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Services in Machinery Manufacturing Sector in Poland**Justyna Kozłowska****Faculty of Management, Białystok University of Technology, Wiejska 45A, 15-351 Białystok, Poland***Abstract**

Nowadays, offering services as an addition to the product, or even shifting to service provision seems an interesting and promising means for the manufacturer to become more competitive and distinctive. The article presents the basics of the servicization of the manufacturing industry concept. The main scientific purpose of the paper is to recognize the kind of services machinery manufacturers in Poland integrate with their products, if any. Also, the assessment is made to ascertain whether the number of services offered by manufacturing companies depends on the size of the organisation. The analysis enabled identification of thirteen forms of services, with the most popular being the warranty support and industrial services. The research has also proved that the number of services that are included in the offer depends on the company size.

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1. Introduction

After the Industrial Revolution in the XIX century came the era of the services revolution, and nowadays economy in most developed countries is based on services [1, 2]. Service sector has gained in importance and services as an activity and intangible products have captured markets on the global scale. It has touched and changed the industry sector as well. Fierce competition on the market place and accelerated technology development [14] triggered the need for the implementation of innovative solutions in many industries. Selling products is not enough, therefore manufacturing companies are forced to introduce services into their activity and offers or even, as e.g. IBM, shift entirely into service sector [3]. Even in China, where the economy is strongly manufacture-oriented, the servicization processes are considered inevitable and are being researched [4]. According to Levit: “There are no such things as

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service industries. There are only industries whose service components are greater or less than those of other industries. Everybody is in service” [5]. The global analysis conducted by A. Neely in 2007 and updated in 2011, considering the servicization process in manufacturing companies all over the world, was the inspiration to the author for conducting the study on services in industry sector in Poland. According to the results of Neely’s research, there are significant differences between the level of servicization in analyzed countries. He also identified twelve different forms of services that manufacturing firms adopt and proved that in larger companies the servicization is more likely to happen [6]. Polish companies, however, were not mentioned in this study. There are several works, that analyze servicization of manufacturing sector, conducted in France [7] and in Europe [8], which revealed that the share of services in the output of manufacturing industries had increased in the large majority of French and European companies. But no such analysis has been done in reference to manufacturers operating in Poland, therefore the author decided to investigate into the polish market to find the answer to two questions: What kind of services machinery manufacturers in Poland, if any, integrate with their products? And: Does the scope of this integration (measured by the number of services in the offer) depends on the size of the organization? The prerequisites for the first question are historically based, as polish economy at the beginning of XIX century was focused mainly on the agriculture, and the industry share in national income was rather low. Only after the World War II did the industry of defense and metallurgy developed as well as chemical, machinery and electronic equipment. However, the political situation and its changes at the end of XX century have influenced deeply Polish enterprises, industries, markets and economy as a whole. Therefore, it seems intriguing and interesting if in such country as Poland, the process of servicization of industry follows the global trend. The second question was formulated on the basis of A. Neely’s research outcomes, i.e. that the large companies are more likely to servitize, hence the scope of services they offer is wider, or the form of services is more advanced.

Vandermerwe and Rada claim that servicization “is happening in almost all industries on a global scale. Swept up by the forces of deregulation, technology, globalization and fierce competitive pressure, both service companies and manufacturers are moving more dramatically into services” [9]. The term, which is frequently used as a synonym to servicization, is a Product-Service System (PSS) which is understood as an integration of tangible products and intangible services into one solution/system to jointly satisfy the customer needs [10]. It has been very often discussed in the literature recently [11] and evolved mainly within the frame of sustainable economic development due to its ecological potential. An implementation of such solution in manufacturing company brings a lot of benefits of economic, ecological and social nature [12]. There are three basic types of product-service systems (being also considered as PSS business models): product-oriented PSS, use-oriented PSS and result-oriented PSS [13]. If company focuses on the product manufacturing and offers only product-related services and/or advice/consultancy it means it applied product-oriented PSS. Leasing or renting manufactured products, where there is no change of property rights, means that there is use-oriented model applied. And finally, the most advanced business model, where a manufacturer becomes a service/solution provider, is result-oriented PSS. This means that there is no shift of property rights and the offered solution includes: activity management/outsourcing, pay per service unit or functional result [ibid.]. This typology enables identification of the degree of servicization of a single organization and also, obviously, the more companies apply to the use-oriented and result-oriented PSS business models, the more servitized the sector or market.

2. Research methods

The data for the analysis were drawn from the EMIS (Emerging Market Information Service) database. The choice of this database was determined by the accessibility for the author. The machinery manufacturing sector was chosen on the basis of the literature review which proved that many of case studies presented in academic works concerned this sector [e.g. 15, 16, 17, 18]. It is also intuitive that the investment goods sector is more suitable for implementation of the integrated product-service solution than for instance mass-production products. The collected database contains over nine hundred companies assigned to machinery manufacturing sector. The author believes that the size of retrieved database accounts for substantial part of all companies registered as manufacturers of machinery and industrial equipment in Poland, so the research results could provide a considerable knowledge about this sector and therefore constitute an important scientific value. In the collected set of 970 manufacturers there was 11% of large (over 250 employees) companies, 47% of medium companies (between 50 and 250 workers) and 41% of small (less than 50 staff). To ensure the feasibility of the study, 100 of them have been chosen using stratified sampling method

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