A typology of European Distribution Centres

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The changing European market and increased globalisation may have consequences for current top logistics regions, such as Flanders (Belgium). New regional distribution centres to serve the local East European markets may arise, but they will not replace the economic value-adding distribution centres currently located in Flanders. As European distribution centres are generators of economic potential, local governments are trying to retain their existing ones and attract new ones. This requires a good understanding of the different types of distribution centres that are active in a region. Therefore, the objective of our research has been to develop a typology of European distribution centres (EDCs) in Flanders, to describe each of the different types of distribution centres, and thus gain a good understanding of the ‘landscape’ of European distribution centres. This typology is useful for the practitioner who is designing the distribution network, and for the policy maker who needs to identify the distribution centres that add the most economic value to a region.

In our research, we define a ‘European Distribution Centre’ as a warehouse that distributes goods to at least five different countries. In collaboration with the Flanders Institute for Logistics, 262 EDC sites were identified in Flanders, distributing goods from 792 manufacturing companies. We sent a survey to these sites, asking about the activities carried out at the site, the level of employment, the level of competencies, etc. We obtained data for 115 manufacturing companies in Flanders, served by 96 different sites (37% response rate from the sites).

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Via cluster analysis (a statistical technique for identifying different categories), we identified four different types of EDCs, which we named as follows: the ‘warehouse EDC’ (WHS), the ‘warehouse/office EDC’ (WHS/OFF), the ‘warehouse/management EDC’ (WHS/MGT), and the ‘warehouse/factory EDC’ (WHS/FAC). Of course, all four types of EDCs carry out the traditional core warehousing activities, such as storage, picking and transportation. The differences between the four types of EDCs lie in the extent to which they carry out other activities (Figure 1).

Figure 1: Intensity of the different activities in each type of EDC
The warehouse EDC, the more traditional type, carries out the core activities (storage, picking, transportation) one would expect in a warehouse. These EDCs are often part of large, multinational companies that have decided to split up their activities into different business units. So, this type of distribution centre mainly carries out traditional warehousing activities.

The warehouse/office EDC – in addition to the traditional warehousing activities, this EDC carries out administrative and management-related activities (e.g. invoicing, customs treatment). A fairly small warehouse, it employs the fewest people of the four types of EDCs and handles the smallest number of SKUs. It is usually located close to suppliers or production facilities, and it typically distributes to a global market.

The warehouse/management EDC has the highest intensity of managerial activities (e.g. forecasting, inventory management). Its complexity stems from the large number of SKUs that it handles, but these are for a rather local market (Western Europe). Its primary location driver is to position itself as centrally as possible within its regional market.

The warehouse/factory EDC carries out a broad mix of activities, with a high level of value added (product technical) activities (e.g. final assembly, repackaging). This type of EDC is often operated by a logistics service provider. The high intensity of its activities demands a skilled workforce.

Technical complexity is mainly found in the warehouse/factory cluster:

- An example of (product) technical complexity is ‘postponement’, where the last production steps are executed in the (warehouse/factory) distribution centre. Postponing these production steps until the distribution centre implies the creation of new tasks such as sales forecasting, procurement of goods for final assembly, management of information flows and education of employees.

- Another example is reverse logistics, often in combination with an in-house repair centre. In this case, the distribution centre attracts jobs: 1) to collect the (defective) goods, and 2) to make the repairs (since the repair centre is relocated from the production site to the distribution centre).

Non-technical complexity is mainly found in the warehouse/management cluster:

- Non-technical complexity is the consequence of, for example, the unbundling of massive flows of standard goods coming from the producer. A nice example of non-technical complexity is the management of spare parts. Our research shows that the warehouse/management distribution centres are especially well-equipped to cope with the complex logistics of such flows of goods.

Conclusions

Because the highly complex processes carried out in warehouse/factory EDCs and warehouse/management EDCs require a considerable amount of labour input, the FTEs employed in these distribution centres must be high-level – making these distribution centres economically more valuable for a country or region. Our research shows that these complex activities require knowledge, know-how and flexibility from the employees – and these are exactly some of the main characteristics of Flanders in comparison to many other regions (see, for example, the recent studies performed by Cushman & Wakefield). Hence, if Flanders continues to invest in these competencies, the economically more important distribution centres are likely to stay. The growth of the European Union may lead to new regional distribution centres to serve the local East European markets, but they will not replace the economic value-adding distribution centres currently located in Flanders.
A selection of publications


For more information

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