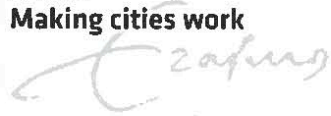


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Thesis

Title:

A Competitive Rotterdam: An investigation into Rotterdam's competitive status vis-à-vis its main challengers- Hamburg and Frankfurt- within the global market.

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Summary

Rotterdam is considered to be an important source of revenue for the overall Dutch economy. The port of Rotterdam is the largest in Europe and is celebrated around the globe for its efficacy in all port-related sectors. The issue is, however, that the city economy and overall urban quality are outshined by the port, and are thus gradually failing to meet the new multifaceted demands of its users. Changes in the world order define cities as the new economic, political and social spearheads, ergo Rotterdam must improve its conditions and compete for higher status with other cities in the system. To obtain higher levels of competitiveness, cities work hard on their overall attractiveness and appeal to visitors, companies and investors, and on forming as many connections to other cities and economic sectors that would help expand their city economy, their market share and ultimately provide all of the city's users with more opportunities and activities.

Looking at some of Rotterdam's competitors- in this case Hamburg and Frankfurt- is an important step towards reinvigorating its image as a global city. Hamburg and Frankfurt each have their own story of how they generate and maintain the allure that brings clusters and investors, as well as improve the overall quality of life in the city. In order to get an insight into the mechanics of all three cities, it is important to consider current trends in the global market, urban competitiveness, the networks that cities form in order to strengthen their positions, and ultimately the existing hard and soft factors that attract users and convince them to stay. Therefore, highlighting investment flows was the first step in identifying the locations where Rotterdam, Hamburg and Frankfurt agglomerate their economic clusters, after which further qualitative research was conducted to conceptualize the attractiveness of these cities. Furthermore, personal interviews were conducted with officials from all three cities, and material gathered from visits strengthen the study by providing first-hand experiences, filling in the gaps omitted by hard, more tangible data.

Hamburg and Frankfurt are much stronger competitors than Rotterdam, and they have both hard and soft facts to support this claim. The amount of their connections to other cities and economic sectors in the global market far outnumbers those that Rotterdam possesses. Rotterdam's economy is too narrow, too port-oriented, and thus it lacks in capacity to expand its market share and establish more connections. This, however, is both a cause and a consequence of its current urban conditions; and despite the potentials, the city faces many issues that need to be resolved. The economy and urban quality are inextricably interlinked; ergo improving one will most certainly have a positive effect on the other. Rotterdam, like Frankfurt, has a hard exterior, but has potential to flourish in sectors that are more culture and leisure oriented, which Frankfurt has already succeeded in. This would humanize the city and improve its appeal to residents, propelling the city to work with investors so as to create more spaces where users could not only work, but also really live in, which would ultimately bring other economic activity into the area, and thus offer more vantage points. To find innovate ways of improving both market and residential quality, Rotterdam can also learn quite a lot from Hamburg. Finally, Rotterdam needs to transform itself into a city where living is the top priority.

Key Words

Urban growth and development, economic geography, agglomeration, competitiveness, networking, reinvention, renewal

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Chapter 1: Introduction

1.1 Preface

Why are some cities more alluring than others? What happens when the status of one city is threatened by the increasing competitiveness of another? And what are the factors that make a city more competitive, more desirable to inhabit, and thus pose such a threat to others? All of these questions, and many more, arise when contemplating the changes in the contemporary socio-political, economic, and ultimately urban, order. Cities are casting shadows as their particularity fosters more economic activity and attracts more attention than their respective nations do at large. Yet how do cities, in this era of globalization, retain their unique characters, manage the interaction between the economy, politics and society, while maintaining good living standards, since cities are, above all else, places of residence?

Adopting an economic viewpoint is one way of addressing these queries; in other words, by casting cities as marketable public commodities that compete for stature and resilience to the changes in the global market that is today's business-driven world. Highly competitive cities are those with a productive and innovative business environment in which enterprises are able to reap benefits from specialized sectors, technology, infrastructure, and the excellent living conditions offered by these cities. To avoid exploitation, cities and enterprises work together to replenish the resource pool. Investment is poured into specific city areas showing most potential in both maintaining high levels of economic activity as well as having the capacity of spreading benefits onto other urban areas. Reaching consensus, however, vis-à-vis investment flows going to and from the city is not an easy task, since stakeholders do not always have the same interests and objectives. The attractiveness of a location to businesses depends on numerous factors, not all of which coincide with the factors considered necessary for other users.

“Form follows function follows flow” (Wall 2010) is a term used to describe the complex relationship between the built environment, urban functions and economic flows. To strengthen their chances of attracting investment, similar cities establish networks of continuously expanding shared knowledge, goods and services. All cities, however, strive to be unique, to offer their own particular blend of allure, ergo all search for ingredients that would set them apart and make them powerful competitors. Urban competitiveness is a zero sum game- some cities will rise and others will fall due to an inability to adequately separate strengths from weaknesses and specialize in areas in which they are strongest (Glaeser 2011; Wall 2009; Allen 1999). A nexus of complementary relationships could alter such realities by reviving fallen cities at no cost to others in the market. A simple shift of focus could propel a city to reinvent itself entirely and attain higher status in the world order without threatening the status of others.

Cities continue to discover new ways to market their locations as favorable business environments, supporting the urban functions that could be significant to companies choosing a location. Such functions have been defined as urban capitals (PwC 2005) and are crucial in establishing and keeping cities' business agglomerations alive. Infrastructure and technology, intellectual and social capacity, local governance and economic activity,

accessibility and innovation are some of the marketable attributes a city can promote to enhance its competitive position (Wall 2009; Markusen 1996). An evaluation of those ingredients does not only conceptualize a city's strengths and weaknesses, but advances the development of ranking systems through which cities can compare their ability to meet the needs of investors and residents, and ultimately provide other cities with stories from which they could learn from.

The focus of this study is Rotterdam, the second largest city in the Netherlands and Europe's largest port. The Netherlands currently ranks 8th out of 139 countries listed in the Global Urban Competitiveness Report of 2010/2011 (Ni & Kresl 2010), and is identified as being one of the few closest to an innovation-driven economy. Although considered to be of vital importance to the Dutch economy, Rotterdam, ranked 81st, out of 500 cities, is facing both internal and external threats regarding its competitive status, and has been identified in a Dutch survey to be the least attractive place to live, with the highest crime rates (Dutch Daily News 2011) and increasing brain drain, despite the prominence of its leading university, Erasmus. Seen as too modern, socially fragmented, and lacking in satisfactory residential quality, the city has been struggling with improving its image as a place its inhabitants can call a home. Nevertheless, Rotterdam has been attempting to alter this reality by establishing more economic and social connections within the Netherlands, as well as beyond. This has been done via capacity building and city marketing, so as to attract more investment and expand its economic network (Rotterdam Urban Vision 2008).

Considering the claims that the contemporary world order is adopting a more entrepreneurial structure (Hymer 1972) and that the relationships between cities stem from flows of investment (Wall 2009: 38), it is plausible that a city's level of urban competitiveness also relies on the nature and scope of such connections (Friedmann 1986). Therefore, urban networks are crucial in defining and evaluating city potential.

Among Rotterdam's numerous competitors, the most prominent are Hamburg and Frankfurt (Burger et al. 2011) - the former being an important rival port city, as well as a media and transportation hub; and the latter leading in the financial and services sector throughout Europe. Hamburg ranks 40th in the Global Urban Competitiveness Report, and Frankfurt is ranked an impressive 28th (Ni & Kresl 2010). Rotterdam can learn a lot from the stories of its competitors, and although the city has potential, the financial crisis has slowed down its reinvention process considerably, and therefore new methods for urban reinvigoration are necessary.

The objective of this study is to evaluate Rotterdam's competitive status vis-à-vis its competitors- Hamburg and Frankfurt-, and see how Rotterdam can learn from these two cities and improve in order to meet the needs of its users, and ultimately, the global market.

1.2 Main Question and Sub-Questions

- ✚ How can Rotterdam increase its competitiveness and improve its status on both a national and international scale?
 - Where have major investments located in Rotterdam, Hamburg and Frankfurt and why?
 - What are Rotterdam, Hamburg and Frankfurt's leading sectors and capitals, and what are their current activities and objectives?
 - How do the structures of Hamburg and Frankfurt's investment networks differ from Rotterdam's?
 - What can Rotterdam learn from its competitors so as to rise in the ranks of urban competitiveness?

1.3 Significance of the Study

The importance, or essence of the study, lies not only in the increasing need for cities to reinvent themselves within the context of globalization and the ongoing financial crisis, but also in highlighting the benefits of economic geography and city marketing in improving the quality of life in cities and their regions. The study revolves around detecting and examining the factors that make Rotterdam and its competitors –Hamburg and Frankfurt-attractive. Rotterdam is particularly interesting due to the paradox that it represents: the port city is an important source of revenue for the national economy (Port Compass: Draft Port Vision 2030), yet there is a depleting desire in individuals to reside in Rotterdam. This paradox could severely impact the willingness of companies to continue to invest or situate themselves within the area. However, by comparing Rotterdam’s story to those of its competitors, it is imaginable that Rotterdam’s challenges can be transformed into future potentials.

1.4 Overview: Structure & Research

The thesis consists of five chapters: an introductory first chapter; a theoretical second chapter focusing on various existing studies on urban competitiveness, city networks, different forms of urban capital, and how these relate to Rotterdam, Hamburg and Frankfurt. This chapter ends with the conceptual framework that links theory to praxis. The third chapter describes the methodology and techniques of the study, including main focus areas, the research questions, including the interview questions used to obtain information from the municipalities about the competitiveness of their respective cities and, in particular, about the factors that make their cities attractive to companies and investors. The fourth chapter showcases the data collected through the following:

- a) FDI Markets.com reports for Rotterdam, Hamburg and Frankfurt detailing the nature of investments going to the cities, based on which
- b) Research was conducted to reveal the investment networks of Rotterdam, Hamburg and Frankfurt, and
- c) and also the economic sectors of Rotterdam, Hamburg and Frankfurt, after which
- d) GIS maps were generated to highlight the business agglomerations in the three cities, later used for
- e) Fieldwork observations in Rotterdam, Hamburg and Frankfurt, and finally through
- f) Interviews conducted with city officials

In the fifth and final chapter the results of the previous chapter are evaluated so as to define various recommendations for Rotterdam, concerning the improvement of its current competitive status.

A more detailed explanation of the modus operandi of this study is presented in chapter three.

Chapter 2: Literature Review: Urban Competitiveness

2.1 Urban Networks

International trade, investment flows, innovations in technology and communication, increasing mobility of labor and capital, and the necessity for knowledge-based enterprises- all of which take place predominantly in cities- have intensified the conditions for development. In order to maintain livability, prosperity, and wellbeing, cities must respond to and align in positions relative to the new competitive environment in which they operate. “Freer international trade, financial transactions, and investment across national borders are accelerating the integration of the global economy and intensifying international competition and cooperation among firms and cities” (Rondinelli et al. 1998: 75). This interaction creates a series of networks based on similarities, proximities, and opportunities generated by business agglomerations within given cities. Through this expanding matrix, cities exchange information and capital vital for maintaining an active business environment, good standards of living, and hopes of climbing up the ranks of urban competitiveness. In other words, globalization has altered the world order, cutting across the traditional North/South, East/West divides to reveal a vast nexus of cities. The geography of urban competitiveness looks more like a giant cluster of wires, cables and chords channeling the economy and powering development. When observed more closely, the cluster reveals a complex order of cities with a few positioned as command points that hold the most links, facilitating the rest of the nodes in the network. Urban networks can be defined as interlinkages of flows of activities, knowledge, skill, resources and investment between cities, and are thus multi-faceted in both nature and scope (Burger et al. 2011a). The corporate nature of urban networks was predicted by Stephen Hymer (1972), who argued that globalization would transform the world into a corporation, in which cities would be both the managers and producers.

As explained by Saskia Sassen in her paper *Locating Cities on Global Circuits*, cities have assumed the role of introducing their national economies to the global market, as well as managing and servicing much of what happens from then on (Sassen 2002). The city’s task is to create an innovative environment that would attract individuals and businesses capable of improving and maintaining such a setting. “Investment will flow to- and exports will flow from- those cities that provide better educated and higher skilled workers, globally linked infrastructures, and flexible and responsible public and private organizations” (Rondinelli et al. 1998: 73). In other words, the accelerating mobility of people and capital is continuously highlighting the importance of having technical capacity and a responsiveness to trade patterns as some of the prerequisites for economic bonanza. Referring to the new global order as a “geography of centrality”, Saskia Sassen states that at an inter-urban level, important financial centers, such as New York, London, Paris, Frankfurt, Tokyo and so forth, are linked together (2002: 20), and that more cities are positioned in such a way that their business sectors are both concentrated and dispersed at the same time to accommodate trans-boundary networks.

The establishment of economic clusters around densely urbanized regions has been identified as a manifestation of progress (Porter 1998); and “because agglomeration is a

principal source of these productivity enhancing outcomes, urbanization is less to be regarded as a problem to be reversed than as an essential condition of durable development” (Scott & Storper 2003: 581). Michael E. Porter argues that the emphasis on location in the new global economy introduced a new aspect to corporate decision-making; the external business environment is just as important as the internal one (1998). There are, however, variables and indicators determining the effectiveness of agglomeration of economic clusters in cities, the main of which are considered by some to be integration and the transition to a knowledge-intensive society (van den Berg 1999). The latter is particularly stressed by Edward Glaeser, who argues in his book *The Triumph of the City* (2011) that the mutual transfer of knowledge is the focal point of development, and is key to uncovering the secrets to urban reinvention,. This explains the establishment of networks based on different forms of agglomeration: inter-agglomeration, complementarity, and subsidiarity. Inter-agglomeration refers to relationships based on competition for dominance of differing entities in the same market; complementarity defines the relationships between specialized entities and their commodity chains; and the subsidiarity principle is the relation between headquarters and their distributive actors (Scott & Storper 2003: 585).

Ann Markusen (1996) offers another peek into the nature of relationships going to and from cities by identifying five different types of agglomerations defined as industrial spaces of particular functions and trading capacities. The Marshallian industrial district is characterized by the containment of business and residential activities to that particular area, increasing the quality of the labor market by offering mutual proximity and accessibility, and concentrating all activity towards enhancing the specialization of the dominant sector; Italianate districts are characterized by greater interaction between urban sectors to minimize costs and enhance benefits by generating a more flexible business environment; hub-and spoke districts are the pivots of regional economic activity, ergo the affiliations formed in such districts are external and explicitly tied to the dominant businesses; satellite platform districts are based on subsidiaries located at a distance from- but with a strong tie to- the headquarter area, in order to stimulate regional development and decreasing costs of operation without an incentive to engage in ventures organized by the other sectors; and the state-anchored districts, in which public institutions are the loci of networking activity (Markusen 1996).

This further highlights the fact that flows between cities and regions are expanding with globalization, and that the position of cities within these networks is what determines their scope of development: “Wealth creation, increased productivity, and technological innovation, in turn, will enhance the capacity of cities to support even larger numbers of international business transactions” (Rondinelli et al. 1998: 73). Densely populated areas of high-skilled, high-income individuals, spurs the development of modern infrastructure (Porter 1998), better educational and health systems, as well as boosts the economy potential through a highly active commercial sector.

In their paper, *Power and Position in the World System*, Alderson and Beckfield argue that the key points, also defined as ‘world cities’ by John Friedmann, or ‘global cities’ by Saskia Sassen, do not only exercise power over other cities, but also the global economy (2004: 812). “The power of world cities is inherently relational: cities do not have power in and of themselves; they have power to the extent that they function as command points and centers of planning and thus establish the framework in which other cities operate in the world economy” (Alderson & Beckfield 2004: 812). What dictates the position of cities in the

new hierarchical order are the number of connections they are able to produce and maintain, the amount of international investment going to and from the cities, and trade; some cities are, therefore, better off than others in this “system” (Alderson & Beckfield 2004: 812).

Similarly, as argued by John Friedman in his *World City Hypothesis*, the flexibility and mobility of factors of production in this nexus will also impact the scope of changes occurring within the cities- structural and ideological (1986: 70); therefore, the geography of urban competitiveness alters the terrain on both a micro and macro scale. “Key cities throughout the world are used by global capital as basing points in the spatial organization and articulation of production markets” (Friedmann 1986: 71); moreover, their function is reflected in employment and production rates, thus elevated numbers of immigrants are expected in global cities. Most importantly, apart from recognizing that the new city order has a direct impact on both spatial and social fragmentation, John Friedmann observes that the world city generates more costs than can be covered by the state (1986: 77). Therefore, established means of regulation are no longer applicable to the world city order; in fact, the nexus is more likely to crash if regulated conventionally. For this reason, cities have to be accessible, offering more than one “vantage point” for all users (Simone 2010: 59).

The theories presented thus far emphasize the importance of looking at how cities are connected to others through their specialized economic sectors, investment flows, and other factors, since clustering of economic activity (Porter 1998) and connectivity (Wall 2009) is how competitiveness is generated. Since Rotterdam competes for investment with Hamburg and Frankfurt, it is imperative that their economic clusters, investment flows and global connectivity are observed in order to develop an idea of what makes those two cities more attractive to companies and investors. Based on the findings, it would be possible to understand why some investors prefer one city over the other, why one relationship is stronger than the other, and what it would take to either raise the level of competitiveness, or establish a complementary relationship between Rotterdam and its two competitors. According to the Global Urban Competitiveness Report 2010, Frankfurt’s global connectivity, or network capacity, is ranked 24th, whilst Hamburg ranks 15th, and Rotterdam an impressive 7th. Rotterdam scored high on location convenience and transportation- attractive features to potential investors for whom mobility is a priority. However, Frankfurt scored highest among the three cities in information, residents and enterprise connectivity, exhibiting higher levels of cooperation between the public and private sectors within and beyond the city. The overall competitiveness of Rotterdam fails to reach the ranks of Frankfurt and Hamburg, despite its global connectivity level. This means that urban networks and global connectivity are not the sole determinants of urban competitiveness. Pengfei Ni and Peter Karl Kresl define urban competitiveness as a *function* of the *enterprise, human resources, industry structure, the living environment, soft and hard business environments* and finally *global connectivity* (2010: 10). Factors that help form urban networks are just as important as the networks, perhaps even more so.

2.2 Urban Capital

In his paper *Cities and Competitiveness*, Iain Begg argues that competitiveness is “essentially about securing (or defending) market share” (Begg 1999: 796); it is not only about rating the economic performance of a city, but also about identifying cities potentials, their comparative advantage, and allowing it to compete in the market for dominance. Improving the factors that increase a city’s economic potential would not only propel corresponding activities to cluster around those factors, but would also offer new prospects for expansion into other markets and provide new areas for the city to specialize in (Scott & Storper 2003), and inevitably strengthen a given city’s competitiveness.. And “improved competitiveness” argues Ian Begg, “is the path to economic nirvana” (1999: 795). Peter Kresl lists having a highly skilled, high income generating labor market, an environmentally conscious industry, a virtually non-existent unemployment rate, and the overall ability of a city to climb up the urban competitiveness ladder via specialization in areas of competitive advantage (Kresl 1995: 51) as the conditions for attaining higher status in the nexus of global cities. The behavior of firms within an urban area corresponds to the quality and cost of labor and capital, scope of information transfers, level of interactions- all of which are required in order for them to build a reputation, establish reliability, and act in accordance to their mutual interests. “Dense agglomerations containing large numbers of firms allow both suppliers and buyers to compensate for variability and uncertainty by providing ready access to needed resources on short notice” (Scott & Storper 2003: 583); in other words, cities in possession of favorable traits- such as low costs of capital, a high skilled labor force, and accessibility to resources- promise an increase in productivity for firms and a corresponding increase in income for workers. Increasing productivity and profitability is not enough to expand the market and create new opportunities for inhabitants. Furthermore, they are not enough to improve the overall attractiveness of a city. In order to be considered highly competitive, cities must also show versatility and creativity. Improving the quality of human capital in a city is a giant step closer to success (Glaeser 2011).

Since improving human capital and other factors affecting a city’s competitive advantage requires financial support, looking at investment patters going to specific activities and urban developments is once again presented as an important element to consider (Ni & Kresl 2010; Wall 2009). In order to attract investment and ensure that the link between the investor and the receiving city remains intact, places of agglomeration must possess a certain level of “stickiness”, or an ability to create a conducive business environment capable of withstanding the volatility of the global market, defined as “slippery” (Markusen 1996). A city is considered more attractive, or “stickier” if it is able to generate higher rates of growth for its region, minimize the negative effects of a changing economic and political climate, maintain low levels of unemployment and income inequality, nourish a high skilled labor market, urge participation and support political tolerance (Markusen 1996: 196).

To be able to identify areas requiring most investment, cities must generate a thorough analysis of the state of their urban dynamic; that is, an account of the virtues and defects of the current system, organizing capacity, assets, business environment, and most importantly, social conditions- livability, wellbeing, security, tolerance. The Price Waterhouse Coopers *Cities of the Future* initiative (2005) offers a breakdown of the urban dynamic into six capitals- intellectual/social, democratic, cultural/leisure, environmental,

technical, and financial- and advocates mapping of high-potential sectors in need of improvement. Through the evaluation of all capitals a city is able to generate a development strategy capable of bridging the gap between present conditions and future ambitions (PwC 2005).

Are the people educated? A vital element in establishing a knowledge economy, intellectual/social capital encompasses human potential and the capacity of the organizational structure to meet that potential. Not only does it entail the provision of educational services, and information exchange, but also the provision of social welfare and the securing of social unity. "Mapping and measuring intellectual capital provides valuable information about the skills and resources available within both government organizations and the general population" (PwC 2005: 38). The increasing importance of establishing a knowledge-based economy is a result of the realization that too much focus on enhancing productivity and specialization could also increase risks in the form of exploitation, unreasonable policies, and fiscal struggles. Some argue that urban renewal policies are much too inclined towards productivity-raising incentives and thus could widen the gap between existing social clusters: "revitalization has accelerated the growth of employment for well-trained individuals, far out-spacing the job opportunities for the unskilled and lo-skilled" (van den Berg 1999: 556). Another fear is that cities will not be able to meet the challenges related to the growing diversity of the urban population, and that they will fail in generating social cohesion. Edward Glaeser, on the other hand, argues that the most efficient, most developed cities provide the less skilled with the opportunity to enhance their abilities, ergo making up for the initial labor inequalities (Glaeser 2011: 224).

The establishment of networks in which both the community and the individual can benefit from a constant interaction with the municipality improves the efficacy of the system in ensuring health, education, employment, livability, mobility, and security (PwC 2005). The problems in attaining the optimum in both social and intellectual capital stem from the lack of voluntary participation and community initiatives, which also contribute to social fragmentation, especially in cities with high rates of immigration. Building social capital through tolerance and celebration of cultural variety- embracing immigration- can deter further widening of the social gap. "Equity must guide the design of cities in the 21st century...these properties invest individual cities with competitive advantages that attract the best and the brightest people to contribute to their harmonious, collective lives" (Mandefro 2010: 7).

Are the interests of all users considered and supported by the municipality? As far as the administrative management of cities is concerned, globalization has created "particular organizational requirements", namely a specific set of "central functions" based on the establishment of a complex network of legal, financial, marketing bodies capable of operating on an trans boundary level; "such concentrations of functions represent a strategic factor in the organization of the global economy and they are situated in an expanding network of global cities" (Sassen 2002: 16). The administrative rhetoric of a city should be concentrated on providing the means to construct such networks. In order to set the foundation for internal and external networking abilities, the city must be in possession of citizen support and participation. In order for cities to become more efficient in catering to the needs of its inhabitants, they must construct an indestructible tether between the administration and the residents, laced with constant interaction and availability of data related to all of the city's ongoing processes. Moreover, inhabitants ought to be given the

possibility to actively participate in decision-making, as well as the execution of agendas in which such an alliance could be of great benefit. “Public opinion must be organized to support improvements, project by project” (Reder 2010: 9). Public-private partnerships, for instance, are the most optimal solutions to some of the cities greatest dilemmas, since they reduce costs, widen the resource base, and improve efficiency of construction and delivery of services. “This suggests that the focus of attention should be both on capacity-building and capacity-utilization” (Begg 1999: 798); or, as stressed by Kresl, urban competitiveness must be backed by a conscious, responsive regulatory framework (Kresl 1995). Edward Glaeser also suggests viewing challenges as opportunities; for instance, perceiving immigration as an indicator of the livability of the city rather than a potential threat to the labor market and social cohesion. “Cities need to establish a dialogue with their citizens and create mechanisms and structures that make them more accountable and open to the changing demands they face” (PwC 2005: 78). The rise of cities demands the rise of a city identity, founded upon a common value that mirrors the diversity of the urban fabric. Democratic capital- transparency, participation, and partnership- is a step towards interlacing the differences and preventing further tearing at the seams. Moreover, a well-developed trans boundary organizational structure also gives rise to “an enormous research agenda” through which cities could “establish whether position in the global hierarchy makes a difference, and the various ways in which it might do so” (Sassen 2001: 18).

Are inhabitants exposed to cultural and leisurely activities? Developing a cultural identity and supporting the initiatives that cultivate that identity are important for any city looking to attract creative clusters and provide the inhabitants with an enriching daily experience. A strong cultural and leisure capital humanizes the city (Hecker 2010), improving its residential quality and capacity. Comfort, inspiration, wellbeing are the words most associated with *home*. Developing a charming cultural identity requires a certain appeal to the senses through a juxtaposition of the old and the new, turning streets into scenes on which creativity and innovation may run wild. “The brand of a city can be made up of many different influences: the business developing or choosing to locate there, an underground culture or cultural artefacts and institutions” (PwC 2005: 52). A city rich in cultural capital is full of creative opportunities, from art and design to media and marketing, and is thus most likely to attract new technology and dexterous, innovative individuals, establishing a conducive environment with a ravishing tourism potential. Architecture, film, music, art, theater, etc. are the food of creativity- an essential condition for gentrification.

Cities must provide: parks, recreation, transportation, sanitation, safety, health, housing, education, and outlets for expression. These things give citizens what they need, causing them to become more harmonious, productive, innovative. They begin to see themselves in the city. The city reflects them. It marks them and they mark it.

Mehret Mandefro 2010: 6

This evokes another important consideration: is the city responding to environmental concerns? Rapid industrialization and commercial growth are raising environmental concerns, and cities are faced with the challenge of defining, establishing and maintaining good environmental sustainability (Ransick 2010: 23). A healthy, clean environment is also becoming one of the principal conditions on the firms’ list for choosing a location, and many cities are adopting policies and developing initiatives to reduce carbon emissions, congestion, improve waste management and create green/energy-efficient solutions. “If we

treated our streets with the same care that we afford our living rooms, it would create safety, civility, and really begin to improve people's lives" (*Livable Cities- the Role of Urban Planning* [Video]). Private, public, and civil partnerships all make a considerable contribution to the environmental quality of urban space; the latter, in particular, impacts the most and costs the least, ergo it is essential to form a community incentive. Moreover, some cities take partnership to a whole new level by establishing a network of cities with a similar agenda in order to exchange information and set benchmarks as to improve the quality of life in the region.

Does the city possess appropriate technical attributes to support its agenda for future development? The better the access a city has to the latest technological developments, infrastructure, transportation, communications the more benefits it can generate for its own local, regional, and national economy. Technical capital is not only essential for the efficiency and provision of goods and services, but also for the expansion of markets and investment opportunities. "Transactions are partly embedded in electronic systems that make possible the instantaneous transmission of money and information around the globe, and much attention has been paid to these new technologies" (Sassen 2002: 16). It is the basis for rapid regeneration and renewal, as many other capitals are inextricably linked to its scope and quality; intellectual/social capital can be improved through innovation and knowledge capacities evoked by technical capital; infrastructure quality increases the probability of improving environmental conditions and reducing dependency on non-renewable energy sources; and democratic capital can score higher on transparency and efficiency through the establishment of e-governance methods such as G2G (government-to-government), G2B (government-to-business) and G2C (government-to-citizen) brought on by ICT (PwC 2005). Mobility and accessibility are essential, and cities must possess the transportation infrastructure and communication abilities to respond to the users' needs. Technical capital allows the city to:

...embrace the trans-disciplinarity of urban infrastructure via engagement of ecologies and economies at its heart, create projects that act as prototypes rather than singular works, expand infrastructure's mono-functionality into hybrids that generate new architectures, and finally, recalibrate ideas of good infrastructure beyond the provision of services to instead advance a collective, cosmopolitan reality.

Dana Cuff 2010: 15

Does the city possess adequate financial tools to support its projects? "In terms of their economic function, cities provide agglomeration economies, massive concentrations of information on the latest developments and a market place" (Sassen 2002:19). The concentration of business activity in cities has given rise to new markets, reduced to city scales but globally interlinked. Such new complexities demand the establishment of trans boundary financial network systems capable of managing global assets. The more connected, open and ready a city is to handle global transaction, the more benefits it would yield.

However, the financial crisis has also ruthlessly proved that globalization has made it rather easy for anyone to be affected. Moreover, "the global integration of markets pushes towards the elimination of various redundant systems and makes collaboration a far more complex matter" (Sassen 2002: 23). Cities are perhaps even more under pressure to come up with solutions that would reap benefits from the existing conditions. Essentially, "despite

different financial systems most cities have one thing in common- increasing financial pressures and a drive to deliver value for money in public service delivery” (PwC 2005: 69). Local government finance- namely, the efficient use of financial instruments- is at the heart of ensuring that funds are effectively allocated and directed towards improving existing projects and spurring imaginative ventures. “Cities that implement cost accounting will gain a much clearer overview of cost drivers within the administration and its tasks, and find ways to drive change towards cheaper service delivery” (PwC 2005: 73).

The emphasis on financial capacity is ever-present, which begs the question, however, of how -considering the current financial turmoil- are cities to knit a sustainable urban fabric when the global market cash registers are empty? Norman M. Klein argues that “we must get used to being energized by our crisis, not medicated into a stupor” (2010: 45). The market crash has caused many cities to retreat from the race for higher competitive status. Cities have battled against isolation and continue, however, to focus on meeting the needs of their inhabitants. There is a theory, presented by Mehret Mandefro and Zeresenay Berhane Mehari, that when the design of a city is able to provide its inhabitants with what they demand, the people will, in turn, provide the city with what it needs (2010: 7). Such conditions establish a trust enabling all institutions to function despite external changes in socio-economic climate.

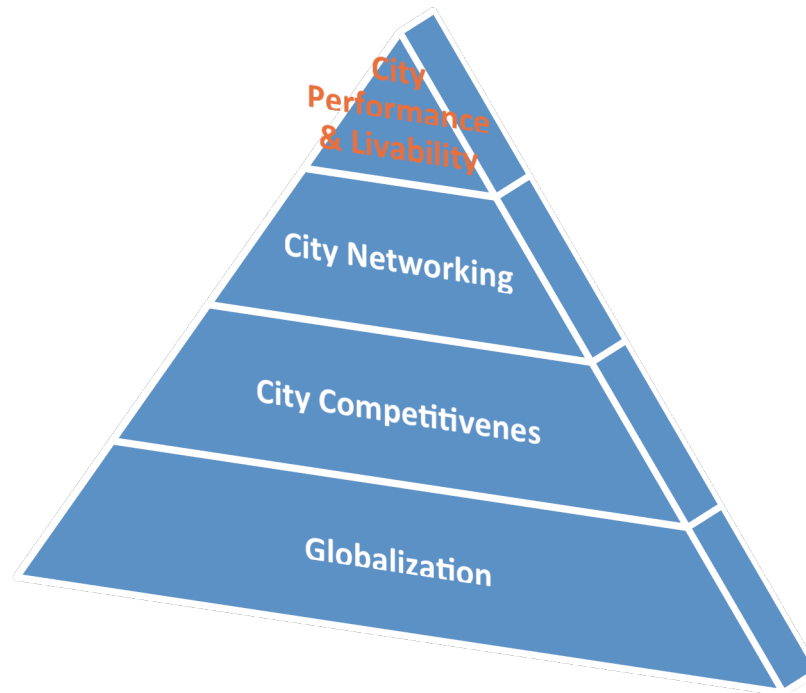
We need a new city that is free from terror and fear, a future city that glorifies human dignity, knowledge, wisdom, equality, solidarity, and the diversity of artistic expression and cultural identity. We need an open city that is connected by horizontal and open networks, and inhabited by citizens who use knowledge, creativity, media, and technology to foster diverse forms of contacts, interaction, and collaboration.

Gustaff Harriman Iskandar 2010: 49

Ann Markusen inquired whether cities could maintain their “stickiness”, or attractiveness, by shifting their focus from one type of network system to another (1996). Perhaps a more intriguing query would be whether this is possible through a more efficient, more calculated allocation of resources and use of urban capitals. According to the municipality, Rotterdam has the technical, environmental and cultural capacity to attract more investors, but lacks in social capital and exhibits a diminishing residential quality (Rotterdam Urban Vision 2008). Rotterdam’s overall rank for human resources is 89, 26 for the living environment- with a staggering 137th rank in social security- and is 56th in its ability for innovation; Hamburg ranks 94th for human resources, 23rd for the living environment, and 17th in its ability for innovation; and Frankfurt ranks 23rd for human resources, 19th for the living environment, and 28th in its ability for innovation (Ni & Kresl 2010). Although the ranks are revealing, it is important to note that each capital contains more indicators that in some cities are stronger than in other higher-ranked cities. It is because of this that a more rounded evaluation of the three cities’ capitals is required.

2.3 Conceptual Framework

Figure 2.3. 1



The theories presented throughout 2.1 and 2.2 all highlight the socio-economic changes evoked by globalization, namely the impact of market trends on urban development and the progress of cities; a new type of economy is born from these changes- an urban economy that is service and network oriented (Wall 2010). Despite diversity in opinion vis-a-vis urban competitiveness, most argue in unison that cities are on the rise, and that urban development is increasingly vulnerable to the position of cities in the global market. Cities have become the protruding vanguards of development, and the key to success lies in the realization of full potential at different times based on different needs- the ability to transform. Such transformations cannot be possible without the synthesis of economic and urban needs (Vrolijk 2010).

As shown in Figure 2.3.1, the forces of globalization are the foundations for an improved urban quality of life, given that a city is able to compete against, as well as work in close proximity to, other cities. As suggested in 2.2, the most effective way of drawing an accurate portrait of the current predicaments of any given city is through a thorough analysis of its assets- capitals. Good quality of intellectual, cultural, democratic, environmental, technical and financial capitals is considered essential for a competitive city, since these capitals influence the location of business agglomerations, or economic clusters, in cities. Once defined, the capitals will point out all the virtues and defects, potentials and shortcomings of the city, generating a blueprint for changes. Cities are then able to evaluate the investment pouring into specific areas: how benefits affect the ability of the city to expand into other market areas, engage in new networks, and improve knowledge and innovation to better living conditions.

Chapter 3: Research Design & Methods

3.1 Research Questions & Limitations of the Study

According to the theories presented in the previous chapter, urban competitiveness is predominantly dependent on the number of lines, chords, connections within a network of cities, presenting a vast variety of opportunities through the establishment of accessibility allowing for the exchange of knowledge and capital that could turn an urban life around. The position or power of cities on the ladder of urban competitiveness- the title of 'global city'- is given to those who can offer the most under given circumstances, and the quality and quantity of the links that they possess. Innovative cities develop new means of reaching out, establishing new connections, marketing themselves as sustainable substitutes, ergo generating more perspectives for their inhabitants. Rotterdam is at the heart of this study, with the investigation of Hamburg and Frankfurt as a means of contrasting and learning from their economic clusters, or agglomerations, for developing a better understanding of what makes Rotterdam more/less attractive to investors.

The main question and sub-questions posed at the onset of this study are presented here once again:

- ✚ How can Rotterdam increase its competitiveness and improve its status on a both national and international scale?
 - Where have major investments located in Rotterdam, Hamburg and Frankfurt and why?
 - What are Rotterdam, Hamburg and Frankfurt's leading sectors and capitals, and what are their current activities and objectives?
 - How do the structures of Hamburg and Frankfurt's investment networks differ from Rotterdam's?
 - How can Rotterdam learn from its competitors so as to rise in the ranks of urban competitiveness?

As far as the limitations of the study are concerned, a far more in-depth study would be possible at a doctorate level. The lack of econometric data that would make the study more tangible is another handicap. The incorporation of more concrete numerical data would offer a clearer insight into the rates of return of business agglomerations to the entire city. It could also be useful in understanding companies' rationale in choosing locations in which costs of establishment and maintenance are high, but long-term opportunities vast. Also, expanding the study to include inhabitant polls would also have helped conceptualize the quality of life in each city.

3.2 Modus Operandi

Data collected is used to analyze business agglomerations in each city and the networks that bind them. The data has been derived from FDI Markets.com database¹. The order of the sub-questions are employed as a series of steps in developing an image of urban competitiveness in Rotterdam, Hamburg and Frankfurt, starting with the use of FDI Markets.com reports from 2003 to the present to address the first sub question and map the answer. The reports provide the names of investing companies and the sectors they invest in, allowing for the research later conducted to locate their offices in the receiving cities, as well as identifying the sectors receiving most investment. Using UCINET network analysis software, the relationships between Rotterdam, Hamburg and Frankfurt are showcased; namely, the cities investing into all three cities and the sectors that Rotterdam, Hamburg and Frankfurt share. Furthermore, GIS maps are generated through Batchgeo.com, an Internet based GIS software that maps the locations of highest business activity in each city, which later were visited for inspection. During the visits to the three cities and their respective business agglomerations, observations are made to conceptualize the attractiveness of these locations and the elements that are necessary for businesses to thrive. Moreover, municipality officials are interviewed to gain an idea of what the city does to promote these locations, maintain their attractiveness, what such agglomerations mean to the overall urban dynamics, and what is it about those particular areas that is attractive and conducive to businesses.

The interviews and dialogues conducted with municipality officials approached directly or via electronic correspondence, also proved to be indispensable research instruments. Facts from official sources, such as the Rotterdam Urban Vision brochure provided by Gemeente Rotterdam, as well as other published material on opinions vis-à-vis the cities' stature and perspectives were also very useful in generating an image of each city individually. Other sources of information include official web sites of the municipality of Rotterdam, Hamburg and Frankfurt, and supplementary city marketing utilities such as material devised for the promotion of the cities. Moreover, upon visiting each city and the respective areas of business activity, photographs were taken to provide visual aid in determining why those areas are so attractive.

All of this allows for factual as well as personal accounts of the current predicaments, objectives, and hopes for the development of Rotterdam as a global city; moreover, it is an authentic portrayal of Rotterdam, Hamburg and Frankfurt and their urban competitiveness. As far as approachability is concerned, most subjects are often open to discussing such topics for and within the realm of research. The nature of this study commands an eclectic mix of opinion and fact, thus the practicality to the subject area itself sets the scene for engaging communication between the interviewer and the subject. The number of respondents is limited to a few with the most insight vis-à-vis the subject area.

¹ The Institute for Housing and Urban Development Studies, Erasmus University, purchased the rights to access the database, which is how reports for Rotterdam, Hamburg and Frankfurt could be generated and used in this study.

² Audio recordings from the personal interviews with Marco Den Heijer, Arnoud Besseling, Kitty Tang and Jan Zerling are available upon request, as are copies of correspondences with Lena Schmidt and

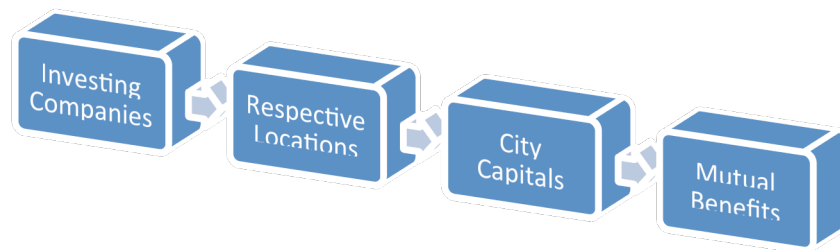
3.3 Validity & Reliability

Taking into account that the research tools used in this study allow for a hands-on insight into the mechanics of Rotterdam, Hamburg and Frankfurt, and their respective competitive positions, the clarity and reliability of the information gathered and the interview responses are indisputable. Moreover, the main respondents could be contacted in case of any further inquiries in regard to this thesis and its subject area. The written material studied is gathered from official sources; moreover, it is provided by the municipalities themselves, thus the legitimacy of those sources is also irrefutable.

3.4 Data Collection Methods

Data

As previously mentioned, in order to conceptualize the competitiveness of Rotterdam, Hamburg and Frankfurt, network diagrams of business agglomerations in each city are produced based on data obtained from FDI Markets.com and consequently identifying the companies investing to the cities and their urban locations. Agglomerations are identified based on the amount of investment projects and job opportunities they create in each city over a ten-year period of time. This information also helps define the leading business sectors in each city, making it simpler to identify the capitals responsible for the formation, growth and maintenance of these specializations, and ultimately for making the cities attractive to businesses and inhabitants.



Interviews

Questions for the Municipalities of Rotterdam, Hamburg and Frankfurt

The questions posed in the interviews are placed into five categories: the first category inquires into the overall current state of affairs, strengths, weaknesses, and position of Rotterdam, Hamburg and Frankfurt in the geography of urban competitiveness; the second, third, and fourth categories are reserved for a more detailed inquiry into the capitals of these cities, the methods used to address issues within each capital, plans for improvement, and main focuses; the final fifth category asks for a prognosis of urban competitiveness and development for Rotterdam, Hamburg and Frankfurt, and how it fits into the aspirations for each city.

Table 3.4. 1: Interview questions for the municipalities; *questions for Rotterdam only

| Category 1 | Category 2 | Category 3 | Category 4 | Category 5 |
|---|---|--|--|--|
| <p>With which cities is Rotterdam/Hamburg/Frankfurt most involved, and what is the nature of these relationships? Competitive? Nourishing? Collaborative?</p> <p>What would you consider the strengths of your city? Weaknesses? Opportunities? Threats?</p> <p>What makes Your city attractive to businesses, and what are the other elements/attributes the city possesses to maintain this attractiveness?</p> | <p>Intellectual and Social Capital are considered vital in setting the scene for improving the city quality of life; how would you describe the current state of opportunities for locals and immigrants in your city?</p> <p>*Erasmus University is home to tens of thousands of students and academics, yet word of mouth is that Rotterdam is suffering a brain drain; how and is this addressed by the city?</p> <p>What are the methods employed by the municipality to encourage participation?</p> | <p>What is the city's cultural agenda?</p> <p>How does the city use its space and architecture to provide entertainment and leisure for inhabitants and to attract more visitors?</p> <p>Suitable environmental conditions are at the top of firms' location selection criteria; what is your city's environmental agenda?</p> | <p>*Mobility is the new natural order; what are the significance of the Randstad rail and the expansion of the port for Rotterdam?</p> <p>How does your city agglomerate economic activity and where?</p> <p>What are the services your city has and plans to offer to the global market?</p> <p>How would you describe your city's economic position in terms of opportunities, investment, and connectivity?</p> | <p>What are the main objectives in enhancing your city's position both nationally and internationally?</p> <p>*How does the city plan on transforming its image to fight negative sentiments, such as its current reputation of being the city least loved by the Dutch?</p> |

Questions about the companies located and investing in Rotterdam, Hamburg and Frankfurt

The level and scope of business activity in any given environment, as mentioned in the theories presented in chapter two, depends greatly on the costs of conducting business and the benefits its proceedings can create. Cities provide the factors/capitals for the establishment of a specialized sector in which respective businesses can thrive and obtain maximum value and global connectivity. Prior to settling at a particular location companies have specific requirements that need to be met, and the following questions attempt to reveal what those requirements are and how Rotterdam, Hamburg and Frankfurt meet them. The questions ultimately answer one central query: why is one city chosen over another?

Table 3.4. 2: Interview questions about the companies

| | | |
|--|--|--|
| What are the principal requirements for the establishment of business in this city? | What are the most significant attributes the city can offer for further expansion/betterment of companies? | What else is considered important in choosing a location for the establishment or expansion of businesses? |
| What is more important to your company: assets and skills, or global connectivity offered by the city? | Were particular areas chosen for/by companies and why? | What do the cities and business hope to achieve by agglomerating companies in specific areas of the city? |

3.5 Data Analysis Methods

The data collected is arranged to produce images of Rotterdam, Hamburg and Frankfurt, and map the areas of high business activity and the capitals in those areas that help nourish it. Future plans and predictions for the city are then also evaluated. The maps of the cities are then compared and analyzed to develop a sense of why some areas are more attractive than others and what Rotterdam can learn from its competitors to attain higher levels of competitiveness.

Chapter 4: Research & Discoveries

4.1 FDI Markets.com Reports and UCINET Network Maps

Using the FDI Markets.com database, reports were generated for Rotterdam, Hamburg and Frankfurt. The reports contain investment details for the period of January 2003- July 2011. The table below showcases the most significant information drawn from the three reports for each city.

Table 4.1. 1: Adapted from the FDI Markets.com Reports for Rotterdam, Hamburg, and Frankfurt for Jan 2003- July 2011

| City | Leading Sector | Leading Activity | No of Investment Projects | No of Jobs Created | Top Investing Source Countries |
|-----------|------------------------|----------------------------|---------------------------|--------------------|--------------------------------|
| Rotterdam | Transportation | Sales, Marketing & Support | 111 | 462 | U.S.A., U.K., Germany |
| Hamburg | Business Services | Sales, Marketing & Support | 244 | 19,618 | U.S.A., U.K., France |
| Frankfurt | Software & IT Services | Sales, Marketing & Support | 360 | 735 | U.S.A., U.K., China |

The most striking fact from these reports, apart from the ostensible- that Rotterdam, in comparison to the two German cities, has the least amount of investment projects and jobs created over this eight year period- is that all three cities have the same leading business activity and all three compete for investment coming from the United States and the United Kingdom. This, however, does not entail that the three cities are in perfect competition. In fact, although the investment is poured into a leading business activity that appears to be uniform to all three cities, sales and marketing can be the underlying activities of any sector. This evokes another interesting observation vis-à-vis the leading sectors receiving most investment: considering the fact that Rotterdam is a port city, it seems only natural that transportation is one of the leading sectors, which would also have been expected for Hamburg, also a port city. However, Hamburg’s leading sector is Business Services, implying a growth in clusters other than the port-related industry. The same can be said of Frankfurt, Germany’s leading financial center, which is expanding its IT cluster. Furthermore, Frankfurt is entering the chemical and biotechnology market, as shown in the report’s most recent project list stating that Sanofi-Aventis Group, among others, is developing a cell culture plant to complement its existing research center in the city (FDI Markets.com *Frankfurt* 2011). All of this suggests that there is a diversification in the economy of Hamburg and Frankfurt,

whereas Rotterdam's economic palette consists of varying shades of the same color of port-related activities.

Nonetheless, it is important to note that Rotterdam has been selected as the head location for company offices- Lloyds, Fresh Traffic Group, Dachser, and Rack-soft, to name a few- catering to the entire BENELUX region, and a European headquarter for overseas companies, such as the Smurfit-Stone Container Corporation (FDI Markets.com *Rotterdam* 2011). The most recent and planned projects in Hamburg and Frankfurt are either the setting up of new offices or the expansion of existing infrastructure to incorporate other clusters (FDI Markets.com *Hamburg, Frankfurt* 2011). Although headquarters are good for Rotterdam, since they broaden the network connecting it to other cities involved in the same economic activity, they do not add variety to the city's economy. Hamburg and Frankfurt's investment projects aim at improving the current capacity of the business environment to accommodate new clusters. This will also improve their connectivity to other cities, as shown later in the study.

Having also extracted more expansive data containing the names of investing companies, their target sectors in Rotterdam, Hamburg and Frankfurt, and other investment details, UCINET network maps were created to reflect this information in a more transparent way. These maps show the connections between the three cities based on the cities they interact with and the economic clusters they contain or sectors they engage in.

The city-to-city network map shown in figure 4.1.1 exhibits the numerous linkages Rotterdam, Hamburg and Frankfurt hold that connect them to their investing cities around the globe, and in thus shows the cities that link them to one another. The bolder the line, the stronger the connection is between the cities. For instance, Rotterdam’s boldest line is with Dusseldorf, followed by Paris, London, Irving, Philadelphia and Hong Kong, prompting the notion that Rotterdam has the strongest investment flow relationship with these cities. Hamburg’s strongest links are with Stockholm, Houston, Amsterdam, London, and Paris; and Frankfurt’s investment linkages are the boldest with New York, followed by Hamilton, Fairfield, Washington, London, Paris, and Tokyo.

Furthermore, ostensibly Rotterdam’s networking range is considerably smaller than Hamburg and Frankfurt’s. This could be due to the lack of diversity in Rotterdam’s economy. Hamburg and Frankfurt share 22 links, suggesting that their economic palette contains clusters that are appealing to a relatively large number of cities. Rotterdam and Frankfurt share six links, and Rotterdam and Hamburg are connected through seven lines- six shared links with other cities and one direct bond. It is important to note that only Rotterdam and Hamburg are directly connected to one another. All three share links with nine cities and their markets, with Paris and London being the strongest common links. The nature and scope of the interest of Paris and London in Rotterdam, Hamburg and Frankfurt is presented in the table below.

Table 4.1. 2: Table showing the nature of the relationships Rotterdam, Hamburg and Frankfurt share with Paris and London as extracted from FDI Market.com

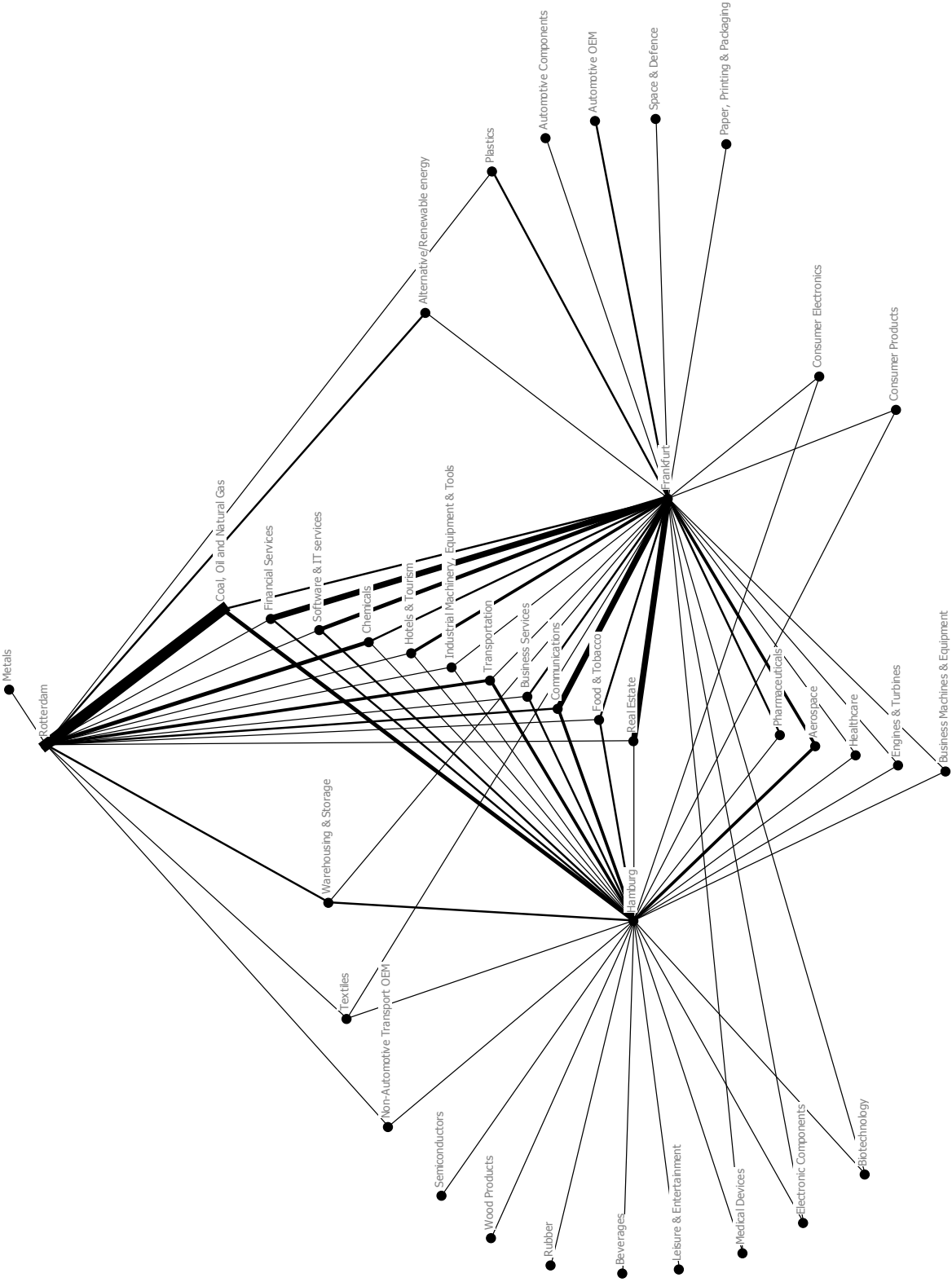
| Investing City | Number of Projects | Sectors | Destination City |
|----------------|--------------------|---|------------------|
| Paris | 3 | Financial Services and Chemicals | Rotterdam |
| London | 3 | Food and Tobacco, Communications, and Financial Services | Rotterdam |
| Paris | 7 | Food and Tobacco, Chemicals, Aerospace, Business Services, and Financial Services | Hamburg |
| London | 11 | Business Services, IT, Communications, Financial Services, Real Estate, Non-Automotive Transport, and Consumer Products | Hamburg |

| | | | |
|---------------|----|---|-----------|
| Paris | 16 | Pharmaceuticals, Biotechnology, IT, Business Services, Financial Services, Chemicals, and Real Estate | Frankfurt |
| London | 20 | Transportation, Business Services, Hotels and Tourism, Communications, IT, and Real Estate | Frankfurt |

Once again, Frankfurt appears to be the most appealing city for investment out of the three. The number of projects initiated by Paris and London in Frankfurt is considerably higher than the number of projects in Rotterdam. Although Rotterdam’s leading sector is transportation, Hamburg receives more investment from Paris and London in related activities than Rotterdam does. The strong links to Paris present a strong argument for competition between Rotterdam, Hamburg and Frankfurt in the chemical and financial services sectors. Moreover, they further strengthen the argument that Frankfurt is diversifying its economy through expansion into more science oriented economic clusters.

In figure 4.1.2 the questions of versatility and market potentials are further explored, as this UCINET network map shows the cities’ strongest economic sectors and highlights those that they have in common. As in the previous UCINET map, the bolder linkages represent stronger interest and activity in particular sectors. Rotterdam and Hamburg are highly active in port-related, industrial sectors, and share many links with similar intensity, such as coal, oil, and natural gas, transportation, and warehousing and storage. Rotterdam and Frankfurt both engage in the market for alternative energy and plastics, as well as the communications sector. The two German cities both show considerable interest and activity in the IT, business services, and aerospace sectors. All three cities are present in the markets for 11 different sectors, the strongest being communications and coal, oil and natural gas. Interestingly, looking at the overall image, the technology and business service sectors appear to be the common denominators for the three cities. Depending on the magnitude of interest in these sectors, Rotterdam, Hamburg and Frankfurt may prove to be a lot more skill-related cities than is often suggested. However, Hamburg and Frankfurt are engaging in the medical and pharmaceutical sectors, whereas Rotterdam fails to make a connection. Furthermore, Hamburg appears to be the only city with a leisure and entertainment sector that is as equally active as most of the other sectors. Rotterdam’s scope of activity fails to involve much of the clusters that concern the overall attractiveness of the city to both companies and residents. If there is some activity in sectors such as hotels, tourism and real estate, these lines are very weak, and clearly not as dominant as the port-related activities. This suggests that Rotterdam does not have the capacity to accommodate other economic activities and clusters. Is this assumption true?

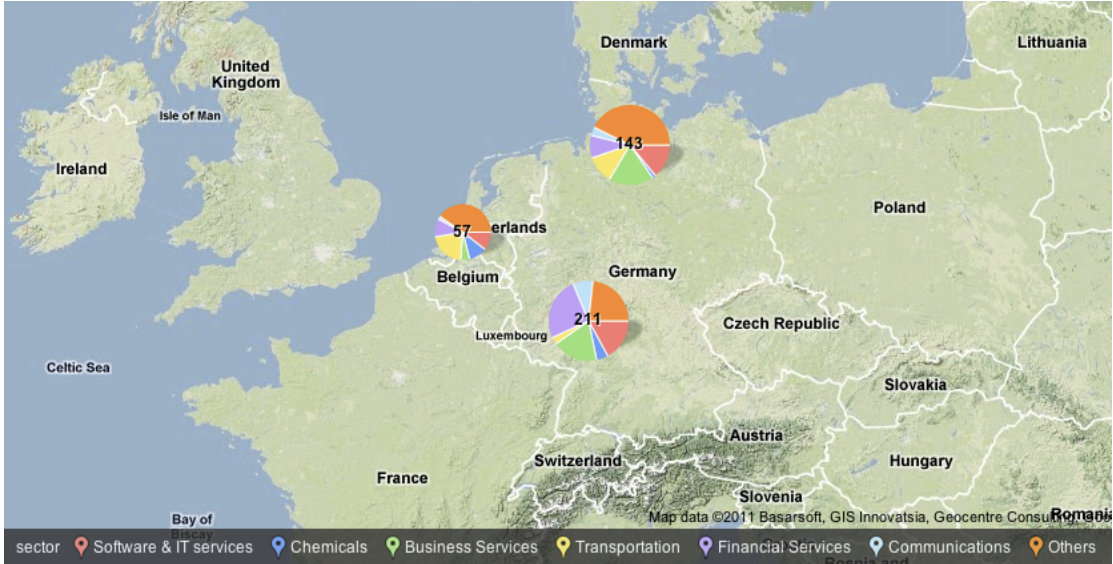
Figure 4.1 2: UCINET Network Map showcasing the economic sectors of Rotterdam, Hamburg and Frankfurt (Pajevic & Wall 2011)



4.2 Locating Agglomerations

Using data extracted from FDI Markets.com and postal codes of the investing companies' offices in Rotterdam, Hamburg and Frankfurt, GIS maps were made to identify the locations of business agglomerations in the three cities. Once defined, visits were made to these locations to help conceptualize their allure in both attracting new businesses and in inevitably maintaining a certain urban standard in the area. Having examined the hard factors determining the economic spearheads of these cities, it is important to explore the soft factors, such as some of the urban capitals mentioned in chapter two, in order to reveal other reasons for locating in a particular area that may not be accounted for in tangible, hard data. Furthermore, first hand observations help determine whether these cities do, in fact, have the capacity to expand their markets and attract new companies and investors. In Rotterdam, personal interviews were conducted with Marco Den Heijer, an official from the Gemeente Rotterdam; Arnoud Besseling, manager of business relations at the Rotterdam Investment Agency; and Kitty Tang, marketing director at the Chief Marketing Office, Gemeente Rotterdam. In Hamburg, a personal interview was conducted with Jan Zerling, project manager at the HWF Hamburg Business Development Corporation; and via electronic mail with Lena Schmidt, an official from the Hamburg Marketing GmbH. Another electronic mail-based interview was also conducted with an official from Frankfurt- Carsten Klug, project director of economic research at the Frankfurt Economic Development GmbH².

Figure 4.2. 1: Number of investments by sector in Rotterdam, Hamburg and Frankfurt



In figure 4.2.1, we are once again confronted with the overall number of foreign investment projects and their respective sectors, recorded in the FDI Markets.com database. When inquired about the arguments that make Rotterdam, Hamburg and Frankfurt stronger or

² Audio recordings from the personal interviews with Marco Den Heijer, Arnoud Besseling, Kitty Tang and Jan Zerling are available upon request, as are copies of correspondences with Lena Schmidt and Carsten Klug. Only the most relevant information is transcribed into the written form of this thesis. All images used in the study are authentic.

weaker candidates for business locations, all three cities had a story to tell. Rotterdam, presented as a “world port, world city” (Rotterdam World Story 2011), a “gateway to Europe” (Rotterdam Urban Vision 2008), a significant strategic location for the markets with a high level of accessibility (Rotterdam Facts & Figures 2011), builds a strong case for global connectivity; however, Marco Den Heijer argues that this is only one side of the story: “Our economy is narrow, it is focused too much on the port economy, and the knowledge economy remains small, as is the cultural economy”. This claim supports the data showcased in the previous section. The first port of Europe, and one of the top five ports in the world, it maintains prominence in container shipping and logistics (Rotterdam Facts & Figures 2011: 15-19), and hopes to solidify its position on the global scene as a global hub and Europe’s industrial focal point (Port Compass 2011: 27). “We want to be a hub and Europe’s industrial cluster, so it’s not just about goods coming in” says Marco Den Heijer. With a population of 610, 412, the city is also home to 166 different nationalities (Rotterdam Facts & Figures 2011: 9,10), with accessibility to match its proximity to other significant regions in the North. As a region, Rotterdam is particularly attractive due to all of the above; in fact, “Antwerp and Rotterdam are looked at as a region” and have all kinds of relations when perceived by companies seeking to locate, argues Marco Den Heijer: “On the positive side, Rotterdam as a city has a broader region, but that may also mean that companies may have their main offices in research and development moving to Breda or Eindhoven, or somewhere in between, [and thus] the question is whether Rotterdam is still competitive enough to attract the related economy [to the city]”. Looking at the investment climate and current economic trends, having the appropriate space to accommodate expanding and new markets, maintaining accessibility, addressing environmental concerns, educating the inhabitants and attracting residents, are- according to Marco Den Heijer, Rotterdam Urban Vision, and the Port Compass literature- important in growing into the city’s ambitions of becoming a global hub. The port economy must spread into the city economy: “the CEO of the Port of Rotterdam [a public company shared between the city and the state], his main point was ‘well, the city needs the port’, but I think the port needs the city”.

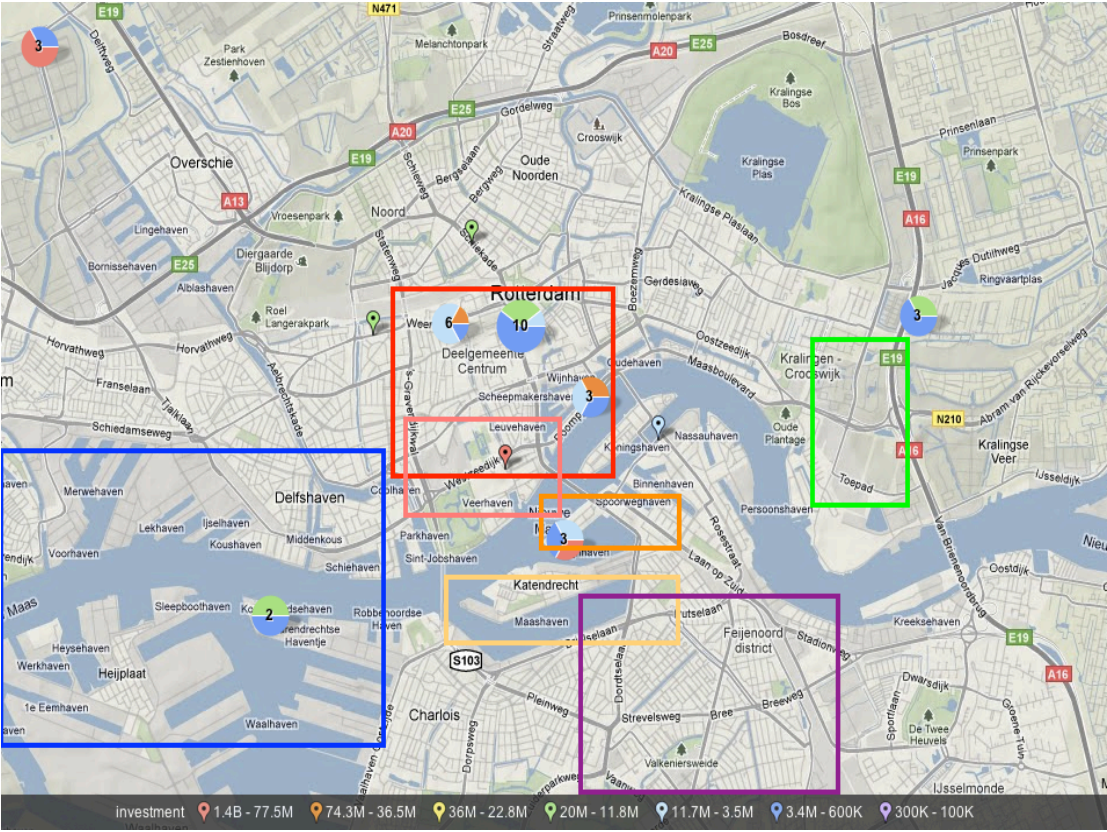
Hamburg, also a port city, has well developed port-related economic clusters that maintain its position as one of the top European ports; however, it also engages in a number of other rather significant economic activities. Furthermore, the city is also multicultural, with 185 different nationalities making up its current population of around 1.5 million inhabitants (Hamburg and the Metropolitan Region- Hotspot in the North 2008). “What is quite apparent is that Hamburg is a very strong business location in itself- Hamburg is known, statistically, to be the strongest business location in Germany; stronger than Bavaria, stronger than Munich- it is a Federal State and it is a city” states Jan Zerling, “also the location promotes itself, considering where Hamburg is located in Europe- a node between other very important cities”. The services sector reins the business environment, tightly linked to the logistics, renewable energy, aviation industry, life sciences and the well-known media and IT clusters (Hamburg and the Metropolitan Region- Hotspot in the North 2008). These links between the clusters are also reflected in their spatial organization in the city. As observed upon visit, at any spot in the city one will find a mixture of different business activities taking place; for instance, German media giants, such as Der Spiegel and Die Zeit are located in close proximity to the Chamber of Commerce to the North and the new project developments in the South- the Hafen City, which is gradually becoming the location for innovative and creative industries in Hamburg, allowing all clusters to mutually benefit from one another. Although “certain clusters do have certain areas in Hamburg where they

agglomerate; this does not mean that these companies are not simultaneously all over the city”, says Jan Zerling. The city’s main objective is to maintain the mixture of clusters and the flow of high-skilled, innovative people into the city; and this is enabled by the city’s tradition of establishing and nourishing public-private partnerships (Hamburg and the Metropolitan Region- Hotspot in the North 2008). As argued by Jan Zerling, “Hamburg has more than 800 years of trading experience, it is the trading capital; but that is more of a cultural advantage that you have to find the right partners for”.

The financial hub of Germany, Frankfurt is also internationally celebrated as a city of conventions, trade shows, and is highly specialized in knowledge economy-based services, such as IT and consulting (Frankfurt am Main 2011; Frankfurt Economic Development GmbH). The city is very well connected in Europe through various communication and transportation networks, the most prominent of which is the city’s airport- Europe’s second largest (Frankfurt am Main 2011)- and the endlessly busy train station. Moreover, the city has “high frequencies of connections to ‘alpha’ global cities like London, Paris, New York”, argues Carsten Klug. He also claims that Frankfurt aims at keeping “infrastructure always at a high level, so that people can get quickly from one point to the other; therefore city planning has to be well done in calculating traffic flows induced by changes... so we offer an efficient place to do business because you do not waste so much time in traveling”. Connectivity and time efficiency, ergo, go hand-in-hand with maintaining the already existing high levels of business activity in the city. Located in the Frankfurt-Rhine-Main “power region”, Frankfurt alone generates more GDP per job than all of Germany, and is host to over 52,000 enterprises and over 300 banks (Frankfurt am Main 2011; Frankfurt Economic Development GmbH n.d.). The main economic clusters of Frankfurt are financial and business services; trade, catering and transportation; public services, and manufacturing, and a rapidly growing chemical and life sciences cluster due to infrastructure and services already in place to support its development (Frankfurt Economic Development GmbH n.d.). As far as the investment rate is concerned, “just look at the many construction sites that you will always see in Frankfurt” says Carsten Klug, “no other city in Germany is so dynamic”.

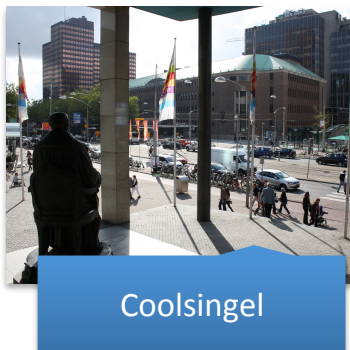
Frankfurt has by far the largest amount of investing companies actually located in the city out of the three used in this study. Having listed the general attributes that make these cities attractive at first glance, and the cities’ main objectives in enhancing or maintaining their attractiveness, it is important to look deeper into the ingredients that bring these ambitions closer to reality, as well as the obstacles that make that journey a little more difficult.

Figure 4.2: Locating Agglomerations: Investment in Rotterdam



This figure shows the amount of investment going to certain points in Rotterdam, and also marks prominent areas in the city that are currently defined as spaces for economic activity, leisure, education; are in the process of being revitalized; and areas perceived as problematic by the municipality. The area with most investment activity is the city center, Cooolingel (the red rectangle), where the City Hall, main municipal offices, the Beurs- world trade center, the mainstream commercial area, business offices, and the central station are located- all within walking distance from the banks of the Maas river. Giants such as Unilever and ING are currently located on Weena street, and are approximately three minutes walking distance from Rotterdam Central, which is currently being renovated to accommodate numerous rail tracks, expanding metro lines to Den Haag, tram and bus lines. “An office building here at Weena- one of the prime locations [for businesses]-, you pay at least twice as much in Amsterdam for the same type of location” says Arnoud Besseling, while discussing the good price-to-quality ratio Rotterdam offers companies choosing a location, “we are redeveloping the whole central district; we already see Shell coming back, Petrobras is coming- all around the area of the central station”. Moreover, he argues that the expanding transportation network in Rotterdam allows companies to remain in the city while the employees live in the neighboring areas, thus reducing their chances of relocating their offices: “We would rather have people wanting to live in the city, but we do not mind if they locate their offices here and live in the Hague”. Marco Den Heijer also lists the brain park, located right next to the Erasmus University campus (green rectangle), Rotterdam Alexander, and the Rotterdam/ Hague Airport area in the north as current and potential areas of business agglomerations. These areas, however, are not as active as the city had hoped due to the financial crisis: “of course, we still want to attract, but we want to limit to most desirable locations and really concentrate those areas”, says Marco Den Heijer. Other

areas showing economic activity are the Maasboulevard, around which Ernst & Young, and Maersk Benelux BV are located, and West Blaak, where the Bank of China has its branch office, in the city center. Both lead directly onto the Erasmus University campus and its adjacent brain park in the west-direction, and to the Erasmus Medical Center and Museum Park to the east (salmon rectangle). Considering the prominence of the medical center (Erasmus MC 2011), it is strange that the city has not yet established a strong medical cluster in the area. Marco Den Heijer argues that the formation of a medical cluster is one of the city's ambitions.



Coolingsingel



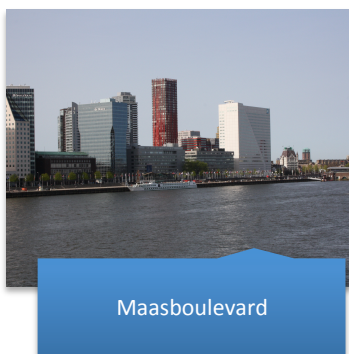
Beurs World Trade Center



Witte Huis,
Maasboulevard

Apart from the available space- and the good value of the same-, there are other factors that the city offers that are considered attractive by the investing companies. “The strong points are that we have a very multi-lingual working force here, of course also because we are a very multicultural city; we also have a very strong history of doing business- we have over 400 years of experience in trade- that gives Rotterdam a business mentality that attracts companies”, argues Kitty Tang. Although Rotterdam is very well connected and accessible, both Kitty Tang and Marco Den Heijer believe that the low numbers of high skilled residents is a problem: “We see that if families are moving out, a lot of facilities will disappear”, says Kitty Tang. Low pricing may be good for the companies, but it is a coin with two sides for their employees’ decision to reside in Rotterdam. Marco Den Heijer claims that the south of Rotterdam (the purple rectangle) is in critical condition and requires most care: “The problems are highest in the south; the quality of housing is a problem, but the quality is the same in Amsterdam- the prices are lower in Rotterdam, but people still choose the former”. Kitty Tang believes that safety is an issue, and Arnoud Besseling claims that the proximity to important, larger government institutions, more international schools for foreign children, and overall likeability, determine individuals’ preferences as far as residential quality is concerned; yet, Marco Den Heijer argues that the problem is more deeply rooted. “If you look at the city as an elevator- people moving up socially- this more or less malfunctions”, he says “it has to do with the in-stream, people coming into your city, it is too much for Rotterdam, especially in the south, because the price of housing attracts such a big group that the elevator gets stuck, and the at the top we are losing too much” because of depleting residential quality. This problem is not only urban and

economic, but also political, and thus highly controversial. The city hopes, however, that by looking at the stronger areas, and working together with all of the city's stakeholders, the benefits will spread unto the surrounding, less attractive neighborhoods (Kitty Tang; Marco Den Heijer; Rotterdam Urban Vision 2008). This type of spillover has already been observed in Kop Van Zuid, Rotterdam's new hip location, that has managed to attract more service-based and creative clusters to locate there (orange rectangle). The city's highest buildings are located in the area, with Deloitte occupying one of them, along with the Port of Rotterdam Authority, and KPN Telecom each having remarkable structures of their own. Old warehouses were turned into a hotel- New York, one of the city's finest-, photography museum and restaurant- Las Palmas-, and other skyscrapers were for grabs exclusively to residents- New Orleans and Montevideo tower. The New Orleans tower is also home to an art cinema complex, Lantaren Venster, which in addition to film organizes jazz concerts. Speaking of cultural and leisure capital, Rotterdam has quite a few good locations in which the creative cluster could boom. The Museum Park clusters the NAI, the Netherlands Architecture Institute, the Kunsthall, the Natural History Museum, and the Boijmans van Beuningen Museum together (salmon rectangle). Nearby is the Witte de With street, the most vibrant of all cultural areas in the city, with numerous bars, restaurants, a theater (RoTheater), exhibition halls (such as the Witte de With Contemporary Center for Art/TENT), and concept stores.



Maasboulevard



Erasmusburg and Kop Van Zuid (view from the Euromast)



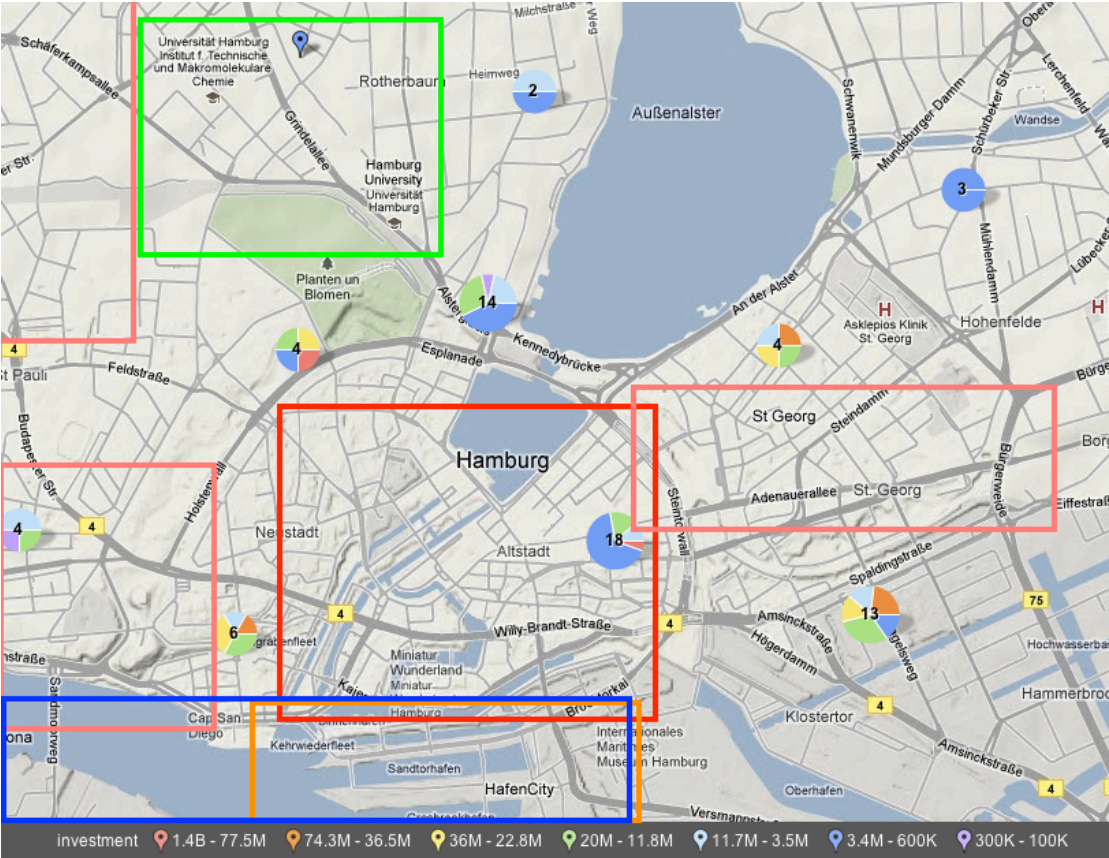
Deloitte and AKD on Kop Van Zuid

The creative cluster, however, is more of a local focus for Rotterdam, claims Kitty Tang. It reaches as far as the national level and no more despite its capacity. A few festivals are well known internationally, but the city has a lot more to offer that could attract visitors and investors from abroad. The cultural scene is heavily promoted by freelancers, such as We Own Rotterdam.com, who would like to see Rotterdam's hip side gain more recognition; such underground networks, however, only reach the few that are on the lookout.

The area's modern, appealing architecture is another element that has proved to be a vital ingredient in gaining lots of worthy attention. Along with an ambitious environmental agenda concentrated on the port area (blue rectangle) and its on-going expansion and redevelopment (Rotterdam Climate Initiative 2010), the creative cluster has come to attention as a potential solution to the city's problems: "we have a lot of themes that we are

working on: like architecture, the climate- our ambition is on a world level, that is our story” says Kitty Tang.

Figure 4.2. 3: Locating Agglomerations: Investment in Hamburg



Looking at the investment map of Hamburg, it is apparent that there are multiple investment points spread throughout the city; in other words, there is virtually an absence of a designated agglomeration area in Hamburg. Multiple investing companies are located within the city center (red rectangle), but there are also higher volumes in the surrounding areas, and numerous lower concentrations at random points. North of the city center, close to the university campuses (green rectangle), numerous companies and consultancies are located, along with embassies and exclusive residential quarters. Endlessly vibrant, the city center is full of culture, history (Rathaus), office spaces, high-end department stores (Alsterhaus) and shops in the Neustadt, an infinite number of cafes and restaurants serving everything from Asian to South American to European cuisine. The long-standing tradition of trade is most certainly felt in the city, yet this is not the definitive factor that companies rely on in Hamburg. “We are not always told what the specific requirements of companies are, but what you can say is that it is a mix of different requirements”, says Jan Zerling. In fact, the history is just a foundation the company can build on; what keeps the structure from collapsing, however, is the strength of the building material the city offers. Jan Zerling claims, “it is a mixture of a few hard facts, a few soft facts, and very soft facts that you bring forth and that you hope are the right mixture for companies”. With over 120,000 companies registered at the Chamber of Commerce (Hamburg and the Metropolitan Region- Hotspot in the North 2008). The city does its best to offer the same services to companies regardless of their size or stature. Furthermore, the city aids companies in cutting through Germany’s vast

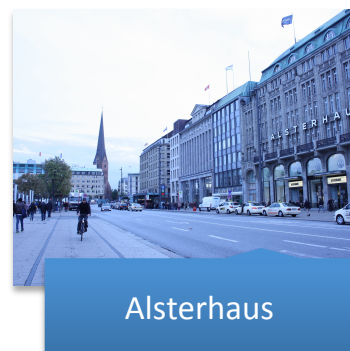
red tape, which is one of the negative factors influencing companies' decision to locate there. However, the long lists of rules and regulations have their benefits, argues Jan Zerling: "once you're through with the process, you know it will work". Apart from the mediation services to help with the authorities, the companies have also listed the city's "growth environment", and overall "vibrant scene" that make Hamburg a pleasant place for residents, says Lena Schmidt. Hamburg, in itself, has become a brand. The city is endlessly green- it is the European Green Capital of 2011-, it is located between two rivers, the Elbe and Alster (the blue rectangle represents the port area), with numerous public spaces bursting with commercial activity- partly due to the port's tax-free status-, an art scene, and whole districts for culture and leisure (salmon rectangles) encircling the city center. It is quite apparent that Hamburg puts quite a lot of thought in ensuring that its inhabitants are occupied at any location in the city. The city does, however, have problems with space availability. "Currently there are two ways that Hamburg addresses the issue: one is that as a metropolitan region Hamburg works closely together with other areas in the region with more space, and the other refers to the preferences of the enterprise", says Jan Zerling. Collaboration with companies vis-à-vis investing into construction and development is an active solution, the perfect example of which is Hafen City (orange rectangle).



Rathaus/Altstadt

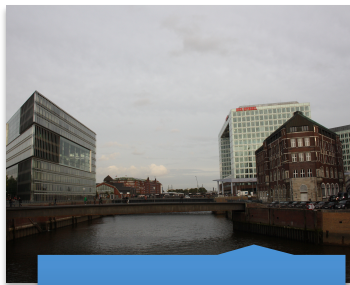


Mitte West/
Neustadt

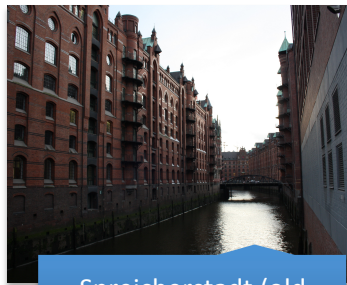


Alsterhaus

Hamburg's green agenda is where a lot of the investment is going into, especially since this initiative ties strongly with the emerging renewable energy sector the city looks to boost (Jan Zerling; Hamburg and the Metropolitan Region- Hotspot in the North 2008); and it is the new Hafen City that is placing Hamburg so highly on the environmentally-friendly scale (Hamburg: European Green Capital 2011). It is Hamburg's avant-garde approach to urban reinvigoration and development, and is currently one of the city's most important projects. Aimed at expanding the city center further onto the waterfront: creating new residential spaces, and transforming the historical warehouses into office and educational facilities- Hafen City is the answer to battling the depleting industrial area that it once was (Hafen City Hamburg- Projects 2011).



Der Spiegel, Hafen City



Spreicherstadt (old warehouses), Hafen City

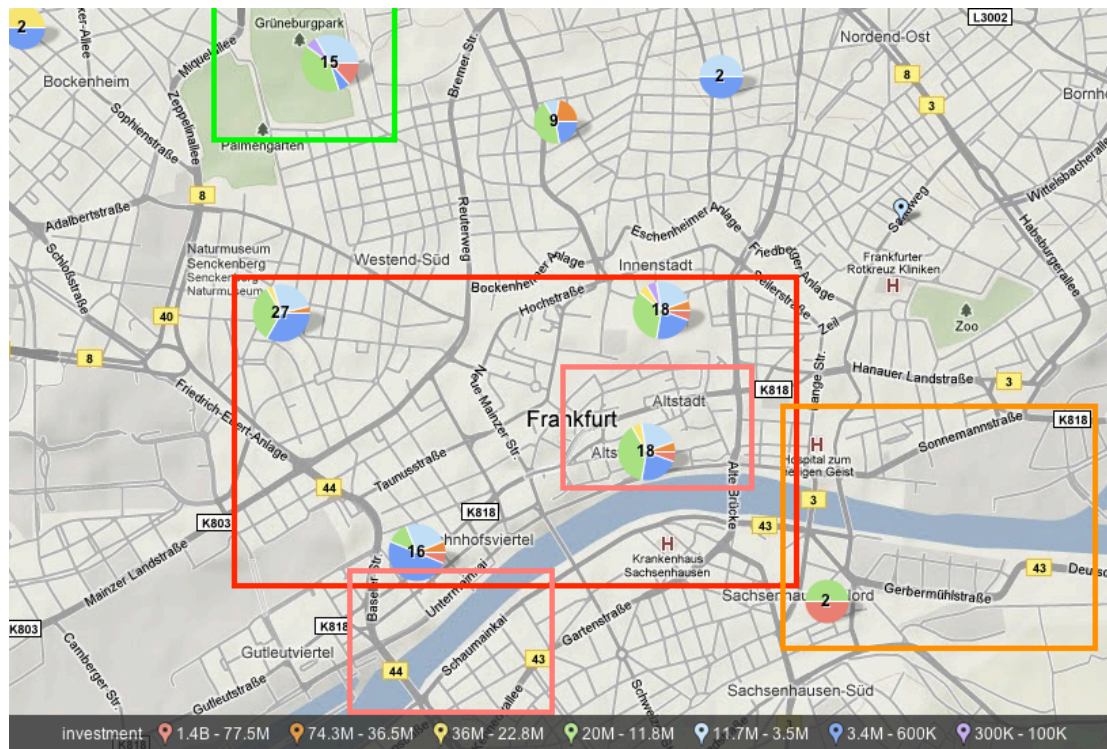


Residential buildings, Hafen City

With a total area of 157 hectares, most of the construction in this new district has already been completed, with housing, schools, and office spaces already in use and attracting immense attention. Germanischer Lloyd, the Spiegel publishing group, Greenpeace and Unilever have already settled in the area (Hafen City Hamburg- Projects 2011), the latter choosing a modern architectural gem as the base for its headquarter operations covering Germany, Switzerland and Austria. Innovative planning and architecture are the most striking existing attributes of Hafen City; “it is important, therefore, not only to attract powerful and financially strong investors, but also to find developers willing to cooperate in setting quality standards and treading innovative paths” (Hafen City- Projects 2011; 7).

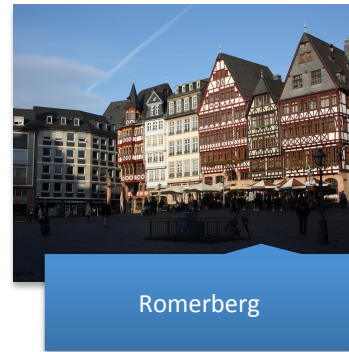
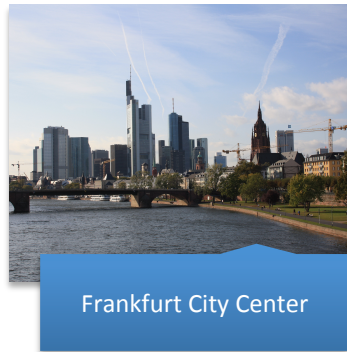
Wherever companies may choose to locate in Hamburg, they will be provided with the same services, scope of activity, and proximity to other clusters. Almost every street in the center and inner periphery has office buildings, residential buildings, a café and a restaurant or two. It is a city that is mainly concerned with life and living. Places of work and places of leisure are mixed together and work well with each other to produce an image of Hamburg as a true metropolis. No cluster stands out as the sole spearhead of the city’s economy, nor does a specific sector or activity define its identity. There seems to be a place for everything in Hamburg.

Figure 4.2. 4: Locating Agglomerations: Investment in Frankfurt

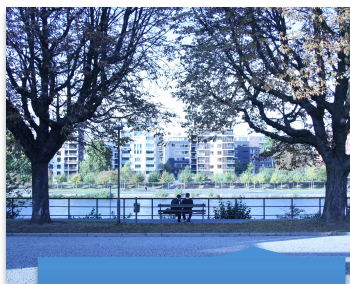


Already upon first glance one can state that Frankfurt is most definitely an entrepreneurial city: from its skyscrapers, office buildings, convention centers down to streets filled with business men and women running errands. The heart of the city (red rectangle) is a cluster of business towers, such as the Silver Tower, Commerzbank Tower-Frankfurt’s tallest building-, and the Main Tower with an open terrace from which visitors can marvel at the skyline, and many others. Walking from the central station to the Neue Mainzer Strasse, where the giants sit, one comes face to face with a massive tribute to the Euro. The city center does have historical sites- Romerberg, Goethe Haus (salmon rectangle)- and streets lined with late 19th, early 20th century villas, but these are inevitably overshadowed by the business complexes rising right above them. Moreover, most of these villas host numerous consultancies and bureaus. The emphasis on business is almost at every turn. And this is reflected in the high numbers of investment projects concentrated in this area, as shown on the map above. Carsten Klug explains that this agglomeration of business activity has been predetermined in the High Rise Buildings Development Plan/Hochhausrahmenplan, and more areas have been designated for use around the airport, Cargo City Sud and Gateway Gardens, “for highly mobile and globally active companies”. East of the city center is the Industriepark Frankfurt-Hochst, specifically designed for the growing chemical, biotechnology, and pharmaceutical sectors (Industriepark Frankfurt-Hochst 2011; Carsten Klug). The Bornheim district, north-west of the city center, is the main residential area, along with the south bank, which is also where most of the city’s museums and exhibition halls are located (salmon rectangle). The Ostend district (orange rectangle), is where most of the existing industrial infrastructure (factories and warehouses) is being redeveloped for commercial and leisure use. For instance, the old Grossmarkthalle is currently being revitalized to become the home of the new European

Central Bank headquarters (Carsten Klug; EZB-Neubau 2011). These conversions of space for civilian use, argues Carsten Klug, are an opportunity for the city.



As far as quality of life in Frankfurt is concerned, Carsten Klug argues that inhabitants have a lot at their disposal, from “quick access to nature” both within the city (Grungurtel Frankfurt, a green belt encircling the city center, and river banks) to the external “mountainous areas (Taunus, Odenwald, Spessart), and wine growing areas (Rheingau, Rheinhessen, Hessische Bergstrasse, Franken)” all easily accessible and ideal for hiking and biking trips. Moreover, he states that Frankfurt is a safe city with a low crime rate, mostly due to the absence of poor quality residential housing, and smart planning of public spaces; and the 35 percent of the immigrant population (Frankfurt am Main: Statistics 2011) seems to be rather well integrated in the city. Although invisible to the naked eye, the cultural sector of Frankfurt is another very important element that breathes life into the machine; the humanizing factors that the city lacks in its overall urban scheme, it makes up for in hidden soft factors that are perhaps even more powerful than in a city that screams culture at every turn. Books are everywhere in Frankfurt- quite literally. It comes as no surprise, then, that one of the world’s most famous book fairs- the Frankfurt Buchmesse- takes place here annually, bringing some of the most celebrated authors to its streets. Overnight the city metamorphoses into a showroom of contemporary literature.



View of the Ostend from the south bank



Construction on the Ostend



New residences in the western part of the south bank

Frankfurt's ambitions, apart from maintaining high standards for infrastructure, are also to make room for more green public spaces, construct more energy-efficient housing (Frankfurt am Main and its way to Passive House Capital 2009), and compete for the title of next European Green Capital; furthermore, Frankfurt does not want to stop at being a financial center- it wants to become *the* entrepreneurial city "by helping people start their own businesses", says Carsten Klug. He does not see any problems within the city, apart from limited space for expansion that is already being dealt with through revitalization of existing infrastructure; he does, however, bring to light external threats that could shake Frankfurt's current status and ambitions for the future: the city is in a "politically difficult situation as [German] competitors are city states", which could sway the federal government in the direction towards meeting their own ambitions, and cause the services sector to move elsewhere in Germany.

Referring back to Rotterdam, apart from plans for the revitalization of the south and gentrification of the north, transformation of some of the port areas into public recreational spaces is also another idea for reinvigorating the city and attracting more residents and companies (Rotterdam Urban Vision 2008). Although the city is green, these areas are lacking in quality and are thus often overlooked. The city hopes that by broadening the economy, the city's market share will improve and there will be a spillover from the port economy into the city economy (Marco Den Heijer, Rotterdam Urban Vision 2008). "The quality of living, housing, education is more important to us as a port to develop, than the other way around; we really hope to become a city where the level of education is high and where people want to live", says Marco Den Heijer. He and Kitty Tang share the opinion that getting investors and business newcomers to believe in the potential of Rotterdam is the key in developing new plans and ideas of how to boost both the city economy and living quality. Boosting sectors such as the healthcare, chemical and energy clusters would bring more variety to the dominant port-related industry. "It is not just one particular element, it's the combination of these factors and we are not sure where to start", says Marco Den Heijer. Kitty Tang adds that incorporating all stakeholders is problematic since not all have the same ideas for the image of Rotterdam.

Chapter 5: Conclusion

In retrospect, although Hamburg and Rotterdam are both port cities, and one would expect to find most similarities between the two not only in terms of economic activity, but also in urban topography, looking at the data presented in the previous chapter this seems to be an inexact conjecture. Hamburg places a lot of emphasis on maintaining a balance in the eclectic mix of its economic activity and cultural and leisure capital rather than focusing on one specific sector. This is, perhaps, the reason why the city's port component is not under the spotlight as much as it is in Rotterdam. Both cities have a long history of trading experience, a managerial mentality, and both promote excellence in logistics in their pitches for higher competitive status. Hamburg, however, has more aces up its sleeve by having a highly diversified economic palette. In Hamburg, residential quality and the economic agenda go hand in hand- they have to, in order to maintain the mix. In Rotterdam, the numerous transport links with its neighboring cities, although admirable, appear to be providing companies with more incentive to, yes, locate in Rotterdam, but provide homes for their employees in other points along the transportation lines. This agglomerates businesses in the city, but feeds the decaying residential quality potentials. Sooner or later, Rotterdam would become even more entangled in this vicious circle, and will ultimately risk losing a metropolitan character in entirety and thus, inevitably its chances of expanding its market. This scenario only highlights the importance of realizing just how interlinked urban development is with the economy and the business environment. Like Rotterdam, Hamburg is revitalizing some of its old port areas, and turning them into a mini city with residential capacity, education, cultural and recreational facilities, and office spaces- Hafen City. A project like this has managed to attract architects world-wide, and has hired a considerable number of Dutch architects to work on the plan, along with a Rotterdammer star architect- Rem Koolhaas (Hafen City Hamburg 2011). This further ties into Hamburg's creative cluster, enhancing its attracting capacity. Ultimately, Hamburg is unconsciously- or very skillfully- finding ways to form synergies between its numerous clusters and keep individuals interested in remaining in the city. Moreover, Hamburg was not chosen as the European Green Capital 2011 because it has successfully battled all environmental threats, but because it has the ability and plans set in motion to do just that (Hamburg: European Green Capital 2011). Hamburg offers the perfect example of Ann Markusen's Marshallian industrial district. Being so multifaceted is what prevents companies, residents and visitors from questioning the city's potential, and this ever-present confidence is yet another element that allures companies and forms trust bonds.

What is surprising, however, is how many ostensible similarities Frankfurt shares with Rotterdam. Although polar opposites on paper, the two cities have common urban traits: from a distinctive skyline, to an entrepreneurial atmosphere and lack of immediate charm. Both cities are smaller than Hamburg, both face competition threats from within their respective countries, and both look for innovative ways to convert existing infrastructure into more attractive areas for business- in Frankfurt it is the Grossmarkthalle, in Rotterdam it is the Van Nelle factory, which is now one of the most popular office locations. Furthermore, both cities are located on Europe's economic axis, also known as the Blue Banana (Brunet 1989); and are considered to be the most international cities (in terms of population) in their respective countries. Despite apparent similarities, Frankfurt does not share Rotterdam's problems. The city scores considerably higher than Rotterdam in the urban competitiveness

reports, exhibits more connections, and hosts over 200 of its investing companies within the city. Their focus sectors also differ, but their plans to include the life sciences as active economic sectors are common ambitions. Frankfurt, however, has already designated space for these activities; in fact, Frankfurt, unlike Hamburg, defines space for business activity and somehow manages to work in the rest, like a hub-and-spoke model. Culturally, both cities are significant: Frankfurt being the birthplace of Johann Wolfgang Goethe, and Rotterdam the home of Desiderius Erasmus. Both have universities that pay tribute to these great thinkers, and both uphold their legacy. Frankfurt, however, has taken a step further to attract the creative class from around the world by establishing itself as the city of literature through its annual book fair. This also attracts other arts onto the scene, and many exhibitions pass through Frankfurt before moving onwards to other cultural capitals. Ultimately, Frankfurt is focused on strengthening its knowledge economy by offering a variety of services. The undying focus on maintaining infrastructure levels at their highest is yet another reason for inhabitants to linger around.

Referring back to the questions posed at the onset of this study -the location of investments in Rotterdam, Hamburg and Frankfurt, leading economic sectors, capitals, networking structures, and finally, the lessons learned- the research has shown that companies like to cluster around areas with most activity. Positions close to the center are almost considered a given, but Hamburg has shown that the heart of the city is not necessarily the heart of urban activity. Hamburg is full of vibrant locations spread all throughout the city, and investment flows to and from these areas, and supports the mix. The emphasis is on locating in areas where contributing to the economy and supplying the market is not the sole objective. Most of the agglomerations in Hamburg are located either within or in close proximity to residential neighborhoods, parks, entertainment venues, and so forth. The same can be said of the agglomerations in Frankfurt and Rotterdam. However, both appear more confined to the city center. Frankfurt is revitalizing old structures on the outskirts of the city, hoping to add more zest to those areas as well. As far as the leading sectors are concerned, both Hamburg and Frankfurt have service-oriented sectors- business and finance respectively-, which are in themselves quite broad and can cater to and accommodate various forms of economic activity. This is reflected in the structure of their networks, which are considerably larger than Rotterdam's. This also explains the significantly larger number of investment projects taking place in Hamburg and Frankfurt as opposed to the amount set for Rotterdam. As for the lessons, Rotterdam can learn a lot from both Hamburg and Frankfurt, which is why this study recommends the formation of a collaborative, complementary relationship out of the global nexus of competitive cities. The multitude of problems that Rotterdam is facing makes it difficult to identify a starting point. However, looking at the information provided by the city officials, it would appear that a diversion from the port focus is unquestionably necessary. Considering that the port is both nationally and internationally significant, a diversion cannot be absolute, but must be enough to propel other sectors to grow. Keeping the sectors port-related is an option, but making sure that the sectors can tie in with other activities is a challenge as long as the port industry is as dominant as it currently is. Plans for the port area should focus on attracting other services by taking a risk and proposing projects such as Hamburg's Hafen City to take place. Although the new Maasvlakte II aims at both expanding the port and providing recreational spaces, the latter which are to extend down the Maas to the hinterland (Rotterdam Urban Vision 2008), perhaps more could be done to attract attention, such as the construction of a new exhibition or concert hall right on the waterfront in the midst of

the port. Although there are numerous ways of taking unconventional areas, such as the port, and turning them into vibrant residential districts, this is easier said than done. Requiring serious funding, dedications, and- most of all- time, such transformations are not exactly one's average walk in the park. Especially for cities like Rotterdam, whose problems are more deeply rooted than in Hamburg and Frankfurt. Residential quality has been repeatedly listed as an issue, creating discrepancies and tensions, and resulting in higher crime rates. The city hopes to share the burden of the increasing lower-income residents with other neighboring municipalities and then have more space to rethink the fraught areas, but this may not be a solution in the long-run. It is not enough to create residential buildings- there has to be a mix to keep the area alive, as repeatedly shown by Hamburg. Revitalized areas should not only accommodate a high-skilled, higher-income population, but also offer facilities to transform the existing one into exactly that. Education, therefore, is imperative- a knowledge economy is imperative. According to Kitty Tang, Rotterdam's graduates would like to remain in the city, but ultimately leave because of the social networks they have established elsewhere in the country. Rotterdam must offer space for such networks to form. The moment this is enabled, an incentive to remain is to follow. And the only way to attract youth is by offering the softest urban factor- inspiration. This inevitably brings the creative cluster into question. The city mentions the creative cluster, but not as an international as much as a national objective. This needs to be turned the other way around, as it has been in Frankfurt, which is now permanently on the map as a location for the arts. Furthermore, as stated by Carsten Klug, Frankfurt is the only city in Germany financing and maintaining its creative cluster all on its own. Since Rotterdam already approaches investors with its vision and prospects, finding ways to tie in culture and creativity with this pitch might bring more interesting results. The municipality needs to connect with the already existing non-governmental, freelance organizations that stand behind Rotterdam's cultural capacity and work together to attract visitors, artists and investors from abroad. The results of this collaboration may diversify the economy by introducing a vibrant cultural and creative cluster, capable of standing up to both Hamburg and Frankfurt. Moreover, this would inevitably create more links with cities in which cultural, leisure and creative clusters are important components of their overall attractiveness. Similarly, the existing port-related clusters must find ways to tie in with other clusters in Rotterdam that could push companies into locating in the city and engaging in projects. This also offers more ground on which the city can reach out to others and broaden its network. For instance, the existing chemicals sector should appeal to pharmaceuticals and healthcare and engage the existing medical center; the communications, business and software and IT sectors could set the foundation for a possible media center. The university could spread throughout the city to both conduct and exude research that could benefit both the companies and the residents. Ultimately, the city needs to be more oriented towards meeting all of its user's needs, and creating opportunities and spaces in which all stakeholders could participate to improve the city economy, and, naturally, the living conditions.

When promoting their city as an ideal location for companies, all cities tell similar stories: they have a history of doing business; they are well connected, have a good work force, are environmentally conscious, vibrant, and have potential to become global cities with an ability to meet a vast pool of needs. Hamburg and Frankfurt both have hard facts that support these claims; Rotterdam stutters. What Rotterdam offers is a vision and a

promise. Both of which are ambitious; but even soft facts can be strangely concrete if the focus is right.

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