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Emerging conceptual issues in global production**Research-based producers in Sweden****Prepared by Statistics Sweden***Summary*

Research-based companies in Sweden show very strong similarities with FGPs as introduced in this Guide. One specific feature of the research-based producers in Sweden is that, besides the typical FGP activities such as R&D and supply chain management, these companies are also responsible for software development and production testing.

Further, they may also be selling services directly to customers using the final product as part of their business, or distributing products supplied by others within its merchandise networks and under its own brand name. So, these companies' output will be a composite of products and services while their value added is mainly services dominated.

However, economic classifications are hard to apply. Classification of these companies as FGPs would probably be a way forward, even in cases where parts but not all fractions of physical transformation is carried out abroad. However, as ISIC Rev.4 does not recognise the FGPs, this classification option is subject to future research.



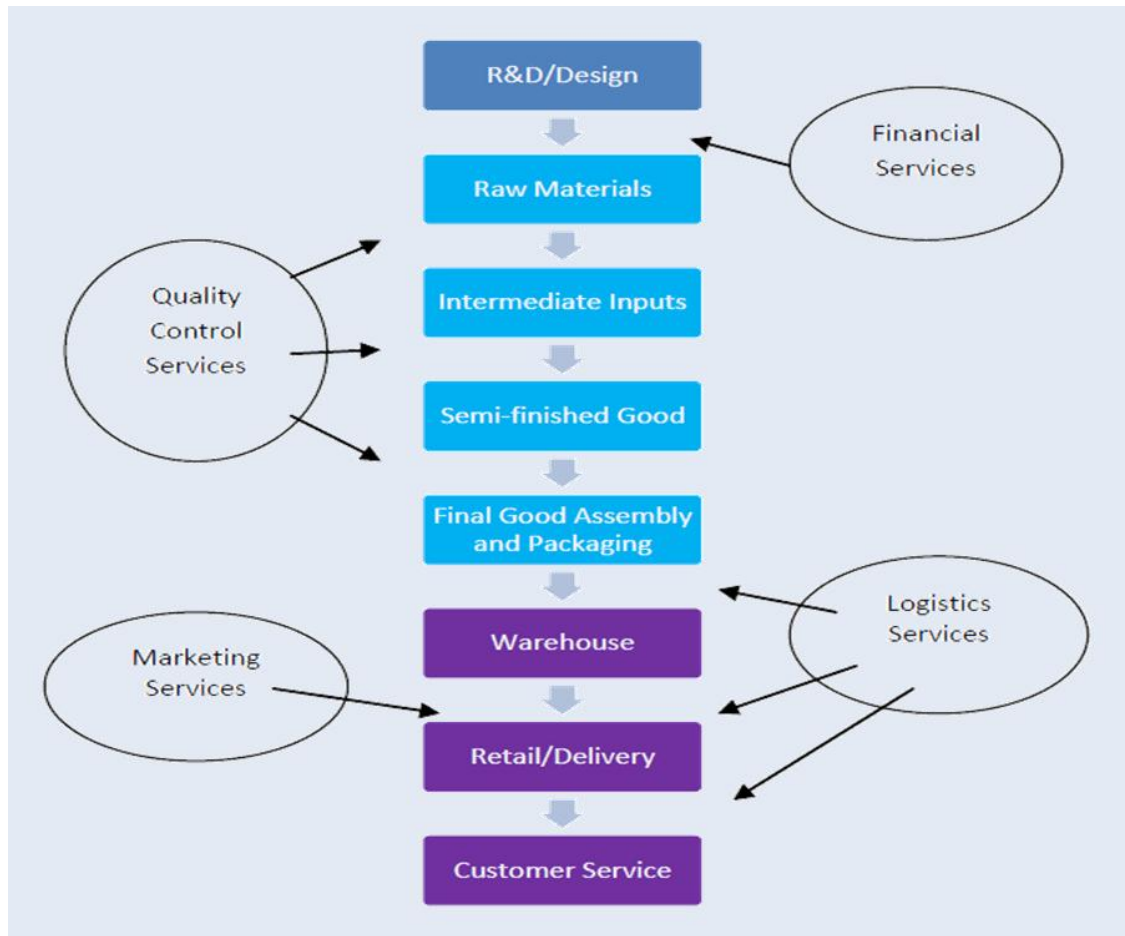
I. Production on a global arena

1. In recent decades producers of high tech goods in Sweden have been outsourcing the stages of physical transformation. This appears to be cost-effective due to streamlining of production processes and reduction in cost for freight. Production is often moved in the close neighborhood of product markets while activities such as product chain management, R&D, product design and production testing are kept in Sweden. These activities are considered to be the comparative advantages of these enterprises.
2. When introducing ESA2010 it was made public that R&D /design are main part of activities in several of the large multinational enterprises with headquarter in Sweden. This development is being supported by government and universities as innovation is regarded crucial in maintaining Sweden's position as a competitive business partner.
3. In these Swedish companies, product development is dominating R&D together with activities such as marketing, branding and other forms of IPP creation. An important part of the R&D process is getting hold of new knowledge and innovations through mergers and acquisitions.
4. All these examples of IPP creation and acquisition must be seen as an inseparable part of the final product, even though physical transformation of the "hardware" is fully outsourced.
5. At first sight it seems that these enterprises are transforming their business toward service production as their main activities are R&D, software development, design, trading, etc.
6. However, all these activities have one purpose only, namely to strengthen the firm's final product in terms of competitiveness. Software and product design are often developed and tested in Sweden. This is then sold to the supplier under a license agreement to secure the content. The supplier provides the Swedish principal a manufacturing service.
7. Confusion about the precise nature of these Swedish principals of global production arrangements has led to an undesirable situation in which these companies are classified in a variety of industries e.g. manufacturing, information technology, R&D or wholesale trade.

II. Goods or services?

8. In Sweden the name of "research-based producer" has on occasion been used to indicate this class of newly emerging companies.
9. Research-based companies show very strong similarities with FGP:s (Factory less goods producers). One specific feature of the research-based producers in Sweden is that, besides the typical FGP activities such as R&D and supply chain management, these companies are also responsible for software development and production testing.
10. Further they may also be selling services directly to customers using the final product as part of their business, or distributing products supplied by others within its merchandise networks and under its own brand name. So, these companies' output will be a composite of products and services while their value added is mainly service dominated.
11. From the picture below research-based producers in Sweden control the full production chain, but outsource the hardware-production (light blue) on a license agreement base.

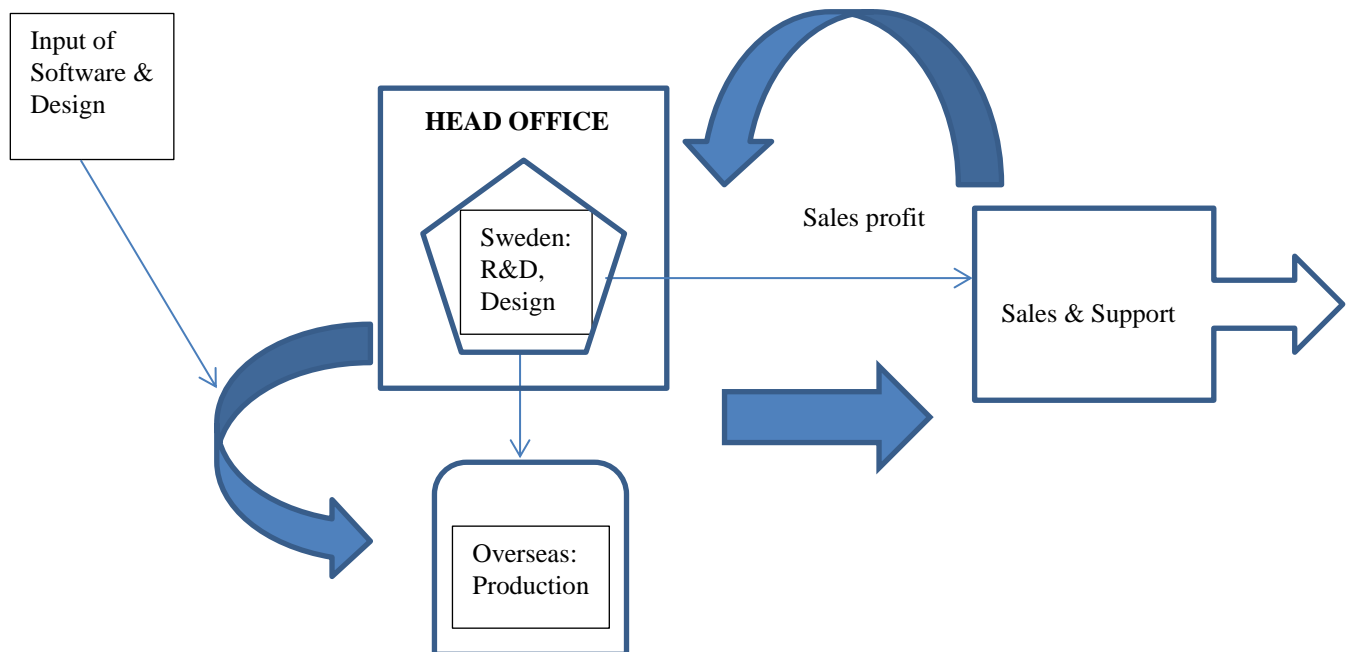
Figure 1
Research-based producers in Sweden



III. Definition of Research based Producers in Sweden

12. A research based producer is typically responsible for the product blueprints, the software related parts and the overall control of the production chain. These fractions typically outsourced relate to the hardware parts of the product. Marketing and logistics are in full control of the Swedish companies. Gross profits are redistributed to the head office in Sweden to be used for funding future research.

Figure 2
Model for research-based producers



13. The research based producers do not consider themselves as service providers as the final products, consisting of hardware and software component, are core to their business. Using old “blue-collar” and “white collar” perception of product manufacturing does not apply to the kind of activities conducted by the Swedish firms. So, economic classifications are hard to apply.

14. Similarities with computer-related manufacturing provide a rough indication of where to classify these research based producers. For the time being it is suggested to classify them within manufacturing even though the manufacturing of hardware is not carried out in Sweden.

15. However, at present the research based enterprises are classified in several industries such as manufacturing, commercial services (software development), trading and research. A classification in services, trading or research would imply that any connection to hardware manufacturing is missed. Classification of these companies as FGPs would probably be a way forward, even I cases where parts but not all fraction of physical transformation are carried out abroad. A final solution can be taken once the representation of FGPs in ISIC is settled.