

# Organisations' location choices - The demand drivers for clustering and dispersal of functions across geographical area

## Summary

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# Introduction

Organisations tend to cluster large parts of their real estate portfolio together. While mostly such concentration happens as a result of incremental growth of the organisation in a particular area, sometimes it is also a result of conscious planning by organisations to achieve economies of scale and better work efficiencies. However, the approach to cluster the different functions and departments together also leads to diseconomies, which eventually leads organisations to disperse their functions.

This research, using four case-studies, identifies the drivers that cause clustering as well as dispersal of functions across geographical area. This is done by transposing the location patterns of organisations with certain proven theories of urban and regional economics. It is, in fact, proven through this research that the classic theories (such as agglomeration economies) that explain the organisation of economic activity at urban and regional scale levels also explain the composition of real estate portfolios of organisations.

The tendency of clustering can be seen in the case of the European Commission (EC) headquartered in Brussels. Over eighty-five percent of the total corporate real estate portfolio of the EC is located in the Leopold Quarter in the centre of the city which accounts for approximately 800,000 square metres of space.

With the growth of the organisation over decades, the EC has incrementally acquired more space in the Leopold Quarter which has led to clustering of different departments and types of functions within this area. The concentration of the Commission's portfolio in this area has increasingly faced more opposition from the citizens of Brussels and has given the organisation a poor image of being a 'European ghetto'.

Now, with plans of restructuring of the real estate portfolio, the EC is looking to disperse the total space usage more efficiently in other parts of the city in three to four different locations (though the largest concentration would still be in the Leopold Quarter). While this restructuring of the real estate portfolio of the EC takes place, one of the critical decisions for the organisation is to distribute the various departments across these three to four locations in an efficient way based on the internal functional and reporting lines as well as the external location requirements of different departments.

The corporate real estate departments of all organisations are faced with similar decision making regarding clustering and dispersal of different functions. One of the critical decisions is that of aligning the work processes and functions with their particular location requirements.

This objective of this research is twofold. Firstly, the research identifies the drivers that cause clustering as well as dispersal of functions at different geographical scale levels (from country to building). With this, the research serves to enhance the theoretical knowledgebase of corporate real estate management borrowing from urban and regional economic theories that have been proven empirically.

Secondly, the research identifies and categorises the various functions performed within service-sector organisations and establishes their particular location requirements. This is significant because while the location choices for headquarters of organisations have been empirically researched, the research on other functions/departments of the organisations is scarce. Though the headquarter location of an organisation is the most representative, it is the functions other than the headquarter that constitute the largest part of an organisations' real estate portfolio.

# Research questions

There are three main questions that the research seeks answers to in order to understand location choices made by organisations for their different functions.

The first question is a broad one that is based on the understanding that location decisions of an organisation are based on the demands arising from within the organisation (internal demands) as well as those that relate to the external context of the location (external demands). This question seeks to establish important demand drivers, both internal and external, that are fundamental to make location decisions by organisations.

## **What are the main internal and external demand drivers that play a role in location choices of large service sector organisations in an urban area?**

The second research question is based on the supposition, as seen in the EC case, that organisations tend to cluster their functions in an urban area. This may or may not be a strategic choice, but is a tendency displayed across most types of organisations. The question asked here seeks to explore if there can be other approaches to location choices. For this, it is important to identify and classify different types of functions performed by an organisation and explore their particular location demands.

## **Is there an alternative approach for location of different functions of a service sector organisation than clustering large parts of the portfolio together?**

- Is it possible to identify different categories of functions within a service-sector organisation?
- Do these functions have particular location demands? If yes, what are they?

The third research question is aimed at gaining new insights into location choices made by organisations which can be used for corporate real estate decision-making as well as would add to the growing literature of corporate real estate management.

## **Is it possible to apply the theories of urban economics at scale level of an individual organisation?**

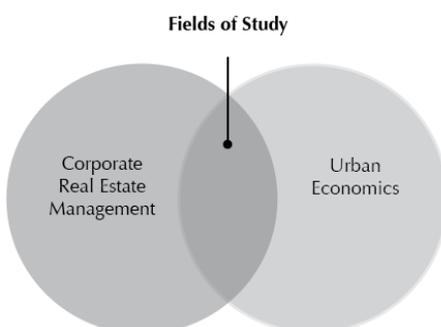


Figure 1: Fields of study

# Theoretical input

As stated earlier, the theoretical input for the research is derived from the two fields of urban economics and corporate real estate management.

## Urban economics

The field of urban economics explains the geographical organisations of economic activity in an urban area. There are several theories in urban economics which explain the location choices of organisations and the drivers behind them. For the purpose of this research, the various theories have been explored under five themes. The theories that explain the location patterns of the manufacturing sector are translated to the present-day service economy.

The first theme is that of agglomeration economies, given first by Marshall in 'Principles of economics' (1890,1920). This primarily explains the decision of organisations to co-locate with other like or diverse organisations (external economies) or to cluster large parts of their own portfolio together (internal economies). Some of the main sources causing agglomeration in the service economy are input sharing, infrastructure sharing, knowledge spillovers, labour market pooling and rent seeking.

After this, the opposite forces – centripetal and centrifugal – which help develop an understanding of the clustering as well as dispersal of economic activity are discussed. Centripetal forces given by Paul Krugman as a part of the ‘new economic geography’ (Krugman 1998, Fujita&Krugman 2004) include the market-size effects, thick labour markets and pure external economies while the centrifugal forces include immobile factors such as land, the land rents and pure external diseconomies such as congestion and pollution.

The market principle is the third theme where the location of firms as a response to market demand is described. This covers the central place theory and the urban hierarchy theory.

The transport principle focuses on firms seeking minimisation of transport costs through their location choices. In the service economy where the transport costs have reduced and the transport options have increased, it is the transferability between different nodes that is of relevance to firms. Theories of highest and best use and bid-rent function are based on the transport principle.

And finally the theme of urban spatial structures is explored where the focus is on understanding the different urban forms – monocentric and polycentric - and related theories are discussed.

## **Corporate real estate management**

Corporate real estate management is increasingly moving from having an operational role of providing accommodation to orienting real estate to realise the strategic goals of the organisation. This means that corporate real estate can increasingly add more value to the organisation and its primary process. Some of these value adding elements by corporate real estate include increase in productivity, reduction in costs, increase of flexibility and the real estate serving as a marketing tool.

The present day service economy has brought about several changes in the work processes. These, categorised by O’Mara (1999), are globalisation of customers and competitors, advances in computers and communication, lifestyle and demographic changes, changes in corporate form, changes in external real estate environment and overall rapid rates of change.

O’Mara provides an analytical framework to assess the corporate real estate strategies adopted by organisations which comprises of demands related to the external environment on the one hand, and the internal demands on the other. The former, described as strategic environment by O’Mara, include the industry forces and the environmental constraints and facilities. The latter, called the organizational demands, include the structural demands and the cultural demands of the organization.

## **Analysis framework and theoretical propositions**

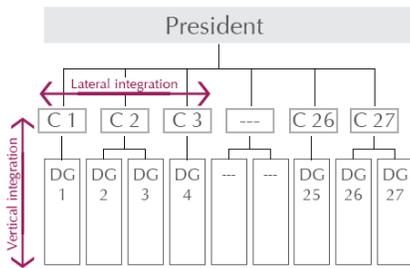
Being an inductive research, the theoretical and empirical studies were conducted iteratively. While answers to research questions provided the analytical framework, this framework was used to conduct the case-studies which in turn confirmed the answers to the research questions.

Firstly, in response to the first research questions, a framework to analyse the internal and external drivers of location choices is developed.

These internal and external drivers are derived from O'Mara's analytical framework as well as the urban economics theories. The internal location drivers are the structural demands, cultural demands, internal economies and corporate hierarchy. The external demands are external economies, transferability, urban hierarchy and other drivers that include market conformity, highest and best use and the bid-rent function.

<b>internal location drivers</b>	<b>Structural demands</b>	<b>Cultural demands</b>	<b>Internal economies</b>	<b>Corporate hierarchy</b>
	Structure	History	Indivisibilities	Strategic value to business
	Work processes	Senior management preference	Synergy	
	Demographics	Culture	Proximity	
<b>external location drivers</b>	<b>External economies</b>	<b>Transferability</b>	<b>Urban hierarchy</b>	<b>Other</b>
	Industrial	Global	Global	Market conformity
	Cognitive	Continental	Sub-global	Highest and best use
	Geographic	National/ regional	Regional	Bid-rent function
		Local	Provincial	

**Figure 2: Internal and external location demands**



**Figure 3: Vertical and lateral integration**

Secondly, as per the second research question, it is aimed to explore an alternative approach for location of different functions of a service sector organisation. For this, the different functions performed within an organisation are identified and then their individual location choices are defined.

There are eight different functions that have been identified as shown in figure 4. The criteria used to establish these functions are: strategic value of the function to the business being either core, supporting or specialised, the integration the function requires with other functions – either lateral or vertical (figure 3), the nature of information transfers – from tacit pooled or sequential to codified and the focus of work processes being internal or external to the organisation.

<b>SI No.</b>	<b>Functions</b>	<b>Criteria used</b>			
		<b>Strategic value to business</b>	<b>Integration required</b>	<b>Nature of information transfer</b>	<b>Focus of work process</b>
1	Main headquarter	Core	Lateral	Tacit pooled	Internal/external
2	Line headquarter	Core	Vertical	Tacit pooled	Internal
3	Client interface	Core	Lateral	Tacit sequential	External
4	Business backoffice	Supporting	Lateral	Tacit pooled	Internal
5	Support backoffice	Supporting	Vertical	Tacit pooled	Internal
6	Support interface	Supporting	Lateral	Tacit sequential	Internal
7	Partially outsourced	Specialised/ support	Lateral	Tacit pooled	Internal/external
8	Offshored	Specialised/ support	Vertical	Codified	Internal

**Figure 4: Identification of functions in service sector organisations**

Having identified the functions performed in a service sector organisation, their individual location demands are assessed. For this, various criteria are used (figure 5). This includes the level of representation required, the transferability required as well as different sources of agglomeration economies needed including input sharing, knowledge spillovers, labour market pooling, rent seeking. In addition, it is also assessed if a particular function requires to be in an urbanisation or a localisation economy, that is in an area with diverse or like businesses respectively.

SI No.	Functions	Location demand criteria						Types of external economies
		Representation	Transferability	Input sharing	Knowledge spillovers	Labour market pooling	Rent seeking	
1	Main headquarter	High	Global/continental/High national	High	High	Global/national	High	Urbanisation
2	Line headquarter	Moderate	National	Moderate	Moderate	National	Moderate	Localisation
3	Client interface	High	Local	Low	Low	Local	Low	Urbanisation
4	Business backoffice	Low	National/local	Moderate	Moderate	National	Low	Localisation
5	Support backoffice	Low	National/local	Low	Moderate	National	Low	Localisation
6	Support interface	Low	National	Low	Low	National	Low	Dependent*
7	Partially outsourced	Low	National/local	Moderate	Low	National	Low	Dependent*
8	Offshored	Low	Local	Low	Low	Local	Low	Localisation

\* these depend on the different departments they serve or work with

**Figure 5: Location demand profiles of different functions**

And finally, in response to the third research question, three theoretical propositions are proposed.

The first proposition states that a strong link can be found between the corporate hierarchy of the functions of an organisation and the urban area they locate in.

**Proposition 1: Corporate hierarchies play a strong role in distribution of different functions across geographic space and correspond to the urban hierarchies.**

The second proposition refers to the tendency of different functions and departments of an organisation clustering in geographical area.

**Proposition 2: The sources that generate the benefits of external economies and cause firms to agglomerate in geographical area are recognisable internally within an organisation, which cause its various functions to agglomerate in space.**

And finally, the third proposition relates to the two opposite forces shaping the real estate portfolio of organisations.

**Proposition 3: The opposite forces – centripetal and centrifugal – shaping the geographical organisation of economic activity at higher scale levels (that of city and regions) are also be found to be active at the scale level of an organisation.**

# Case-study analysis

The four case-studies used in this research include European Commission and BNP Paribas Fortis that have their headquarters in Brussels and the ING Group and ABN AMRO that have their headquarters in Amsterdam.

For the case-analysis, first of all the history of the organisations is traced along with the real estate location choices that have been made over time. This analysis is done at different geographical scale levels – country to building. The various drivers that have caused clustering and dispersal at different scale levels are assessed.

After this, the present portfolio of the organisation is divided along the eight categories of functions proposed earlier. Each of the functions and their location characteristics and reasons behind particular location choices are studied. Several tools are used to complete this analysis which include the location quotient of a location, the ranking of cities as well as observations at site and interviews with real estate managers. From the location quotient, it was possible to assess if a particular function was located in a localisation or an urbanisation economy. And by looking at the ranking of cities, it was possible to put them at different urban hierarchies.

A strong tendency to cluster the real estate portfolio has been found through the history of organisations. However, different reasons that lead to dispersal of portfolio are also present.

The eight categorisations of functions that were proposed have been found to exist in the case study organisations. The function of ‘business back-office’ is further divided into separate categories – business core and business backoffice. The distinction is essentially between high and low order functions that support the business.

## Results and conclusions

It was intended through this research to understand the internal and external drivers that cause organisations to cluster and disperse their real estate portfolios. In doing so, some classic theories of urban and regional economics were tested at the scale level of an organisation. There were three theoretical propositions that were tested through the four case-studies and their results are discussed below.

**Proposition 1: Corporate hierarchies play a strong role in distribution of different functions across geographic space and correspond to the urban hierarchies.**

It was seen with the help of the categorisation of functions that a distinction between high and low order functions within service sector organisations is possible. However, it was not possible to place all functions on a scale of functional hierarchies.

In case of urban hierarchies it was seen that different cities exist at different levels of urban hierarchies but the polycentric nature of urban areas (such as Randstad) allowed similar order functions to be located at cities of different hierarchies.

Therefore, it can be said that though corporate and urban hierarchies exist but a linear relationship between the two could not be confirmed through this research.

**Proposition 2: The sources that generate the benefits of external economies and cause firms to agglomerate in geographical area are recognizable internally within an organisation, which cause its various functions to agglomerate in space.**

Through the cases, it was confirmed that the benefits of external economies that cause

several like or diverse firms to agglomerate at urban, metropolitan or country level are also recognisable internally within firms. These factors cause the various functions of the organisation to agglomerate in space. The main sources that cause this clustering are infrastructure sharing where sharing of building infrastructure between different departments allowed flexibility to grow and downsize and avoid vacancy in buildings, input sharing where certain departments provide input to the main business lines, knowledge spillovers between departments and rent seeking to locate close to the high order functions. Figure 6 outlines these sources at different scale levels.

	External economies		Internal economies	
	Urban area level	Cluster level	Cluster level	Building level
Infrastructure sharing	Overall public infrastructure -transport, schools, infrastructure	Important transport nodes at different levels of transferability, telecomm	Buildings in a cluster shared between departments esp. in restructuring. Facilities like parking and training.	Floors shared between departments. cafeterias in one building get shared.
Input sharing	In urbanisation/localisation economies esp. for high order functions (HQ, line HQ)	In urbanisation/localisation economies depending on type of functions	Business backoffice and support interface provide input to all business lines	Business backoffice and support interface provide input to all business lines
Knowledge spillovers	Face-to-face contacts in Urbanisation and localisation Economies by virtue of Diversity and specialisation	Face-to-face contacts in urbanisation & localisation economies	Formal face-to-face contacts common due to presence of sharing training and conference facilities. Also other organised meetings	Formal and informal contacts, owing to the presence of having a common cafeteria, restaurant
Labour market pooling	Different hierarchies of urban areas offer different labour markets	Not at cluster level. Good accessibility allows movement	No evidence	No evidence
Consumption	Active by virtue of the size Of city and urbanisation Economies therein	Not at cluster level	No evidence	No evidence
Rent seeking	Firms locate in the same cities as political and governmental institutions	Locating in the same cluster is seen	Strong tendency to be close to the headquarter and top management exhibited	Proximity to top management found in buildings but to lesser degree

**Figure 6: Sources of external and internal economies**

**Proposition 3: The opposite forces – centripetal and centrifugal – shaping the geographical organisation of economic activity at higher scale levels (that of city and regions) are also be found to be active at the scale level of an organisation.**

The third proposition, based on Krugman’s ‘new economic geography’ has been found to be true through this research. The opposite forces shaping the geographical organisation of economic activity at higher scale levels (that of city and regions) can also found to be active at the scale level of a firm.

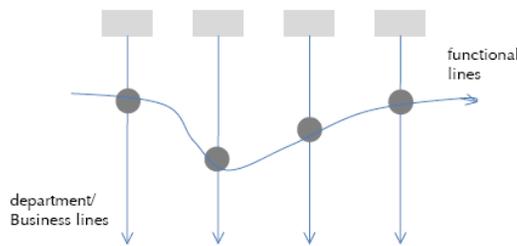
Centripetal forces	Centrifugal forces
Infrastructure sharing	High property rents
Tacit information exchange Requiring face-to-face contacts	Legacy buildings that are spread-out Immobile labour
Input sharing	Clients located in different areas
Rent seeking	Business continuity

**Figure 7: Opposite forces acting at individual firm level**

While there are several centripetal forces causing the clustering of organisations' real estate portfolio, the opposite centrifugal forces were found through the different case-studies that caused the dispersal of the real estate portfolio. These include high property rents as seen in the case of European Commission where by having clustered in the Leopold Quarter, the organisation gradually lost its rent negotiating power which it is trying to regain by choosing multiple locations. The second factor, presence of spread-out legacy buildings, tested in case of all the banks where the banks have had to spread out some of their functions at country as well as urban area scale level to occupy their legacy buildings. The factors of immobile labour and location of clients also caused dispersal of locations in the case of banks. Business continuity as a centrifugal force was seen very strongly in the case of BNP Paribas Fortis, where the bank was asked by the Belgian banking regulator CBFA to spread its real estate portfolio across atleast two locations to ensure business continuity in case a calamity struck.

This research, taking an inter-disciplinary approach involving fields of corporate real estate management and urban economics, provides new insights into the location patterns of organisations. It was intended to discover the approach of these large organisations to location of their real estate portfolio in a wider purview of these expansive theories.

Not only were these theories found to be applicable at the scale level of an organisation, but they also provided new insight into location patterns of organisations. In addition, a categorisation of functions performed in the service-sector organisation was also done successfully. This categorisation allows the choice of locations to be made along the functional lines instead of the vertical departmental lines enabling organisations to strike a balance between clustering and dispersal of functions and lead to optimisation of their portfolio qualitatively and quantitatively.



**Figure 8: Vertical departmental lines and lateral functional lines**

## Recommendations

In view of the limited time for this research, only four cases were included. In future research, this study must be broadened and more cases should be included to test as well as further refine the findings of this research.

Alternatively, it is also possible to study one or two of these organisations in-depth. This would involve surveys with wide sample sizes within each organisation as well as interviews with people at different levels such as managers of businesses, top-management etc.

It is also possible to include the supply factor in future research which has not been included in this research where the focus has been on demand. The external supply factors would include a deeper study into the availability in real estate market, the public incentives associated with different areas etc.

Finally it can be said that this research, with its high originality value, provides managers with a streamlined approach to location decisions taking different functions and their requirements into consideration. It also provides academicians a foundation to further develop the knowledgebase of corporate real estate management using theories from other fields of study, as has been done here.

This research must be seen as a new approach to corporate real estate decision making instead of a final product, which must be further developed with future research.

## Literature list

Some important literature references are given here. The complete list of reference can be found at the end of the main thesis document.

Fujita M., Krugman P., 2004. The new economic geography: Past, present and the future. *Papers in Regional Science*, vol. 83, pp. 139–164.

Geltner C., Miller E., 2007. Commercial real estate: analysis and investment. *South-Western publishing co.*

Jacobs J., 1969, *The economy of cities*. Random house inc., New York

Krugman P., 1998. What's new about the new economic geography. *Oxford university press and the Oxford review of economic policy limited*, vol 14, No. 2, pp. 7-17.

Marshall, Alfred (1920). *Principles of Economics* (Revised Edition ed.). London:Macmillan; reprinted by Prometheus Books

McDonald J.F., McMillan D.P., 2007. *Urban economics and real estate – theory and policy*. Backwell publishing.

O'Mara M.A., 1999. *Strategy and place: managing corporate real estate and facilities for competitive advantage*. The free press.

Ottaviano G., Thisse J F., 2002. Agglomeration and economic geography. <http://www.cepr.org.uk/meets/wkcn/1/1524/papers/OttavianoThisse.pdf>, 15/11/09, 14.20 hrs

Parr J.B., 2002a. Missing Elements in the Analysis of Agglomeration Economies. *International regional science review*, vol. 25, 2, pp. 151–168.

Parr J.B., 2002b. Agglomeration economies: ambiguities and confusions. *Environment and planning*, vol. 34, pp. 717-731

Rosenthal S.S., Strange W.C., 2002. Evidence on the Nature and Sources of Agglomeration Economies. Prepared for the Handbook of *Urban and Regional Economics*, vol. 4, pp. 1-64

Sassen S., 2001. *The global city – New York, London, Tokyo*. Princeton University Press

Vande Putte H., de Jonge H., 2008. *Corporations and cities: envisioning corporate real estate in the urban future*. Delft: Publikatie Bouwkunde.