Just Add Services

A case study on servicification and the agri-food sector
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As the expert authority in trade and trade policy, the Board provides the Government with analyses and background material, related to ongoing international trade negotiation as well as more structural or long-term analyses of trade related issues. As part of our mission, we also publish material intended to increase awareness of the role of international trade in a functioning economy and for economic development. Our publications are the sole responsibility of the National Board of Trade.

The National Board of Trade also provides service to companies, for instance through our SOLVIT Centre which assists companies as well as people encountering trade barriers on the internal market. The Board also administers The Swedish Trade Procedures Council, SWEPRO.

In addition, as an expert authority in trade policy issues, the National Board of Trade provides assistance to developing countries, through trade-related development cooperation. We also host Open Trade Gate Sweden, a one-stop information centre assisting exporters from developing countries with information on rules and requirements in Sweden and the EU.

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## Contents

1. **Introduction** ................................................................................................................................................ 2
   1.2 Background .................................................................................................................................................. 3

2. **Aromatic and Services** .................................................................................................................................. 6
   2.1 Aromatic and the ingredient industry ......................................................................................................... 6
   2.2 Aromatic and the processing chain ............................................................................................................. 6
   2.3 Services used and offered by Aromatic ....................................................................................................... 8
   2.4 The paramount need for movement of natural persons ............................................................................. 13

3. **Concluding Remarks** .................................................................................................................................... 14
   3.1 The food industry requires the services just as much as the manufacturing sector .................................. 14
   3.2 Trade policy implications – time to think agri-food industry AND services ............................................ 14
   3.3 Global value chains ending in developing countries .................................................................................. 15

Annex ..................................................................................................................................................................... 16

Notes ........................................................................................................................................................................ 18

References ............................................................................................................................................................... 19

This report was written by Magnus Rentzhog, Senior Adviser. The National Board of Trade wishes to give its special thanks to Mats Persson, the former CEO of Aromatic, for his time and insights into the operations of Aromatic.
1. Introduction

The manufacturing industry increasingly relies on services to produce and sell products and to stay competitive – they are being servicified (more below). On the face of it, a layman might think that the agri-food industry, which is perceived as more low-tech, is different and that services do not play an as essential role. Additionally, the agri-food production is generally not seen as being based on global value chains to the same extent as the manufacturing industry\(^1\) – and since value chains rest upon services to function and be effective\(^2\), this might also bring forth the notion that the agri-food industry does not rely on services to the same extent as manufacturing. However, this is a false notion since the agri-food sector is very much dependent upon access to the right services, at the right time to the right price. Without services this industry would not be able to trade nor, for that matter, produce the goods.

The aim of this study is to analyse if services are as important to the agri-food sector as they are for manufacturing and if the agri-food also is being servicified. This will underline the importance of services and that trade in services is essential for agri-food companies – both to provide them with access to needed services and being able to deliver the services they need to deliver alongside their products. How open markets are for competition in the provision of services will have an impact on the efficiency of agri-food-production and on its participation in global value chains.

This case study examines the intrinsic link between agri-food and services. The Board has chosen to describe a company in the “food” aspect
Facts

What is servicification?
Servicification describes a process where non-services sectors in the economy:

1. buy and produce more services than before, and
2. sell and export more services, often as a package deal with the good.

Companies in non-service sectors use an increasing number of services in their production. To develop goods and stay competitive entails research and development. Running the company demands legal, administrative and economic services as well as auditing and communications. Selling requires marketing and to get the goods to customers entail transport and logistics. Companies can either produce the services themselves or buy them from external suppliers. Services are added to goods to add value. Both forms are increasing.

1.2 Background

1.2.1 Servicification and services delivery
In a number of studies, the National Board of Trade has outlined the growing importance of services for the manufacturing industries – how the manufacturing industry has been servicified. The Board has shown how industrial companies use more and more services as inputs and also as part of their output. For example, in “At Your Service”, the Board exemplifies the need of services for manufacturing companies by showing how the tooling company Sandvik Tooling needed 40 services to sell and ship one single product and how they themselves offered 15 services to their clients (see Annex for details).
One reason for the servicification trend is the fact that services are essential elements of global value chains. Basically all companies in the agri-food sector are part of such value chains where production is organized in different steps with different actors along the chain. Generally, the chains tend to be quite long – geographically and with many links (that is, many actors involved). Longer chains will need more services. Companies “trade in tasks” along a value chain. Services play a key role as enablers (or glue or facilitators) and are indispensable for coordinating a dispersed production. Services are needed to move products forward and coordinate the chains. Examples of enabling services include communications, insurance, IT-services, business services, finance and logistics.

Services, that companies use or offer, can be delivered in four ways – by four modes of supply. Mode 1, cross-border delivery, and mode 3, delivery by local establishment, are the two most common. Mode 4, temporary movement of natural persons, is a smaller mode of delivery by numbers but vital for many companies. However, as shown in National Board of Trade (2013b), movement of natural persons is a central aspect of many companies’ business models – and many times a prerequisite for making trade happen.

### 1.2.2 Services in the agri-food sector

This study looks at the agri-food sector by describing the services needs of a small company called Aromatic. The agri-food sector is, on an aggregated level, not as servicified as many other non-service sectors.

#### Table 1: Servicification per sector (Sweden, 2006)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Index</th>
<th>Use of services</th>
<th>Sale of services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicines</td>
<td>0.82</td>
<td>0.49</td>
<td>0.21</td>
</tr>
<tr>
<td>Coke, refined petroleum, nuclear and chemicals</td>
<td>0.73</td>
<td>0.54</td>
<td>0.15</td>
</tr>
<tr>
<td>Furniture, manufacturing n.e.c. and recycling</td>
<td>0.62</td>
<td>0.47</td>
<td>0.13</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>0.61</td>
<td>0.59</td>
<td>0.09</td>
</tr>
<tr>
<td>Rubber and plastic products</td>
<td>0.60</td>
<td>0.38</td>
<td>0.14</td>
</tr>
<tr>
<td>Textiles and leather and their products</td>
<td>0.54</td>
<td>0.60</td>
<td>0.06</td>
</tr>
<tr>
<td>ITC equipment</td>
<td>0.54</td>
<td>0.76</td>
<td>0.02</td>
</tr>
<tr>
<td>Pulp, paper, publishing and printing</td>
<td>0.43</td>
<td>0.55</td>
<td>0.03</td>
</tr>
<tr>
<td>Medical, precision and optical instruments</td>
<td>0.43</td>
<td>0.24</td>
<td>0.11</td>
</tr>
<tr>
<td>Other transport equipment</td>
<td>0.41</td>
<td>0.25</td>
<td>0.10</td>
</tr>
<tr>
<td>Non-metallic mineral products</td>
<td>0.38</td>
<td>0.45</td>
<td>0.04</td>
</tr>
<tr>
<td>Other machinery, office machinery and computers</td>
<td>0.35</td>
<td>0.24</td>
<td>0.08</td>
</tr>
<tr>
<td>Wood products</td>
<td>0.34</td>
<td>0.29</td>
<td>0.06</td>
</tr>
<tr>
<td>Food, beverages and tobacco</td>
<td>0.33</td>
<td>0.08</td>
<td>0.11</td>
</tr>
<tr>
<td>Motor vehicles, trailers and semitrailers</td>
<td>0.33</td>
<td>0.16</td>
<td>0.09</td>
</tr>
<tr>
<td>Other electrical machinery and apparatus</td>
<td>0.31</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td>Basic metals and fabricated metal products</td>
<td>0.23</td>
<td>0.22</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Source: National Board of Trade (2010b).
Note: Columns 3 and 4 contain shares in totals, while the index is the mean of the normalised values of these shares.
sectors. Based on numbers from 2006\textsuperscript{12}, the sector “food, beverages and tobacco” (which is sub-part of the entire agri-food sector) was the fourth least servicified manufacturing industry in Sweden.

As seen in table 1, more services were used in sales than in production. However, the sector still uses a fair amount of services as input. In 2008, services amounted for 20 per cent of total output in the food sector in Sweden (as compared with the motor vehicle sector where services stood for 24 per cent). Figure 1 shows that the sector uses a lot of services with transport and storage representing the largest shares. This illustrates that even in food production, services play a vital role.\textsuperscript{13}

Hence, services are important. Looking at data on value-added (in the so called TiVA-database\textsuperscript{14}), in 2009 services amounted to 15 per cent of added value of Swedish agricultural gross exports (up from 13 per cent in 1995). For the Swedish gross export of food and beverages, services represented 31 per cent of value-added (27 per cent in 1995). This shows a clear servicification of the sector.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Services_input_in_the_food_sector.pdf}
\caption{Services input in the food sector (Sweden, 2008)}
\end{figure}

Source: National Board of Trade (2012)
2. **Aromatic and Services**

2.1 Aromatic and the ingredient industry

Aromatic is a middle-sized company in the agri-food sector. Until 2012, the company was family owned but was then sold to a multinational company. This presentation of the company and its service needs is based on how Aromatic operated when still a family owned company. Nevertheless, that does not impact the content and the lessons that can be learnt.

Aromatic’s headquarters are situated in Stockholm, Sweden. Aromatic has six sales units outside Sweden as well as trained distributors in other countries. The Board chose to study Aromatic since it is a fairly small company with a high degree of exports. Additionally, as stated in the introduction, it is interesting to study the “food” part of agri-food, a part with companies often involved in long production chains and with very sophisticated production.

The company specializes mainly in ingredients. Aromatic sells most of its products to the bakery industry, which represented over 90 per cent of their customers. Focus is on ingredients for cakes, biscuits and pastry. Aromatic exports roughly 85 per cent of its production.

The ingredient industry is in two parts: one is bulk (for example flour and sugar); the other one is so called functional ingredient. Aromatic focuses mainly on the functional part of the industry, when the ingredient is added as a percentage of the total mixture (i.e., it is not a base ingredient such as flour, which is sold as bulk). Ingredients can be in the form of powder, liquid or paste – with Aromatic mainly producing paste.

2.2 Aromatic and the processing chain

Aromatic is, like many companies in the agri-food sector, one link in a larger processing chain. Figure 3 shows the basic lay-out of one of Aromatic’s products – from the raw material, through a number of processing stages, to mixing (Aromatic) to the final production stage usually bakery. The actual production chain varies depending on the ingredient. However, figure 2 shows a stylized example of a processing chain. The figure clearly demonstrates how production commonly is organized in different steps with different actors along the chain.

What cannot be seen in either figure 2 or figure 3, are the services that are needed to uphold the chain and move forward the products involved. As described above, services play a key role as enablers in processing/value chain and are indispensable for coordinating dispersed production. As a consequence of most companies – including Aromatic – being links in different change, they become service dependent.

Figure 3 shows the actual processing chain of an Aromatic ingredient - vegetable oils coming from Sweden and Malaysia. They are processed together with other raw materials in Denmark and then sold to Aromatic in Sweden. Aromatic processes the product, which is then sold to countries such as Saudi Arabia, Iran and Sri Lanka for final processing.

Many times, Aromatic buys the products needed for its production from countries within the EU.
About 90 per cent of input comes from other EU-countries. Apart from the fact that some raw material is sensitive (e.g. perishable) and cannot be traded over long distances (and hence is bought predominantly from Denmark), the decision to buy from European sellers is based on factors such as price, availability and quality. The country of origin is irrelevant.

After mixing, a majority of Aromatics products are sold to customers (bakeries) in industrial countries. However, about ten per cent are sold to bakeries in the Middle East and other developing countries, as shown in figure 3. Hence, the set-up of the processing chain (and the value chain of the products from these bakeries) implies that the final stage(s) take place in developing countries while several of the earlier stages are in developed countries. Most studies on global value chains tend to be based on opposite situation where developing countries supply the raw material and early processing and the final stages take place in developed countries.18

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**Figure 2: Stylized processing chain**

![Stylized processing chain](image)

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**Figure 3: The processing chain of an Aromatic ingredient**

![Processing chain](image)
2.3 Services used and offered by Aromatic

The services needed by Aromatic can be divided into two categories; i) services needed in producing, selling and shipping the ingredients and ii) services offered to the customers.

Aromatic procures many of the services in the first category from third party suppliers. Unfortunately, the Board could not acquire information of the imported amount and the number of services bought nationally (nevertheless, the text below will at times indicate this). However, figure 4 shows the import dependency of the Swedish food sector. Again, based on services imports in the sector, the shadowed areas represent import shares. As seen, the shares vary considerably between different services. Interestingly, the sector’s high import dependence for “research and other professional services” stands in stark contrast with how Aromatic has organized its business model.

**Figure 4: Import dependency of the Swedish food sector (2008)**

The figure shows distribution of services input in Swedish food sector. Shadowed areas represent import shares.

Source: National Board of Trade (2012)
2.3.1 Aromatic: Services used during production, sales and shipping

This category of activities includes a wide range of services. Altogether, Aromatic needs about 50 services to uphold its business. Clearly, the company depends upon the availability of services and like all companies mindful of costs and efficiency; Aromatic requires access to the right services, at the right time to the right cost.

Following the classification list in the GATS\(^9\) (in bold below), the services need of Aromatic looks as follows.

Running the company entails services like legal services, accounting (incl. book keeping and auditing), taxation services, medical and dental services, real estate, investigation and security, building cleaning services, postal services and environmental services. As a relatively small company, Aromatic cannot produce all these services themselves instead they have to procure them from other companies.

Computer services are essential for the running of the company (for example, to facilitate human relation processes), for sales (order processing) as well as for the production. The same goes for telecommunication services. Other services that are needed in all aspects of Aromatics business include insurances and related services (life, accident and health insurance, non-life insurance, reinsurance and retrocession and services auxiliary to insurance\(^{10}\) – it would also include insurance against kidnap).\footnote{Other business services n.e.c.}

The production also entails engineering services for the machinery as well as maintenance and repair (which often is handled by outside companies). Research and development is a key to ensure competitiveness. Aromatic has a large in-house unit to fulfil this need. Closely connected is related scientific and technical consulting. Technical testing and analysis is important, as ingredients are very micro biologically sensitive products. Usually, these services are bought from a third party. Services incidental to energy distribution are obviously central for production. Aromatic sometimes has to hire staff temporarily and hence placement of personnel was needed. Packaging is in-house.

To reach customers, the sales phase includes advertising services (including some photographic services), market research and convention services. Hotel and restaurant services and travel agencies – as well as road, rail and air passenger transport are also essential to reach and work with customers. Courier services to send (or receive) samples, documents and payments, are an essential part of this phase. Banking and other financial services are indispensable – not at least in sales (but of course also in the ordinary running of the company). Aromatic uses a Swedish bank and has people working closely with the bank when dealing with customers in countries with more complicated procedures. Here assistance with different permits is also vital for Aromatic (other business services n.e.c.).
**Figure 5: Aromatic: Services used during production, sales and shipping**

- Legal services
- Accounting, auditing and bookkeeping
- Taxation services
- Engineering services
- Medical and dental services
- Computer services
- Research and development
- Real estate
- Advertising services
- Market research
- Technical testing and analysis
- Services incidental to energy distribution
- Placement and supply services of personnel
- Investigation and security
- Related scientific and technical consulting
- Maintenance and repair
- Building cleaning services

- Photographic services
- Packaging services
- Convention services
- Other business services n.e.c.
- Postal services
- Courier services
- Telecommunication services
- Wholesale trade services
- Environmental services
- Insurances and related services
  - life, accident and health insurance
  - non-life insurance
  - reinsurance and retrocession
  - services auxiliary to insurance
- Banking and other financial services
- Passenger transport
  - road
  - rail
  - air

- Hotel and restaurant services
- Travel agencies
- Freight transport
  - maritime
  - internal waterways
  - road
  - air
- Supporting services
  - maritime
  - internal waterways
  - road
  - air
- Services auxiliary to all modes of transport
  - cargo-handling
  - storage and warehouse services
  - freight transport agency services
  - other supporting and auxiliary transport services
Figure 6: Aromatic: Services offered to customers

- Engineering design
- Research and development
- Services incidental to manufacturing
- Technical testing and analysis services
- Technical consulting
- Packaging services
- Educational services
- Financial services
- Logistical services
Shifting sold products to customers include whole-sale trade services. Aromatic uses distributors around the world and had two types of customers – their distributors or direct to end consumers (bakeries). Beyond wholesale, transport services are vital. Aromatic uses all forms of transport except rail when sending their products (maritime and internal waterways freight transport, road freight transport and air freight transport and corresponding supporting services). Transportation is however usually by road (either whole truck or buying space from other service suppliers) and by container to the U.S.A. and the Middle East. Container transportation takes place by buying space in others’ containers. Rental of storage space and other services are needed both in Sweden and abroad (services auxiliary to all modes of transport, including cargo-handling, storage and warehouse services, freight transport agency services and other supporting and auxiliary transport services).

2.3.2 Aromatic: Services offered to customers

The supply of services is essential for Aromatic to stay competitive. The company offers almost ten services to its customers and getting these services right (for example, finding the right mix) will ensure a lasting business relationship.

Most services offered are based on the need to ensure that the customer can use the ingredients satisfactorily. It is important that customers use its ingredients in the correct way to ensure a tasteful product. Again, based on the classification list in the GATS (in bold below), the following services are offered:

i) Services incidental to manufacturing: helping bakeries with baking, that is assisting the customer adding the right amount of the ingredients and adding them at the right time,

ii) Research and development: adapting the ingredient to the customer,

iii) Technical testing and analysis services: analysing customers ingredients and products

iv) Educational services: baking but also handling of equipment. Offering these services was an essential part of sales.²¹

Aromatic also produces some ingredients for third parties, so called contract manufacturing (that is, again, services incidental to manufacturing). This service includes packaging services.

Furthermore, Aromatic offers services facilitating the movement of the products to the customer; financial services (credit solutions) and logistical services²². This last service can be offered; i) ex works (buyer handles transportation), ii) ex works but Aromatic buys transport for the customer or iii) including transportation (transportation is included in the price).

Finally, customers demand consulting services and engineering design services. In the ingredient sector (as

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²¹ "Aromatic also produces some ingredients for third parties, so called contract manufacturing (that is, again, services incidental to manufacturing). This service includes packaging services.

²² "Furthermore, Aromatic offers services facilitating the movement of the products to the customer; financial services (credit solutions) and logistical services. This last service can be offered; i) ex works (buyer handles transportation), ii) ex works but Aromatic buys transport for the customer or iii) including transportation (transportation is included in the price)."
well as other agri/food sectors), it is increasingly common that customers’ demand new product ideas, product development and new recipes from the sellers. Hence, in order to keep customers, Aromatic has to assist in improving their product lines.

2.4 The paramount need for movement of natural persons

Aromatic is a good example of companies’ need for movement of natural persons to ensure goods trade (mode 4 in GATS-terms). Many times, barriers to movement of persons have hindered sales or raised costs resulting in non-optimal business set-ups.

The selling process of Aromatic revolves around movement of natural persons. The process can look like this:

1. The sale commences by a meeting between seller and potential customer.
2. The customer requests product samples
3. Aromatic sends a baker (either a seller or a baker technician) to the customer’s bakery. The baker helps the customer to use the ingredient correctly (ingredients must be of the right amount and added in the right way in the baking process). Sometimes this stage can involve Aromatic’s research and development team in helping to adapt the ingredient to the customer’s need. In these cases, R&D-staff needs to visit the customer or the customer will travel to Aromatic HQ to discuss technology and ingredient content.
5. Continuous sales.

The third step (adapting the ingredient and the amounts used) is usually a time consuming phase, which requires several business visits. Usually the Aromatic staff can travel to the country of the customer but often, especially for countries in the Middle East, the visa process is cumbersome. Many trips have been cancelled and customers lost due to long, detailed and time-consuming visa procedures. Hence, barriers for movement of natural persons (in this case, visa procedures) means increased costs and delayed, and even missed, sales.

A related problem occurred when Aromatic wanted to place a Middle East expert in Dubai to handle regional customers. It turned out to be too expensive and cumbersome (including moving the entire family, getting work permits for the spouse etc.). Hence, the person was placed in Sweden.

Aromatic employs local staff in their sales offices. While having the advantage of employing people with local market knowledge, it means big risks for a relatively small company like Aromatic. Due to the distance, it is harder for HQ to ensure the competence of the employees and to control the operation.

These examples show how difficulties in moving and employing people abroad can hamper optimal business set-ups. In both cases, Aromatic wanted to organize its operations differently but regulations in the export market drew costs up and made personnel transfers problematic. Hence, other solutions were found even though these solutions were sub-optimal to the needs of Aromatic.
3. Concluding Remarks

3.1 The food industry requires the services just as much as the manufacturing sector

Together with the example of Sandvik Tooling in National Board of Trade (2010a), the Aromatic case describes how companies in non-services sectors rely on services. The two cases exemplify the dependence on services and how the manufacturing and, in the case of Aromatic, the food industry are being servicified. For both companies, services are important for their effectiveness and competitiveness.

It is interesting to note that a company in perceived low-tech sector and less services intense industry can be just as servicified as in more high-tech sectors. Sandvik Tooling and Aromatic use roughly the same amount of services. And comparing the services, we find that most of the services used by Sandvik are also used by Aromatic. There is no substantial difference between the services used by either company.

When it comes to what services the companies offer, Sandvik offers more services than Aromatic. This might follow from the fact that Sandvik’s customers demand more and different services (e.g. Sandvik offers storage), the products are different (e.g. the need for maintenance of Sandvik’s tools) and legal demands (environmental services). The two case studies are not enough to conclude whether there is a general difference between the services offer by manufacturing companies and food companies.

3.2 Trade policy implications – time to think agri-food industry AND services

Servicification strengthens the case for liberalization – both on domestic and foreign markets. Thus, with this study in mind, the Board argues that services trade barriers are likely to significantly affect food production and trade, underlining why the focus needs to shift more to services liberalization, where the barriers remain high compared to goods. While here focusing on the food industry, the arguments made can be made for the entire agricultural sector.

Countries exporting and importing food product therefore need to pay equal attention to services, as do countries with more high-tech industrial structure. This includes both the availability of efficient services on their own markets and on export markets. Liberalization of services is a key to ensure that the food industry has access to the right services, at the right time and for the right price.

However, in the food sectors, services have traditionally mostly only been recognized in relation to increased productivity but not how services liberalization can facilitate trade. Governments in food exporting countries have missed out on a possibility to help their companies become more competitive and overcome obstacles created by services barriers and services negotiations have not necessarily focused on the services that are most important for food producers but rather on the
interests of large services companies.\textsuperscript{26} One only has to look at the negotiation history of the WTO Doha Development Agenda (DDA), where agriculture and liberalization of non-agricultural goods have always been in focus, while services have basically been in the shadow. Discussions about services have been based on the offensive interest of services companies – and the perceived need for protecting domestic services companies. Rarely, if ever, have countries considered services as a mean to support their goods trade.\textsuperscript{27}

There are clear incentives to start discussing how services trade can support food production and trade – including how trade negotiations can help giving companies access to the right services, to the right price, at the right time. In National Board of Trade (2012), the Board argues that trade negotiators must look at both goods and services negotiations to ensure helping their servicified manufacturing companies. The Board argues that negotiators must look at goods AND services instead of the more usual not goods OR services. A deduction from this study is that the same conclusion can be drawn with regard to the food industry. It is time to look at food industry AND services. The silos between food industry and services negotiations should be broken down.

Moreover, there should be modal neutrality. As shown, Aromatic needs to supply services using different modes of supply and should be allowed to organize its operations how it sees fit. Therefore, all modes of supply should be open, not at least the most sensitive one (that is, temporary movement of natural persons, mode 4).

The goal should be to see how best to create favourable circumstances for current, service-heavy business models. If negotiators wants to help their food industry to thrive and stay competitive, negotiators should examine how to best use these two trade fields to facilitate for their companies.

### 3.3 Global value chains ending in developing countries

Both Sandvik Tooling and Aromatic are part of different production and global value chains. The companies are situated in different parts of the chains. Sandvik Tooling is the last link before the end-user while Aromatic is one step earlier in the chain, that is making products that go into the last stage of the production (the bakery’s products). Nevertheless, independent of where a company is positioned in a value chain, services are essential for joining and performing in the chain. As discussed, value chains need services to function, which enhance to the need to look at the link between food production and services.
National Board of Trade (2010a) showed the services needs of Sandvik Tooling. The figures below are taken from that study and are reproduced here in order to let the reader compare the outcome in this study with Sandvik Tooling.
Services delivered to the customer

- Computer services
- Research and development
- Rental/leasing
- Maintenance and repair
- Management consulting
- Technical testing and analysis services
- Services incidental to manufacturing
- Design
- Environmental services
- Financial services
- Logistics
- Warehouse services
Notes

1. This is far from true as shown for example in Bamber et al. (2013).


3. The National Board of Trade has produced the following studies on servicification: i) Servicification of Swedish Manufacturing, ii) At your Service - The Importance of Services for Manufacturing Companies and Possible Trade Policy Implications, and iii) Everybody is in Services – The Impact of Servicification in Manufacturing on Trade and Trade Policy.


7. A simple example: a chain with two actors needs transport between them while a chain with ten actors needs transports between each individual participant.

8. For more on services and global value chains, see National Board of Trade (2010a).

9. Accounting for just a few percent of services trade.

10. The last mode is mode 2, consumption abroad.

11. None of the companies interviewed in National Board of Trade (2013a) were in the agri-food sector. Nevertheless, the arguments are similar.


14. Trade in Value-Added database. Developed by the OECD and the WTO.

15. This case-study is based on an interview with Aromatic’s former CEO, Mats Persson. The study is written in present tense to facilitate readability.

16. Germany, Switzerland, Poland, Hungary, U.S.A. and Turkey.

17. See e.g. references in Bamber et al. (2013). However OECD (2012) states that “[f]ood products are globally produced in value chains where both developing and developed countries are involved. The data do not indicate that developing or developed countries are confined to specific roles”. Nevertheless, OECD/WTO (2013) note that developing countries mainly participate in earlier parts of the chain.

18. This inversed chain opens a discussion on how developing countries should approach, for example, trade policy – that is, how should a country adapt its trading regime to a position in the end of a production/value chain?

19. W/120.

20. Including broking and agency services.

21. Aromatic did not have an academy as many other producers have.

22. In GATS-classification there is no service named "logistics". Instead this is a number of different services, including transport, postal and courier service etc.

23. Not to be confused with the need for a visa. That is non-contested. However, the time it takes to get a visa is a barrier to trade. See National Board of Trade (2013b).

24. Differences, especially when it comes to the use of services, has among other things to do with that the studies do not illustrate exactly the same activity.

25. E.g. OECD/WTO (2013) discuss that services are important but do not discuss how access to services can be improved.

26. See for example “orphan” services in National Board of Trade (2012). These are services that have not been discussed much in the DDA but are of interest to most servicified companies. Examples include maintenance and repair, technical test and rental/leasing.

27. It is interesting to note that the literature on global value chains sometimes highlight this link (usually focusing on infrastructure and logistics). However, this is rarely transformed into actual trade policy.
References

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