 2 of them report on the existence of an innovation unit. Servitization has not been mentioned by any company.

The corporate website analysis of 36 selected chemical companies did not find a mention of servitization. With respect to the outcomes of the previous written questioning conducted at manufacturing companies in the Czech Republic [30], this outcome was expected because 83 % of the respondents stated that they had not come across the term of servitization and, moreover, this term does not exist in the Czech professional literature except one source [31]. Nevertheless, the analysis of the services provided has shown that a number of chemical companies actually engage in servitization or have a potential for its implementation. Companies make use of different forms of product-service integration focusing on monitoring of marketing targets, such as bundling (which is defined as a joining of two or more products and/or services into one package, e.g. full service subscription and vehicle maintenance), *Full service* (comprehensive package of products and/or services satisfying the customer's needs and wishes relating to a particular event or a problem), *Service package* (including supporting facilities, possibilities of utilizing the goods, information, explicit and implicit services), *Product service* (set of all possible additional services the supplier can

supplement their product as an offer different from the competitors), Installed basic service (complementary services provided as a product support tool, supporting end users for the period of the product lifetime).

Conclusion

It is possible to assume that companies rarely apply even more advanced strategies, where products and services are integrated in the primal stage of designing offerings in a way to be interconnected, not just added. However, to make specification of the applied strategies more accurate, it will be necessary to conduct the planned personal questioning directly inside such companies. At the same, they will have a chance to become better acquainted with the opportunities servitization that may bring, which could have a positive impact upon their long-term competitiveness.

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