

Servitization in Industrial Firms

Mapping and Analyzing the Danish Service Landscape

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SERVITIZATION IN INDUSTRIAL FIRMS: MAPPING AND ANALYZING THE DANISH SERVICE LANDSCAPE

DECEMBER 2017

SERVITIZATION IN DANISH INDUSTRIAL FIRMS

INTRODUCTION

This booklet outlines the breadth and depth of services offered by Danish manufacturing companies, aiming to provide a better understanding of the servitization landscape in Denmark. A total of 1,103 company websites have been checked against 16 service categories. Of these, 939 companies were analyzed in more detail, for example with regard to the types of services offered, company size, industry representation, turnover and earnings before interest and tax (EBIT).

The analysis presented in this booklet may inspire Danish firms and help them, in their servitization journeys, to position themselves in relation to other companies in similar or related industries. In setting out a brief overview of the overall industrial service landscape in Denmark, the following is highlighted:

- **The extent to which Danish industrial firms are communicating service offerings through their websites**
- **The relative frequency of different service categories and variation across industries**
- **The characteristics of the analyzed companies in terms of size, turnover and EBIT**

WHAT IS SERVITIZATION?

Today, traditional European industrial firms face competition from companies operating in low-cost economies that are increasingly able to sell quality offerings at low prices. Globalization has intensified competition across many industries, resulting, in many cases, in the commoditization of product offerings.

As a consequence, many firms are looking for new ways of differentiating their offerings from those of their competitors, for example by adding services to their existing product portfolio and emphasizing customized solutions to meet specific customer needs.

This phenomenon is typically referred to as servitization. Often employed as a competitive strategy, servitization may also help to build long-lasting customer relationships, assist in increasing turnover and profit and potentially make it more difficult for competitors to imitate offerings that integrate products and services.

OVERVIEW OF THE ANALYSIS AND FINDINGS

While servitization is not yet a mainstream phenomenon in Denmark, the wealth of services mentioned by Danish companies on their websites indicates that many organizations sell more than ‘just’ a product to their customers. While the majority of the firms in the sample mention one or more services, a large proportion of companies did not indicate any services on their websites.

More specifically, the analysis of the Danish service landscape revealed the following:

Finding one: A large proportion of companies do not list services on their websites

- A high percentage of the companies (41%) investigated do not claim to offer services.
- 37% of companies emphasize services beyond simply the provision of basic services. Basic services are services requiring little to no investment, such as providing basic advice on products.

Finding two: A multitude of service categories are offered across Danish industries

- The most frequent service category is *Customer Service*, which is mentioned by 75% of the service-offering companies.
- Of the companies mentioning services, 40% offer *Consulting services*, 38% offer *Repair Service* and *After-Sales Services*, 36% offer *Maintenance Services*, while 35% offer *Research and Development (R&D) Oriented Services*.

Finding three: By industry group, Machinery and equipment manufacturers are the largest service-providers in the sample

- *Manufacturers of machinery and equipment* were found to be the largest representative service-offering group (27%), followed by *Manufacturers of fabricated metal products, except machinery and equipment* (15%).

Finding four: While small companies mention services more frequently, large companies offer services that are more resource intensive

- Small companies tend to be more vocal about their service offerings than medium-sized and large companies.
- Large and medium-sized companies claim to offer more resource-intensive and generic services such as *Maintenance Services*, *Repair Services* and *After-Sales Services*.
- Large companies emphasize *Smart Services*, *Financial Services*, *Training*, and *Payment Schemes* to a greater extent than both small and medium-sized companies.
- Medium-sized companies emphasize *Spare Parts*, *Warranty* and *Solution* services to a greater extent than small and large companies.
- Small companies claim to offer services related to *Consulting*, *R&D Oriented Services* and *Outsourcing* to a greater extent than large and medium-sized companies.

THE RESEARCH APPROACH

RESEARCH STEPS ADOPTED

The analysis was based on data collected from company websites, which were visited between 2015 and 2016. In order to gain an overview of the service offerings mentioned by Danish industrial companies, the research team followed a strict research protocol. First, the academic literature was reviewed, which resulted in 12 seminal papers being identified, from which a list of 126 services was derived.

Next, this list was reviewed extensively, duplicates were excluded and similar service types grouped together, resulting in a list of 57 services.

In step three, these individual services were grouped into a final list comprising 16 service categories. Using this list, the websites of 1,103 Danish manufacturing companies were visited by researchers who identified whether these selected companies offered any services and if so, what different services they claimed to offer. This process resulted in the compilation of an overall dataset which describes the services mentioned by Danish industrial companies (see Figure 1 for an overview of the steps followed).

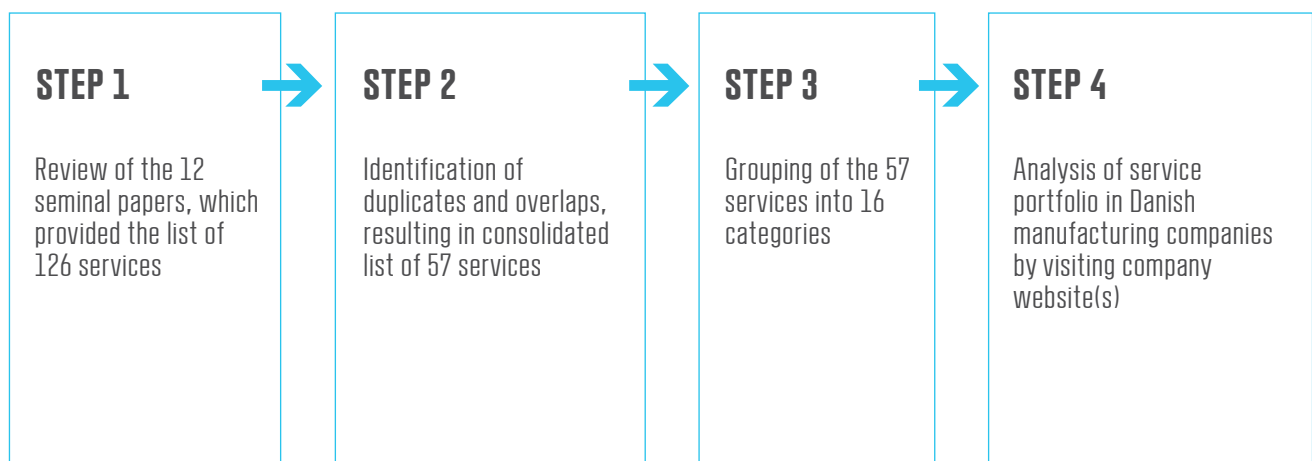


Figure 1: Research steps adopted

Table 1 lists the 16 service categories identified for data collection and analysis. See Appendix A for a complete list of the 57 industrial service types identified in the literature and their respective groupings into the 16 service categories.

Table 1: 16 service categories

SERVICE CATEGORIES			
After-Sales Service	Financial Services	R&D Oriented Services	Spare Parts
Basic Services	Maintenance	Repair Services	Training
Consulting	Outsourcing	Smart Services	Use Agreement
Customer Service	Payment Schemes	Solution	Warranty

THE SAMPLE

The details of Danish industrial companies were extracted from the ORBIS company database, a global directory of publicly available company information, resulting in the identification of a total of 1,103 firms (258 large, 736 medium and 109 small). The sample of companies includes only NACE Rev. 2 main sections: B - Mining and quarrying, C - Manufacturing, F – Construction. The companies were classified as small, medium or large by reference to staff headcount, in accordance with the European Union’s specifications. Small firms, for instance, are those with a workforce of fewer than 50 people and a turnover of €10 million or less or a balance sheet total of €10 million or less, as shown in Table 2.

Table 2: Company sizes (adapted from http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en)

COMPANY CATEGORY	STAFF HEADCOUNT	TURNOVER	BALANCE SHEET TOTAL
Small	< 50	≤ €10 million	≤ €10 million
Medium	< 50 - 249	≤ €50 million	≤ €43 million
Large	≥ 250	> €50 million	> €43 million

The team of researchers investigated the official websites of 1,103 companies. Out of these, 164 companies were excluded: 98 that were selling to end-customers (business-to-consumer) and 66 that for other reasons were not relevant (for example due to duplicate ORBIS entries). This resulted in a total sample of 939 companies for the analysis, as shown in Figure 2.

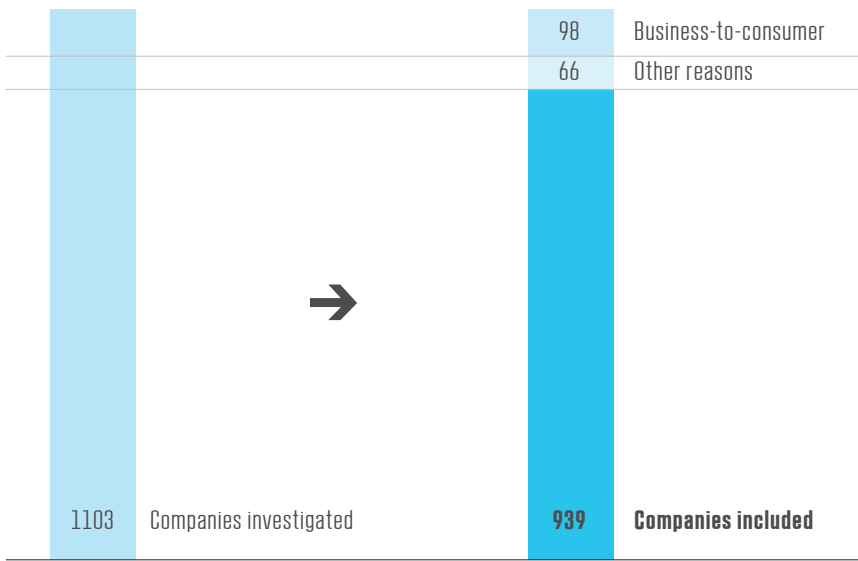


Figure 2: Companies analyzed - refining the dataset

THE ANALYSIS PROCESS

Figure 3 illustrates the design of the website analysis process, using the example of System TM A/S, a Danish supplier of customized handling systems to the solid wood industry. Zooming in on one of the bullet points in the screenshots from System TM's website shows that the company's service offerings include, among several others, "Relocation, renovation, installation and start-up of machine

installations". Once identified, those services were compared with the list of 57 service types found in the literature (see Appendix A for the list). The aforementioned services were found to correspond with *Installation/commissioning* and *Transport to client/distribution* under *Customer Service* category. System TM were found to offer services within 12 out of 16 service categories as indicated by the ticks.

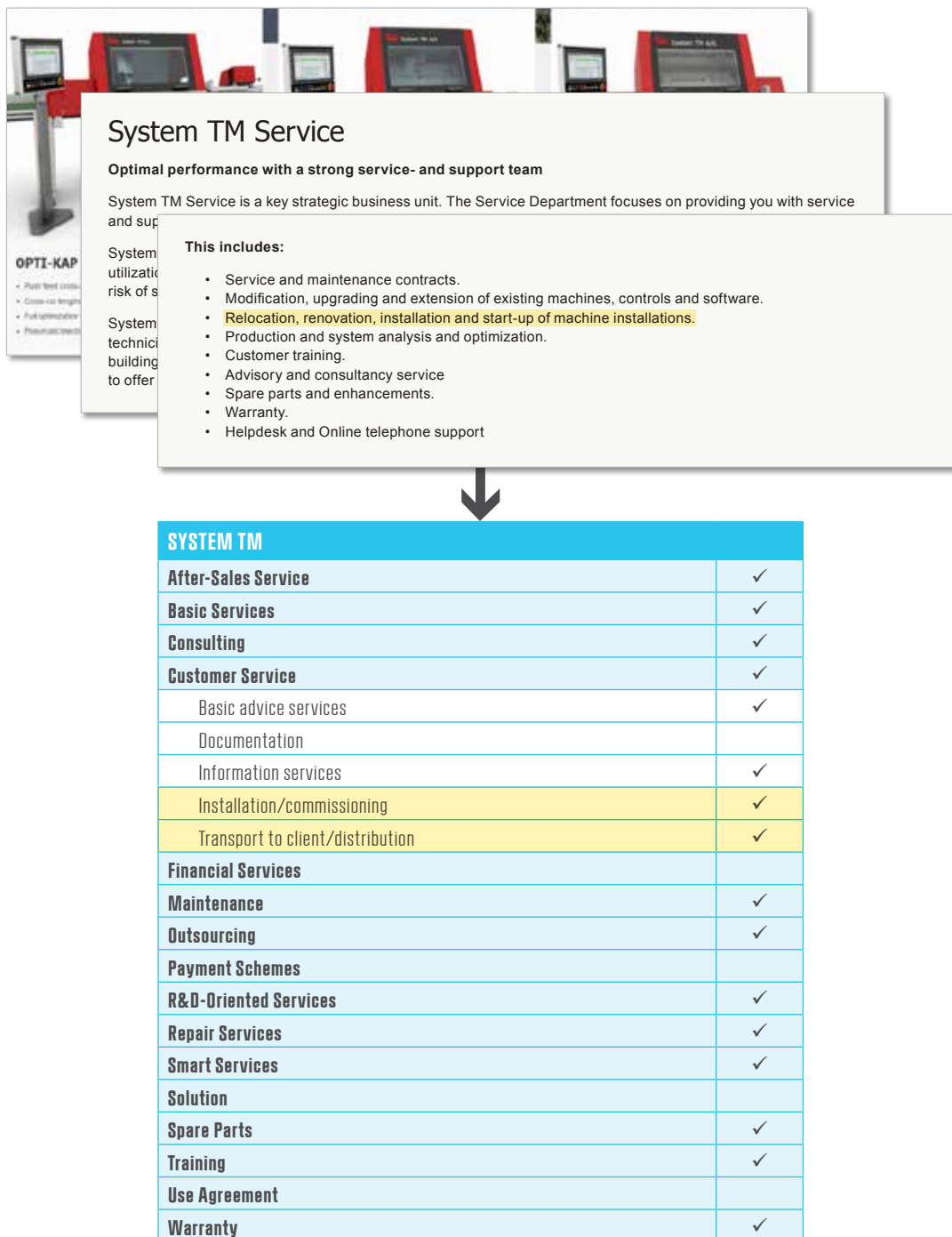


Figure 3: Website analysis process

**“SERVITIZATION IS ABOUT
COMPETING THROUGH
VALUE PROPOSITIONS
THAT INTEGRATE SERVICES
WITH PRODUCT OFFERINGS”**

AVLONITIS, FRANDSEN, HSUAN & KARLSSON (2014)

FINDINGS

The following sub-sections detail the results of the analysis and provide an overview of the Danish industrial service landscape. The analysis is based on observations of the content of company websites at the time of the study.

FINDING ONE: A LARGE PROPORTION OF COMPANIES DO NOT LIST SERVICES ON THEIR WEBSITES

Of the 939 firms, the majority (59%) state on their websites that they offer one or more services. However, a substantial proportion of the companies (41%) do not mention any services on their websites.

While 22% provide information about three services or fewer, 37% provide information about four or more services. Figure 4 shows the breakdown of the information about services identified on company websites.

It is surprising that the number of Danish industrial companies emphasizing services on their websites is not higher. This raises the question as to why, based on information from their websites, a large proportion of companies do not seem to rely on services as a means of differentiation.

While this observation may simply reflect the fact that some industrial firms choose not to offer services, it may also stem

from a failure to communicate services actually offered. The lack of focus on services may be a result of strategic decisions to focus on the core product offering, or a consequence of traditionally emphasizing this.

Lack of communication may reflect the fact that services delivered have not yet been commercialized or that the company website is not prioritized as a marketing channel through which industrial services may be promoted. Depending on the context in which the individual firm operates, the lack of reference to services may be a result of sound strategic decisions.

However, the finding also suggests that some firms may wish to consider the commercial potential of offering services and to ensure that any services offered are clearly communicated on their company websites.

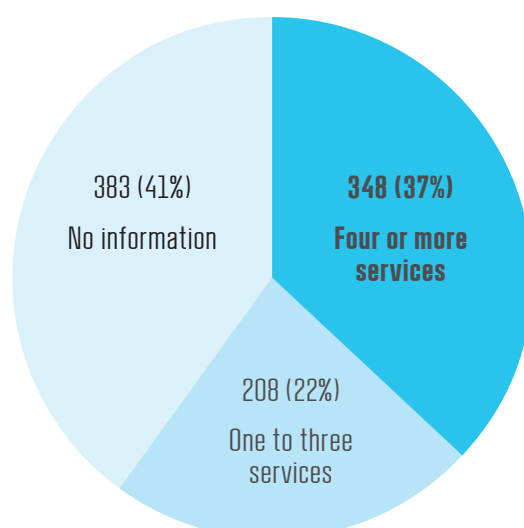


Figure 4: Sample split by information on services

FINDING TWO: A MULTITUDE OF SERVICE CATEGORIES ARE OFFERED ACROSS DANISH INDUSTRIES

Figure 5 illustrates the finding that Danish industrial companies mention a broad variety of service offerings on their websites. Of the companies that list one or more services, the most frequently mentioned service categories were:

- *Customer Service* (75%) – information services, basic advice services, documentation, transport to client/distribution, and installation/commissioning
- *Consulting* (40%) – general consulting, process consulting, and product consulting
- *Repair Services* (38%) – mobile repair units, operating repair teams for customers, repair services, and spare parts management
- *After-Sales Services* (38%) – diagnosis services, inspection services, and hot-line/helpdesk
- *Maintenance* (36%) – preventive maintenance, service level agreements on maintenance, full maintenance contracts, annual/scheduled maintenance activities, predictive maintenance, process optimization through continuous maintenance, and updates/upgrades

Figure 5 shows that for those companies that mention services, such services typically include types which are closely related to the product offering. Other service types such as *Use Agreement* (6%), *Payment Schemes* (2%) and *Financial Services* (1%) are less frequently observed in the data. This is an interesting observation, as it suggests that there could be potential for considering how such services can enhance product offerings.

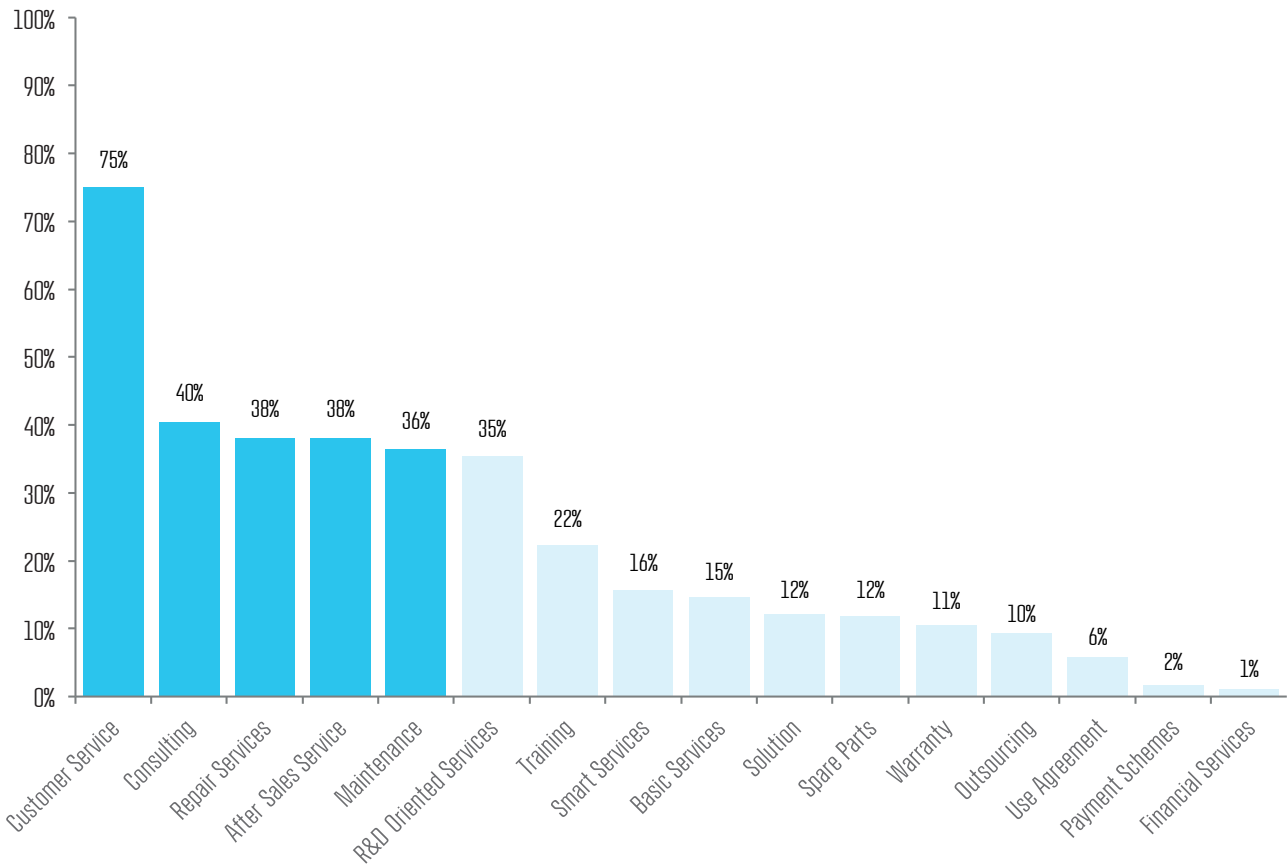


Figure 5: Service category overview

FINDING THREE: BY INDUSTRY OVERVIEW – MACHINERY AND EQUIPMENT MANUFACTURERS ARE THE LARGEST SERVICE-OFFERING GROUP IN THE SAMPLE

As shown in Figure 6, clustering the remaining 556 companies offering information on services (Figure 4) into groups according to industry reveals that *Manufacturers of machinery and equipment* represent the largest industry group offering services in the Danish industry landscape (27%), followed by *Manufacturers of fabricated metal products, except machinery and equipment* (15%) and *Manufacturers of computer, electronic equipment and optical products* (8%).

A large pool of different industries (*Miscellaneous industries*) also offer services (38%). These *Miscellaneous industries* include, for instance, *Manufacturers of other non-metallic mineral products*, *Manufacturers of motor vehicles, trailers and semitrailers* and *Manufacturers of chemicals and chemical products*.

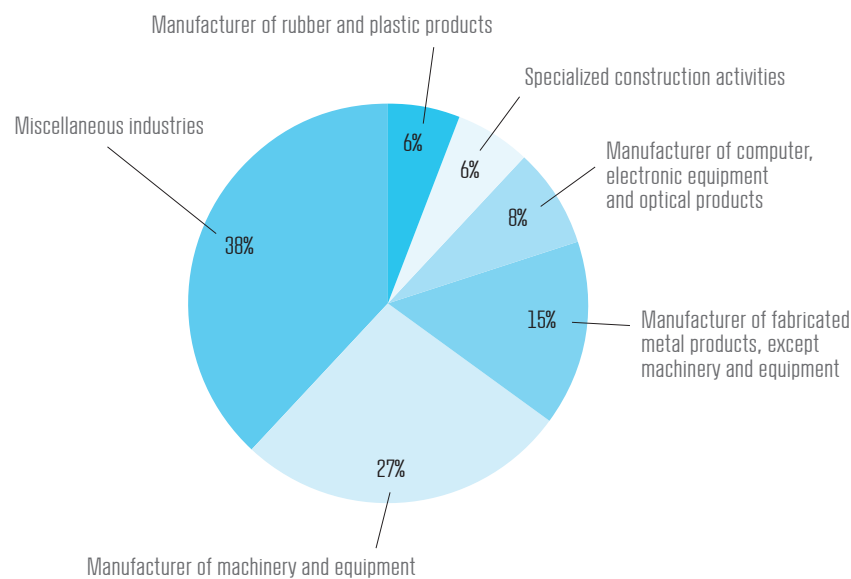


Figure 6: Industry representation of 556 companies offering services

Table 3 lists the nine most commonly offered service categories. For example, the provision of services related to *Customer Service* seems to be a prerequisite for any company, as the analysis revealed that the majority of companies – irrespective of industry – provide such services. The table also highlights potential services that companies may wish to consider offering in order to differentiate themselves from their competitors. An example of service for a company in the industry of *Specialized construction activities* may be *Smart Services*, given that, in that industry, presently only 3% of companies offer at least one or more *Smart Services*.

Furthermore, the analysis reveals how industries differ in their service provision. In the *Maintenance* service category, for example, the number of companies offering related services varies between industries. Thus 62% of *Manufacturers of machinery and equipment* offer *Maintenance* services, while only 12% of *Manufacturers of rubber and plastic products* do so. This difference can be utilized by companies seeking to expand their service portfolio to include services that are uncharacteristic of their industries.

Table 3: Most popular service categories offered by industries

INDUSTRIES	SERVICE CATEGORIES								
	CUSTOMER SERVICE	CON-SULTING	REPAIR SERVICES	AFTER-SALES SERVICE	MAIN-TENANCE	R&D ORIENTED SERVICES	TRAINING	SMART SERVICES	BASIC SERVICES
Manufacturer of machinery and equipment	72%	40%	53%	44%	64%	32%	38%	28%	14%
Manufacturer of fabricated metal products, except machinery and equipment	89%	45%	27%	30%	25%	45%	7%	8%	15%
Manufacturer of computer, electronic equipment and optical products	67%	40%	53%	56%	27%	38%	47%	24%	20%
Specialized construction activities	69%	16%	56%	28%	72%	9%	3%	3%	3%
Manufacturer of rubber and plastic products	88%	58%	18%	33%	12%	70%	12%	9%	18%
Miscellaneous industries	72%	40%	29%	36%	26%	32%	17%	11%	15%

Figure 7 shows the percentage of companies within each of the industry groups. For instance, 80% of the companies in the *Manufacturer of machinery and equipment* group and

75% of companies in *Manufacturers of fabricated metal products, except machinery and equipment* offer services.

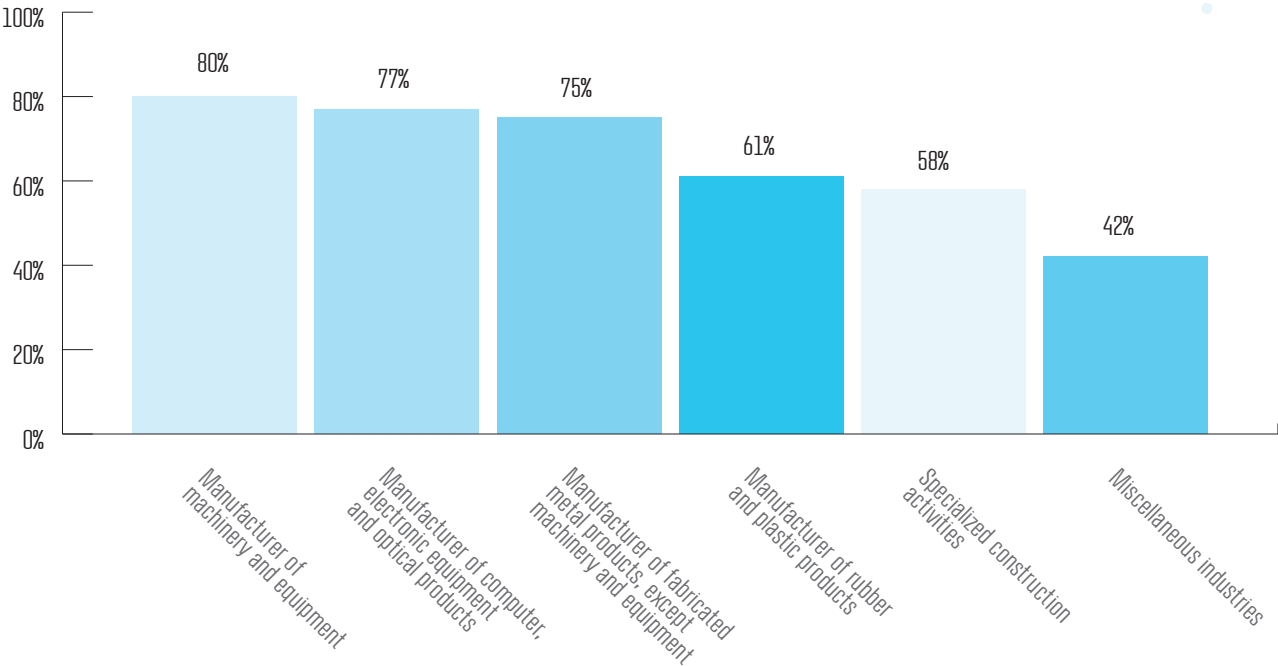


Figure 7: Percentage of companies in industry groups offering services

FINDING FOUR: SMALL COMPANIES MENTION SERVICES MORE FREQUENTLY, WHILE LARGE COMPANIES MENTION SERVICES THAT ARE MORE RESOURCE INTENSIVE

Most small companies (98%) claim on their websites to offer some kind of service (see Figure 8a). This percentage falls to 57% for medium-sized companies (see Figure 8b) and to 50% for large ones (see Figure 8c). This may indicate that small companies are more vocal about their service businesses than large companies, perhaps because small companies may perceive a need to be more strident when interacting with potential customers. This should be contrasted with large companies, which typically have established brands and customer bases and consequently may not feel the need to be as aggressive in promoting services.

As indicated above, the extent to which companies mention services varies between firms, with some services being referred to more frequently. In order to identify companies which seem to place a stronger emphasis on services, Figures 9a, 9b and 9c show the percentages of companies of each of the three sizes that mention four or more services.

This reveals that 53% of small companies emphasize services (Figure 9a), while only 37% of medium-sized companies (Figure 9b) and 31% of large companies (Figure 9c) do so. Consequently, while the majority of companies mention services, the proportion of companies that mention a range

of *different* services is substantially lower. This could indicate that even for the companies which mention services, there seems to be potential for further development and communication of portfolios of different service offerings as part of the process of defining and implementing service strategies.

Large companies dominate most of the service categories, particularly those which are more resource intensive, such as *Smart Services*, *Financial Services*, *Training*, and *Payment Schemes*, which all require financial investment that may prevent small companies from offering them.

Resource-intensive service offerings can, however, also feature in the service portfolio of small companies, which may explain why small companies are more vocal than their large counterparts with respect to *Consulting*, *R&D Oriented Services* and *Outsourcing*.

Large companies focus noticeably more on customer *Training* than medium-sized and small companies. In addition, large companies appear to emphasize the transition to *Smart Services* to a greater degree than small and medium-sized ones.

Mentioning services

- One or more services
- No services

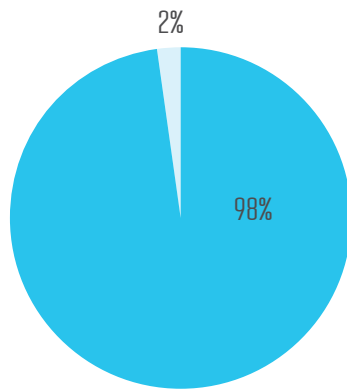


Figure 8a: Small companies mentioning one or more services

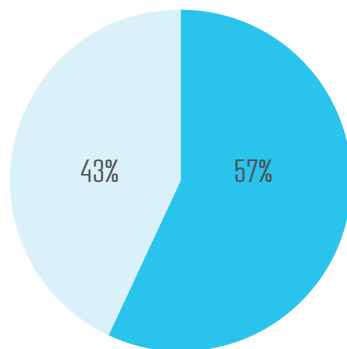


Figure 8b: Medium-sized companies mentioning one or more services

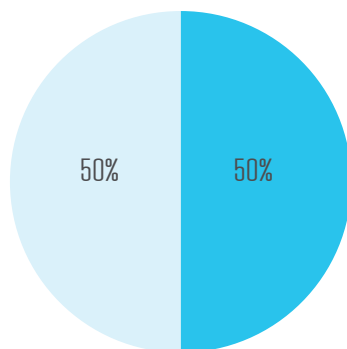


Figure 8c: Large companies mentioning one or more services

Emphasizing services

- Four or more services
- Three or fewer services

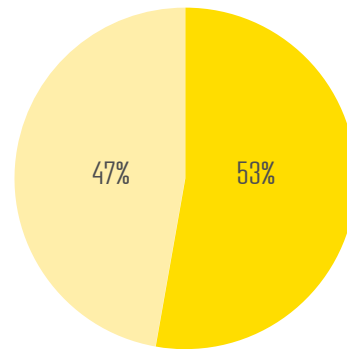


Figure 9a: Small companies emphasizing services

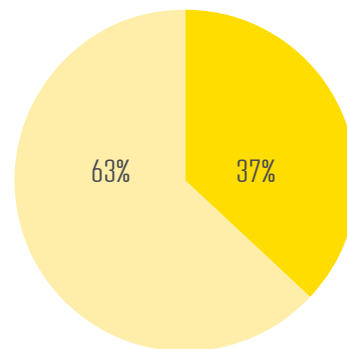


Figure 9b: Medium-sized companies emphasizing services

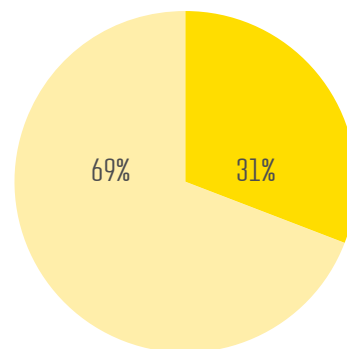


Figure 9c: Large companies emphasizing services

Breakdown of Companies by Size, Turnover and EBIT

Figure 10 shows that, based on staffcount, a large proportion (67%) of the 939 companies in the sample are medium-sized, while 23% are large companies and only 10% are small companies. Small and medium-sized enterprises (SMEs) thus make up 77% of the sample.

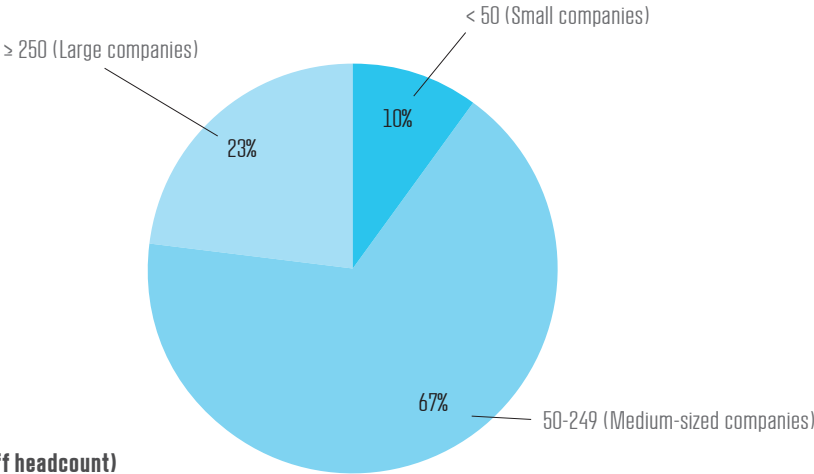


Figure 10: Company Size (staff headcount)

Figure 11 shows that 47% of the companies did not provide information on turnover. 23% reported a turnover of between €10 million and €50 million in 2016, thus meeting the EU's criterion of a medium-sized enterprise. 25.5% reported a turnover above €50 million, rendering them large companies. Only 4.5% of the companies had a turnover of €10 million or less. Rapid technological developments may challenge the present EU definition of a small and medium-sized enterprise (SME) as a smaller labour force is increasingly able to produce higher outputs.

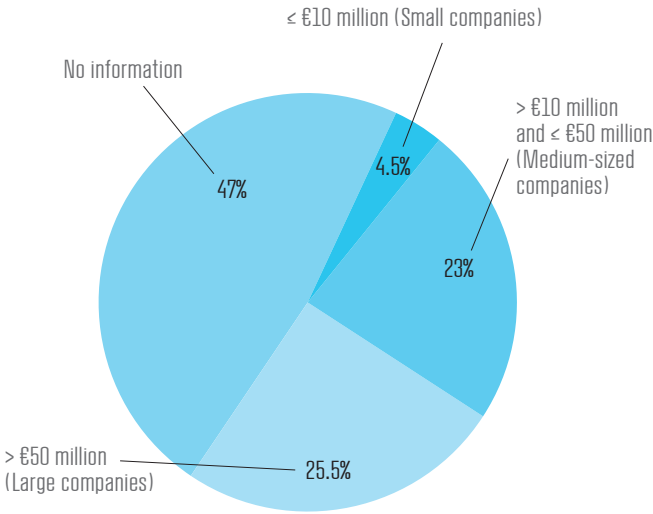


Figure 11: Companies by turnover

Technology has also increased the ease with which companies can service their products through *Remote Monitoring*, *Data Analytics* and *Application Management*.

Figure 12 shows that while 4% of the companies in our sample reported EBIT in excess of €30 million, negative EBITs were reported by 16% of the analyzed companies. The majority of the companies (75%) reported EBIT up to €10 million.

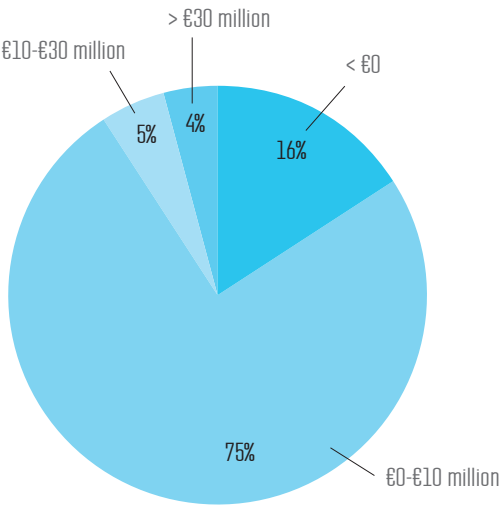


Figure 12: Companies by EBIT

SUMMARY OF KEY FINDINGS

The key findings of the mapping and analysis of the Danish industrial service landscape are as follows:

- While 59% of the analyzed companies mention on their websites that they offer one or more types of services, a large proportion of these companies only mention *basic* services. Small companies were found to be more vocal about offering services than their medium-sized and large counterparts. Approximately 1/3 of the analyzed companies listed four or more services on their website(s) (See Figure 4).
- The most frequent service-offering category was *Customer Service*, with 75% of companies providing a related service. Approximately 40% of the companies offered services relating to *Consulting, Repair Services, After-Sales Services, Maintenance and R&D-Oriented Services*, with little emphasis on services such as *Outsourcing* (10%), *Use Agreement* (6%), *Payment Schemes* (2%) and *Financial Services* (1%) (See Figure 5).
- *Manufacturers of machinery and equipment* is the largest industry group offering services (27%), followed by *Manufacturers of fabricated metal products, except machinery and equipment* (15%) (See Figure 6).
- Furthermore, 80% of companies in *Manufacturers of machinery and equipment* and 75% of companies in *Manufacturers of fabricated metal products, except machinery and equipment* offer services (See Figure 7).
- Comparing the industries with each other provides insights into what services companies could offer in order to remain competitive, as well as which services companies can offer to differentiate themselves and how service-offerings differ across industries (see Table 3 for details).
- Medium-sized and large companies had roughly the same level of service offerings. 53% of small companies offered four or more services, compared with 37% and 31% in medium-sized and large companies respectively (See Figures 9a-c).
- Our analysis revealed that the majority of the companies (67%) are medium-sized companies with 50-249 staff headcount, while 23% are large companies with at least 250 employees (See Figure 10).
- 25.5% of the companies had a turnover of at least €50 million, while 23% had a turnover of €10-50 million (See Figure 11). In contrast, 16% of all the companies reported a negative EBIT (See Figure 12).
- Using company size (by staff headcount) as a variable, there were small differences within the service categories. The differences between the services offered by small and medium-sized/large companies were mainly in relation to resource-intensive services. It seems that large companies emphasize *Smart Services* to a greater extent, which could reflect the fact that they more actively explore technological opportunities. Large companies were far more likely to offer *Training*, while medium-sized companies emphasized *Spare Parts, Warranty* and *Solution* services to a greater extent. Small companies were more likely to offer services relating to *Consulting, R&D-Oriented Services* and *Outsourcing*.
- It appears that Danish companies have begun to reconsider their business models, shifting from a focus on goods to being more concerned with services. However, it was also noted that a large proportion of Danish companies do not emphasize services to a significant extent, leaving room for servitization and differentiation trajectories to be explored as a means of competitiveness.

WHAT DOES THIS MEAN IN PRACTICE FOR THE MANUFACTURING COMPANIES?

If you are a manufacturing company embarking upon (or considering) the move towards servitization, the services listed in Appendix A might provide some inspiration.

If you are already working within servitization, the following questions are worth exploring:

- **How easily are you able to articulate and/or identify the services you offer?**
- **Where is the company, in terms of services offered, in comparison with the other companies in the industry?**
- **Does your company website adequately portray and explain your current service portfolio?**
- **How easy would it be for a potential new customer to find the right in-house point of contact for a specific service offering mentioned on your website?**

APPENDIX A: LIST OF 16 SERVICE CATEGORIES AND 57 SERVICE TYPES

	SERVICE CATEGORY	SERVICE TYPE	LITERATURE
1	After-Sales Service	Diagnosis services Inspection services Hot-line/helpdesk	[4], [8], [10] [4], [8] [4], [8]
2	Basic Services	Service at the point of sale Procurement Recycling/refurbishing	[6] [7] [6], [8], [10]
3	Consulting	General consulting Process consulting Product consulting	[8], [10] [4], [8] [4], [10]
4	Customer Service	Information services Basic advice services Documentation Transport to client/distribution Installation/commissioning	[4] [4] [4], [8], [10] [2], [8], [10], [11] [2], [4], [10]
5	Financial Services	Financial Services	[7]
6	Maintenance	Preventive maintenance Service level agreement on maintenance (SLA) Full maintenance contracts Annual/Scheduled maintenance activities Predictive maintenance Process optimization through continuous maintenance Updates/upgrades	[4], [8], [10] [4] [4], [8] [3], [4] [8], [10], [11] [4] [4], [8]
7	Outsourcing	Managing the whole maintenance function Operating the product	[4], [8], [9] [3], [4], [7]
8	Payment Schemes	Result agreement Pay per service unit	[3], [6], [9] [6], [9]
9	R&D-Oriented Services	Process design Process-oriented engineering Development services Construction (design) services	[4], [8] [4], [8] [3], [4], [7] [4], [7]
10	Repair Services	Mobile repair units Operating repair teams for customers Repair services Spare parts management	[5] [4] [2], [4], [5], [8] [8], [10]
11	Smart Services	Software updates/upgrades Remote monitoring/service Systems upgrade Data analytics and/or diagnostics Application management Licensing software agreement	[12] [8], [10], [12] [8], [12] [12] [12] [12]
12	Solution	Integrated solutions Systems integration Lifecycle management	[10], [11] [7] [10]
13	Spare Parts	Managing spare parts logistics Spare parts inventory management	[4] [3]
14	Training	Managing personnel development Product-oriented training Process training Business training	[4] [4], [8], [10] [8] [8]
15	Use Agreement	Leasing Leasing Renting Pooling Sharing	[5] [7], [9] [9] [9] [9]
16	Warranty	Basic warranty Longer warranty periods Wider warranty coverage	[5] [5] [5]

Sources: [1] Baines et al. (2007), [2] Bowen, Siehl & Schneider (1989), [3] Colen & Lambrecht (2011), [4] Gebauer et al. (2010), [5] Lele & Karmarkar (1983), [6] Mont (2002), [7] Neely (2008), [8] Oliva & Kallenberg (2003), [9] Tukker (2004), [10] Wang et al. (2011), [11] Wise & Baumgartner (1999), [12] Zeithaml et al. (2014).

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For more information, see cbs.dk/competitiveness and blog.cbs.dk/servitization

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