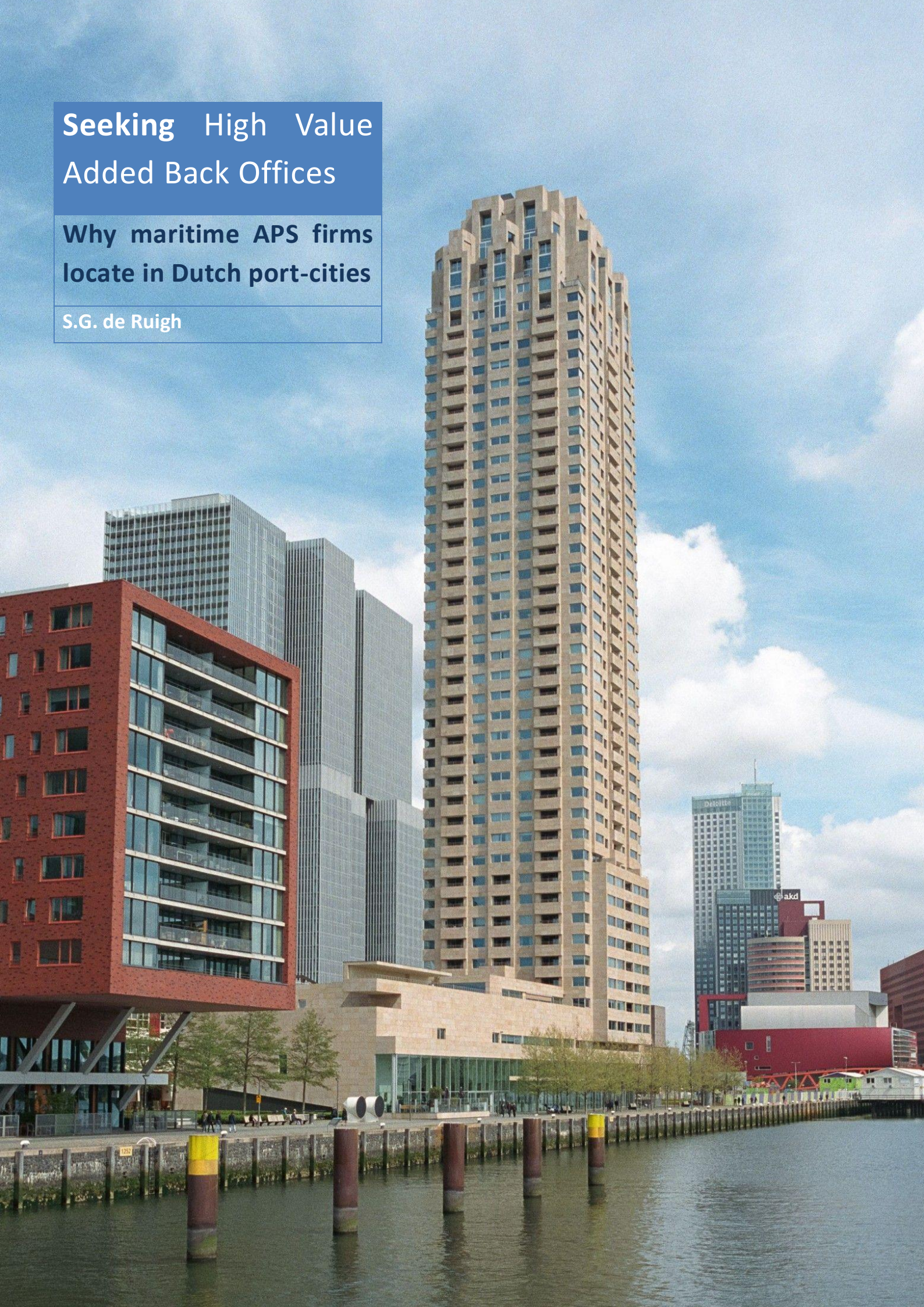
Seeking High Value Added Back Offices

Why maritime APS firms locate in Dutch port-cities

S.G. de Ruigh



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I Preface

Dear reader,

As globalization processes evolve, society faces a continuous need for transformation in order to cope with ever changing environments. The port-city poses no exception to this rule. This thesis attempts to shed a light on areas within economic geography that lie outside of the usual cannon, focusing on the interconnection between land and sea, local and global, and city and port. In essence, this thesis connects local urban functions with global maritime equivalents and in doing so, takes the perspective of the firm.

We can distinguish a lot of different port-cities with varying concentrations of urban and port functions. This raises the question of why and where do maritime functions cluster in space? What role do advanced producer services take in orchestrating maritime space? And do ports sustain cities or do cities enable ports?

In answering these questions, I found it to be interesting to examine the locational behavior of firms across urban-maritime space. Why do firms opt to locate in large ports, in world cities or so-called international maritime centers? What explains the global maritime division of labor? And how is this division related to local urban diversity? A red line that intertwines this research is that the best-functioning port-cities are those who are able to align port and urban interests, a fragile balance that when struck can produce significant synergy effects, as urban and maritime sectors cooperate to achieve more in sum than in their parts.

Choosing to conduct qualitative research has certainly proven to be a just fit to the topic at hand. The perspective of the firm is often neglected or simply taken to be equal to economic motivations. Too often, research focuses itself on analyzing cluster formations by regional assets without considering the perception of those regional assets by the most important actors in economic processes; firms. With the perspectives of 10 interviewed AMPS firm respondents, I have been able to gain an inside-out perspective of the location variables at play for these firms in the Dutch port-cities of Rotterdam and Amsterdam.

This process has been very insightful for a relative outsider to experience the workings of the maritime (services) sector. The interesting combination of diversity in subsectors, the sheer size of projects and capital flows and the personal nature of business have particularly struck me in exploring this world. It is therefore that this research is quite extensive in its structure, as there are simply so many dimensions to properly contextualize, explain and understand before a (relative) outsider can really grasp the processes at play here. With that said, I would encourage readers to certainly cherry pick the relevant chapters for them in reading this research. An experienced reader could do with the executive summary, while a novel reader might be well off in reading the context chapter.

I could sense that all the respondents that I have spoken to during this research, were very passionate about their line of work and were proud to represent their firm in providing advanced maritime producer servicing. They truly identify themselves with their firm and job, committing themselves to the maritime sector for the long term. This passion has certainly left its effect on me which is why I am proud to present the findings of my research here in this document.

Sincerely yours,

Bas de Ruigh

II Abstract

The socioeconomic contributions of ports are increasingly challenged as many port-cities are facing the evolved effects of economic globalization. Lower value added jobs are increasingly automated in ports, decreasing the value of direct port-related activity for the port-city region. Port-cities therefore face a need for transformation towards higher value added activities. With the intensified automatization, containerization and supply chain organization spurred by economic globalization has come a great need for '*glocal*' orchestration and facilitation of ever expanding transport flows. It is in these maritime services where we can expect growth and higher value added. It is also in these services that we see a great urban component, in which there lay possibilities to co-create mutual gain between these port 'back offices' and the urban high-rises.

This thesis provides an 'inside-out' empirical perspective on the location behavior of *advanced maritime producer service* (AMPS) firms in the Dutch port-cities of Amsterdam and Rotterdam. This empirical perspective is grounded in semi-structured interviews with representatives from 10 AMPS firms located in these cities. Patterns are identified between the 10 respondents in order to indicate how AMPS firms service their clients, what sort of service networks and organizational structures they build up and what regional assets they value in their location behavior. Emerging through their perspectives and experiences, a thorough in-depth and inside-out perspective is formed upon what attracts high value added AMPS functions to regions and how port-cities can further develop *international maritime center* (IMC) functions. These empirical findings can be used academically to help determine location variables for A(M)PS firms; and can be used more practically to help improve port-city synergy and to help develop (Dutch) port-cities towards an IMC status.

III Executive summary

This section provides a concise summary of the main conclusions of this research, based on the synthesis chapter 5. These conclusions are sorted per area, matching the headers of this chapter. If interested, matching illustrations (figures 7,8 & 9) and more details can be found there as well.

Nature of service provision

- The findings of this research on the AMPS sector(s) strongly acknowledge the need for a relational perspective towards the nature of AMPS, as the sector is anchored in personal, trust-based relationships. Delivering quality work to existing clients, building up a reputation and a distinctive identity are found to be processes essential to AMPS firms in securing their livelihood.

- The intangible AMPS services are often assembled in a likewise manner to actual products and goods. I feel we can freely speak about AMPS as '*intermediate servicing'.* Cross-sectoral teams bring together key people, tacit knowledge, and external networking with (research) organizations, through which services are '*constructed*' piece by piece much alike intermediate production processes.

- The service provision of AMPS firms involves in-depth interaction between clients and (inter-) AMPS firms, creating cumulative knowledge creation processes. Knowledge creation and innovation in the AMPS sector appears to largely arise from inter-firm interaction in the creation and delivery of services and are therefore embedded in specific social, economic, political and cultural contexts.

- AMPS provision can be limited by language, values and culture. These factors play a significant role on the international level, but even exist between the examined Dutch cities, as their rivalry creates distinct local networks and local cultures that are not easily penetrable for 'outsiders'.

Nature, positionality and role of networks

- All respondents were found to have an (extensive) international network and in most cases to conduct international projects as well. Respondents are therefore significantly functionally and relationally interwoven with both the global and local level. Local AMPS firms highlight the importance of personal networks in their creation of new knowledge, while global AMPS firms highlight the concept of 'local buzz and global pipelines'.

- International AMPS respondents use their expertise centers and tightly connected network of offices as a means to create strengthened local knowledge bases around the world. These spatial developments are found to be driven by economies of scale and gaining competitive advantages. These Maritime knowledge hubs are used bottom-up by local offices, rather than being used as a top-down fronting office by headquarters.

- Spatial proximity is found beneficial only when it is proximate to the AMPS market and the locales of decision-making of (potential) client firms. The locations of production of the client firms are not so interesting to AMPS firms, who instead cluster near headquarters and other AMPS firms in their subsector with whom they exchange informal (tacit) and formal knowledge.

- The respondents clearly indicate that their knowledge of the national and local regulation, market and cultures is valuable to their client firms. This thesis finds that one of the most important reasons for having a local office is to gain access to local markets, local regulation and local cultures. AMPS offices can service their clients better if they can properly adapt their service provision to local cultures, business environments and laws.

Regional assets

- Seeking related variety in order to optimize their service provision, AMPS firms are found to locate in close proximity to diverse and vibrant urbanization economies. Proximity to the market and to a high quality urban environment is found to be most important. This behavior is anchored in AMPS requiring close proximity to the locales of decision-making and other AMPS firms, as well as skilled labor in order to i

economies found in global cities. They value inputs over outputs, but they are inevitably strongly connected to both the maritime sector and the urban economy. but they are inevitably strongly connected to both the maritime sector and the urban economy.

- Very specialized AMPS firms are more likely embedded within localization economies, having stronger and deeper embedded relations with port-related activities. With specialization comes embedded localization, as AMPS firms cater to a narrowly defined set of outputs which creates more need for proximity to these outputs, instead of inputs.

- To a certain degree, the formation of maritime clusters and the location of AMPS firms are found to be path-dependent. The competitiveness of some firms has gotten intertwined with regional maritime growth. Respondents indicate that they own their livelihood to the growth of the maritime sector in this region and this creates a strong regional mutual dependency that prohibits relocation.

IMC Policy Recommendations

- The respondents clearly indicate that they require maritime governance to be pro-active in its maritime connectivity, use of technology and institutional framework. They are clearly mixed in their perceptions of the current pro-activeness of (maritime) governance in the Dutch port-cities. Given this role, it is then also up to the government to identify, support and stimulate the maritime subsectors that have potential for the future.

- From both a spatial and relational perspective, the AMPS sector is found to shape the interrelation of urban and port functions. AMPS firms have a strong link with both the maritime sector (output) and the urban environment (input). International Maritime Centers (IMC) use a strong local presence of AMPS firms to serve as a bridge between the two.

- One area of synergy between port and city is found in the maritime institutional framework. It is in these social surroundings that maritime firms can root themselves in the urban structure, connecting the different subsectors of AMPS firms in ways that lie out of the reach of normal business contact. Maritime institutes also provide plentiful high-skilled labor and knowledge to the Dutch port-city regions.

- However, the many existing maritime initiatives in Rotterdam are in need of centralization and coordination. Now, these initiatives overlap considerably and work contradictory to their cause as their fragmentation undermines the holistic ambition towards international maritime status. Creating more unity among the maritime (services) actors helps to underline the reputation of an IMC or port-city. A coordinated institutional framework can properly transfer reputation and ambition to outside actors.

- To create more port-city synergy, Rotterdam should balance both the maritime sector and the maritime services sector; global maritime connectivity with a high quality urban environment. These synergetic effects allow port-cities to move ‘beyond the lock-in’ and cater to the demands of a sustainable future. Amsterdam simply lacks the space to expand its maritime activities to match its urban functions and therefore has limited potential in achieving more port-city synergy. The potential areas for synergy in Amsterdam are already in continuous development.

- In order to strategically couple more AMPS firms to Dutch port-cities, a very important condition then is to create a high-quality urban environment attractive enough for high value added firms, headquarters and talent. These aspects help to provide AMPS firms with the input they value and seek in a region; a large pool of skilled labor for their activities, an institutional framework that helps to develop knowledge creation and (other AMPS) offices where crucial maritime decision-making is located.

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Chapter 1 – Introduction

1.1 Societal context of ports

Why do ports matter to society and economic geography more specifically? To start, it is now common knowledge that worldwide economic organization has been uprooted in the last decades under the influences of economic liberalization and its globalization effects. Changes in the transport sector have herein been both a cause as well as a consequence. Ports, or more accurate port-cities, historically have had considerable influence in the facilitation of this transport sector, with *´over 90% of the world's trade now being carried by sea as it provides the most cost-effective way to move goods 'en masse' around the world* (IMO, 2016).[1]

As port-cities transfer these massive flows of trade, they can spur significant regional economic development and value as is shown below by the value added and employment figures of the port of Rotterdam (table 1). The value of the port to society however, extends itself beyond these numeric measurements. The port itself can serve as an excellent connection to global markets for local businesses and vice versa as global companies embed themselves with the local or regional area. A port links its host city in a vast network of trade and services that relate to port activity and (indirect) port-related activities, the dynamics of which are regularly addressed in commodity or supply chain theory.

Direct added value	€ 15.5 billion	Direct employment	90.000 people
Indirect added value	€ 6.7 billion	Indirect employment	55.000 people
Direct and indirect added value	3,3 % of GNP	Annual average business investment	€ 1.5 billion

Table 1 – Rotterdam's economic impact in numbers (National Port Council, 2011)

The societal contributions of ports have however become increasingly challenged as many port-cities are facing the evolved effects of economic globalization and technological advances. Lower value added jobs are increasingly automated in ports, decreasing the value of direct port-related activity for the port-city region. Meanwhile, port-cities handle increasing volumes of cargo which has increased localized negative externalities. As a result, there are *increased tensions within port-city societies as urban and port functions increasingly compete vis-a-vis for the allocation of scarce land*. The 'Transformation strategy 2040' issued by the municipality of Amsterdam is a good example of how land allocation can be a societal problem; this document formulates the possible path of relocation or retreat of port functions from more central urban areas, provided the development of port as well as urban functions continues along its projected path (Municipality of Amsterdam, 2013). Ports are often situated in dense areas where tensions quickly translate into planning challenges.

The 'Smart Port' platform based in Rotterdam, acknowledges this port-urban challenge and states the following concerning the societal importance of Rotterdam's port for this city-region: "*City and port alike have their own qualities, but the value added comes from combining the two, from synergy. It is important to realize that Rotterdam is not just a city coincidently situated near a port. They are one and the same. To not think this way signals untapped potential*" (Smart Port, 2015).[2] Clearly, they see there is a path for coexisting urban and port functions.

In general, it appears as though port-urban relationships are diverging. Yet there are indeed examples of port-cities in which port (and city) transformations have managed to restore or revitalize port-urban relations, creating vibrant synergetic port environments. The terms *synergy and untapped potential* used above might come across as vague, opaque or catch-all notions, but when scrutinized make considerable sense. With the intensified automatization, containerization and supply chain organization spurred by economic globalization has come a great need for more global orchestration and better facilitation of what seem to be ever expanding transport flows. It is in these underlying maritime services where we can expect growth and higher value added. It is also in these services that we see a great urban component and in which there lie possibilities for mutual gain between these port 'back offices' and the urban high-rises.

[1] https://business.un.org/en/entities/13

[2] The Smart Port platform constitutes a joint cooperation of the Port of Rotterdam, the Erasmus University, the municipality of Rotterdam, Deltalinqs and the TU Delft through which the port-city of Rotterdam aims to transform its port activities towards more sustainable, global and market-oriented developments.

1.2 Academic inclination

Port-cities are a foremost example of neglect in the thriving scientific analyses on clusters and global networks within the field of economic geography and beyond (Hall & Jacobs, 2012). This is a shame, as these clusters are both a) of significant importance to regional economic development in suitable urbanized maritime areas as well as b) among the main tangible realities of *glocalizations* (global to local) and globalization processes because of their gateway and logistics hub functions (Jacobs et al., 2014). Ports therefore constitute original grounds on which to study the local and regional factors affecting globalization and vice versa (Ducruet, 2010).

> *"….the port - free-trade zone bundle is suggested as a valid intersect between spaces of production and spaces of circulation. Such zones act as interfaces between local and global spaces: they are spaces of global articulation" (Wang & Olivier, 2006).*

Another inclination can be found in the fact that port-cities face a rapidly changing environment to operate in. The containerization of cargo, the unset of regionalized hinterland logistic systems and automatization of low value added port functions have had profound effects on port systems and port-urban relations (Ferrari et al. 2012; Merk & Dang, 2013; Merk & Notteboom, 2013; Merk, 2013; Merk & Li, 2013). In order to attract or retain levels of economic value added that are crucial for regional economic development and for a sustainable port-urban relation, *port-city transformation is needed*.

In this transformation, the akin notions of so-called international maritime centers, global supply chain management centers and global port cities are considered to be leading ideals for port-cities. These concepts all apply to highly networked port-cities and the centers of maritime private sector decision-making. It is now generally recognized that these maritime networks have had an increasing influence on ports and port-city relationships over the last three decades (Ducruet, 2010). The role of the port has changed from that of a node for transferring cargoes between transport modes to that of a link in the logistics chain (Song, 2003), creating its own value added.

Notteboom and Rodrigue (2005) have labelled this rise of (maritime) networks such as global supply chain systems and the corresponding geographical dispersion of related inland logistics centers as the new phase of port regionalization. Given the rise of this integrated logistics sector, port performance depends increasingly on its strategic relationship to these supply chains and less on traditional port competition factors such as hinterland size and physical infrastructure (Jacobs & Hall, 2007). Today's port operators are therefore increasingly operating as multinational corporations, as in the current global economy era a port no longer enjoys a natural monopoly (Song, 2003).

In essence, the aforementioned akin concepts of international maritime centers, global supply chain management centers and global port cities therefore serve as maritime equivalents of Saskia Sassen's infamous global cities, the sites of the 'advanced producer service' (hereafter abbreviated to 'APS') sector. Sharing the same characteristics in organizing and orchestrating global economic activity and provide the same high value added services that require knowledge-intensive non-standardized labor and organizational proximity.

The transformation that is taking place in port-cities is then on the one hand being driven by the AMPS firms that look beyond simply extracting costs and achieving efficiency but also look how to deliver value to their customers and how to gain more competitive advantages. On the other hand, ports themselves seek to create value for shipping companies and AMPS firms as they apply customer segmentation and targeting on the basis of clearly specified value proposition through which the port captures value for itself and for the chain in which it is embedded (Robinson, 2002). In short, the port and AMPS relation is found to be dialectic and synergetic. It is in the AMPS sector where we see the port-urban relationship and functions flourish, which makes research into its nature, role and location behavior all the more interesting.

1.3 Academic contribution

We have established a brief state of port geography, the need for port-city transformation and the role maritime APS firms (AMPS) can play herein. This research will attempt to empirically enrich the economic geography field by focusing on what attracts or deters advanced maritime producer service firms from locating in Dutch port-cities (Amsterdam & Rotterdam), in order to assess the nature, spatial patterns and locational variables of maritime APS firms.

Literature indicates that firms providing maritime APS are not necessarily located in leading port-cities, but also exhibit links with non-primary port locations or financial centers. Every port has a unique position due to its global insertion into these supply chains while facing local and regional specifies in terms of economic development and planning (Ducruet, 2010). In this light, it will be interesting to see what regional assets are valued by AMPS firms in the selected Dutch port-cities.

Meanwhile, there is a rich literature seeking to account for the governance, processes, actors, and geographies of global production, which also extents itself to the maritime sector. Although the array of concepts at one's disposal to account for globalization is now rather impressive, much of the work arguably lacks systematic empirical substance (Olivier & Slack, 2006b). Using a firm perspective, this research will attempt to provide such empirical substance to the field.

Port geographers have undervalued the firm as a locus of agency, which is why Olivier & Slack's (2006a) call for *'an epistemological shift away from a port-centric view toward the entrant firm or user, consistent with a much needed `follow-the-firm' approach'*. It is from this perspective that I want to assess why maritime APS firms locate where they do? Why does London seem to inhibit a relatively large maritime APS sector while Rotterdam inhibits a relatively smaller one? Do we see inter-differences between maritime firms? And can Dutch port-cities benefit from cooperation to facilitate a larger maritime APS presence in the area?

Seeking the optimum synergy between the port and the urban, the role of the 21st century port-city needs to be repositioned accordingly. This constitutes a widely recognized challenge for port-cities around the globe, but also provides numerous possibilities for the specified Dutch port-cities to redevelop and/or sustain a viable maritime based economy (Merk & Notteboom, 2013). This thesis aims to contribute to this development.

1.4 Research question and sub-questions

The following research question is central to the thesis:

"Following the role that AMPS firms take in the transformed 21st century ports, what determines, facilitates and/or hinders their location behavior regarding the Dutch port-cities of Amsterdam and Rotterdam?"

The following sub-questions are used to answer the research question. These questions are sorted according to their respective chapters:

Context
What characterizes the 21st century port-city and what role do AMPS firms play herein?

- What characterizes the transformation that port-cities face?
- How do AMPS firms fit in the concept of the modern port-city?
- How can we define maritime AMPS firms?
- What characterizes the role and nature of AMPS firms?

Theory
How do theoretical insights explain (a lack of) the role, nature and position of AMPS firms in port-cities?

- How do AMPS firms conduct their service provision?
- What do theories state to be factors in locational decision-making of AMPS firms?
- What does literature say about the spatial and relational structures that AMPS firms engage with?
- How can port authorities and governments facilitate relative growth in AMPS firms and become IMCs?

Empiricism
How do AMPS firms provide their services, what networks and structures do they engage with and what do AMPS firms seek when locating in the Dutch port-cities?

- What is the nature of AMPS provision in the Dutch port-cities?
- What is the nature of relational networks and spatial structures that AMPS firms tend to engage with?
- What do AMPS firms seek in their location or region, in their perception?
- How can the Dutch port-cities become more attractive for maritime APS firms?

Synthesis
Following the role that AMPS firms take in the transformed 21st century ports, what determines, facilitates and/or hinders their location behavior regarding the Dutch port-cities of Amsterdam and Rotterdam?

- What role do AMPS firms take in modern port-cities?
- What are the main determinants of AMPS location behavior following the coupling of theory and findings?
- Which policy recommendations can be formulated for port authorities and governments?
- What are (possible) limitations of the findings of this research and what can further research look into?

1.5 Thesis structuration

The further structure of this thesis will follow what the illustration depicts below (figure 1). Chapters 2 and 3 feature secondary data analysis, acquired by means of desk research (see appendix A: "Methodology"). Chapter 2 describes the contextual framework of the 21st century port-city and the role of maritime APS firms herein. Literature is used to engage with the nature of this concept, analyzing its definitions, origins and development to frame proper understanding of its meaning till this day forward. Mixed with the current socio-economic workings of the global economy, often coined as 'economic globalization', 'containerization' and 'global supply chains', we can distill the development and transformation of the port-city concept and define the current context in which the 21st century port-city operates. Specific attention is put on the role of and interplay with maritime APS firms.

Chapter 3 examines the different theoretical insights on the spatial patterns, role and nature of (maritime) APS firms and higher value added creation applicable to (international) maritime clusters. Central questions here are how clustering of the maritime APS sector serves as a means to achieve growth in international maritime centrality and to maintain a global port –city status? How do 'port' and 'city' develop or hinter a strong maritime APS sector? What kind of strategies and policies are needed to guide this development?

Chapter 4 discusses the empirical data created in the form of semi-structured interviews with AMPS firms located in both the port-cities of Amsterdam and Rotterdam. First, the nature of AMPS practices in these port-cities is outlined. Second, the nature, role and positionality of AMPS spatial structures and networks are assessed. Third, I discuss the regional assets and challenges that both of the Dutch port-cities face. This will then identify the playing field in which maritime APS firms (do not) choose to locate and engage with, helping to determine the location behavior of maritime APS firms. Last, I focus on how AMPS firms think that port-cities can work on their ability to retain or increase their AMPS presence, create more synergy between port and city and how to develop or sustain international maritime center functions.

Chapter 5 synthesizes the findings from chapter 4 with the theory from chapter 3. Central here is answering what determines, facilitates or hinders the relation between port-cities and maritime APS firm locational behavior in the specified ports of interest. We see where the findings fit in the port-city and economic geography literature and how we see the (policy) development of the specified ports. This chapter discusses the effects:
a) between the port and the urban in the Dutch port-cities.
b) of glocality of knowledge and practices on maritime APS firms.
c) of suggested strategies and policies of different actors in creating the 21st-century port-city-region.

Appendix A features the methodological section. It comprises a detailed overview of the methodology used and the rationale that goes with it. The appendices B (interview form) & C (interview questions) complement this section.

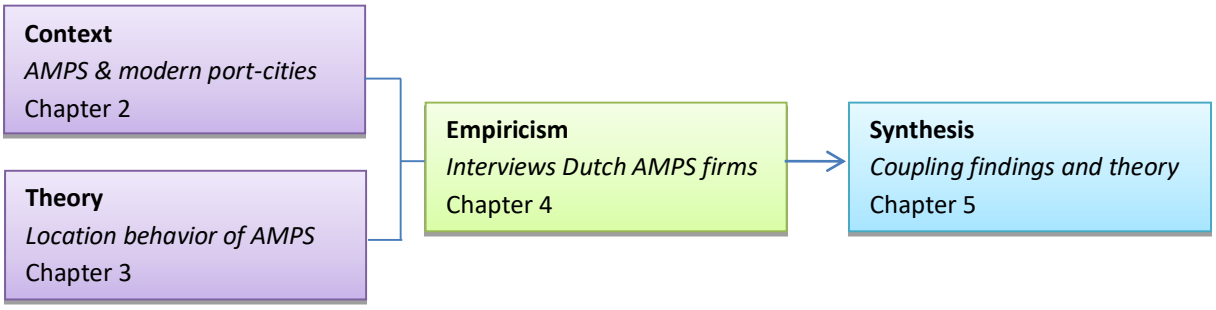


Figure 1 – General structuration of thesis (author's contribution)

Chapter 2 – Context of the 21st century port-city

2.1 Port geography & the port-city concept

Port geography is an inherently interconnected area of research (figure 2). It serves as a sub discipline of respectively transport geography, economic geography and overall, human geography, and with duly respect can only be considered a niche research field within economic geography. However due to its unique nature, it still bears significant value for research. More than ever, the port cannot be separated from its surroundings and its surroundings are enormous, numerous and volatile. Often situated in urban areas, ports are connected to cities, to (maritime) networks of cities and global chains of value and supply. Increasingly, ports are seen as networked nodes that serve a global service center function. As of such, port geography interplays with the fields of urban planning, global supply chain management, global city networks and global production networks among others. Port geography can thus be described as increasingly relational and dynamic, far evolved from the static points of derived demand they were considered as being not long ago.

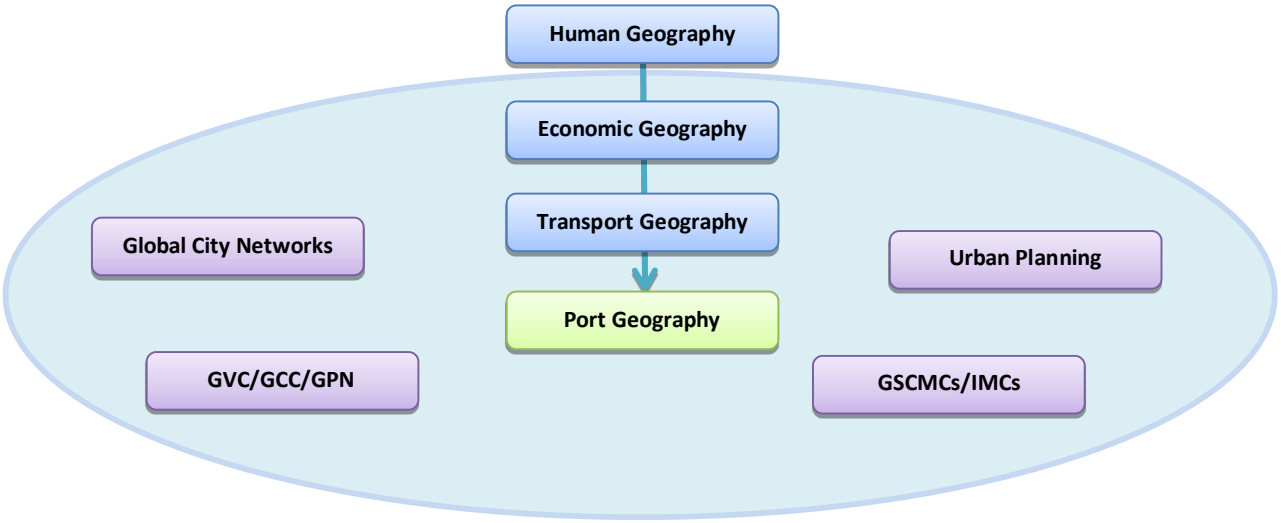


Figure 2 – Positioning port geography (author's contribution)

Central to this field of research, is the concept of the port-city. Historically, ports and cities have been intertwined with the combination of the two still featuring prominently today. Rather than the simple observation of spatial proximity that the concept implies, the true value of this concept is sought in the combination or relationship between port and urban functions. The term 'urban' here refers to urban agglomerations, a functional definition in metropolitan-regional dimensions to properly relate to port functions.

> *" [As] the embodiment of a complex mix of urban processes and maritime technology, port cities actually constitute a special subspecies of inner cities" (Hoyle, 2002)*

This relationship between port and city has been of academic interest for some time now, with scholars already describing social changes in this relationship (Vigarié, 1979) and seeking explanations for space-use changes in port-cities (Harvey, 1973) before Hayuth (1982) formally introduced the concept of the port-city interface. He approached this interface from a spatial and functional point of view and was therefore interested in the changes in land usage and zoning between port and urban functions. Hoyle (1989) in addition conceptualized the concept of the port-city in alternative ways; as an interactive economic system, ecological system and as a particular area of conflict in policy formulation and implementation. Later work from scholars proved that this concept is indeed open to many dimensions (e.g. spatial and temporal, social and economic, functional and technological; Daamen, 2007). Rather than seeking a concrete definition of what is meant by the concept of the port-city, a better application is created by treating the concept both as a static spatial-functional denotation and as a dynamic relational concept, dependent on the specific mixture of interconnected urban and port functions that constitute it.

2.2 Development of the port (-city)

The trajectory of the theoretical discourse on the modern port has not been a linear one (Olivier & Slack, 2006a). Rather this trajectory has moved in overlapping waves following technological advances or broader narratives within the field of economic geography. However, a clear distinction can be made between traditional port research of the pre-globalization period and more recent dynamic port-city research, a division upheld in this paragraph. A proper start for this paragraph then is the work which is academically considered as the origins of port theorization; the seminal AnyPort model by Bird (1963).

The work of Bird analyzed the major seaports of the United Kingdom, which led to the conception of his Anyport model. Bird conceived the port as a form-function relationship in which linear succession of historically distinct development phases take place. His conceptual models endured theoretical and empirical challenges up until the moment when economic globalization processes took over (Slack & Wang, 2003). His model provided a benchmark for port development and consisted out of six eras, each involving an addition to or change in the physical lay-out of the port, helping to build up to the complex pattern of a modern major port (Daamen, 2007).

Bird's long lasting contribution to theorizing the development of maritime ports particularly features technology as (one of) the leading factors in port growth, going so far as to even forecasting the period of containerization following his work. Next to the potential spatial impact of containerization, Bird (1963) also rightly predicted some other factors of major significance to maritime port development: dock labor, port administration, and finance (Daamen, 2007).

The Anyport model provided a useful tangible conceptual tool in understanding the relationship between form and function and the spatial and functional impacts of cargo flows and shipping movements to and from hinterland and forelands of ports. As such it established the role of the port as a specific spatial entity that handled ships and cargo. It triggered a large body of research into understanding the port in relation to spatial change (Hayuth 1987; Hilling and Hoyle, 1984; Rimmer, 1967), research in which the port-city concept gradually developed (Harvey, 1973; Hayuth, 1982; Vigarié, 1979).

The second wave of port research (red. 1960s and 1970s) was largely oriented on addressing the real-world problems of growing inefficiency and capacity of ports (Robinson, 1976). It encouraged research effort into quantative, modelling and engineer-led solutions (Robinson, 2002). Organizations such as UNCTAD and the World Bank developed research and models to help solve the pressing issues of efficiency and port expansion, adding operational efficiency to the of the port.

Research continued by focusing itself on framing ports as economic units. As early as 1960, Thorburn (1960) underlined the importance of an economic perspective in discussing ports and shipping more generally; while Flere (1967) wrote specifically on port economics. Subsequently, Goss (1968, 1982) produced a range of economic principles and applications for ports; Bennathan and Walters (1979) focused on the economics of port pricing; and Jansson and Schneerson (1982) defined what they understood to be `port economics'.

A new wave emerged when transport geographers began to hypothesize about how these historically self-standing port spaces were being assimilated within broader corporate agendas (Olivier & Slack, 2006a). Much research effort through the 1980s and 1990s has recorded and interpreted the issues inherent in the transformation of port administrations from those of statutory singular authorities to corporatized, commercialized or privatized entities (Robinson, 2002). According to some, the port had become a mere `pawn in the game' of global corporate interests and intermodal networks (Slack, 1993). This discourse prompted governance to became a trendy lens by which to approach the port not as a space, but as a community, analyzing ports within administrative and policy frameworks (Robinson, 2002).

During these 'traditional' waves of port research that lasted up until the unset of globalization processes, research on possible synergy effects between urban functions and port functions was marginalized, as technical (network and node performance) and/or institutional (transport actors and their strategies) issues clearly dominated the debate (Banister, 1995). Urban functions served as secondary factors to explain strategies of global carriers, port authorities and terminal operators, as research primarily focused on cost and time efficiency of transport systems regardless of their embedded locations (Ducruet, 2010). Among

researchers who did (extensively) account for urban dynamics in port functions, the problem of causality is immediately raised (Boyer and Vigarié, 1982). "Does the port develop the city and its economic activities, or is the city the engine of port expansion?" (Verlaque & Tine, 1979). The main findings from these theoretical beginnings can be interpreted as four separate traditional port-city models, briefly addressed down below (table 2).

Port +	*→ Urban +*	*More port activity leads to more urban activity*
Urban +	*→ Port +*	*Growing cities attract cargo for ports*
Port +	*→ Urban -*	*Port activity externalities displace other urban activities*
Urban +	*→ Port -*	*Urban growth displaces port activity*

Table 2 – Traditional port-city models (adapted from Hall & Jacobs, 2012)

While these traditional models represent basic port-urban relations within port-cities, none of these models mention any form of dynamic processes resulting from these relations. Goss (1990) therefore rejects these arguments, arguing instead that port and urban development should be analyzed in reference to each other. Hall & Jacobs (2012) add that such basic relations provide no a priori theoretical reason for ports to locate in urban areas. However, while major urban agglomerations do not need to host a major port, *almost all major coastal urbanizations host a major urban por*t. Several dynamic port-city models have been formulated in recent years that do address these critiques and provide generalized synergetic effects between ports and their urban areas (table 3).

Port A_{t1} + → Urban A_{t1} + → Urban A_{t2} + *Ports benefit cities which lock in their advantage over time*
Port A_{t1} + → Urban A_{t1} + → Urban A_{t2} + → Port A_{t2} + *Ports eventually benefit from urban areas they helped create*
Port A_{t1} + → Urban A_{t1} + → Port A_{t2} + → Urban A_{t2} + *Port-urban growth benefits the port which allows further urban growth*

Table 3 – Dynamic port-city models (adapted from Hall & Jacobs, 2012)

These more dynamic port-city models address the initial impacts of port development in subsequent development in both city and port in a causal manner. They address lock-in effects and endogenous growth and growth theory, however they do not particularly look beyond cause-effect relationships and therefore do not address the co-evolutionary dimension of the port-city relationship. The latter dimension is grounds for what is known as port-urban synergy, in which the specific interactions amongst port and urban functions are researched instead of simpler causal relations between the two. If ports are able to persist within cities, it is because of dynamic lock-in effects that combine both sector-specific and urban-wide aspects (Hall & Jacobs, 2010). Hall & Jacobs (2012) propose pursuing a more synergetic logic in port-city modelling or research, arguing that cities and ports evolve both separately and in relation to each other (table 4).

Port A_{t1} +	*→ Port A_{t2} +*
↓	↓
+ / +	– / +
↑	↑
Urban A_{t1} +	*→ Urban A_{t2} +*

Table 4– Synergetic port-city modelling (adapted from Hall & Jacobs, 2012)

The vertical two-way arrows in the two time periods express that we have gone from a situation where ports and cities unambiguously supported each other (+ / +), to one where the relationship is more ambiguous (– / +). Port and city have a mutually beneficial relationship at t1 and both experience growth, however at t2 their positive exchange starts to come under pressure due to all kinds of negative externalities, which is a common depiction of recent European port-city relations. This interdependent form of modelling can be altered schematically to include all kind of effects on (regional) port-city development (Hall & Jacobs, 2012).

More recent academic contributions on port-cities have expanded the field of port geography considerably by taking numerous avenues. Broadly-speaking, these expansions have followed the call made by Robinson

(2002), who argued persuasively for a new paradigm in which to ground the port within themes of logistics and value-adding chains, building on earlier research of corporatization of the port.

> *"It is clear that ports are now operating in a new environment - which is globalized, corporatized, and privatized and is exceptionally competitive; it is also a logistics-restructured environment'' (Robinson, 2002)*

Whereas Robinson (2002) primarily focused on the recent global linkages that have arisen, Notteboom and Rodrigue (2007) introduced the spatial-functional integration wave known as port regionalization. Hesse and Rodrigue (2004) pushed the argument further by challenging traditional views of transport as 'derived demand' to one as `integrated demand', lifting port activity from a simple consequence derived from economic activity between spatial units to part of that economic activity, able to create its own value added. Besides these examples of recent academic research, we can generally distinguish three separate spatial entities (*global, regional/national and local*) on and through which port research is conducted (Ng. et al. 2014). In light of this thesis, primary focus will be put on connecting *global* changes with *local* changes as coastal cities are increasingly torn between their global maritime functions and their urban economic functions, causing the equilibrium between these functions to become increasingly unbalanced (Ducruet & Lee, 2006). Before narrowing down further, the upcoming paragraphs will therefore provide more in-depth insights into the major recent global *and* local developments that port-cities have faced or still face today.

2.3 Global changes in port-cities

The maritime sector has evolved along with the emerging global division of labor based upon the principles of "the integration of trade and disintegration of production in the world economy" (Feenstra, 1998). The maritime sector, in particular through its mass application of the container since the late 1980s (a process also known as 'containerization'), has been a key facilitator of the process of global economic integration (Levinson, 2006; Hall, 2007). This has led to attempts from scholars in rebuilding the theoretical and empirical connections between transport and economic geography (Hall et al., 2006; Hesse and Rodrigue, 2006), constituting port-cities and port actors as competitive elements in value-driven chain systems or in value chain constellations (Robinson, 2002; Jacobs & Notteboom, 2011).

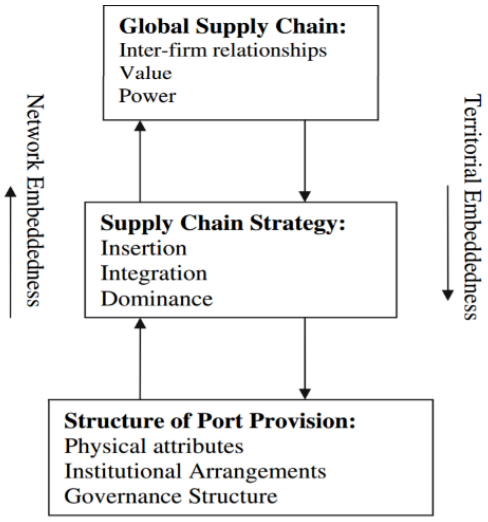
> *``The economic relationship between seaports and their host cities (the port-city relationship) would surely not have changed as profoundly if it had not been accompanied by fundamental change in the organization of the global economy, in particular the rise of global value chains" (Hall, 2007)*

Globally, we can observe horizontal and vertical integration in the maritime and logistics industry. Vertical integration is best explained by the aforementioned wave of port-regionalization, which is characterized by a strong functional interdependency between logistic actors across the supply chain. The essence of this phase is that warehouse, distribution and logistics activity move further inland and away from the initial port city. A primary example is the center logistic position of Venlo for the ports of Rotterdam and Amsterdam. The main factors for this relocation are the lack of affordable land close to the port and the congestion on the main highways and container terminals (Notteboom & Rodrigue, 2007). Moreover, port regionalization highlights the increasing functional-economic and spatial integration of ports, inland logistics zones, suburban and urban economies and hinterlands (Hall & Jacobs, 2010). It views ports and inland hubs as nodes in international freight flows, transportation networks and logistics chains (Olivier & Slack, 2006; Notteboom & Rodrigue, 2007).

These descriptions are akin to what Robinson (2002) calls supply chain systems, or what economic geographers in general call commodity chains or production networks (Gereffi, 1994; Henderson et al., 2002). In a rapidly globalizing market place, with widespread and sometimes relatively footloose production sites linked into globally networked and rapidly integrating logistic systems, it is evident that significant structural and functional changes must take place in ports and port authorities (Robinson, 2002). Although port regionalization has implications for port governance and recognizes potential constraining institutional factors in the evolution of regional integrated port systems, Jacobs & Notteboom (2011) state that it undertheorizes the role both of strategic agency and of institutional structure, which paragraph 2.4 will address more thoroughly.

Furthermore, in the era of global economy a port no longer enjoys a natural monopoly. Many port actors and operators who previously ran only their local business now extend their business scope to the regional or global scale as today's port operators can be regarded as multinational corporations (Song, 2003). Horizontal integration through market consolidation has resulted in large port clients with fading home port loyalty who possess strong bargaining power vis-a-vis terminal operations and inland transport operations (Jacobs & Notteboom, 2011). The new market environment has brought new kinds of inter-firm partnerships at the port-terminal level, involving ocean carriers and global terminal operators who try to hedge the risks associated with the container business (Jacobs & Notteboom ,2011; Dicken, 2003; Jacobs & Hall, 2007). This increasing presence of multinational port operations suggest a growing need for integrated logistics management from firms with cross-border operations (Zhu et al., 2002). The globalization of port operations therefore requires a fundamental shift and re-conceptualizing of the port; from a single and fixed spatial entity to a network of terminals operating under a corporate logic (Olivier & Slack, 2006a).

These processes of vertical and horizontal integration have changed the competitive setting in the industry (Notteboom & Winkelmans, 2001), so that firms can have organizational stakes in several spatially proximate locations, leading to new interdependencies between ports (Hall & Jacobs, 2010). Port (related) actors that are willing to insert the port city within the global transport chain must thus cope with an ever-reducing number of powerful global companies (e.g. shippers, shipping lines, freight forwarders, logistic agents) and local and regional specificities in terms of economic development and spatial planning (Ducruet, 2010).



GPNs are not only likely to shape global economic processes but also to foster regional development as every global network is embedded in local and regional places (Hesse, 2006). Coe et al. (2004) emphasize this point as they refer to the intertwined relationship between the 'global' and the 'regional' dichotomy between global and regional processes emerging out of GPNs. It is in fact the global distribution system, consisting of firms, transport modes, and infrastructure, which makes the GPN a functioning entity (Capineri and Leinbach 2006; Hesse, 2006). The location of economic activity is no longer a mere function of transportation infrastructure provision but also relates to the ability of port-cities to cope with the extraordinary demand for flexible, timely, and cost-efficient physical distribution (Hall et al. 2006, Hesse & Rodrigue 2006).

Figure 3– Embeddedness of ports in global supply chains (Jacobs & Hall, 2007)

The port-city's or port actors' competitive strategic advantage is not only based upon operational efficiency or location, but increasingly based on the degree to which it is embedded in these supply chains, is able to enhance the efficiencies within these supply chains, and is able to extract value from them (Jacobs & Hall, 2007). Jacobs & Hall (2007) further state that it is the nature of the local embeddedness of the port-city in physical, political and institutional structures that conditions the supply chain strategy that port actors or the port-city as a whole will pursue. This will result in a specific network embeddedness in global supply chains (Figure 3).

In light of this global port-city system with its supply chains and major global port actors, Song (2003) proposes a new strategic option for port-cities in combining competition and cooperation, known as 'co-opetition', to gain competitive advantages. Co-opetition is a way of collaborating to compete. Such collaboration could avoid mutually destructive competition among the players as they countervail in networks of international coalitions against outsider competition (Song, 2003).

2.4 Local changes in port-cities

Central to the local changes perceived in port-cities, is a growing disconnect between port and urban functions. Changes in economic relations have led to a growing disconnect between the beneficiaries of port activities

and the long-term interests of coastal communities (Hall, 2007). Some researchers have therefore foreshadowed a gradual end to the port-city as integrated functional–economic spaces. They argue that as ports increasingly operate as strategic nodes in globalized maritime networks, the port-city is transformed into a general city through successive stages of economic diversification towards a service economy (Murphey, 1989; Charlier, 1988; Pesquera & Ruiz, 1996). Most researchers have contested this notion, arguing instead that there is no universal evolution of port–city relationships (Ducruet, 2004). Most researchers also point out that despite the ongoing transformation of the maritime sector and the rise of global supply chain systems, world's important ports continue to occupy urban spaces, are embedded in localized knowledge systems, draw on urban labor markets and infrastructure and are subject to local politics and policy concerns (Hall & Jacobs, 2012). Highly urbanized port cities may have seen their port functions decline over time, but many of them have managed to overcome the difficulties of port competition and urban growth (Ducruet & Lee, 2006).

"Successful port cities are not necessarily those who increase their traffics in absolute numbers or create an attractive waterfront, but those who manage to sustain an equilibrium between different temporalities, different functions and different scales" (Ducruet & Lee, 2006)

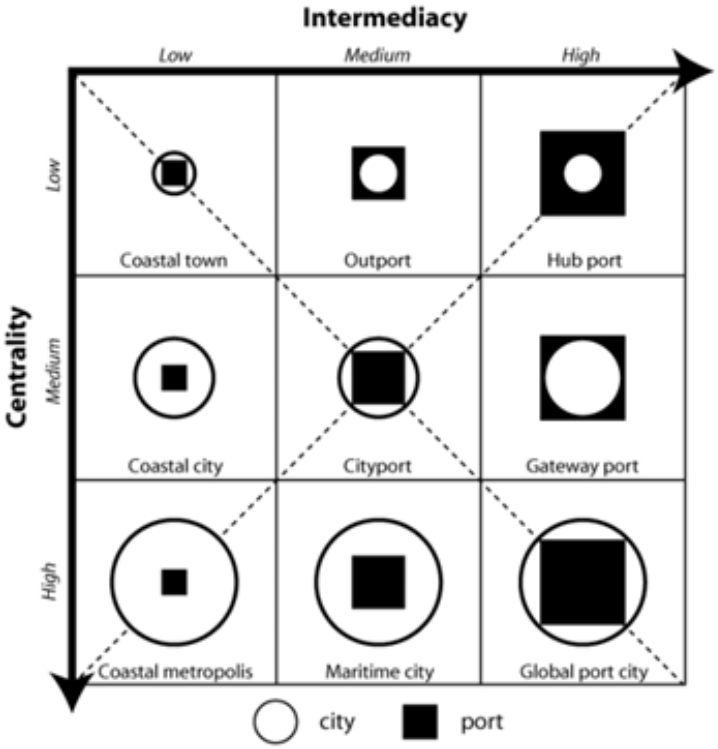


Figure 4 – The typology of port-cities (Ducruet, 2004)

The breakdown of the traditional port–city relationship has seen the establishment of new relationships at a wider, but nevertheless urban scale (Hall & Jacobs, 2012; Ducruet, 2009; Hall & Clark, 2010; Ng. et al. 2014). The urban challenges and constraints faced by ports located in densely populated metropolitan areas today provide them with a competitive edge as they are forced to innovate and rely upon dynamic urbanization externalities (Hall & Jacobs, 2012). Thriving port-cities excel in balancing global-local changes in operating environments and are often hampered by the institutional and physical separation between urban and port actors and functions (Ducruet, 2010).

It therefore follows that we can observe a multitude of different local port-city variations, with different levels of urban and port functions. Ducruet (2004) has formulated a widely used classification of port-cities using intermediacy and centrality (figure 4). The model overcomes the difficulty of creating a single definition of the port-city as it includes different combinations of degrees of urban and port functions. A port-city with extensive port functions scores high on intermediacy, while a port-city with extensive urban functions scores high on centrality. The downwards sloping diagonal cuts across all classifications at which port and city exhibit a size equilibrium, a situation where both can optimally profit from each other. Examples of such ports are Singapore, Hong Kong and Shanghai which can all be considered global port cities. More likely are unbalanced profiles such as the gateway port-city, which is dependent on its hinterland and develops few activities apart from heavy industry and logistics (e.g. Le Havre and Genoa); the maritime city where port functions are efficient in spite of an important urban environment (e.g. Barcelona, Marseilles); the urban port, which has some importance in the urban system but with limited port activity (e.g. Bordeaux); and finally the outport, which is usually dependent on nearby cities and whose port functions do not act as a mechanism for developing its own urban economy (Ducruet & Lee, 2006).

Hesse (2006) has pointed out that the recent rapid increases in cargo volumes can lead to more frictions in port-cities between urban and port functions. Whereas the volume of freight transport is expected to increase

further, the expansion of supply of infrastructure for cargo movement and handling appears to be limited in historical port interfaces (Hesse, 2006). In addition, the maritime sector is a mature industry in which the drivers for opening and creating windows of locational opportunity do not develop independently of existing spatial structures and thus do not emerge within a neutral space (Boschma and Frenken, 2006). It is therefore difficult to significantly alter existing port structures. While competition and other market-based selection mechanisms provide pressure for change, they unfold within existing structures of power and communities of practice, limiting port operators in finding balance with urban functions (Jacobs & Notteboom, 2011).

This is why port authorities are struggling to define the new core business of the port, to identify an appropriate strategic intent, to specify relevant core and threshold competencies and to position the port for growth (Robinson, 2002). Rather, the restructuring that is taking place in port-cities is being driven by maritime service firms. These firms do not simply seek to extract costs and efficiency, but aim to deliver value to the end customer and to gain competitive advantage (Robinson, 2002). Such firms are generally described in literature as advanced producer service (APS) firms. Such firms provide organizational commodities -- accounting, legal, insurance, finance and all sorts of new technology-linked specialized services, commodities increasingly needed in all sectors and on all spatial scales (Sassen, 2010).

In this regard, Raimbault (2015) remarks that while applying actor-network theories, contemporary port studies are too logistics-centric and take a reductionist or instrumental logic, neglecting the roles that other actors play in facilitating or constraining the port-city development. Instead, research should focus more on relational constructs and social formations that have been formed through *actor-specific* practices and processes across territorial scales.

It is here that the concept of 'strategic coupling' (Coe et al. 2004) can be applied, to analyse the role of agency in aligning locally available assets with global network demands (Yeung, 2009). The insertion of ports into global supply chains implies increasing organizational and cognitive proximity, however territorially based institutional and social proximities might be equally important as a counterbalance to ensure continued openness to innovation and upgrading (Hall & Jacobs, 2010). The maritime equivalent of APS firms (hereafter AMPS) can provide the tangible reality of such integral forms of proximity, embodying the linkages between organizational and cognitive global networks and processes linked to spatial proximity. Analyzing AMPS firms in the spatial proximity of a port-city is an actor-specific analysis of practices and processes, adding more tangible *'flesh'* to the studies of global supply chains and global maritime networks, by looking at the real-life connections and material links of AMPS firms with the maritime sector (Vind & Fold, 2010). The provision of qualitative information of the practices and strategies of AMPS firms can help to further explain their role in the current port-city dynamics, looking at how elements of governance get embedded in command functions – a disaggregated networked system, with locations in each pertinent country (Sassen, 2010).

2.5 Why AMPS firms matter

Sassen (2010) has suggested that as a firm digitizes and globalizes its operations, the stronger will be its incomplete information problem in organizing those operations and hence the stronger will be its dependence on APS services. The unfamiliarity with the customs of different markets creates a knowledge problem that is solved by outsourcing functions to APS firms specialized in these areas. APS firms tend to be spatially clustered in cities, as they constitute an environment in which diverse networks, information loops and professional exchange come to create a form of knowledge capital (Sassen, 2010) that helps to overcome incomplete information problems. This urban environment and subsequent knowledge creation is related to the concept of related variety. In this conceptualization, urban economies which host a wide variety of economic activities possess a greater probability for inter-industry crossovers and collaborations than more mono-functional economies (Hall & Jacobs, 2012).

This information can be applied to port-cities in three ways. First, historically port functions and urban functions are an example of related variety as these functions co-evolved in some (major) port-cities. Second, the modern globalized port businesses or organizations increasingly face incomplete information when operating in a vast multitude of locations. Third, the cross-border production chains or networks require coordination in logistics, a link in globalized economic activity (Zhu et al. 2002). The combination of this urban variety, incomplete information and global coordination need stimulates AMPS networks in the maritime sector, moving beyond

traditional port activity.

The 21st century port-city holds a demand for advanced (maritime) producer services, in order to finance ships and port facilities, insure ships and cargo, have a legal representation in case of an incident, have software solutions in supply chain management, inspect ships and to provide technical expertise on damages (Jacobs, Koster & Hall, 2011). This specialized and sector-specific set of advanced producer services are what Jacobs, Koster and Hall have named AMPS. These AMPS are the maritime equivalent of general advanced producer service firms and as such exhibit likewise functions, albeit that AMPS are adjusted for the port environment in which the maritime sector operates. As discussed previously, these environments can vary greatly as they range from a global port-city (dominating urban functions) to a distribution complex (dominating port functions). Most major port-cities, and AMPS in general, are somewhere in the middle (Sassen, 2010).

A viable AMPS cluster, alike its parent concept within global city research, can be vital for sustained economic development in port-cities. In some port-cities (most noteworthy; Singapore) specialization in logistics has transformed the port-city into a technologically-advanced industry, attracting firms with its high AMPS (and APS) services (Zhu et al. 2002). While AMPS presence thus accrues benefits to the urban region they are located in, the question of what attracts AMPS firms to certain locations remains.

On the one hand, it can be argued that AMPS opt to locate in close proximity to the industry they provide their services to and accrue localization economies. This would see a strong correlation between port size and AMPS clusters. On the other hand, AMPS could be more 'footloose' and opt to locate in diverse, vibrant urban areas to accrue urbanization economies. This would see a strong correlation between APS and AMPS clusters. Jacobs, Koster and Hall (2011) empirically tested this location behavior and found evidence of both maritime localization economies as well as urbanization economies, indicating the complex nature of the AMPS and port-cities relationship. The theoretical chapter will therefore examine the locational behavior of AMPS firms in more detail.

2.6 Supporting theory & empirics

This chapter provided the context in which the modern port-city is situated and operates. I deemed this supportive chapter necessary, because, as Saskia Sassen eloquently puts it:

> *"explaining the x requires a focus also on the non-x. Confining an analysis to description of the x that is the object of explanation provides a description, potentially enormously rich and revealing, but falls short of explaining. It also, thereby, falls short of theorizing – and theorizing is a way of seeing what the empirical details do not allow you to see" (Sassen, 2010).*

I interpret her remark as a call for proper contextualization of empirical and theoretical insights, as these insights clearly do not operate (or hold validity) in a vacuum. This chapter therefore introduced the origins of port geography and the port-city relationship, the recent primary developments of port-cities and the perceived role and characteristics of advanced maritime producer services herein. Now that the need for port-city transformation towards a more service-oriented formation has been demonstrated, a closer look is needed on the dynamics that shape higher value added formation from a strong AMPS sector in port-cities. Chapter 3 therefore explores the theoretical insights regarding location behavior of AMPS firms and how actors can facilitate further AMPS presence.

Chapter 3 – Theoretical framework

3.1 International Maritime Centers

The challenge for many port-cities is to find a way to use the existing port cluster as an asset for a high value added services economy and in turn wider urban economic development (Merk & Notteboom, 2013; Merk & Dang, 2013). A high amount of port traffic is not associated with the economic performance of port-cities as it possibly generates low value-added activities (Merk & Dang, 2013). Instead, higher value-added port activity is mainly found in so-called *'international maritime centers (IMCs), global supply chain management centers or world port cities'*. The concept of the IMC (the standard term used in research and in this thesis) is used in different varieties and under different terminology, but usually applies to maritime service centers embedded in global supply chains that cater AMPS functions. These AMPS firms are in turn presumed to use their position to orchestrate global logistic flows and decision-making processes for foreign markets (Wang & Cheng, 2010; Verhetsel & Sel, 2009; Jacobs & Van Dongen, 2012; Sassen, 2010).

IMCs are situated at the 'nexus of interconnected functions, operations and transactions through which a specific product or service is produced, distributed and consumed' (Coe et al. 2008; O'Connor, 2010). These new roles reflect the way many services have evolved and developed over recent years, moving from a final step in a production process to a central and innovative function that can shape production outcomes (Bryson et al., 2004). IMCs have evolved with them, altered from being 'front shops' to 'design and control rooms' (Wang & Cheng, 2010).

When analyzing IMCs, it is important to distinguish "maritime industry" as a whole from just the port industry alone. Port clusters have substantial indirect economic effects as they share forward and backward linkages with industries engaged in logistics and services, creating a maritime industry that extends beyond traditional port operations (Merk & Li, 2013). Maritime industry therefore broadly consists of three sectors: port, shipping and services. The first two are often jointly referred to as the maritime sector. Maritime services have the highest value-added potential, while the value added of the shipping sector is greater than that of the port sector (City University Hong Kong et al. 2013; Merk & Notteboom, 2013).

Port sector	*Traditional port operations*
Shipping sector	*Process of transporting cargo, including shipbuilding and ship repairing*
Maritime service sector	*Ship registration, ship management, ship financing, ship insurance, maritime arbitration, ship broking & chartering, commodities trading, headquarter functions and energy and other professional service institutions*

Table 5– The three primary maritime industry sectors (adapted from City University Hong Kong et al. 2013)

As discussed in chapter 2, port-cities can exert different combinations of functions. Gateway port-cities or intermodal ports are well positioned in GPN-GCC-GVCs because of their well-functioning physical infrastructure, variety of transport functions, large throughput volumes and substantial market share (Hayuth 1981; Notteboom 1997; Ducruet & Jeong, 2010). These port-cities focus moreover on traditional port industry. On the other hand, maritime business services centers or general (port-)cities can influence and control the global maritime industry and market through providing industry supporting services, such as financial and legal services, and market exchange information. This focus on maritime services positions these port-cities well in world city networks (City University Hong Kong et al. 2013; Ducruet & Jeong, 2010). IMCs are generally equated with a mixture of the two, being both a global hub as well as a high-end maritime service center (Jacobs & van Dongen, 2012). Importantly, the provision of maritime services (upstream) in IMCs is at least equally important to traditional port operations, while urban and port functions coexist in relative harmony and interdependence (Jacobs, Ducruet & De Langen, 2010; City University Hong Kong et al. 2013).

London is the world's most dominant IMC. The traditional port functions in London have been greatly diminished, but this has not diminished London's international maritime status. On the contrary, London's maritime business service sectors enjoy world-wide dominance due to its mature policies, qualified talents, extensive maritime service sector and long-lasting maritime network. Legal and financial service providers in London cater specifically for the maritime sector (Verhetsel & Sel, 2009). In 2010, London controlled 15% of global ship finance, 20% of marine insurance underwriting business, 50% of tanker chartering, more than 30%

dry bulk chartering, around 50% of second hand ship sales and purchases and dominate the P&I Club services by occupying 62% global market (City University Hong Kong et al. 2013). This confirms the notion by De Roo (1994), who states that *the sustainability and efficiency of port cities is better represented by their ability to connect different scales than by their ability to increase their traffics*. London's IMC status comes solely from its AMPS cluster, which has accrued mayor synergy advantages such as reduced transaction costs, search costs for services providers, negotiation costs, and services assurance costs. This attracts core maritime business participants to form the virtuous cycle of a growing market, a growing presence of services providers and substantial value added (City University Hong Kong et al. 2013; Merk & Notteboom, 2013).

Hong Kong, Singapore and Hamburg are considered to be other top IMCs (Merk & Li, 2013; Jacobs et al. 2010). Many maritime firms have their headquarters at Hamburg or Hong Kong, underlining their importance (Verhetsel & Sel, 2009). A number of port-cities, including Antwerp, can be considered second-tier IMCs. The port-city of Antwerp is considered a strategically important maritime hub, which is why large maritime firms have offices in Antwerp, although they are often small and of limited importance within the corporate structure of those companies. This is a common trait among second-tier IMCs, as they lack developed financial and legal services sectors. Leading IMCs contain diversified urbanization clusters that represent vital resources for AMPS firms (Verhetsel & Sel, 2009).

The capability of IMCs to facilitate global transport has been transformed by the shifting of the center of gravity of international trade business. Coupled with increasing intra- and inter-port competition on regional and global scales, these processes have resulted in port concentration and deconcentration (City University Hong Kong et al. 2013; Lee & Ducruet, 2006). Larger ports are generally better connected and more centrally positioned within maritime networks, but there is no perfect correlation between size and IMC reputation. Some ports are simply better connected, despite size (Merk & LI, 2013). In addition to size competition, existing IMCs such as Hong Kong and Singapore have started upgrading their port activity, shifting from value-added logistics activities such as consolidation, labelling, processing towards higher value added activities such as retail, banking and finance. These activities are much less freight-generating and strengthen their cities' rank among global urban systems (Lee & Ducruet, 2006). AMPS functions are thus competed for by port-cities, as attracting AMPS serves as a good strategy for port-cities to upgrade their economy and to strengthen their position within their embedded supply chains (Jacobs, Ducruet & De Langen, 2010).

IMCs therefore need to continuously develop their competitive edge, building on their existing strength in terms of for instance geographical location, legal system, business environments. Port-cities with top IMC ambitions cannot effectively compete directly with existing IMCs for global market share in the short run, which requires gradual development instead (City University Hong Kong et al. 2013). Wang and Cheng (2010) have showed that the service functions of major port cities can help these maritime clusters to evolve into IMCs as they look beyond traditional port activity.

Policy instruments	
Formulate supportive legal and financial systems	Promote R&D investments and innovation
Develop a FEZ with tax incentives	Use spatial planning to promote port-city synergy
Develop flows of information, goods and services	Use pro-active communication to build common interests
Targeted acquisition of headquarters	Help develop general maritime policy and regulation
Develop inter-sectoral linkages	Attract exchange functions to sustain open firm relations
Improve the urban quality of life	State IMC ambition and holistic development strategies
Facilitate a vibrant maritime community	Engage in inter-port coordination and strategic alliances
Educate a maritime-related skilled labor force	Combine and integrate air- and seaports

Table 6 – Main IMC policy instruments (author's contribution based on Merk & Dang, 2013)

The policy instruments mentioned above (table 6) have been used and advocated in developing IMC status, the nature of which are addressed in more detail in the following paragraphs. A business environment conducive and favorable to maritime services is essential in attracting AMPS firms as it creates a competitive advantage amidst fierce international competition. Free flow of information and capital, transparent custom clearance services, efficient communication, legal and financial systems, strong intellectual property rights protection, quality assurance, low simple tax structure and/or free economic zoning and tax incentives are crucial parts in creating this environment (MCR, 2013; Verhetsel & Sel, 2009; Merk & Li, 2013). In addition, inter-sectoral linkages have to be developed in the port-city area in order to retain and increase (in)direct economic effects

and value added. Targeted acquisitions, incentive schemes, training and education, platform organizations and knowledge transfer schemes can serve to attract high value added companies that could make a port-city an international maritime services center (Merk, 2013; Jacobs, Koster & Hall, 2010).

This business environment has to be supplemented with a high-quality urban environment attractive enough for high value added firms, headquarters and talent. Quality of life and a vibrant maritime community is an important element of this urban environment, underlining the importance of air quality and an attractive waterfront (Merk & Li, 2013). An abundant reserve of maritime-related skilled labor is needed to provide enough maritime manpower for the IMC cluster. This requires scholarships and incentive schemes for training maritime services professionals, seagoing officers and ship-repair technicians (Merk & Li, 2013).

Policies can aim at building port-city synergy and community by using R&D, spatial and communication policies. R&D can reflect the potential spillover effects of innovation to benefit port modernization, labor productivity and highly qualified port employment. Spatial development can provide a picture of territorial management dealing with the contentious expansion of port and urban area, while pro-active communication is essential to build common interests and minimize the conflicts surrounding mismatch development between port and port-city. (Merk & Dang, 2013).

AMPS firms share a tendency to locate in cities where general maritime policy and regulations are given shape and where hence the most comprehensive information is available (Verhetsel & Sel, 2009). In addition, the absence of an exchange tends to create a dynamic in port-cities in which maritime service business is done through personal relationships rather than a mature market system. Resulting, business will lack new talents as the entry barrier is blocking the younger generation from moving in (City University Hong Kong et al. 2013). In order to develop IMC reputation, developing a well-connected institutional framework is therefore key.

Furthermore, Merk & Dang (2013) state that an aspiring port-city has to form a comprehensive ambition and holistic strategies for developing and sustaining an IMC or AMPS cluster. A wide set of instruments could be used to aggressively further development such as development assistance, export promotion, trade missions and anti-piracy policies (Merk & Notteboom, 2013). Engaging in port cooperation (between different ports, at the metropolitan or regional level) can also help in developing IMC status. Inter-port coordination is seen as a strategic response to a competitive environment, in which jointly led activities gives participants a competitive edge. It generates a whole that is larger than the sum of its parts as it improves information transfer, supply chain integration, and the effective allocation of infrastructure (Merk, 2013). The same holds for the combination and integration of sea- and airports which can create synergies for certain businesses. O'Connor (2010) has observed that more diversified gateways (i.e. those possessing multiple airports and seaports within a radius of 70 km from the 'core') generate larger logistics sectors than more specialized gateways.

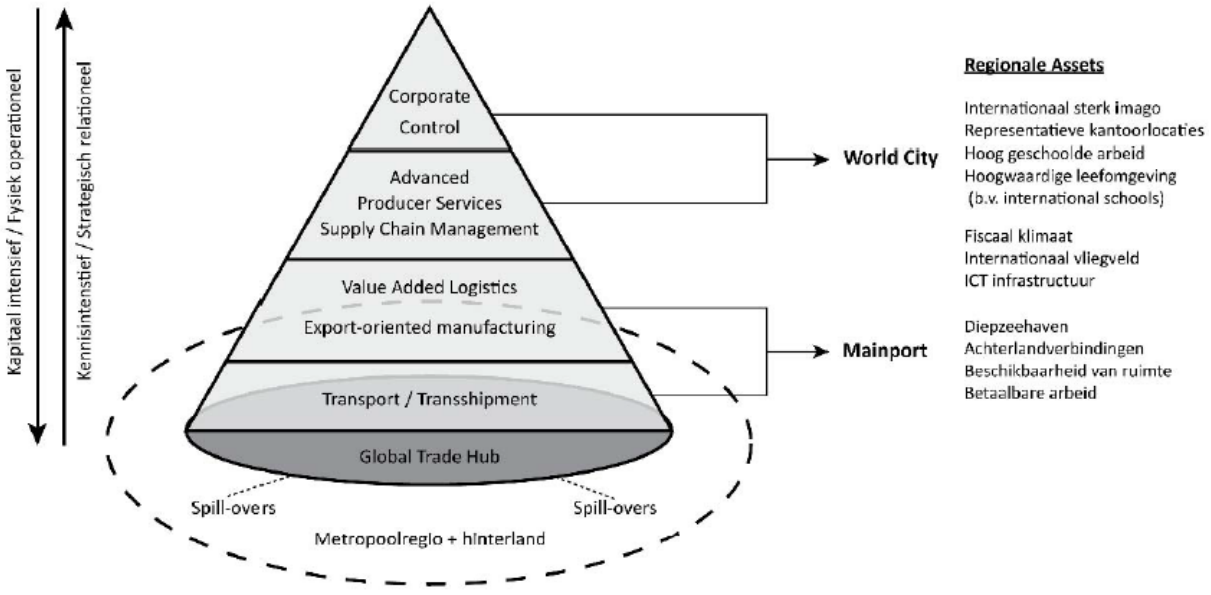


*Figure 5 – The IMC structure (*adapted from Jacobs & Van Dongen, 2012)*

Finally, each path of IMC development needs to be adjusted for the context, strength and weaknesses of the port-city involved. The aforementioned policy instruments are most effective when adjusted to these characteristics. Jointly, these policies serve to strengthen the regional assets of the port-city. The more active policies in these fields and on these assets, the more positive their influence will be on the port-city's performance (Merk, 2013). Coupling these regional assets with the maritime AMPS sector provides the 'model' IMC pyramid-structure as depicted in figure 5 in which the full maritime industry (from the port sector to service sector) is present. This process of 'strategic coupling' between regional assets and global economic activity will be addressed in full in paragraph 3.3.

3.2 The role, nature and characteristics of AMPS sector in port-cities

3.2.1 Basics: APS & KIBS firms

The concept of advanced producer services (APS) applies to firms who provide a service enabling the functioning of other firms and institutions in regional and global economic space (Coffey, 2000; Sassen, 2001; Wood, 2002; Hanssen, Derudder & Witlox, 2012). The role of APS firms herein is to help overcome "*differences between parts of the world in terms of technology, product specification, language, culture, politics, legal institutions, infrastructure and forms of regulation*" (Bryson et al., 2004). In other words, APS firms provide a legal, accountant, insurance or consultant (etc.) solution to the increased spatial and organizational complexity inherent to globally operating firms and global networks of production and consumption (Lambregts. 2008). This reflects the changes in the private- and public sector where large organizations outsource their specialist requirements and focus on their core activities which are produced in-house (Luthi, Thierstein & Goebel, 2010). APS offer strategically significant technical or organizational knowledge that client staff do not possess, or could not exploit without consultancy support (Parnreiter, 2015). In order to be able to service the local market successfully, APS firms need to be familiar with local regulatory and labor market conditions, but also should know all about the workings of the local client market (marketing) and, in addition to that, continuously develop its service products to satisfy local preferences and needs (Lambregts, 2008). This has created new social divisions of expert technical and management labor between client and consultancy functions (Wood, 2002). Research therefore pays increasing attention to the service provision for accelerating capital circulation and accumulation through advanced producer services (Hanssens, Derudder & Witlox, 2013).

Hanssens, Derudder & Witlox (2012) identify three dimensions in which advanced producer services are of major interest: *"(i) a functional dimension focusing on APS firms' influence on managerial and/ or operational capabilities; (ii) a governance dimension focusing on APS firms' ability to influence wider geographical patterns; and (iii) a concrete spatial dimension focusing on the geography of APS procurement".* In a functional capacity, APS firms acquire and assimilate knowledge of local cultures, business environments and legal frameworks and use this information on regional assets to reduce the geographical distance between places of MNE headquarters and places of local subsidiaries (Hanssens, Derudder & Witlox, 2012). These APS firms do not only provide their clients with their detailed codified local knowledge in their area of expertise, but also dispense valuable tacit knowledge on political and cultural sensitivities (Beaverstock et al., 1999). In a governing capacity, APS firms are presumed to exert global command and control. Sassen (2001) states the practice of global control encompasses "the work of producing and reproducing the organization and management of a global production system and a global marketplace for finance" (Sassen 2001). Parnreiter (2015) rebutted this statement by stating that this impact cannot be straightforwardly equated with 'command and control'. Though Sassen's notion is frequently quoted, little empirical effort has been dedicated to analyse the work practices and linkages that allows APS becoming key agents in the management and governance of economic globalization.

In a spatial capacity, APS firms need access to a skilled labor pool, vibrant information-rich environments and superior offices, transport and telecommunications infrastructures in order to maintain a competitive edge (Glückler 2007; Pereira and Derudder 2010). These resources are predominantly found in leading global urban areas, providing benefits in the form of benefit from economies of scale, knowledge transfer and especially from economies of scope, with competition and specialization supporting a greater variety of high-quality service provision (Merk, 2013; Marshall and Wood, 1995). APS firms have therefore increasingly become multinational firms, as they seek a foreign presence in numerous international markets to service existing

clients and find new ones (Aharoni and Nachum 2000; Harrington and Daniels 2006). On the other hand, global cities are considered to be the sites or locations of corporate and institutional power that drive and command global economic activity, because they harbor a strong APS presence (banks, insurance companies, law firms etc.; Sassen, 2001; Taylor, 2004). There thus is a clear interdependence between the *'globality'* of a city and clustering of the APS sector.

However, there exists a systematic lack of empirical information on the spatial and functional relations between APS firms and their (urban) clientele (Parnreiter, 2003; Hanssens, Derudder & Witlox, 2013). There is unfortunately no easy way of unravelling the influence of business consultancy from broader developments in the innovative environment. The presence of offices of major APS firms tells us very little about how these firms perform this role and how representative/important their role is (Parnreiter, 2010; Parnreiter, 2015). Assessing their influence is made more difficult by the common wish of clients to manage their own affairs and to be the primary 'owner' of change, even while drawing on wider sources of expertise (Wood, 2002). More research on the practices of AMPS firms is thus clearly needed.

Lastly, to fully frame the role of APS and AMPS in the knowledge economy, I also want to mention the akin so-called knowledge intensive businesses (KIBS) as both the APS and KIBS concepts are considered integral parts of global city development (Luthi, Thierstein & Goebel, 2010). The KIBS concept encompasses (1) financial intermediation and insurance services; (2) professional real estate, legal and accountancy services (3) 'auxiliary' financial services (e.g. exchange administration, securities broking and fund management), computer and database services, technical/architectural services, and business consultancy, advertising and market research (Wood, 2009). While the APS and KIBS conceptualizations differ, both feature a strong focus on the provision of knowledge intensive services (Muller, 2001) and in doing so, KIBS research is to a relatively high degree applicable on both the KIBS and APS sector. However, KIBS research draws similar criticism to APS research as there is little empirical evidence for the significance of KIBS as metropolitan assets in relation to the complex of 'multiple specializations' that support urban innovation (Simmie, 1999).

3.2.2 Specifics: AMPS firms

Hanssens, Derudder & Witlox (2013) state that the relevance of advanced producer services is dependent on the (sub)sector as there is significant sectoral variety between APS firms. This is why it interesting to look at AMPS in this thesis as the notion represents the maritime (sectoral) equivalent of advanced producer services. Maritime services are seen as a significant part of the service (APS) sector. Maritime services fit many of the key dimensions of the service economy outlined by Bryson et al. (2004), so has the sector experienced a shift from 'local to global' activity, playing a part in global service trade and investment. The maritime economy is also part of 'the production world' as the creation and operation of global production systems (as discussed by Dicken, 2011) is only possible if intermediate goods can be moved between production locations, and from production points to the consumer, in a predictable and speedy way. Dicken (2011) concludes that maritime services thus 'make the connections and move the goods'.

In conducting these activities, maritime service providers are also part of a "service world", as they are involved in complex interdependencies with other services, especially information technology, finance, marketing, and government services (O'Connor, Derudder & Witlox, 2015). Within the maritime sector, there is a demand for such servicing: *"to finance ships and port facilities, to insure ships and cargo, to have a legal representation in case of an incident, to have software solutions in supply chain management, to inspect ships and to provide technical expertise on damages"* (Jacobs, Koster & Hall, 2011; Bentlage et al., 2014). Maritime trade activity thus creates demand for specialized advanced business services in terms of marine insurance, finance, legal advice and certification (cf. Jacobs et al. 2011).

Dissecting the AMPS sector, there is a wide diversity apparent in organizational structure. Some AMPS firms opt to specialize themselves in the maritime services, while others include the sector as a part in a greater portfolio of clients. Some AMPS firms are part of multinational APS firms, while others are local firms hosting international clients or internalized AMPS divisions of MNEs. Some companies use the global connections forged in these port-cities as a springboard to enter global markets (Jacobs & Van Dongen, 2012). Relational proximity is key in AMPS functions as most of the services are provided incidentally and periodically when facilitating transactions within supply chains or covering certain firm risks. Trust, reputation, experience and

maintaining face-to-face relations with clients are essential in achieving this relational proximity (Jacobs & Van Dongen, 2012).

Briefly analyzing the locational patterns of AMPS firms, Jacobs et al. (2010) observe some overlap between AMPS clusters and the conventional GaWC world city ranking, but also some fundamental discrepancies: the top-ranked cities in trade and shipping-related AMPS include port cities such as Rotterdam, Houston and Hamburg. Therefore, the need remains to explain why certain port cities are capable of developing AMPS and certain global city functions related to flows of goods (Jacobs, 2012).

The AMPS sector is comprised out of several different subsectors. City University Hong Kong et al. (2013) indicate the following seven AMPS subsectors; maritime insurance, cruise industry, maritime arbitration, ship owning and management, ship registration, ship brokering and chartering and ship finance. These categorizations however differ in literature and heavily depend on the national and local context of the AMPS sector, which is why the table below should be taken as a general example.

AMPS subsectors	Core activity
Maritime insurance	Covering quantifiable risk such as Hull and Machinery (H&M) insurance or cargo insurances and indeterminate risks such as third party liabilities. Given the significant value of the shipping industry and the unpredictable nature of liabilities, these maritime services are much needed.
Cruise industry	Cruise vessels and facilities bring in tourists who consume locally and offer ample business opportunities. Several cruise clusters are considered supply-driven, for without ships and operational facilities to support the servicing of the vessels, demand cannot manifest itself.
Maritime arbitration	Due to the rapid growth of the Asian economies and their growing acceptance of arbitration as a form of alternative dispute resolution, there has been a substantial increase in dispute referral to arbitration in recent years.
Ship owning and management	Among all the maritime services, ship owning and ship management play a critical role in developing the sector as a whole. Other services, such as ship finance, ship insurance and ship chartering, always follow ship owning and ship management by cultivating long-term and professional relationships with them. Ship owners or managers and maritime services are highly interactive, and they work together to maximize the economic synergy.
Ship registration	Ship registration is a process by which a ship is documented and authorized in certain countries or territories. Ship owners or operators will take into account the registration fee, trade restrictions, taxation arrangement and service efficiency when deciding where to register. The taxation arrangement is the most important factor in their considerations.
Ship brokering and chartering	The broking and chartering business follows the ship owners and covers multiple aspects of ship business, including sales and purchase (S&P), ship building, ship chartering and ship repairing. Due to the highly specialized nature of the work, the industry is not easy to enter, the business usually thrives on personal relationships and networks with ship owners.
Ship finance	Bank loans have remained the primary source of financing for the shipping industry, despite the fact that some of the largest companies are listed on stock exchanges. Considering the complexity of the business nature, competent and experienced manpower is critical to the industry. Besides pure bank loans, few related services have been provided to ship owners.

Table 7 – Background information on the main AMPS subsectors (City University Hong Kong et al. 2013)

In order to fully grasp the workings of the maritime economy and the position of AMPS functions herein, a closer and inductive look the composition of, and relationships within, the maritime economy in order to evaluate the role of knowledge transfer for spatial development, the interdependence of activity fields and interaction of spatial co-location and distant collaboration (Bentlage et al., 2014). The next paragraphs will address this composition at the global and local level.

3.2.3 Global role of AMPS sector

Advanced maritime producer services are provided through extensive and intensive interaction between the seller and the buyer. This interaction requires reliable and rapid communication best conveyed through personal contacts, which creates a distinct need for locality for AMPS firms. AMPS firms therefore face a need to engage in regional production networks. In addition to these regional production networks, AMPS firms are found to be increasingly inserted in trans-regional networks (Hanssens, Derudder & Witlox, 2013). This has led to conceptualizations of AMPS clusters as 'neo-Marshallian nodes in global networks' (Amin and Thrift, 1992), 'global city-regions' (Scott et al. 2001), 'local buzz and global pipelines' (Bathelt et al., 2004), and in the case of APS above all 'world city networks' (Taylor, 2004). The business networks and linkages between AMPS firms and their consumers are part of a much broader dynamic involving vertical disintegration and the new geographies this brings about (Michalak and Fairbairn, 1993; Thierstein et al., 2008).

The AMPS firms that help organize global and regional trade are supplied by multi-locational, multi-functional, and information-intensive firms delivering wide array of services to a broad array of clients in many countries (Hanssens, Derudder & Witlox, 2013; O'Connor, Derudder & Witlox, 2015). Global AMPS firms gain their competitive edge over local MAPS firms and in-house service departments by developing economies of scale. These economies of scale can even be attained while executing unique and multifaceted projects by sharing specialized know-how, tacit knowledge and relational proximity in a cross-border network with quick and easy flows of information (Parnreiter, 2015). Firms and cities are increasingly connected to other places in the world in many different ways and through many different actors who form networks on different spatial scales (Luthi, Thierstein & Goebel, 2010). Corporate power can be an interesting lens through which to analyze these AMPS structures. Focusing on power asymmetries to explain how and why networks and partnerships take form, is a perspective that has found resonance within economic geography circles (Olivier & Slack, 2006; Bathelt and Taylor, 2002; Jessop, 2001; Yeung, 2002). Understanding the port community partially translates into questioning power imbalances among stakeholders and examining 'strategic alliances, corporate consolidation, global tendering processes, corporate-governance structures, knowledge and technology circulation channels, R&D resource concentration, etc.', say Olivier & Slack (2006). Such relational global networks are widely assumed to harbor specific hierarchies, hierarchies which according to Parnreiter (2015) cannot be simply deduced result from different office sizes. He states office sizes are primarily determined by market size and do not imply any chain of command. Local offices of international AMPS firms are established wherever a certain local presence is preferred or required in order to attract and service clients properly (Wood, 2002). However, authors argue that their work does originate and gets planned from metropolitan based headquarters, reinforcing the metropolitan nexus of corporate strategic planning (Wood, 2002; O'Connor, Derudder & Witlox, 2015). Luthi, Thierstein & Goebel (2010) remark that APS firms are increasingly located just within the city centers of economic regions and connect these places directly with other city centers in the world.

Vandermotten et al. (2006) argue that the dominant positions of certain AMPS clusters can be attributed to their central location and well-developed infrastructure, implying that AMPS firms serve larger regional, national or even international areas from a central office. Friedmann (1986) suggests that as (economic) power is relative concentrated in one location, a 'world city' may consist of multiple cities and their hinterlands as their economic power extends beyond urban boundaries. Luthi, Thierstein & Goebel (2010) confirm this argument as they find that secondary cities in proximity to Munich and Munich itself are linked together by interlocking networks of AMPS firms, defining the greater Munich area as an emerging polycentric mega-city region; a localized system of value chains with a steep functional urban hierarchy. Scott (2001) states that such regional clustering forms an enhanced competitive firm advantage for many types of firms. Strategies of vertical disintegration and outsourcing of production encourage agglomeration as spatial proximity lowers transactions costs, especially when those transactions are frequent but complex and unpredictable (Hanssens, Derudder & Witlox, 2013).

Jacobs, Koster, and Hall (2011) found only a weak relation between commodity flow patterns in ports and advanced maritime producer service firm localization in port cities. They argue that the maritime services they studied responded to a separate set of locational forces, akin to those applicable to the overarching sector of advanced producer services. Hanssens, Derudder & Witlox (2015) noted that AMPS face a need to locate part of their activity close to ports in order to coordinate and integrate other service suppliers across the globe along the supply chain such as transportation, storage and distribution. This role requires management and

financing input to coordinate the needs of clients and suppliers, typically located in head or major regional offices. It is possible that the breadth of commercial functions and the diverse skills required by logistics service firms nowadays may therefore encourage location of key management activities in the producer service-rich environment of global cities (Hanssen, Derudder & Witlox, 2015).

Global cities therefore also seem to be the "basing points" of global production for logistics service firms when orchestrating a wide array of production linkages within global and regional production systems (Hanssens, Derudder & Witlox, 2015). Adding effect, Verhetsel & Sel (2009) find that AMPS companies have a tendency to locate in cities where general maritime policy and regulations are given shape because the most comprehensive information is available in those cities. These developments concur with the restructuring of port activities and the rise of port city-regions (Notteboom & Rodrigue, 2005) as relevant units, marking a process of up-scaling and alignment with global city regions (Hall, 2007). However, these patterns need not be uniform. A number of AMPS firms, have retained head offices in smaller cities, often where they commenced business. The AMPS sector might therefore have a different distribution of their head offices across global cities than is the case with ordinary advanced producer services such as finance and banking (Hanssens, Derudder & Witlox, 2015). However, it is presumed that when AMPS firms structure a global network of offices, they do look to the highest ranked global cities as locations.

> *'Economic success in urban areas does not depend only on technology transfer arrangements and/or the presence of innovators, but also on the characteristics of the wider regional economy; that is the various actors, the relationships between them, and the economic environment within which they operate' (Hanssens, Derudder & Witlox, 2013)*

Sassen (2010) suggests that the widespread cross-border operations lead to new organizational formats and demand for organizational needs. Her work (Sassen, 2001; Sassen, 2010) suggests that global cities are the best production places for such organization commodities, and that this accumulation of organizational commodities creates an urban hierarchy through which APS firms exert command and control functions over global economic activity. Parnreiter (2015) has empirically challenged this notion and rejects the idea of 'command and control' in a narrow interpretation. He however acknowledges that GCCs are 'greased' through APS' inputs, and that APS also shape "how financial, material and human resources are allocated and flow within a chain" (Gereffi 1994). (Hanssens, Derudder & Witlox (2013) find that these processes clearly reveal a functional and networked logic of both "independent and interdependent institutions throughout the value chain". Hanssens, Derudder & Witlox (2013) warn for circular reasoning in AMPS research, as a focus on the importance of 'globalized APS firms' can necessarily engender 'world cities' and vice versa. This warning echoes McCann's (2004) call for considering locations beyond a set of 'major' cities. When analyzing AMPS functions it is therefore important to assess regional specificity to service provision and focus on the observed empirical links involved in urban network formation. The relative importance of 'local' branding and local knowledge, points to the continuing relevance of regional specificity in APS provision as behavior of MNEs is being tailored to local cultures, business environments and laws (Hanssens, Derudder & Witlox, 2013). Luthi, Thierstein & Goebel (2010) points out that this regional specificity in AMPS provision needs more consideration from a qualitative rather than a quantitative perspective.

Another global AMPS dimension that was briefly touched upon earlier in this paragraph is found in knowledge structures. Globally networked advanced producer services firms are presumed to play a key role in transferring knowledge between local and global circuits (Lambregts, 2008; Taylor, 2004). Transnational multi-office firms try hard to hold various knowledge architectures in place and seek to achieve relational proximity across their distant sites through practices of translation, travel, shared routines, talk, common passions, base standards, brokers, epistemic and community bonding as well as the ordering and orientation provided by files, documents, codes, common software and so on (Amin & Cohendet, 2004).

The competitiveness of regions is highly dependent on the capacity of actors located within them to generate leading-edge knowledge. Bentlage et al. (2014) reaffirm this notion as they remark that a "strong technological knowledge base underpins the competitiveness of the maritime economy, which is grounded in distinct spatial structures and proximities". In generating state-of-the-art knowledge, no city or region can be constantly self-supporting. "No matter how 'knowledgeable' and creative a region's economic agents are, it is rather likely that elsewhere in the world particular pieces of new and valuable knowledge are formed either just a little bit earlier or in just a slightly more advanced form" (Lambregts, 2008). Regions that are able to combine a strong

local knowledge capital base ('local buzz') with high levels of connectivity to similar regions elsewhere in the global economy ('global pipelines') are best off in this regard (Simmie, 2003; Bathelt et al., 2004). In other words, local knowledge bases should be rich enough to fuel a continuous process of leading-edge knowledge formation while the myriad of external relationships maintained by their globally networked firms should ensure that new and valuable bits of knowledge created elsewhere, quickly find their way to these regions as well (Lambregts, 2008). A(M)PS firms constitute agents that build these spatially concentrated knowledge gateways between regional and global economies (Hanssens, Derudder & Witlox, 2013).

This simultaneous relevance of both global and local knowledge could be even more pronounced in the maritime sector due to its interdependence with globalization and structural change (Bentlage et al., 2014). AMPS firms are functionally and relationally interwoven on and between the global and local level. From a functional perspective, the maritime economy transcends the sectors of transport, services and manufacturing, involves private and public actors and fosters the importance of advanced producer services as intermediates in the structurally changed production process (Bentlage et al., 2014). The relational perspective acknowledges the knowledge networks of AMPS firms and considers this knowledge creation as an interactive process. Knowledge production is a complex process that is strongly interlinked with the transformation and exchange of goods, ranging along the value chain from low-tech manufacturing to knowledge intensive industries (Hall & Hesse 2013; Hesse 2013).

The aggregated maritime economy therefore represents a heterogeneous and complex innovation system in which physical flows of goods are interwoven with nonphysical flows of information and knowledge. As a result, the maritime economy provides a unique opportunity to assess the spatiality of knowledge networks, which reach beyond the facilities of port-cities (Hesse 2010).

3.2.4 Local role of AMPS sector

As established earlier, there is a great observed spatial variety among port-cities, port activity and AMPS clustering. Some port-city regions are observed to contract in terms of maritime activity, while others are able to persevere or (rapidly) expand. Hall & Jacobs (2012) argue that a reason for decline can be that local firms have become locked into established industrial practices and corresponding institutional frameworks. In these cases, firms "lose their absorptive capacity to detect new knowledge and to engage in new avenues of exploration and in which institutions fail to accommodate both innovative behavior and newly founded industries" (Hall & Jacobs, 2012). Reviving a regional economy is possible if firms are able to make new combinations through technological advances with other or emerging industries. New regions can emerge as seedbeds of new industries, as they are not constrained by any form of industrial legacy, vested interests or existing institutions and thus face a more grassroots or level playing field (Hall & Jacobs, 2012). Under the right techno-economic and institutional structure, regions can be seedbeds or incubators for AMPS firms.

AMPS are therefore found to be correlated to a high level of related variety (Jacobs, Ducruet & Delangen, 2010), a notion that can be defined as "sectors that are related in terms of shared or complementary competences" (Boschma & Iammarino, 2009). It is found in urbanization economies that host a wide variety of economic activities, possessing a greater probability for inter-industry crossovers and collaborations than more functionally-specialized economies (Hall & Jacobs, 2012). Singapore's policies have been explicitly aimed at furthering synergy between the port and the advanced services located in the city, or in other words, to stimulate related variety (Hall & Jacobs, 2012). It is the related variety that urban spaces typically provide, that will allow some ports to move 'beyond the lock-in' and cater to the demands of a sustainable future (Atzema, Boelens & Velman, 2010). Likewise, it has been argued that the relationship between AMPS and (other) multinational enterprises (MNEs) within the regional economy is advantageous for urban and regional dynamics (Jacobs, Koster & Van Oort, 2014). Service innovation relies on close interaction, cognitive proximities and customer-specific, intangible products. Moreover, innovation in services and the presence of AMPS are considered to be crucial for the development of a city's international competitiveness in the knowledge-based economy (OECD, 2005; Raspe and van Oort, 2006; Simmie and Strambach, 2006).

The previous paragraph established the importance of external flows of information and knowledge, which is broadly identified as an exchange of codified knowledge transmitted via ICT. Localized knowledge transfer has a different dimension; that of tacit knowledge which is geographically located or socially embedded (Amin &

Roberts, 2008). Codified and tacit knowledge are complementary categories. Tacit knowledge is needed to interpret codified knowledge meaningfully and it is often from their interaction that new knowledge is created (Nonaka et al., 2000). A firm's ability to produce, access and control tacit knowledge' is widely considered to be 'most important to its competitive success' (Gertler, 2003).

A key characteristic of dense urban ecologies is that they produce spatially bounded knowledge spillovers. These are knowledge externalities that enable their beneficiaries 'to introduce innovations at a faster rate than rival firms located elsewhere' (Breschi and Lissoni, 2001), which are now seen as important determinants of local and regional competitiveness (Malmberg and Maskell, 2002) and an important agglomerative force (Gordon and McCann, 2000). Gertler (2003) mentions three arguments for this spatial foundation. Firstly, tacit knowledge is difficult to exchange over long distances since it is rooted in personal experiences. Secondly, it is context specific in terms of regional language, shared values or culture. Thirdly, the innovation process turns into social action when a learning process is initiated which requires interaction with local institutions and organizations. During the past decade or so, however, a growing number of authors have started to ask if these readings of the spatiality of knowledge diffusion and creation do not put too high a premium on spatial proximity (Amin and Cohendet, 2004; Bathelt et al., 2004; Boschma, 2005). To analyze this innovation system, a focus is needed on the patterns of spatial and relational proximity between the actors of the maritime economy and their functional role in the process of innovation (Bentlage et al., 2014).

The right mixture of spatial and relation proximity ensures competitiveness for AMPS firms (Notteboom 2000). Spatial, or physical, proximity is given by short geographical distance and is considered to catalyze knowledge transfer by increasing the likelihood of interaction (Storper & Venables, 2004; Eriksson, 2011). Relational proximity, by means of organizational, institutional and cognitive proximity, is complementary to physical proximity in that it 'reduces barriers to the exchange of knowledge within a shared value creation process, knowledge base and competitive and regulatory environment' (Malerba 2005). Cognitive proximity exists when actors share the same knowledge or technological base. Institutional proximity is realized by being a formal member of a club or association. Finally, organizational proximity is defined by being part of an overarching framework within which the same rules or strategies are followed, as is the case with the subsidiaries of a company (Boschma, 2005). Hall & Jacobs (2010) found that an increase in external linkages of port-cities is 'counterbalanced by strengthening of the importance of proximity to institutions and other partners within the local environment' (Hall & Jacobs 2010).

> *"Shipping companies are a prime example of an actor linking the sector of transport and logistics, manufacturing and high tech, by commissioning the construction of vessels to certain specifications and then inserting those vessels directly or indirectly in the system of maritime transportation innovation" (Bentlage et al., 2014)*

Koschatzky & Sternberg (2000) stresses the importance of proximity within AMPS provision and identifies personal networks as key elements of a regional "entrepreneurial social infrastructure". It is assumed that knowledge and its organization is tied to personal capabilities and information (know-how, know-who) and therefore has a geographical component. *"Tacit knowledge"* in terms of business behavior, routines, and attitudes is only available at certain locations where the respective learning processes can be realized. The economic advantages of such *"untraded interdependencies"* (Storper, 1995), as, for example, commonly shared industrial conventions and business practices, or a culture of cooperation between economic agents, arise from local clustering and specialization. Particularly with regard to less codified knowledge, it is generally assumed that "knowledge traverses corridors and streets more easily than continents and oceans" (Feldman, 1994, p. 2).

Bentlage et al. (2014) find that the maritime economy revolves around certain knowledge bases and cognitive proximity between the actors. In their perspective, the maritime economy is predominantly held together by actors in advanced maritime producer services, manufacturing and research institutions. Knowledge from transactions, high-tech and information requires mediation between tacit and codified knowledge, adding a specific need for locality to AMPS functions. In addition, the need for a common sense of understanding and a shared language is found to enhance local clustering and spreading services through networks in a regional spatial range (Bentlage et al., 2014).

Nonaka et al. (2000) view organizations as continuously concerned with creating and recreating knowledge, and define knowledge itself as dynamic, context-specific, humanistic and relational. Knowledge cycles leading

to innovation result, at least partly, from interactions between different categories of actors. Innovations are thus embedded in specific social, economic, political and cultural contexts, they are context-dependent and have a systemic character (Muller & Zenker, 2001). Recreating knowledge occurs in the following ways according to Lambregts (2008). Socialization refers to the process where tacit knowledge gets shared and converted to form new tacit knowledge. Externalization concerns the process of articulating tacit knowledge into codified knowledge. Combination is the process of converting *'basic'* codified knowledge into more complex and systematic sets of codified knowledge. Internalization, finally, is the process where codified knowledge is assimilated into tacit knowledge. The formation of strategic market-related knowledge rather involves a combination of the 'combination', 'internalization' and 'externalization' modes of knowledge conversion. Networked firms have typically introduced a division of labor between their units to perform this strategic knowledge activity, with headquarters or a dedicated subsidiary taking care of the identification and interpretation of the global trends and the (other) subsidiaries seeing to the translation of these insights to their national and/or local contexts (Lambregts, 2008).

Czarnitzki and Spielkamp (2000, p. 26) underline that KIBS and AMPS firms can be considered "*bridges for innovation*". A process of knowledge recombination takes place within AMPS and KIBS; knowledge gained from interactions with clients is combined with existing knowledge whereas additional knowledge is acquired and new knowledge is generated (Muller & Zenker, 2001). KIBS and AMPS firms act moreover as bridges between technological and business expertise on the one side, and localized knowledge and capabilities on the other side, becoming problem-solving actors specialized in the provision of the complementary knowledge inputs allowing the generation of innovations. KIBS therefore contribute to the development of innovation potentials at regional level (Muller & Zenker, 2001). The function of KIBS as "bridging institutions" is crucial for the renewal of innovation networks.

"A service does not have an autonomous existence defined by its technical specifications. It is a social construction" (Djellal & Gallouj, 1999)

AMPS are constantly competing for clients and contracts, making it the art to become and remain 'preferred supplier' for particular clients, and to get short-listed and invited for tender procedures as often as possible. This is, in part, a matter of delivering high-quality services, careful name building and keeping existing clients satisfied. But it also a process of securing access to information that helps the service provider to winning new contracts. These processes therefore rely heavily on personal, trust-based relationships (Lambregts, 2008). AMPS firms can be approached as if they were 'pseudo-manufacturers', assembling and selling intangible services in much the same manner as tangible goods. Service innovation is also often associated with cross-functional teams, bringing together key people, sharing tacit knowledge, networking with external agencies, and sustaining formal and informal control processes (Tidd & Hull, 2006). Any service innovation thus arises from the processes of interaction, service creation and delivery. APS firm combine various competencies without necessarily requiring distinct R&D functions (Wood, 2009).

Altogether, interactions with clients and other units within the firm appear to be the most instrumental to product-related knowledge formation. Success always depends on exchanges of expertise with other firms, especially 'co-production' with clients. What is learned by consultants may then be applied to other projects, the benefits are therefore cumulative. The practice of acquiring operational market-related information concerns the employment of a deep (tacit) understanding of a market in order to secure access to exclusive information that is often distributed among a (very) few people only (Lambregts, 2008). The prevailing picture is clearly one whereby the acquisition of operational market-related knowledge for APS firms is very much a story of 'being there'.

3.3 Locational behavior of AMPS firms

3.3.1 APS spatial structures

So far, it has been established that the location behavior of AMPS firms is not a subject that can be isolated from its context or history. A proper exploration of the theories and variables that underlie the location behavior of AMPS firms therefore first examines the current spatial structures in place. As earlier, I start out by

examining the non-sector specific APS structures as a research benchmark. Or put simpler, *where does service work take place?*

Hermelin (1998) provides sensible but crucial answers to this question. (Advanced producer) service work takes place in either of these four locations*: 1) In the office of the firm, 2) At the client's premises, 3) At meeting-places (public places that are suited for business meetings between clients and service providers) and 4) Telework from home.* These four alternative working environments imply different locational patterns for different APS firms. If most work takes place in the office, its location must be central and thus accessible to its employees. If most work takes place at the premises of clients, proximity to clients is favored. If considerable amount of work is conducted in meeting-places, a location in an urban agglomeration is favored. When most of the work is done from home, location choices become more obsolete (Hermelin, 1998). Hermelin's work implies that spatial structures of APS depend partially on the nature of the APS work conducted.

Martinelli & Moulaert (1993) differentiate further and account for different types of services provided and their respective locational pull factors: (a) services and service phases related to strategic management and decision-making (R&D, marketing policies, finance), which greatly depend on the ease of face-to-face communication and spatial proximity; (b) services with a more operational character such as routine business administration or material production, which depend less on communication and proximity; (c) services or service phases that are more standardized in either content or process and therefore do not need physical proximity to either headquarters or production; and (d) services or phases related to the distribution of goods, which share a need to be closely located to their market (Martinelli & Moulaert, 1993).

Hanssens, Derudder & Witlox (2012) provide four more multiscalar spatial models (centralization, partial centralization, decentralization and partial decentralization) of the APS-related interfirm transactions links. These models address spatial hierarchy among global networks of APS and non-APS firms (figure 6). In a centralized organizational structure, decision-making power is concentrated at the level of the parent company (PC) and services are concentrated at the APS level. Here, the flows between decision makers and service providers occur within the first order decision-service city and include strategic knowledge, contractual arrangements, capital transfers, etc. while the production or commercial nodes and the first order decision-service city merely exchange information, ideas, products, services, etc. Decision-making is concentrated in the first order decision-service city and lies with the PC, which has a strong relation with the APS located here (Hanssens, Derudder & Witlox, 2012). In other words, the hierarchical functional and locational division of labor in these multinational firms, separates the strategic functions and related APS from more routine and decentralized operations (Martinelli & Moulaert, 1993).

In partial centralization, international APS firms play a crucial role. This spatial models envisions both global (hierarchal) office networks of MNEs and APS, in which both locate in first order and second order decision-service cities. While allowing for some deconcentration through the opening of branch offices in lower level regions, APS also foster a functional division of space within the service production/delivery process itself, spatial concentrating the most advanced and strategic functions within each of these activities (Martinelli & Moulaert, 1993). Flows do not transcend these hierarchies and instead local contracts are made that address the local specificities, while primary strategic knowledge and contractual agreements are made between the parent companies in first order cities.

In spatial terms, the third and the fourth model are identical. In both cases the PC and its subsidiary are serviced by different APS firms, so that we are dealing with decentralized decision making. The two models differ with regard to the flows between the first order decision-service city and the second order decision-service city as in partial decentralization the PC keeps control over the selected service providers in both cities. In the case of complete decentralization, a subsidiary subcontracts a local APS firm without the PC influencing or controlling that decision-making process (Hanssens, Derudder & Witlox, 2012).

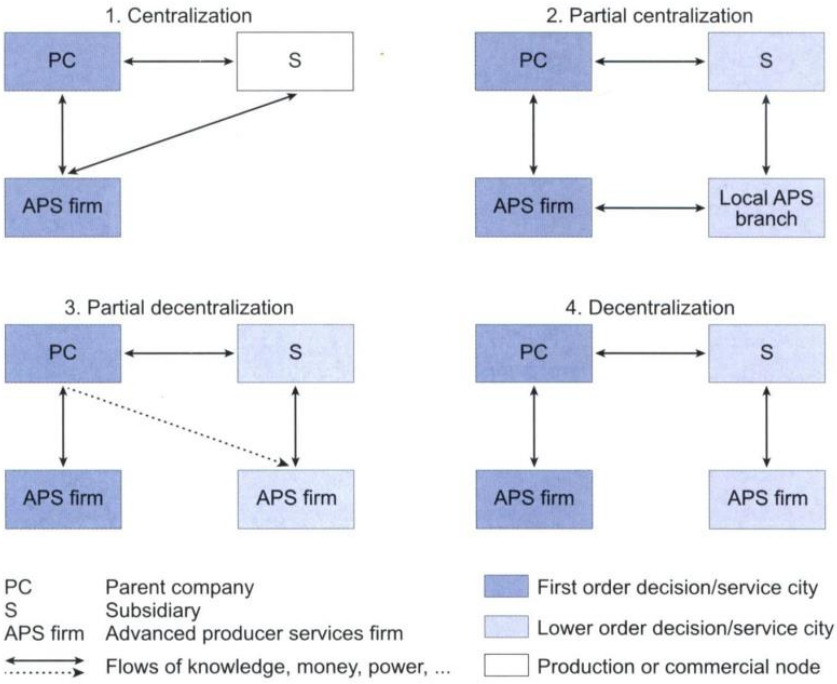


Figure 6 – Four spatial models of APS transaction links (Hanssens, Derudder & Witlox, 2012)

3.3.2 AMPS spatial structures

We have established that in every production network, there is a need for advanced producer services (Jacobs, Ducruet & De Langen, 2010). However, adding sector specificity to APS spatial structures can create a different frame altogether. Jacobs, Ducruet & Delangen (2010) examined the relationship between commodity flows and AMPS centers and found that "port-related APS activities predominantly follow the world city hierarchy, but a number of port cities stand out because they act as nodes in global commodity flows and as centers of advanced services related to shipping and port activities". The location of AMPS is correlated with maritime localization economies, expressed in the presence of ship-owners and port-related industry as well as APS in general, but not by throughput flows of ports (Jacobs, Koster & Hall, 2011) as there is merely a weak relation between commodity flow patterns in ports and APS firm localization in port cities.

In turn, this suggests a spatial division of labor in which AMPS are spatially disconnected from the global flow of commodities that it supports (Jacobs, Ducruet & Delangen, 2010). On the other hand, Jacobs, Ducruet & Delangen (2010) identify some specific cases such as Rotterdam, Houston and Hamburg where the concentration of physical flows coincides with the location of specialized APS functions, suggesting co-location benefits of maritime APS with supply chain activities. Sector-specific specialization of APS raises the possibility of a different location pattern than that predicted by current world city analyses if such services agglomerate in close proximity to their client industry (Jacobs, Koster & Hall, 2011).

A possible explanation for a different spatial structure is that maritime services are part of the transportation sector as well as the APS sector (O'Conner, Holly & Clarke, 2012). Both these sectors '*require rich, geographically-specific knowledge, deal with international and widely geographically dispersed transactions and remain among the most localized and embedded industries of all' (*Aoyama et al., 2006). However, these sectors usually seek different local milieus. Tabuchi and Thisse (2002) argue that different sorts of goods exhibit distinct spatial patterns because of the commodity-specific dimension of agglomeration and dispersion forces. Notably, heavy industries and industries producing goods with high transport costs are more agglomerated than light industries and industries with lower transport costs. Core economic regions such as large urban tertiary centers therefore concentrate most valued, diversified, and weighty traffic, while more peripheral and traditional ones tend to specialize in bulky traffic (Ducruet, Itoh & Joly, 2015).

In the same way that the ports and logistics services are often tightly interwoven into one sub-sector, the shipping and maritime services sub-sectors often go hand-in-hand. Ship ownership and management play a key role in the health of the maritime cluster as a whole, increasing demand for a range of services and positioning port-cities such as Singapore, Rotterdam and London as international maritime centers. Shipping companies are somewhat constrained in their locational choices for their strategic command and control functions. Indeed, headquarters and regional offices where top-level decision-making and deal brokering takes place must be located in places that can provide the services without which the shipping industry could not function (Merk, 2013). For these economic activities urban attractiveness is a more important criterion than the presence or size of a port. Verhetsel & Sel (2009) find that while high value added functions are often located in port-cities, being a port-city is in no way a guarantee for attracting such functions.

The location of maritime APS therefore appears to be the result of two opposing agglomeration forces: *AMPS firms derive benefits from localization economies in port-cities, but also derive benefits from urbanization economies found in global cities.*

3.3.3 AMPS Clustering

Little is known about the importance of agglomeration economies for the location decisions of individual firms. Location theories focus on the process of choosing a specific location, and the relevant location factors influencing the outcome of this process (Jacobs, Koster & Van Oort, 2014).Traditional location theory suggests that firms choose their location in order to minimizing transfer cost. Newer location theories shift the focus from distance and transportation costs to location-specific aspects of collections of people (markets) and resources (inputs; Wernerheim & Sharpe, 2003). Firms capture positive economic externalities by being co-located, or clustered, in space. Clusters are usually defined spatially, as regions or areas that feature higher than average concentrations of value-added activity within a given domain (e.g. maritime), but can be distinguished from industrial districts or simple spatial concentrations of firms in that they are linked through (formal) networking platforms, and usually benefit from some degree of cooperation and collective governance (Doloreux & Shearmur 2009). Porter (2000) therefore explicitly defines clusters as networks, stating that they are 'a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities' (Porter, 2000).

Agglomeration theory concerns itself with the presence of positive externalities which result in increasing returns to scale (Jacobs, Koster & Van Oort, 2014). Two sources of agglomeration economies are applicable in this thesis: localization economies and urbanization economies. Localization economies entail the availability of external economies for all local firms of a same sector, such as in an industrial complex. Urbanization economies entail the availability of external economies to all local firms from a variety of sectors or arising from urban density or size, such as in global cities (Wernerheim & Sharpe, 2003; Frenk, Van Oort & Verburg, 2007; Jacob, Koster & Hall, 2007). Localization economies are related to supply inputs, industrial knowledge spillovers and client proximity, while urbanization economies are related to accessible infrastructure (transport, communication and real estate) and labor pools (Hermelin, 1998; Pereira & Derudder, 2010).

The positive externalities stemming from co-location are complemented and intensified by other interrelated elements, including the dense linkages among co-located buyers, suppliers, and customers (Porter, 1998). Urban density supports the production and absorption of knowledge and stimulates innovative behavior as important innovations stem from the recombination of knowledge present in different industries. Spatial proximity between firms in different industries renders such recombination more likely to occur, particularly if these firms also operate under similar institutional conditions. Acs et al. (2006) contend that ''entrepreneurial activity will tend to be greater in milieus where investments in new knowledge are relatively high, since the new firm will be started from knowledge that has spilled over from the source actually producing that knowledge. As such, an innovative milieu can harbor a locational advantage.

Economic geographers have long argued that spatial proximity contributes to processes of innovation and upgrading that are central to economic development. Spatial proximity supports the interactions that are required for learning, including the creation, acquisition, and application of knowledge (Hall & Jacobs, 2010). Proximity to clients is the most frequently named factor explaining clustered APS. It is widely assumed, that the location of APS relies heavily on APS requiring a direct and often unique face-to-face transaction between

supplier and user, and hence suppliers need to be co-located in close proximity with their clients (Moulaert & Gallouj, 1993; Hermelin, 1998). Clustering of APS services is thus powerfully influenced by needs for and benefits of proximity and accessibility to clients (Keeble & Nachum, 2002; Arzaghi & Henderson, 2008; Jacobs, Koster & Van Oort, 2014). Localized process of knowledge acquisition, development and networking are crucial to the APS cluster's existence (Keeble & Nachum, 2002).

Martinelli & Moulaert (1993) have criticized the importance put upon spatial proximity, arguing that it is a fallacy to imply that many A(M)PS cannot be transported or transferred (Martinelli & Moulaert, 1993). Higher rates of APS utilization might be expected among firms that reside in supply-rich locations, but the fact that APS can be traded across regions (and over long distances) implies that firms outside clusters could compensate for local supply weaknesses via imports. While this does indeed seem to happen, the level of non-local sourcing is found to be lower than it could be (Makun & Macpherson, 1997). For many firms, it would seem that the import option of A(M)PS is fraught with difficulties (Makun & Macpherson, 1997).

Clusters are especially important to the maritime sector because the shipping and ports industries are highly dependent on sub-contracting, various kinds of maritime services and a very specialized local workforce (De Langen 2002; Wijnolst 2006). AMPS subsectors are affected by agglomeration economies in different ways as they can have different requirements. For some AMPS firms, direct proximity to seaports and physical goods movement is important, for instance in order to inspect or classify ships when in port. These AMPS firms tend to be more routine and in real-time demand (Jacob, Koster & Hall, 2007). They find the local or regional market to be particularly important as they sell distance-sensitive products or services, making physical accessibility to large and dense markets valuable (Andersson & Hellerstedt, 2009). However, for some AMPS firms spatial proximity to other APS is more important, while direct proximity to port-cities and commodity flows is less relevant. They produce knowledge-intensive products in which proximity to financial services and specialized human capital becomes crucial (Jacob, Koster & Hall, 2007). In a response, some port authorities have used the proximity of the port to the city to 'benefit from the positive externalities that urban agglomerations represent in terms of human capital and infrastructure' (Hall & Jacobs 2012), stimulating the procurement of the latter types of AMPS firms.

Another manifestation of spatial proximity is found between AMPS and their clients; the ship-owners and other port-related industries. A high concentration of ship-owners at a particular location might attract offices of maritime advanced services (Jacob, Koster & Hall, 2007), which is exemplified by the relatively large concentration of globally operating AMPS in Piraeus and Oslo. Institutional and historical factors may also influence the location and networks of maritime advanced services, as Karlsen (2005) argues that in most instances clusters emerge through path-dependent and market-induced processes. This means that not all maritime clusters can be encouraged in the same manner and that not all port regions have the potential to form maritime clusters or should pursue such a strategy. In addition, Wernerheim & Sharpe (2003) find that clusters or networks of high order service firms tend to develop in agglomerated regions, in locations that are already core industrial areas. They argue that patterns of location and interregional competition rest upon historical factors that typically lie beyond the service sector itself (Wernerheim & Sharpe, 2003).

Daniels (1993) for instance, shows that service firms will partly base their location decisions on the behavior of competitors, as replicating location choices of competitors helps minimizing uncertainty in the decision making process. Gluckler (2007) emphasizes the role of reputation spillovers as a determinant at play in urban location choices of knowledge services. Locational choices might also be driven by subjective locational attributes such as legitimacy and uncertainty concerns (Pereira & Derudder, 2010). Uncertainty or a lack of legitimacy can drive firms to global cities through a process of 'isomorphic mimicry' or 'locational herding behavior' (Suire & Vicente, 2009; Pereira & Derudder, 2010), where firms copy each other location choices to minimize these risks and concerns. Going a step further in historical path dependence, the concept of 'lock-in' represents an extreme version. In lock-in, different orientations of the regional economic agents form the basis of diverging trajectories. A lack of economic linkages within the region might enforce vulnerability of regions with regard to one-sided economic development and path dependency (Merk, 2013). Linkages are not just outputs of industrial strategies as suggested in the historical approach, but also premises for them, according to Karlsen (2005).

As firms create local demand for APS inputs, they stimulate the local supply of these inputs in what amounts to a virtuous feedback mechanism (Wernerheim & Sharpe, 2003). Given that cities develop due to their self-reinforcing agglomeration economies, their very presence generates the lock-in effect in the location space, from which individual agents find it difficult to escape, and to which new agents tend to be attracted (Fujita & Mori, 1996). Some port cities have tried to synergize new and emerging sectors with the port by building institutional linkages, as a way of tapping into the human capital and knowledge resources otherwise 'locked into' the port and logistics sector (Merk, 2013).

3.3.4 Additional location variables

Jacobs, Koster & Van Oort (2014) argue that it is likely that APS aim to locate proximate to MNEs because of dynamic agglomeration externalities, while an abundance of APS help MNEs overcome the costs of doing business abroad (Goerzen, Asmussen & Nielsen, 2013). These costs arise because foreign firms face what is known as the 'liability of foreignness' (LOF). These costs are closely related to, but more broadly defined than, the economic geography concept of the "frictions of distance" (Appold, 1995). The three key sources of the LOF – complexity, uncertainty, and discrimination – differ across space. Part of the attraction of global cities is that they alleviate these LOF problems, as their supply of APS and their extensive interconnectedness to global networks of transportation and communication make it easier for MNEs to monitor their subsidiaries (Goerzen, Asmussen & Nielsen, 2013).

Goerzen, Asmussen & Nielsen (2013) therefore suggest that the global division of activities results in specific patterns of intertwined co-location of multinational firms and APS firms in and around global cities. The clustering of both APS and international client firms within urban centers represents a diversity of different economic activities in close proximity, which is understood to foster innovation and growth (Glaeser et al., 1992). This process in turn influences the evolution and development of such localities: MNEs and global cities co-evolve.

Compliance with international standards such as those published by the ISO, the IMO and the ILO, also increases attractiveness of a location and can in fact constitute an important pro-cluster mechanism as AMPS firms might seek proximity to maritime-related public administration (Merk, 2013). In addition, governments might undertake bilateral measures to increase opportunities for firms within their maritime cluster. These bilateral agreements foster trade relationships, improve the competitiveness of the maritime cluster, and enhance its attractiveness for ship operators (Merk, 2013).

Another location factor is found in the availability of skilled labor as the specific skills needed in maritime clusters are often in short supply. Governments are increasingly seeking to better match their local labor pools with the needs of the maritime cluster, as a way of simultaneously promoting job creation and contributing to the value-added of the port. Many maritime clusters now feature partnerships between universities, local government and maritime firms (Merk, 2013; Jacob, Koster & Hall, 2007). The presence of a skilled labor force, a well-developed infrastructure, and deregulated markets are among the most-cited drivers for attracting globalized APS firms as these factors enable them to become organized into international networks (Pereira & Derudder, 2010).

3.3.5 Strategic Coupling of AMPS

Strategic coupling should be viewed as a relational process across various spatial scales, in which actors assign a particular meaning and value to certain locally available assets (see Yeung 2009). In a corporate sense, strategic coupling is about connecting corporate functions to your region by using the appropriate regional assets available (Jacobs & Van Dongen, 2012). These assets differ in their nature. Some of these assets are related to traditional production factors and concern physical infrastructure, while others are non-physical and relate to international reputation or a vibrant urban environment. The degree to which these regional assets form a value added for global networks and supply chains depends on the specific demand and needs. In general, attracting more advanced functions also requires more advanced regional assets (Jacobs & Van Dongen, 2012).

But who couples 'strategically'? On the one hand, governments attempt to attract foreign firms and their FDI to the region. As such, they initiate most of the regional cooperation between the so-called 'triple helix'

(institutions, firms and governments). However, globally operating firms also couple strategically when organizing efficient supply chains. These firms actively search for specialized regional assets to exploit (Jacobs & Van Dongen, 2012). Putting this in maritime context; ports, as territorialized service providers, face a need to embed themselves into supply chains in order to secure and strengthen their competitive positions. 'Footloose' firms operating in these supply chains must deliberate the possibilities for value creation in the territorially rooted institutional structure of ports within which they become embedded. Once embedded within a port, these firms become to an extent dependent on the port's development for their own competitive positions (Jacobs, 2007).

A(M)PS do not have to be located in spatial proximity to this physical commodity flow, but they do offer a great strategic value to the port-city economy. Each A(M)PS addition adds to attracting other international firms or regional headquarters (Jacobs & Van Dongen, 2012). Related variety in an economy can thus be an additional source of economic growth (Glaeser Et Al., 1992; Van Oort, 2004). This means that for a region not only the stock of inputs affects growth, but also the precise composition in a qualitative sense. And since spillovers are spatially bounded, differences in regional growth should be related to qualitative differences in an economy's composition at the regional level (Frenken, Van Oort & Verburg, 2007). In the long-term, related variety is even positively related to the degree of urbanization, the reason being that a variety of products and sectors can only be sustained with sufficient local demand (Frenken, Van Oort & Verburg, 2007).

3.3.6 Conceptual Overview

The following illustration (figure 7) provides a general overview of the theory and context chapters (2 + 3). Having established the field of port geography and the nature of the port-city in the context chapter, this chapter has gradually introduced the variables, processes and factors that underlie the role, nature and characteristics of AMPS firms and the spatial structures and location behavior they tend to engage in. Serving as a foundation, these insights will be addressed in synthesis with the thesis findings in chapter 5, where these patterns and roles will be illustrated in the context of the Dutch port-cities.

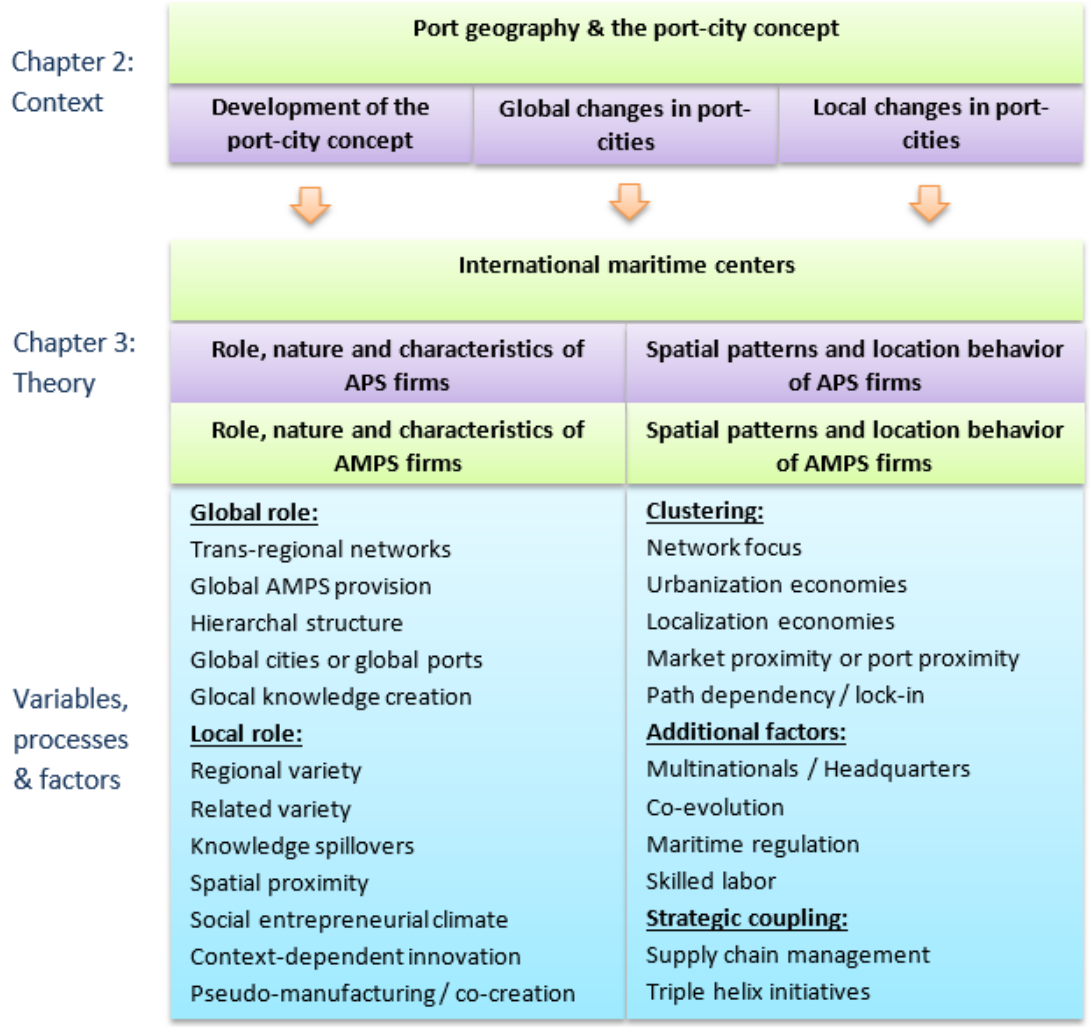


Figure 7 – Conceptual overview of chapters 2 (context) and 3 (theory; author's contribution)

Chapter 4 – Empirical chapter: AMPS location behavior

This empirical chapter discusses the perspectives and experiences of employees from AMPS firms regarding the Dutch maritime sector. Patterns are identified between 10 respondents to indicate how AMPS firms service their clients, what sort of service networks they build up and how this influences their location behavior. Emerging through their perspectives and experiences, a thorough in-depth and inside-out perspective is formed upon what attracts high value added AMPS functions to regions and how port-cities can further develop IMC functions. These empirical findings can be used academically to help determine location variables for A(M)PS firms; and can be used more practically to help improve port-city synergy and to help develop (Dutch) port-cities towards an IMC status. The methodology used consists of semi-structured interviews with (leading) employees of AMPS firms active in the Dutch port-cities of Rotterdam & Amsterdam. Attachment 1 contains more information regarding the chosen method. Attachment 2 shows an overview of the participating AMPS firms and their backgrounds.

4.1 The role of personal relations and networks in AMPS

In order to fully understand why AMPS firms locate themselves where they do, it is important to grasp their nature of business. In this paragraph, I will introduce the role of personal relations, trust and reputation and intermediate servicing in doing business in the AMPS sector. Serving as a foundation, this paragraph frames the nature of AMPS, an environment which will be analyzed in more depth in latter paragraphs of this chapter.

4.1.1 Personal relations & favors

The respondents unanimously identify personal arrays of communication as a key element in advanced maritime producer servicing, as they indicate that personal networks and relations play an essential role in gathering and maintaining clientele. Respondent 8 claims that his '*personal network is one of his most important assets'* and thinks that the *'major leagues of AMPS comprises about 400 people, in which everyone knows the names and the faces and knows who is where'*. Respondent 9 confirms that the maritime services sector is a small world. He thinks that he knows all the players in that small world, in different degrees. Respondent 10 also confirms this notion in stating that AMPS "*remains people's business*".

> *"I don't want to call it [the Dutch AMPS sector] incestuous, but I will" (respondent 9)*

In such a sector, where network connections are relatively few, tight and personal, word travels fast. If an AMPS firm provides a high quality service, referrals are made to the clients' network and extra work is generated from the market as a result. Respondent 4 proclaims that *"work done well, brings forth new work….which is why existing clients are most important for our firm".* Respondent 8 agrees with him and states that "*active acquisition completely doesn't fit our way of working*". Quality of the service provided and diffusion of its reputation through personal connections therefore creates and maintains an AMPS firm's livelihood. Respondent 2 acknowledges that he is frequently confronted with the following manner of acquiring new projects; *"I have received your name from a person I trust, which is why I trust you too and why you get this project*". Projects are given and received on an ad-hoc basis through the networks that the various respondents have established in their profession.

This personal procurement of business, is what prompted respondent 7 to call the maritime services sector *'surprisingly personal and tightly networked. It all appears to work on favors'*. Respondent 3 agrees, stating that *'advanced producer servicing in the maritime sector primarily revolves around granting or favoring specific people certain projects'.* The Dutch AMPS system is one of favors according to them and therefore a market of personal connections. Establishing a personal relation can help to get favored in business opportunities. According to respondent 3, these favors work both ways: *'I help you and you help me. Without a good relation, you don't do business with each other'.*

> *"A lot of people in our line of business choose their firm very deliberately and really feel and act as representatives of those firms. We are expected to" (Respondent 8)*

Adding to the personal networks of AMPS firms and representatives, respondent 8 highlights the importance of an AMPS firm's identity, stating that '*his firm does not want to move to the 'Zuid-As' [Amsterdam's high-rise*

offices location] because we would disappear in the mass there. We want to have our own identity, our own logo on the door, our own office. In the 'Zuid-as' we would be on the 23rd floor in two rooms. Aside from prices and logistics, we would not be happy with that'. The size of AMPS firms and the personal touch of the sector plays into this role. Identity becomes a need as it serves a means to distinguish an AMPS firm from others, providing representatives with a distinguished brand that aid them in acquiring more personal relations.

The respondents clearly highlight the importance of trust in their relations with clients. Respondent 4 points out that trust can be established by means of personal relations or having a trustworthy reputation: '*Sometimes a firm chooses us for our reputation, sometimes a firm chooses us specifically for a person working at our firm'* (respondent 4). Trust can thus be forged in personal contact or it can be forged in '*embedded relationships'* that rely on reputation, image and quality of work. Next to having personal relations and a personal network, an AMPS firm is likely to share a (varying) degree these of embedded relations. These relations with clients have existed for such a long time, that they have become intertwined and mutually embedded in both firms. These relations are more likely to exist in those (sub)sectors which rely moreover on risk and capital, in which trust and stability are valued at the utmost.

Respondent 3 illustrates how the process of trust building occurs abroad by exemplifying Turkey. '*In Turkey, you have had to have dinner with a business relation three or four times before actually receiving some business. Contracts do not mean too much over there. Do you know each other, trust each other? Then you do business with each other'*. Respondent 3 therefore states that "*you have to create a trustworthy network of partners. That goes for the Netherlands as well as abroad. Abroad, you want at least one person in each country you can really trust, do business with and achieve a win-win scenario: that they receive something from your network while you receive something from theirs. Balancing interests means you can do business together*". Mutual benefits from business relations are needed to balance personal relations and maintain trust. These benefits underlie trust, while trust underlines the strength of a personal network.

In addition, sharing a common culture and a common language, can help cultivate personal relations abroad. Respondent 8 *explains that business 'begins with communication. When you go on vacation to a place far away and you hear a Dutch person talking, you feel the urge to talk with them. You can see that language and cultural aspects do play a role in your contacts'*. If European head offices of a client are located in Spain, France or Germany, it is therefore preferred by firms there to address them locally in their own language. They feel more comfortable in engaging on a personal level with that 'local' employee. As head offices are located in global cities in countries over the world, a great number of local offices is needed for the larger multinational AMPS firm. Respondent 6 acknowledges that language can be a barrier, but he also notices that the French and the Germans speak perfect English, on the level of sophisticated business, nowadays. English has become a 'Lingua Franca' in Europe. '*Previously, we would always have to agree on a language to hold international meetings in, today that has all standardly become English'*. The role of language therefore might be decreasing.

Complete outsiders seem to have little chances of entering the sector, as personal relations and trust are the rules of the game. Respondent 9 warns that '*you have to be careful, with such a tight group [AMPS sector], that you remain open to clients, because their numbers are far greater'*. A lack of openness can give clients the impression that the AMPS sector arranges business amongst each other, which might make clients feel less secure in doing business here as their trust in the firms' reputation is lowered.

> *"It takes 10 years to know what you are doing…. It is so diverse" (respondent 8)*

Personal networks are in continuous development and increase with the years spent in the maritime sector. It enhances the need for acquiring (personal) reputation and being present in the various activities such as seminars, congresses and social events. Respondent 4 indicates that foreign firms who are looking to do business in the Netherlands, are more likely to hire an AMPS firm when he or she has spoken (extensively) to that firm's employee in a social event. In addition, personal relations forged in past jobs and experiences can help to get projects now. All of these contacts form *'branches of an ever expanding networking tree'* (respondent 2).

4.1.2 Role of cooperation and intermediate servicing

"The maritime sector is a practical industry, our business is business-driven" (respondent 3)

As the AMPS sector is quite interconnected, the servicing itself often requires frequent cooperation with other firms in the AMPS sector. Respondent 3 states that these contact processes flow very practical in the sector; you assemble a team from different AMPS subsectors. Large consultants occasionally take on projects with a specific maritime component, which they then outsource to more specialized companies because they have the expertise needed to properly fulfill that part. Respondent 9 states that "*it is always a search for the right person for the right job. That is the case in the Netherlands and abroad it isn't any different*". In order to assemble the right teams for projects, personal networks are even more important. Consultancies can thrive when operating in a smaller setting, as long as they are also able to scale up when needed. In diverse or larger projects, they face a need assemble a broader team using contacts from their personal networks and areas of expertise.

Those needed contacts are again all included in the personal network of the initiator, which is not a large network: *"it's a small world. There are a number of stakeholders and their interests matter. At the moment you don't consider their interests, you are quickly 'out' " (respondent 9).* As the nature of AMPS business is so specific, respondent 9 states the he needs *'a little black book of names and numbers; for this I need him and for that I need her. If I need a fiscal advisor for instance, I already have my top-5 at the ready'.* AMPS is increasingly done on a project-basis, through personal contacts and on the job.

Box 1 - Intermediate Servicing: A sub-sectoral AMPS perspective

The subsectors risk management, brokering and insurances form a large share of AMPS. Communication in these subsectors is largely organized through intermediate servicing, albeit that sub-sector AMPS systems can differ nationally. The Dutch maritime insurance sector is broker-driven which puts specialized work at the hands of brokers, while in London insurers appoint *'loss adjusters'* directly, granting each more responsibilities. In the Netherlands, there is thus a complex system of cooperative insurance in which agents provide insurers with clientele. These agents operate as intermediates between insurance clientele and insurers, analyzing and connecting the complex insurance options needed and the insurer options available. However, insurers also directly interact with clients, while there are also other parties involved such as lawyers, loss adjusters and brokers, creating a complex network through which there are multiple interactions. As can be observed, AMPS here becomes more of a system than a simple link between producer and producer service provider. Respondent 9 states that his *'work is more oriented towards consultancy now as we spend much of our time discussing with insurers, discussing with agents, discussing with clients'.*

Another example regarding the positionality of intermediate servicing is provided by respondent 9, a loss adjuster, who is predominantly engaged with intermediate servicing. He has intensive contact with clients, agents and insurers: "*You have to objectively determine the facts and circumstances surrounding damages or incidents. But you have to do that in consideration with those three parties".* The loss adjuster has a legal framework in which he or she operates, but also has to consider commercial interests in his or her actions. The insurer wants to pay only for the liable payments, the agent wants to get the best payment possible for his client while the maritime logistics provider who faces the claim wants to retain his client as well. *'As loss adjuster, you have to maneuver through these interests. That is why I always ask logistic providers whether their client is important to them, as commercial interests have to be factored in'.* Their line of work thus requires extensive personal relations with both clients and other AMPS firms, which is a factor in their locational behavior.

The effects of personal relations is strengthened by the finding that a large share of AMPS beholds intermediate servicing, in which personal relations play a greater role (see box 1). The occurrence of intermediate servicing has increased as the *'the issues pertaining to AMPS firms, are getting more complex and multi-faceted'.* Another example of this servicing manner can be found in arbitration processes; these processes are bound to the legal sector, but deal with technical subjects with attached business aspects as well. This requires the input of other AMPS firms. This intermediate servicing is by not limited to nations only, international intermediate servicing also occurs. One of the respondents deals exclusive with Japanese clients

as his firm is owned by Japanese. Even then, large international agents are used as intermediates between Japanese clients and the local Dutch division of a Japanese insurer.

Most of the large AMPS firms have a direct or indirect link to the financial sector or the world economy as a whole and are thus interconnected with events on a much broader level. As respondent 8 states: "*Wars, the economy, the Brexit. Those events directly impact what we do. The oil price directly impacts what we do. AMPS functions are to some degree bound to the revenues generated by the financial sector they cater to. In transport insurances, in the broadest of terms, you see the world pass you by…. we are very quick to react on events… if there would be another war in the Gulf region, we would know immediately as we face consequences immediately. The resources industry, political stability and demand for products determine what we do. If 6 yachts are ordered in the Netherlands tomorrow, I will know the next day".* The vast interconnectedness described above requires well-functioning connections to centers of information and decision-making, as these firms face a need to respond quickly to these events.

4.2 The nature, purpose & positionality of local, national and international networks

This paragraph will outline the different networks that the participating AMPS firms engage with, on the local, national and international level. The formation of and access to networks form a key motivation for AMPS firms to locate where they do. International structures are usually created in such a capacity that they fit create a well-functioning system of networks across the world, connecting the local with the global. The relevance of proximity, distance and interaction with the actors in the maritime services sector are therefore analyzed in depth.

4.2.1 Locating work & clients

Taking a step back, I begin this paragraph with analyzing the relevance AMPS firms attach to their office location. When asked where most of the work that employees of AMPS firms perform takes place; at the office, at clients, in meeting places or from home, most of the work was found to take place at the office. As a large part of the work concerns telecommunication or emailing and preparing documents, this is found to be logical. Respondent 8 explains that *'interactions with colleagues in the office are very important, as the business that we do is no textbook information. People learn a lot on the job, as details cannot be taught in classrooms. How else would you know how to insure a mango or oil?*'. The office can then serve as means to engage in collective learning processes. In smaller and varying degrees, AMPS firms perform work at the premises of clients. As respondents 1 and 2 put it; *'design and preparations can be done from the office. But if a project demands a physical presence than you work at the client's location'*. Respondent 2 adds that when it comes to international projects, *'a degree of uncertainty can demand a physical presence to check in'.* Proximity is then used to counterbalance the uncertainty of working in different (international) contexts.

This degree of work executed outside of the office, increases if the nature of the AMPS firms' business is more intermediate. Intermediate servicing requires more (physical) contact with both backward and forward linkages. As respondent 10 put it: '*We spend a lot of time visiting clients or insurers, as we are the agent that is placed in between. That can entail Dutch parties but also firms abroad*'. However, even for this firm, the time outside of the office still amounted to a lesser amount than the actual time spend at the office. Interestingly, smaller consultant firms were found to be less office oriented than larger insurance firms, indicating inter-sectoral differences. A possible explanation could be that the nature of consultancy is more oriented on hands-on work at the premises of clients, however it

Respondent 9 states that the relevance of offices has changed over the years. With the increased need for efficiency and the unset of modern communication technologies, there are now easier ways to deal with minor maritime incidents than before. In conjunction with the spread of logistic centers to hinterlands, this creates more focus on the office as work becomes both more diffused, which creates a need for the use of local agents, as easier to process locally by local lesser skilled agents. The spatial diffusion of activities simultaneously creates the need for orchestration of all these different local projects; *"we work on project basis and depending on the exposure we fly people in or out".*

Communication occurs primarily by telephone and email, but there is *"a tendency to return to physical meetings"* according to respondent 6. Respondent 6 continues to state that discussions are more practical when done in person as modern solutions such as conference calls or videoconferencing are found to be relatively inefficient and time-wasting. In light of this development, a new meeting place for maritime insurance professionals has recently been set up in Rotterdam. Traditional meeting places such restaurants or lunch places are also found to still have (minor) value for employees as a means of exchanging information. Meeting in person when physical distance is great, is however only done when required as there significant costs incurred with meeting people over distance.

'We do business with large multinationals, but also with ship-owners and shipyards, who can be located anywhere. Our clients are located throughout the Netherlands' (Respondent 10)

Regarding the locations of clientele, most of the respondents find it hard to answer where their clients are located. They find it difficult to see a clear locational pattern among their clients or these patterns are found to be highly dependent on the client's sector. Especially respondents working for international AMPS firms are unable to provide a clear answer, as they simply operate with many different actors on many different scalar levels. Respondent 10 hails the example of one of the largest Dutch ship-owners, which has just moved to Breda. This smaller Dutch city does not seem to be an obvious place for a maritime firm to be located, as it has no port and little connections to the maritime sector. However, this city now is a client's location for them, symbolizing the scattered spatial landscape of clients for his firm. Logically, he finds it hard to indicate clear spatial patterns of his clients then.

With the unset of intermediate servicing and globalization, projects are increasingly complex making it harder to indicate clear cut answers on the locations of clients or business relations. Respondent 6 for instance explains that in many international transactions there is a Dutch component. His firm is experienced in these cross-border transactions, well-functioning international networks are important to his firm as they face a need to service multiple jurisdictions from one organization. He explains that the role of his firm in their projects can vary, along with the required connectivity. Sometimes his firm is the lead firm in international projects, which involves extensive international contact. Sometimes his firm's projects can remain completely national in nature, which then require solely national or regional contact. For these AMPS firms, their web of relations is hard to untangle.

Box 2 - Where are clients located?

International AMPS firms usually deal with a balanced mix of both international and local (Dutch) client firms . Respondent 10 explains the multiscalar interactions his firms has. On the client side, his division in the Netherlands focuses primarily on Dutch companies. As their marine department is quite large here, there are also clients who approach them through his firm's international network. However, most of the respondents indicate that if their office is part of an international network, their national division in principle focuses on national companies. Respondent 10 continues by stating that for the purchase side of his work, 'we make predominant use of insurers located here, but we also use foreign insurers if need be'. While the principal focus here is also on companies based in the same nation, respondent 10 clarifies that these companies are often a national division of an international firm as well. On the cargo side, respondent 10's clients can be located anywhere.

On the maritime side, the maritime hubs are very relevant as a location. However, respondent 10 indicated that these hubs are also very fragmented and segmented per sector; "if it concerns port-related insurances, terminals and alike, you of course end up in port-cities. Rotterdam is the [Dutch] number one in that, but Amsterdam is certainly no small port either". Respondent 1 states that as his firm's clients are active in the port, they are therefore located close to the port. According to him, that is why logistic services are located close to maritime clusters. His firm also has contact with container terminal operators, who operate as multinationals owning many terminals across the world. They have contact with contractors such as Boskalis and Van Oort, who work internationally but also own large engineering centers in the Netherlands with whom you can work on every level of scale. Then there is London, which is important because of the financial center there. In London, international AMPS firms have most contact with financial organizations.

Regarding preferences in clients, respondent 1's firm has a clear perspective on who they would like to do business with. They primarily seek out international clients as one job done well, can open up opportunities to a multitude of jobs across the world. '*These economies of scale help you in doing business*', an argument that was confirmed by the other respondents.

4.2.2 Local buzz & global pipelines

Since we have established that the client base of most AMPS firms is a mix of national and international clients, that the maritime sector is more internationally oriented and that knowledge is found to be transferrable over distance, one key element of the spatial structures of AMPS firms is then the connection between the local and the global. AMPS face a need and a motivation to be active locally and globally; to be '*glocal*'. Respondent 1 states that you '*need to observe the local, but also the global. You must look at each other, while working on innovation yourself too*'. Respondent 1's firm therefore '*wants a local presence that knows the local environment, while also working with specific centers of excellence that contain global knowledge*'. The term 'global knowledge' here is used to indicate knowledge that can be used in any (maritime) location in the world. In contrast, local knowledge is per definition used only in the local context and therefore holds no or little value for locations outside of this region. Respondent 1 provides a recent example, as his firm is currently prospecting a project near one of their major offices with major experience in maritime servicing. He states that while this region has plenty of expertise in this sector, specific expertise gained in 'global center' Rotterdam is used too in that process. Such 'global' knowledge can be easily transferred over distance and used locally across the globe. However, it is important to keep mind that this 'global' knowledge also has a local dimension, *'as there are no people working in the cloud, they are always located somewhere'.*

Most of the respondents working in an international AMPS firm also indicate that their firm works with global practice groups; a global group of knowledge often divided per area of practice. Respondent 10 states that in this group, different offices collaborate for clients and client acquisition, but also cooperate in their purchase market and strategies. Respondent 1 finds the maritime sector to be rather homogenous across space; '*port-cities to a reasonable degree look alike in different regions'*. This makes these global practice groups more relevant, as expertise can then be easily reapplied in different locales.

Practically, the local-global connection often works in the following manner. Respondent 10 explains that '*it is naturally not efficient for a client in Greece to have an account manager here [Rotterdam], an account manager who then has to visit that client three of four times a year*'. Their office in Greece then performs the tasks of the account manager, but when this client requires a special maritime insurance product, Rotterdam is 'called in'. Local offices thus handle the producing elements with the client as they know the local market and local regulation best. Knowledge centers such as Rotterdam handle the specifics and in doing so help to deliver a strengthened local presence in other areas of the world. This practice implies a top-down approach where the global centers control local counterparts, but respondent 8 explains how this is typically not the case. London is the primary center of expertise for the firm of respondent 8 and the place where they service all their products. Respondent 8's office has access to the knowledge there, however '*it works as such; when we need London, we ask them to come to us. This is more of a bottom-up approach, than a top-down one*'. Respondent 8's office has decision-making power on all of their practice areas. In non-practice areas, 'we are able to execute but authority to make decision lies elsewhere. In that case, we are no more than an intermediate messenger, as respondent 8 then uses London as a pool of knowledge and resources. As the contracts are signed here, the client sees nothing of this intermediate structure.

Summarizing shortly, the international network and knowledge from offices elsewhere is thus used as an asset locally. Knowledge that is not sufficiently present here can be attained from elsewhere. In literature, this phenomenon is denoted as connecting *'local buzz with global pipelines'.*

4.2.3 Local networks

Respondent 6 points out that the maritime services sector engages in different networks than the traditional maritime sector. Maritime firms need each other physically in their execution of work, which is why these firms face a need to locate closely to each other. Respondent 6 explains that '*we do not follow our clients to maritime clusters, we locate ourselves country by country'*. Respondent 10 provides a more intermediate type of AMPS, which is why he argues that his firm is '*able to operate better when they are located near other AMPS*

firms and they can visit each other more frequently'. Therefore "*location, rather than on the client side, is important on the market/community side. Rotterdam as a center for maritime insurances, makes it easier to visit each other (the insurers and contacts)…. if you are closely located to one another*". Respondent 10 takes the London market as an example, where all the players are located within a few square kilometers of each other in the City with Lloyds as its gravitas. This type of clustering clearly appears "*to work well in doing business*".

Respondent 7 considers the influences of personal relations on the relevance of distance and proximity. He considers proximity to be important as it stimulates personal contact and hereby enhances trust. He argues that digitalization does not provide such qualities. As people are not purely rational and professional in their decision-making, they seek connections with people they can trust, which often require physical contact. Proximity here does not mean that AMPS firms seek to be close to actual production sites or the location of projects. Proximity here means proximity to the locales of decision-making, to head-offices. A local presence is found to be a need to enter those local or regional networks. A local presence helps to build more personal relations with important actors and that is why international telecommunication alone should never be the only option.

In slight contrast, respondent 6 explains that proximity is not required to build up a strong personal relation. He states that the "*decision-making power of large multinationals is not necessarily present in Rotterdam. One of the clients I do most of my work for is located in Terneuzen!*". Respondent 6 barely visits this client because they are located relatively far away, but their personal relation and trust is strong: "*I know precisely what they are up to and just now had them on the phone about everything that they are doing*". While respondent 6 thus proves that proximity is not a requirement for building personal relations, the respondents tend to agree that proximity does contribute to building and facilitating such relations.

Respondent 7 argues that for multinationals operating on a global scale, the need for personal relations is similar, although he notices that the trust provided by personal contacts in international relations is sometimes replaced with a trustworthy reputation or image. Discussing the relevance of distance in providing AMPS, respondent 8 states: "*If a client wants to meet with us tomorrow, we will be there tomorrow. But you can also hire a lot of services on a distance*". He wonders whether you should want to execute most servicing yourself. "*Everybody has his specialty, I don't believe that one firm can manage all*". His argument is one for more use of intermediate AMPS, in which companies share AMPS functions. With increased intermediate servicing and thus hiring more '*outside*' services, extra relevance is given to personal contacts in local networks.

Local networks are an important reason to uphold or create a local presence. Respondent 1 states that "*it is more logical to be located in Rotterdam if you are involved with ports, because if you are not located in Rotterdam, you will have a lot of trouble with it [maritime services business]*". As the business is personal, access to local networks helps to create business. Entering existing local networks can be difficult, also in the context of the Dutch port-cities. Respondent 8 states that we talk about '*010*' and '*020*' for a reason (these are the area codes for Amsterdam and Rotterdam, used as an identification mechanism). Amsterdam and Rotterdam are completely different cities, different people with different characters and different economies.

> *"That is the beauty of Amsterdam-Rotterdam, a hate-love relationship. We think of each other as jerks, Ajax versus Feyenoord [Dutch Football Clubs], 010 versus 020. But in the end, we do a lot of business together which is funny to see" (Respondent 8)*

Respondent 6 states that his firm's strategy to globally pursue projects linked to the financial sector, has distanced them from industry clients located in Rotterdam. They currently seek to get closer to those industry clients, however he thinks that these clients perceive his firm as an Amsterdam '*Big City Firm'* now. Respondent 6 observes that '*we aren't part of their world, which might make the option of an additional office location important again for us. We might make a couple of employees live there [Rotterdam], have them go the pub there and let them see what is happening there exactly; who talks to who and how do you get in? We aren't there anymore and getting in requires a lot of networking'*. For his firm, the question remains whether they would get the work out of the Rotterdam network that they seek to get, and whether that work is worth their time and effort in networking. The high barrier to entering these networks can then limit location behavior of '*outside*' AMPS firms.

As indicated earlier, another *'local'* option is to use a localized network of agents. Respondent 8 states that his firm does business internationally partially through local offices (80% of business) and partially through an informal network of 'fronting partners' (20% of business). Respondent 9 explains that his firm uses a network of local Lloyds agents. They either ask their own people or these agents to deliver a standard product, which then is customized at the regional offices according to the wishes of their client here. Here, we clearly see the standardized routine work being outsourced to local agents, while non-standardized custom work is centralized in expertise centers. Respondent 9 adds that this creates the need to establish a credible localized network; "*you always have to find the right person for the right job. That is the case in the Netherlands and internationally even so*". As logistics has moved to the hinterland, having expertise centers in every location is an utopia. International AMPS firms therefore usually work with several hubs. From there they can provide their services in the regional area and use local agents for local cases in more remote areas. In case of respondent 9's line of work, these agents vary from experienced mariners or a simple photographer; *'what we [expertise centers] provide is becoming more and more of a unique service, a service that is similar to consultancy'*.

4.2.4 International networks

As previously stated, the maritime services sector is in its nature internationally oriented. In this regard, respondent 6 states that '*because the maritime sector, more than others, is per definition internationally oriented, you find a lot foreign capital and foreign influences here'*. He mentions the example of the Dutch Off-shore Wind Park project *'Gemini*', in which 18 banks and 4 sponsors from around the world are involved. This maritime project is clearly then very international in its operations, however is located solely in the Netherlands. Here, we see that the location of projects and the location of decision-making over these projects can clearly differ. Groningen for instance, harbors a very vibrant energy sector with maritime connections, but '*the backing parties are no Groningen parties. Our clients are not located in Groningen, the projects might take place there but there are no offices located in Groningen. Those firms have their decision-making located elsewhere' (respondent 6)*. In analyzing AMPS structures, it is therefore important to distinguish the location of physical activities from the location of decision-making.

Respondent 6 continues by pointing that there are different reasons for engaging in multinational activities. He argues that their firm's international actions are knowledge-driven, while other AMPS firms from other nations are more intertwined with their clients on an operational level. Most of the Dutch offices that are part of an international AMPS firm, had been previously autonomous. Respondent 6 discusses why international AMPS firms opted to come to the Netherlands in the first internationalization wave around the millennium. "*The Netherlands has a pretty impressive financial market. Let me clear this up, not a single international firm has come to the Netherlands for its impressive industry. It has everything to do with the financial markets*". International AMPS firms were especially interested in Dutch firms who excelled in those financial markets as "*building up a network requires a lot of money and time, which is why a takeover is the obvious thing to do*" (respondent 8). When creating your own new network by setting up a new office location, the networking process is much more elaborate. Respondent 6 briefly explains the process; a firm brings a specific specialism along to a new location, tries to get a hold on the ground and gradually brings along more corporate aspects to staff locally. This gradual process requires more time and effort, which is why a lot of firms have (in the past) preferred acquisitions and takeovers.

Most of the international AMPS firms appear to work according to an organizational matrix structure, being both organized per region and per area of practice. These firms thus have several global practice groups that focus on one sector while also using a regional division of labor. In these regional divisions, a central cluster oversees most of the region. In America, New York is the cluster serving this regional purpose, while Singapore holds a likewise position in Asia. Europe is however found to work differently, as countries here still harbor a very strong national focus because of the established old cultures and economies, which do not easily lend themselves to '*projects in Europe*' type thinking, according to respondent 6.

> *"In Europe, each [major] nation performs its own [domestic] projects" (Respondent 6)*

Looking at hierarchy in the spatial structures of AMPS firms, both the formal and informal dimension need to be taken into account. Formally, all of the respondents of international AMPS firms state that their organization has a *'flat structure'*. A limited degree hierarchy is present; Dutch CEO naturally has the CEO EMEA as his/her boss, who has the CEO global as his/her boss. In addition, respondent 6 explains that 'if his central management says: you can't go up against this bank, than that goes worldwide'. The central management thus can limit the offices in their actions for the company's greater good. However, *'if the national division remains profitable, you are very free to follow your own strategies'* says respondent 6. Strategic frameworks do exist, but '*we know our own market and economy the best, which gives us relatively much freedom. That freedom is lost only when we lose our profitability'*. Respondent 1, 5 & 10 confirm this notion, as respondent 10 states that his firm "*is a country-by-country organization, every country [national division] has its own P&L [profit-loss responsibility]. We do not get controlled or directed in details from abroad*".

Box 3 - Regional AMPS divisions

International AMPS firms use likewise regional structures which are generally spatially categorized as:

- EMEA (Europe, Middle East & Africa)
- Asia-Pacific
- South America
- North-America / Canada
- London

London often is a separate region, because of the crucial importance of Lloyds to international AMPS firms. The respondents indicate a clear spit between Lloyds and non-Lloyds: *"We still have the same amount of employees in London, as in the rest of the world combined" (Respondent 6).* For respondent 9's firm, this split is different; his firm uses a U.S. organization (head office in Atlanta) and a non-U.S. organization (head office in London).

Informally, as previously stated, these offices can call in expertise from their international network to aid them in their activities. These centers of expertise resemble an informal hierarchy, in which power rests with knowledge. The global marine hubs such as London, Singapore, Rotterdam, Hamburg, Oslo & New York/Houston, all hold the largest marine offices and greatest levels of expertise, which informally provide them with more stature.

Respondent 5's firm formed a clear exception to the patterns described above, as his firm is part of a more tightly organized Japanese multinational AMPS firm. He states that he often acquires his clients through his firm's network based in Japan: '*If my firm has a client in Japan which also has activities in Europe, that client is automatically coupled with us. My business relations are therefore exclusively Japanese multinationals'*. This creates a more hierarchal structure as local business relations are predefined by their parent company.

The structure of most maritime subsectors requires AMPS firms to attain a national presence, as they need to comply with specific national regulation or laws regarding these sectors for which they then need specialized national expertise. Generally speaking, these national divisions receive a strategic framework to operate in. Within this framework, they have to perform and they have their own responsibility in doing so. International AMPS firms thus appear to follow what is called the 'Domicile Principle'; the principle that national divisions of multinational AMPS firms primarily handle clients operating in the same nation. For instance, Dutch offices service Dutch companies or companies operating in the Netherlands. This principle is not binding in the case of respondent 8 and allows servicing of firms outside of the 'home market', but rather serves as a means of directing the firm's resources and scope.

This choice for a national focus is not always made because operational considerations; respondent 6 for instance states that his firm is nationally based out of a marketing perspective rather than a need for the execution of their work, which could be executed within a more regional framework. Here we see that language plays a role in the location behavior of AMPS firms too. Respondent 6 explains that Paris serves as a regional guardian for the African market, because of the shared use of the French language in large parts of the continent. Likewise, New York serves as a regional guardian of Latin America because the distance, migration and recent international relations of this continent are more geared towards North-America than Europe. Most importantly, a great number of Americans also speak Spanish.

"Let my colleague in Hong Kong please speak with the local client there" (Respondent 8)

As the maritime sector remains people's business, "*it is important to speak the local language, which is noticeably appreciated*" (respondent 6). "*The Chinese client does like it better to discuss with a Chinese insurer…you have to watch your steps as we [the Dutch] are a direct and stubborn people. Those differences are apparent even when we go to London or Belgium*" (respondent 8), indicating how cultural differences can be very important in this personal sector. Gaining knowledge about local regulation, local culture and the local market is therefore found to be a very important factor in a choosing a local location.

Local AMPS firms do not have formal international structures, but often do possess (extensive) international networks. These networks in practice form informal international structures. The firm of respondent 3 operates from a single location, but has managed to acquire international projects in different nations by means of the employees' personal networks. Looking at their international practices, they are able to deliver their services easily over distance. However, his firm prefers conducting projects in European nations, as these are more profitable when operating from the Netherlands. Flight and accommodation costs limit their international competitiveness, as the work requires them to meet with clients locally and assemble a local team for that project specifically. Here we see a benefit to having an international structure which can limit transaction costs incurred over distance.

Respondent 4's firm also does not seek international offices, and uses partnerships instead. Respondent 4 has frequent contact with foreign correspondents who share information to him about local laws. This contact "*broadens our horizon as the Dutch way of doing things is not holy, things can be arranged very differently*". However, respondent 4 is adamant in stating that "*our current organization benefits our operations... we have chosen these areas of practice and this specialization. Our structure fits that choice"*. Implied here, is that his firm, by specializing on a niche within AMPS, has decreased its need for international offices and increased its need for locality. In other words, ***with specialization comes embedded localization.*** This relationship between the nature of practice specialization and the local (business) environment is certainly one that appears most interesting, deserving further consideration in further research. For now these relations imply a deeply intertwined local/regional system.

4.2.5 Size differentials in AMPS

Although size differentials have not been placed centrally in this thesis, they do appear to play a role in AMPS servicing and as such will be briefly outlined here. Respondent 2 indicated that smaller AMPS firms tend to compete with other smaller service providers only, as larger AMPS firms focus more on tender contracts than personal relations in acquiring their work. Smaller AMPS firms therefore deal relatively more with local Dutch companies that operate in the regional cluster, while larger firms have a more mixed interaction which includes larger multinationals.

Larger AMPS firms often are multinationals themselves and as such possess vast resources which allows them to become '*multi-line*' AMPS firms to other multinationals. In other words, they are able to see to every need globally in the AMPS firm's area of expertise. Respondent 8 only has three or four clients who he addresses multi-line. Multi-line servicing is conducted in order to secure quality, trust and collaboration. Respondent 8 explains that his firm is a sizeable organization with sizeable capital, and therefore a solid partner. When you insure your company, "*you are bringing a part of your firm to another firm*". He argues that large multinationals want to do that with a solid and equal partner. He indicates that in the Netherlands, there only two AMPS firms in his field that exercise such global servicing well and two more are moderately capable in doing so. He explains that multi-line global servicing '*asks a lot from an organization as it is costly to maintain such a network, but as you face all kinds of national regulation and compliance such a network is required in response*'. Here we see that larger multinationals seek out larger AMPS firms to minimize their risks; their activities involve a lot of money and many offices or production facilities across the world, for which sizeable AMPS firms simply do not have the resources.

In return, larger AMPS firms then tend to have larger scopes. As indicated above, size differentials thus appear to create different networking dynamics. Larger firms tend to engage more in targeted acquisitions or sector-

wide profiling than rely on personal networks only. This creates the need for an (minor) acquisition or sales department and the need for creating and maintaining a regional or global reputation, whereas that reputation is more personalized in smaller AMPS firms. However, the dynamic of personal networks is not lost in large AMPS firms, it is simply relatively smaller to the overall structure of gathering clientele: '*Partially, gathering clients is comprised out of personal contacts based on random encounters, while I will also actively pursue contact with prospective clients'* (respondent 6). Further research could focus more on these size differentials, as they appear to create likewise diversity among AMPS provision as in the manner sectoral differences can.

4.3 Regional assets and weaknesses of (Dutch) port-cities

Every maritime cluster contains specific asset or weaknesses that form a key motivation for AMPS firms to locate where they do. This paragraph will outline the regional assets and weaknesses of the Dutch port-cities, and will describe their influence on the locational behavior of AMPS firms. All respondents indicate crucial relevance to the urban environment, the availability of skilled labor and the regional economic structure in the execution of their services. In addition, the roles of locality, reputation and cultural differences are assessed as locational variables, while the port-cities are dissected in their maritime composition.

4.3.1 Dutch maritime sector

To fully frame this chapter, I quickly want to address the specific nature of the Dutch maritime (non-services) sector. When analyzing Dutch AMPS, a high degree of specialized servicing can be observed. A significant of Dutch AMPS caters to a niche, whether that niche concerns yachts, off-shore energy or IT structures. Respondent 8 states that his firm's clientele mostly comprises of *'special firms or normal firms who are transitioning towards more high tech. Several of these Dutch clients or types of business sectors, have remained under the radar for most of the Dutch population but are globally leading. The Netherlands is often not their [main] market'.* He illustrates how the Dutch maritime sector recently received its largest ship order to date; oil drill ships worth 1.5 billion euro, but that this has gotten barely any (media) attention. Meanwhile, the Dutch are leaders in the above mentioned markets because of their innovations.

> *"We all know Philips, perhaps TomTom and KPN, but firms like these [Damen] are just as interesting and important" (Respondent 8)*

Respondent 8 concludes that '*regular ships are rarely build here anymore, that market has shifted to special items. The same goes for the cargo market. Standardized production is becoming a less frequent fact in the Netherlands'*. In short, he states that the Dutch maritime sector has focused on the '*specials*' in shipbuilding, the custom designed ship building. Damen is a frontrunner in these special ship builds. They have created a *'Lego'* concept in which they build ships modular and as a result have greatly speeded up their production time. These maritime producing industries are very innovative, internationally competitive and create substantial value added for the greater Rotterdam area.

> *"On the last ship, I was in the bathroom and asked what this strange looking thing was? I could understand the provision of hot and cold water, even ice cold water for when you step out of the sauna, but this tap could produce snow. Why snow? Because we can"* (respondent 8)

On the other hand, as the Dutch port-cities have increasingly focused on *'specials'* within the maritime sector, they do not build global bulk cargo ships which facilitate a large part of international maritime trade. This explains why a lot of ship owners are only represented in the Netherlands with smaller offices or are not represented in the Netherlands at all, as the major ship builds do not take place here. The large capital sums that these ship owners hold are then also not located in the Netherlands; as these are reserved for headquarter locations only. These headquarters are not typically located in specialized ship building clusters such as in the Netherlands, which makes it more difficult for a port-city such as Rotterdam to acquire the necessary amount of capital within its region.

Respondent 10 agrees that Rotterdam's competitiveness is highest in niches such as off-shore, specialty ship building and ship management. He argues that the same applies for maritime servicing, where Rotterdam can

profile itself as an AMPS center in these *'specials'* or niches. To him, that is the strategy of the Netherlands, which he finds to be a strong one.

4.3.2 Port-city compositions

Before dissecting the regional assets that characterize the Dutch port-cities, I first briefly want to sketch the respondents' view of the port-city compositions; the development of the different subsectors. The maritime (producers) cluster in Rotterdam is broadly specialized and contains a number of key subsectors. The cargo functions of the Rotterdam port are well-known, but Rotterdam is strong in the port activities of off-shore, producing and sledging as well. These sectors are all located in the greater area of Rotterdam; 80 kilometers East-West and 30 kilometer North-South around Rotterdam is where most of the Dutch maritime activity is located. The exceptions are MARIN (A well-established independent research institute in maritime research) in Wageningen, some producers located elsewhere and the ports of Amsterdam, Groningen and Zeeland. This concentration (also known as the maritime delta of Zuid-Holland Zuid) harbors extensive maritime knowledge, high-skilled labor and knowledge. The regional Rotterdam cluster, with all its different (international) actors, forms a powerful agglomeration granting a strong competitive advantage.

These sectors do not always receive the necessary attention, prompting respondent 3 to state that they should receive more focus from the Rotterdam Port Authority. He thinks '*that there is certainly equal value added to be gained in other maritime subsectors than cargo transfer, a pursuit of which simultaneously would portray a complete cluster. A complete cluster can be an important locational factor'*. Focusing on the broader (regional) maritime cluster in both its sectoral and spatial sense, can help to present Rotterdam better as an international maritime center (see 4.4).

Concerning the maritime services or AMPS sector, respondent 9 proclaims that '*Rotterdam AMPS is fully developed now. Banks, insurances, fiscal, law, experts and brokers are all here'*. The legal sector of Amsterdam serves as the dominant center for the Netherlands. Rotterdam used to have a likewise legal cluster with most firms having offices in both cities, but the legal sector has now clustered in Amsterdam. This has left Rotterdam with only (maritime) legal niches. Respondent 8 even questions the competitiveness of these maritime legal services in Rotterdam, as Amsterdam law firms have a diverse international (expertise) network that is considered a major competitive advantage. Respondent 10 disagrees with this statement; he states that the legal sector might have protracted in Rotterdam, but so has the volume of maritime legal matters in Rotterdam and in general. In other legal aspects, Rotterdam is doing good, as Rotterdam just received the location of an international tribunal concerning maritime law. Respondent 10 sees this as an acknowledgement of the maritime status of Rotterdam.

> *"For maritime law, we think that Rotterdam is the place to locate. There is no discussion, it is a fact" (Respondent 4)*

Respondent 3 agrees that the legal, insurance and banking systems work well in Rotterdam, but notices that Rotterdam as a region is less able to attract capital sums. He argues that the lack of ship owners located in Rotterdam create this lack of capital, as ports with more ship owners (London, Oslo, Pireaus & Hamburg for instance) appear to accumulate more capital. Compared to the size of the port activities, capital markets are therefore underdeveloped in Rotterdam as some financial functions are just not viable here. Respondents 9 and 2 agree with this argument, but each signal another area of underdevelopment in both Dutch port-cities. Respondent 9 sees a need for the expertise sector to profile itself better in consultancy services, while both respondents highlight a need for better and broader usage of IT services in the maritime (services) sector to further enhance the competitiveness of the regions.

> *"Rotterdam is the place where insurers and brokers specialized in the maritime sector must be located" (Respondent 10)*
> *"Rotterdam is the insurance center for the Netherlands" (Respondent 9)*

Respondents from the insurance sector state unanimously that Rotterdam is the hub for insurances in the Netherlands, especially for the maritime insurances niche. The large brokers and insurers are located moreover in Rotterdam than in Amsterdam. Respondent 9 attributes '*this Rotterdam clustering to the maturity of the maritime insurance market in Rotterdam'*. Respondent 8 shares that the insurance industry in Rotterdam is the

largest maritime employer in Rotterdam, instead of ship building or transport activities. Rotterdam does not realize this itself, according to him.

Comparing Rotterdam to London, London's maritime position is seen as strongly bound to Lloyds and thus primarily driven by financial servicing. Financial servicing is well organized in Rotterdam according to respondent 2, but it does not measure up to the likes of the primary financial centers. Rotterdam is more operationally driven, many logistics firms are located in the region as Rotterdam is where cargo flows '*happen*'. Respondent 2 is hopeful for further development of financial maritime services, as he sees that "*Rotterdam has serious growth potential in financial systems*".

Comparing the two Dutch port-cities, "*Rotterdam is by far larger than Amsterdam*" (respondent 8) in the size of the maritime sector. Large containerships do not go to Amsterdam; the port is too narrow and too far from the sea for that. Amsterdam cannot compete in container shipping, Rotterdam operates much better and efficiently in this subsector. Respondent 8 points out that Amsterdam is very successful in attracting cruise ships instead, as around 400 cruise ships lay anchor in Amsterdam yearly. This subsector earns considerable value added for ship suppliers and tourism businesses in the Amsterdam region.

> *'The do'ers are in Rotterdam, the thinkers are in Amsterdam. Amsterdam is globally renowned financial center, Rotterdam makes people think of the port and ships' (respondent 8)*

Rotterdam, as a port-city, is then more specialized on maritime activities than Amsterdam. Amsterdam however, is the financial center of the Netherlands. Respondent 6 confirms that most of finance and accountancy sectors is located in Amsterdam, and explains that these sectors followed the head offices of banks, which have a tendency to cluster in one location. "*Where you previously went to Rotterdam for certain practices…. all the important work now happens here*". There are some exceptions, but most finance and legal head offices are located in Amsterdam now according to respondent 10.

Amsterdam lacks the space to achieve more maritime activities, prompting respondent 6 to state that Amsterdam can better focus on finances; *'you can want to do a lot, but if you do not possess the space, it is not going to work. In the end, it is a matter of space. The entire maritime and industrial sectors that are linked with the port, are intensely space consuming'*. The maritime sector has "*three characteristics: it is capital intensive, space intensive and energy intensive*. *You have to make choices in land usage and housing is priority number 1 in Amsterdam right now*. *The port in Amsterdam competes for land use with Schiphol too, you can't go that way. The city surrounds the harbor, with a very roaring population that won't accept an energy plant in their backyard. They did not build the 2nd Maasvlakte in Rotterdam for nothing, there was a lack of space. But when you build into the sea you create space and conveniently end up with little complaining neighbors'.* Here we see the core of the port-city problems; port and city functions increasingly compete for scarce lands. This scarcity creates a need to for innovative solutions, such as the 2nd Maasvlakte to best integrate port and city. Another wat can be found in matching port and city functions to its best possibility. As an extension of maritime activities is not possible in Amsterdam, the port of Amsterdam is better off prioritizing the maritime (AMPS) subsectors which it can cater to and which suit the urban economy profile. It is in this regard that cruise ships (tourism) and maritime finance form suitable areas for port-city integration and synergy.

Respondent 5 makes an important distinction in stating "*that Amsterdam, more than other Dutch cities, drives on a knowledge economy. The 'Zuidas' is built only on knowledge and not on [low-skilled] labor*". The financial sector plays a big part in this knowledge economy and works as a magnet for A(M)PS firms that are in nature knowledge intensive. Respondent 6 explains that in the end the financial sector is a real heavyweight in the economy: "*You can see its strong influence all over the world; In England everything is clustered in London, in France it is Paris, Germany is the exception with the Hamburg-Frankfurt-Munchen triangle. For us, Amsterdam has become like that but on a smaller scale"*. APS (and AMPS) firms cluster in Amsterdam, while producing clients are located elsewhere. Respondent 6 observes that headquarters cluster together. This happened in Canary Warf, London, where 'The City' was also created in the slipstream of numerous banks locating there. Respondent 8 tells that proximity to headquarters of multinationals can certainly be regarded as a pull factor. For the Netherlands, that place is Amsterdam. There is no need for A(M)PS firms to be located particularly close to sites of production, but the respondents indicate that they need the proximity of each other, HQs and urbanization economies.

4.3.3 Proximity, distance & centrality

Several respondents address the role of distance in acquiring clients and providing their services. Respondents 1, 6 & 8 argue that travelling time is becoming less important, as work can be done while travelling because most business activities are conducted over the phone or mail. The respondents are unanimous in declaring distance increasingly less relevant, certainly in the Dutch context of limited distances. Respondent 4 states that as the distance between Amsterdam and Rotterdam is so small, locating in either region is of no relevance in acquiring clients. His clients choose their servicing firms despite of the location of that firm. Respondent 5 states that as he provides maritime services to the maritime sector, he often deals with the maritime cluster indirectly. His clients might feel the need to locate themselves close to concentrations of cargo such as the Schiphol or Rotterdam, but his firm does not feel the need to be '*around the corner and can easily overcome that relatively small distance*'. Respondent 6 states that most of their clientele is based in the maritime cluster of Rotterdam, while they are located in Amsterdam.

> *"I am not waiting at the end of the harbor to acquire my clients" (respondent 5)*

Respondent 4 states that distances are becoming relatively smaller as the world gets increasingly interconnected, however that "Rotterdam remains important to be close to", as it forms a 'core' region for (maritime) business activities. One the one side, as connections are personal and capital investments are great, "people want you to come to them or come to you whenever there are problems". On the other side, respondent 1 states that it is 'important to be present in the major regions and then you talk about Rotterdam-Amsterdam-Keulen, the larger urban agglomerations'. Centrality in core regions thus appears to be quite important in location decision-making. Respondent 2 acknowledges that need and states that this was the reason for his (smaller) firm to even rent an office. Rotterdam was chosen because of its central location and proximity to clients and the port. Respondent 1's firm has relocated closer to Amsterdam recently. Factors that were taken in consideration in this decision were the proximity to public transit and having a regional presence; which is to say a combination of client proximity and having a central location. As takeovers frequently occur, centralization is sometimes needed between multiple locations, in which case the same considerations apply.

Respondent 5 deals exclusively with Japanese multinationals, the clear exception in this thesis. These firms only want to locate in Amsterdam, because of the proximity to decision-making. "*If you look at head offices or people with decision-making power, especially when Japanese insurers are concerned, they are located near Amstelveen. A lot of Japanese expats live in Amstelveen, which is why we are located there too*" (Respondent 5). It is this need for proximity to decision-making that underlies the above described need for a central presence in core regions.

> *"Distance does not matter too much. Where can't you go in 1 day of travelling? Distance is no physical obstacle, it is only a mental obstacle" (Respondent 8)*

Physical distances also factor in when daily commutes are concerned. Respondent 8 states that if "*we were to move to Rotterdam, the risk of losing our staff is pretty great. A lot of our employees live in Almere/Noord-Holland and do not like such a high travelling time… I refuse to relocate to Rotterdam. If the firm calls tomorrow and ask me to live in Rotterdam, then I have news for them: I won't. The same goes for a lot of my colleagues as Dutch people are happy to travel, but not when it comes to daily work travelling".* Here we see the relevance of skilled labor and the locations thereof for the level of proximity AMPS firms can permit themselves. Most of the AMPS firms interviewed can survive at distance from their clients, but face substantial difficulties when distanced from their skilled labor pools.

> *'American colleagues would ask why there are two offices located next to each other [Rotterdam-Amsterdam]? In London, even the highest bosses use public transportation and easily accept the long transit times. They associate those with one city, while we travel less to reach our offices in different cities here' (respondent 8)*

4.3.4 Urbanization economies

As respondent 7 puts it; '*the urban environment has a facilitative working on the location behavior of AMPS firms'*. Most respondents attach great significance to this location variable in attracting AMPS functions. They are also nearly unanimous in signaling a higher (perceived) quality of life in Amsterdam when compared to Rotterdam. The centers of Rotterdam and Amsterdam are clearly perceived as being different. Respondent 9 shares that Rotterdam has always been the working capital of the Netherlands, a city where physical activities take place, while Amsterdam harbors more servicing firms.

Most of the Rotterdam based respondents acknowledge that "*people rather want to live in Amsterdam than in Rotterdam. A significant degree of the youth wants to apply for jobs in Amsterdam first because of that sentiment*". Respondent 4 and 5 think '*that Amsterdam, for youth in their beginnings of their career, has even more attractiveness as a city, trumping Rotterdam. Everything is close by in Amsterdam, there is enough to do'*. Respondent 4 addresses the implications of a lower quality life in Rotterdam, arguing that the lower quality of life can problematize hiring maritime talent as the urban quality of life is important in this regard. Respondent 9 is more nuanced in this regard, stating it is mostly foreigners who rather want to live in Amsterdam than in Rotterdam. According to him, *"Rotterdam does not have the sex appeal for foreign visitors*".

Respondent 6 states that there is a certain logic following the likes of London, Paris and Amsterdam. Advanced producer service firms seek the best people and those people flock to the same place. Rotterdam has suffered because of this; they used to have an active and large law sector (albeit specialized on the maritime sector), but that sector has now been marginalized. He explains that '*people want to work in Amsterdam, that is a real important reason. Amsterdam is a nice city and is not too big. It has an airport within 15 minutes of travelling and it is a tolerant city. This all adds to the reason why this is a fine city to create such a cluster. You simply can't argue that the financial sector came here because we have canals, there is more to it*'. Here we see the soft factors that help shape the perceived quality of life in urban environments, that jointly ultimately have considerable influence on the location behavior of firms and labor.

Looking at the maritime aspect, Rotterdam can be considered a global brand in the maritime sector, exceeding the maritime reputation of Amsterdam. Respondent 1 shares that *"If we are abroad, it is an advantage that we come from Rotterdam and worked with Rotterdam, as Rotterdam has a good name in this business. The reputation of Rotterdam and our experience there, creates that advantage when doing business abroad".* As stated previously, reputation is one of the factors that underlie personal relation building. In addition to firm reputation, regional reputation has a likewise effect in building trust. In this light, respondent 9 states that "*Rotterdam's reputation is growing, certainly in the maritime sector, in the sense that Rotterdam is not only moving cargo around but also has generated extensive knowledge in banking, insurances, law*", an argument which is repeated by respondents 5,8 and 10. The totality of maritime (services) in the cluster is more pronounced towards the public now than before.

> *"I don't want to call "The port's reputation is a given" (Respondent 4)*

However this reputation seems to be limited to the maritime operations of Rotterdam only. Respondent 5 emphasizes that "*operations take place in Rotterdam, but head offices do business in the capital [Amsterdam]*". The reputation of Amsterdam as an urban economy and environment overall exceeds that of Rotterdam. Respondent 6 explains how these reputation differentials play out practically: "*Certain parties, such as international investors, won't go to a lawyer in Rotterdam. They know no other city than Amsterdam. That is just like when we have major business in the United States, our first thought goes out to New York. That is while there other cities in the U.S. who are far larger than Amsterdam. Our list of offices, those locations are the places with reputation*". Respondent 8 acknowledges this and finds Amsterdam to be '*a wonder, tourists put the city in their top five of most famous cities. The city in itself is a mere small village, but is seen by all as a world city. That is the power of Amsterdam, its [worldwide] reputation'*. Reputation then has a way of sustaining (global) activities that may even lie beyond the actual size and scope of a city, such as in the case of Amsterdam.

> *'Rotterdam has made into the top-10 visits of the Lonely Planet' (Respondent 9)*

While the quality of life is thus perceived as being lower in Rotterdam, it is recently also perceived as rising. Respondent 3 remarks that the urban environment is '*becoming increasingly attractive*'. Policymakers in Rotterdam have grasped the idea that enhancing the urban reputation can enhance the reputation of the maritime cluster of Rotterdam. Major (esthetic) builds and redevelopments have therefore been commissioned or completed recently, which have made the city skyline and urban areas a lot more attractive for people working or seeking work in the advanced producer services. Respondent 10 calls this change "*important, as it all ties together"*. Respondent 4 remembers that when he was a child in the 1980's, the central station of Rotterdam would look like '*hunting grounds and derelict terrain, it wasn't esthetically pleasing. Looking at the development of the city nowadays, it has been great*'. Recently built architectural highlights such as the office complex 'Willemswerf', the neighborhood 'Kop van Zuid' or the 'Markethall', provide the urban allure and dynamics needed to transition towards a world city. Respondent 10 credits the municipality as *'it has played a good role in improving the urban environment the last couple of years'*. According to respondent 9, the 2016 Lonely Planet 'Best in Travel' cities nr.5 listing shows that Rotterdam is now a nice place to locate. However, respondent 2 points out that while investments in real estate are high now in Rotterdam, they are also uneven. He sees a need for more quality housing for lower incomes and holistic planning actions.

> *"The gap between Amsterdam and Rotterdam is closing, Rotterdam is becoming more of a living location" (Respondent 3)*
> *"Rotterdam is a modern city with all facilities" (Respondent 9)*

Respondent 6 warns Amsterdam for a 'London scenario', entailing the spiraling land prices in the city. Amsterdam might not be very expensive in housing yet, but '*it is viable that the same happens here as in London, New York or Paris; certain services move outside of the city and leave a back office in the center, because it is so unbelievably expensive to have offices in these cities'*. Respondent 10 confirms that Amsterdam is relatively expensive and crowded, while Rotterdam is upcoming. As Rotterdam is positioning itself well, the city might be able to take some of Amsterdam's target population away from them. Respondent 6 states that they have considered moving back to Schiphol Airport, as logistically that would be a for more interesting place for them. However, they were scared to lose their best people as they would not want to work there. '*They [their employees] like to work in a place where fun things can be done such as food, drinks, housing. That is why the land prices are spiraling, which is not good for the city*'. Respondent 6 agrees that in time this could be a threat, as sprawl and diffusion could be on the rise. However, the example of London has also shown us that there is no limit yet to these spiraling land prices in world cities.

Most of the respondents point out that skilled labor is a primary locational variable. Respondent 6 states that his firm primarily locates itself in Amsterdam because of the in-flow of staff, as they think that the most valuable employees are found there. This notion is confirmed by most of the respondents. Respondents from Amsterdam strongly embrace the following narrative: "*if we wouldn't be located here, we would miss a large part of the labor market that we aim for*" (Respondent 6). Relocation is perceived to come at a high cost.

> *'Philips is a prime example of relocation for skilled labor; the only reason they came here [Amsterdam] is because they could not find the right people who would want to live in Eindhoven' (Respondent 6)*

4.3.5 Path Dependency

To a significant extent, the location of AMPS firms is found to be path dependent. Ownership of these firms can change hands and in doing so names are sometimes altered, but locations seldom change. The internationalization trend which started two decades ago has altered the apparent structure of many of these firms, but the decision to expand their networks across borders has hardly affected national location structures. As respondent 5 states: "*We have always been located in Amsterdam, because of our background*". Respondent 6 states that '*their offices here date back a hundred years, only the name changes. We have always been in the city and while the city grew, the service providers grew along. This has therefore never confronted us with a reason to leave'*. The growth of AMPS firms seems to coincide with the growth of the maritime sector in these regions. AMPS firms in turn, refuse to bite the hand that feeds them and see little need in relocating.

> *"We have been here since the 18th century, so its historically dependent. We have never left because it is a good city for a firm to be in, we want to be present here and can find high-skilled labor here". (Respondent 10)*

This is not to say that these firms have not relocated, they just never relocated outside of the region. Respondent 5 illustrates this point: *"Where we are in (greater) Amsterdam does not really matter, but this region does matter to us".* The regional presence is key, as the operations, growth and livelihood of AMPS firms are intertwined with the regional maritime sector. London is the prime example of a historical established maritime center. Respondent 10 explains how London has built its maritime status to where it is now: "*London is the maritime insurances center, the center of the entire insurance world really. This has to do with…. the British position in the 18th and 19th century as a maritime empire and London as a center of finance, which has grasped the insurance market in its slipstream; the creation of Lloyds. They have extended and strengthened this position in the 20th century, supported in all kinds of ways by the government*".

Respondent 6 confirms this notion: *"Historically, the U.S. & UK have been able to export their legal system",* which is why most international projects are conducted through American or English law. Respondent 10 argues that '*the position of British law in international contracts and the stability that that provides, helps to maintain their maritime status'* . This combination of factors and the smart conduct of the British has "*lead them to hold on to that position as maritime insurance capital of the world*". Respondent 10 however adds that "*local markets, often specialized such as the Netherlands, do have a role to play*". Next to all-round maritime centers such as London, maritime centers that focus on niches are also able to secure a strong position.

Another path dependent explanation for maritime clustering is put forward by respondent 6, who states that *"everything started here in a time when the whole information infrastructure was less developed or even not present".* In these different times, "*you had to use office clerks to go to next door offices".* Respondent 6 suggests that *"that might have set the entire culture.... I can imagine that that is where the culture of being closely together came from"*. He implies that technology has advanced faster than we adapt our location behavior, which is tied to broader sociocultural influences. In addition, cargo flows do change, but not as rapidly that frequent (inter)national relocations are needed. Perhaps, the location behavior of AMPS firms is more path dependent than we think. Respondent 4 is not sure of this and sees limits to the relevance of path dependency. While path dependency certainly plays a role in the maritime sector, albeit correlated with port activity, respondent 4 powerfully states *"If business reasons are primary, they trump historical reasons very quickly".*

4.4 Policies - Promoting AMPS functions & port-city synergy

This paragraph will outline the policy measures that can stimulate growth of the AMPS sector. First, it will focus on the role of maritime governance in sustaining and promoting AMPS functions. It includes a discussion on the role of the port authority and the need for pro-active behavior and supporting development. Second, the synergy between the port and the city, the maritime and the urban, is discussed. This section includes synergy policies, physical dependencies, export of regional knowledge, social functions and the role of related variety. Third and last, I focus on the international maritime status of the Dutch port-cities. Here, the ambition, competition and cooperation to become an IMC are discussed.

4.4.1 Maritime Governance

The respondents are clearly mixed in their perceptions of the pro-activeness of (maritime) governance in the Dutch port-cities. Respondent 3 is adamant in stating that the maritime sector runs itself: *'A real vision and really committing resources to achieve goals in the maritime sector? Those aspects have become worse during recent years'*. Respondent 3 would like to see "*less talk, more actions*", which can be considered a typical Rotterdam approach to business. He suggests that the Netherlands should make their register more appealing and should invest in technology, innovation and fiscal climate; "*if you don't, [European] competitors will catch up. With the limited manpower here, we should focus on perfecting the business climate in the Netherlands in a corporate manner, which could use more focus*".

Looking at maritime connectivity, respondent 2 argues that the port authority is not international enough and does not hold the ambition it should. He states that the Rotterdam port authority had previously been progressive in policy-making for a long time, however the organization incurred some larger mistakes along its way. A natural reaction to these mistakes made was to be more cautious hereafter. He puts forward the

following example: *'During the build of the 2nd Maasvlakte, the technology to automatically transfer containers was available, but was not included in the execution of the works as unions obstructed the idea and wanted to provide its members with jobs in the traditional port activities of cargo transferring'*. Such considerations, respondent 2 deems *"not part of our [new] times".* Instead of embracing new technologies and new opportunities, he saw consolidation and conservatism. Now he sees the beginnings of another approach: *"We have to think about the Rotterdam port as a supplier of value added, how we are going achieve that?"* This value added approach fits in perfectly with a more AMPS centered approach.

Respondent 9 finds the municipality of Rotterdam to be very proactive. This is a positive note, but proactivity also has its limitations. Respondent 9 indicates that there are too many clubs, organizations and institutes that concerns themselves with maritime activities at the moment: *"Rotterdam does see the value of the maritime climate and wants to contribute, but is that not something to do more centralized? Can those funds not be spend better? Now there are numerous initiatives including the RSMC, but why so many?".* The circles of maritime institutions thus seem to overlap. *"A little overlap is good, as cooperation spreads like an oil stain. But when the overlap is too large and your own part of the circle too little, you have to start thinking: Guys, are we doing this right?"* (respondent 9). This respondent indicates an apparent lack of coordination in the maritime sector. This might not be apparent to insiders of the sector, but to non-local actors the archipelago of maritime instances creates an opaque, indistinct system wherein they face trouble in delivering their requests or initiatives.

Respondent 3 acknowledges this lack of coordination and points out several different problem areas in Dutch port-cities: *'1) We lack an exchange here; 2) we could make the Netherlands more attractive for ship owners and 3) we can make the Dutch flag more attractive for ship registration. Other countries are doing better in this regard. We should have a maritime authority…where all those services are combined. This authority can service ship owners properly, can service ship builders properly. It should be a kind of 'one-stop shop', which is sadly missing here at the moment'.* Apparent in their answers is a sense of fragmentation of different initiatives that ultimately result in Dutch port-cities being less attractive, or less able to transfer their attractiveness to outside actors.

Regarding the nature of maritime governance, there is an ongoing debate on whether port authorities should be private or public. Ports authorities in other parts of the world, such as Singapore or China, have the capability and authority to invest in other maritime regions. In this regard, respondent 1 states that if the Rotterdam port authority would be private, it would certainly have more means than in its public form now. However, he is careful in arguing for full privatization, as a port authority could then become a target for venture capitals and private funds. This could leave the organization '*high and dry after 5 years with a ton of debt. I understand the political considerations of not immediately doing this, but it is a fact that you decrease the chances of making your port authority a multinational by doing so. It has its plusses and minuses'.* The Asian port authority models do however warrant the discussion for more private forms of port management. Respondent 9 thinks that a more corporate style of governance can work well with a commercial, target-driven perspective. In addition, by centralizing initiatives and organizing them more professionally as they did in Singapore, monitoring of performances also becomes easier. However, he argues that the organization has to remain a governmental institute that serves our interests; "*I would opt for the middle ground*", which he finds in corporate governance structures.

Regarding the development and support of the maritime sector as a whole, respondent 5 finds the role of the Dutch government to be instrumental in facilitating international relations. If the government does not maintain regional and national infrastructure, this will inevitably decrease the amount of trade in Rotterdam. He argues that *'you have to keep developing yourself, the 2nd Maasvlakte is a prime example of that. I see that the IJmuiden Sluizen [Entry to the Amsterdam Port] are being expanded as well, in order to allow larger ships to the port. Developments are happening, which is good as little developments leads to lesser trade'.* Respondent 6 is less enthusiastic about the support of the Dutch government. He uses the example of the wind energy sector to describe how one can miss out on opportunities without the support of government: *'30 years ago, we were the frontrunners in wind energy because of wind mill history. However, I have understood that in the 70s government opted not engage in active industry politics in this sector, while Denmark did choose to. They supported Vestas, which in combination with Siemens now has become a center for wind energy technology which provides a great number of jobs. In logistics, the government is now really of focusing on creating a good*

locational climate, as we have made mistakes herein in the past and have seen industries disappear because of it.' Respondent 10 points out that the port must keep developing itself for port-city synergy (see next paragraph) to remain strong. He argues that traditional port activities do not exist anymore nowadays, *"but also the port as we see it today will not exist anymore in the future…. In 30 or 50 years those activities will be gone or far less present. The port must be aware of this changing world. For now, it is".* It is thus important for the government to identify, support and stimulate the maritime subsectors that have potential for the future.

4.4.2 Port-city synergy

Respondent 7 states that synergy between port and city economies is important to attract advanced economic port activity, as the maritime and the urban economies supplement one another. In this regard, respondent 1 finds that the synergy between port and city economies is limited in Rotterdam. He argues that there is more that can be done: *'Too much emphasis is still put on old traditional economy, the transformation hereof demands a change from and led by entrepreneurs themselves. Maritime institutes and governments can help herein, but they cannot lead'.* Respondent 1 implies that more traditional port activities have fewer linkages to the city economy and that an approach to achieve more overlap between the economies of the urban and the maritime ultimately rests with the economic actors themselves.

Respondent 10 agrees with respondent 7 in remarking *'that port and city must become a whole. We see a role here for AMPS firms as we are part of the maritime sector in the region. The advanced maritime producer services sector will become more important. However on the other side, the Netherlands remains a distribution country, we are not filled with printers yet'.* This cautious plea calls for a moderate transition towards port-city integration led by the services sector. The AMPS sector has roots in both the producing maritime sector and the urban economy and as such can serve a bridge between the two. Turning tables, respondent 1 states that *'the port is seen as a major source of revenue by the city, which is maintained with the 2nd Maasvlakte. The economic policy of the municipality is clearly aimed at sustaining port activities'*. There is a clear willingness to sustain a healthy port-city.

Respondent 4 agrees that the port is immensely important for Rotterdam. He remarks that as the flows of cargo from the port-cities are nowadays quickly transported to the hinterland, the activities of these ports are not as visible as before. In addition, I have explained in paragraph 4.3.2 how the maritime producers are increasingly located in the regional area of Rotterdam. The exposure of the maritime sector is therefore limited for the urban area. Respondent 4 however does think that there is considerable synergy between port and city: '*If I say what I do, I always have to add that it is related to insurances and banks, which is all related to transport. I think it is all connected with each other*'. Respondent 1 adds that concerning the regional infrastructure, there is a large overlap between the port infrastructure and city infrastructure. Roads used for transport enrich the cities infrastructure. Being good in one, makes you do good in the other. It is one the most visible port-city synergy connections; the port helps to improve the transport systems of its surrounding city.

According to respondent 8, the synergy in the port-city of Rotterdam is greater than within Amsterdam. His logic is based on that the port of Rotterdam is a very large employer for the region, it is the livelihood of Rotterdam: "*If they would shut down the ports, Rotterdam would be finished, but Amsterdam would live on"*. Respondent 8 estimates that seven out of ten firms in Rotterdam are (in)directly linked with the maritime sector. Respondent 5 agrees with respondent 8: '*Port and city are complementary to a degree in Rotterdam, but in Amsterdam this synergy is less as the scope is smaller and it produces less jobs for the urban area as such'*. To achieve more synergy between the port and the city economies, it appears beneficial to balance the size of these economies for there to exist significant potential for synergy effects.

One way in which the synergy between port and city can be developed further, is in exporting maritime knowledge to other urban areas. Respondent 2 argues that more could be done with its know-how. Rotterdam has one of the best ports in the world, but the regional knowledge acquired here is not exported as much or made tangible enough, in his opinion: '*Building the 2nd Maasvlakte on time and within budget, that knowhow needs be exported more. This needs to be done by the region itself, intertwined. There is no major driver, it is a joint ambition and a joint effort*'. Respondent 8 agrees with his arguments: *'Make your expertise tangible and distinguish yourself by means of this expertise from producing countries such as China. This logic also applies to*

maritime service provision'. Export of knowledge can be an important factor in the transition to a highly developed port-city economy.

Another area of synergy between port and city is found in the maritime institutional framework. Respondent 3 states the following in this regard: '*We are not located here for nothing. Rotterdam has social functions build in; we are located next to the shipping area but also close to major maritime-related offices as well. We like to be located in an environment that harbors several of those different interests. We like to participate in the maritime-related events here. We are part of the local entrepreneurial networks, which are embedded in the urban economic structure'.* It is in these events and social surroundings that maritime firms can root themselves in the urban structure. They form grounds for interaction between urban and port functions. For example, the firm of respondent 4 is a member of the RMSC (Box 4), which he finds to be a good initiative as it gets young professionals involved with the AMPS sector. He argues that "*in Hamburg, the youth drink beer and BBQ on the beach looking out on the Hamburg Terminals. That makes the port a large part of the city. Tourists come there for the maritime experience. This is lost in Rotterdam, the port has been forced out of the city. Now we only see cruise ships, the terminals are a drive away. The port is not so visible anymore, not like it used to be".* Here maritime organizations such as the RSMC can help to reconnect the port with the urban economy.

Most of the respondents also have some degree of (formal) relations with research and education institutes. These institutes provide plentiful high-skilled labor and knowledge to the Dutch port-city regions. In addition, they provide strong marketing aspects to help put Rotterdam on the map as a maritime expertise hub. Frequently named institutes are MARIN & TU Delft, which respondents deem the most important institutes for the Dutch maritime sector in general. Respondent 3 thinks the relevance of TU Delft is explained by the Dutch focus on specials, which requires knowledge and labor skilled in technical services. Less frequently named are the higher Economic School of Rotterdam, Erasmus University, STC Group, TNO and Deltalinqs. Respondent 2 sees these organizations as '*an extension of our personal network. Here we can create innovation built on bridging opportunities.* Building on this formula, respondent 2's firm takes initiatives as well: '*We host a brainstorm session every quarter year with our own network of companies and institutes to see if we can learn from each other'*. Respondent 4's firm has another reason for their extensive contact with research institutes. His firm provides support and resources for courses and seminars in order *"to keep our quality on the mark".*

The role of networking: The RMSC

The respondents give significant importance to (informal) contact with partners and other AMPS firms. Respondent 5 therefore speaks of a strongly developed informal entrepreneurial climate. According to him, "*there is a network here which is maintained by the diverse people active in this business*". One of the AMPS subsectors has a physical meeting place in Rotterdam where people can meet and socialize, whereas other subsectors are actively engaged in lecturing and seminars which provide social opportunities thereafter. These social interactions sustain this network.

The Rotterdam Maritime Services Community (RMSC) is a prime example of how AMPS firms can unify, network and promote their cluster. Here, numerous AMPS firms from different sectors are represented and through which networking events are organized for their members. They involve a wide range of companies like banks, insurance companies, insurance brokers, lawyers, accountants, tax consultants, damage experts and other related businesses: "*The Rotterdam Maritime Services Community represents the common interests of these Rotterdam based companies which provide professional services to the maritime industry. Together with our members, we work on strengthening Rotterdam's position as a leading maritime business services center*". In discussion with the respondents, they find that the RSMC aims to achieve the potential of AMPS firms here: "*Rotterdam is doing well, not just in maritime regard, but in all regards. The city is very busy with Rotterdam promotion and it is logical that we want to put a strongly present cluster, that of AMPS, on the map*". Cooperation in the RMSC or likewise organizations can strengthen the cluster, which all respondents agreed upon.

Respondent 8 stresses the importance of MARIN and FERMA (Federation of European Risk Management Associations), as perfect meeting places. His event focus lies primarily on these two events as his clients go there as well: "*Ferma is held once every two years, we invite our biggest clients to that event. What we do is: we rent a suite, ask for a large table to be placed and sit at that table with every major client and discuss our business in one, one and a half hour. It is super-efficient… try making an appointment with 6-7 people who have busy schedules. We purposely do that there and for us that is the value of such organizations*". The maritime

institutes therefore can serve an important role by connecting the different subsectors of AMPS firms in ways that lie out of the reach of normal business contact.

4.4.3 Coopetition & becoming an IMC

Most of the respondents acknowledge that other parts of the world are gaining ground. Respondent 1 for instance states that *"big things are happening elsewhere in the world, which means you are per definition losing some power and control in the world".* Respondent 8 notes that while their offices in developing nations such as India and Poland might have started out as standardized data entry centers, these offices are '*growing and broadening*'. Clearly, global trade flows have been shifting in recent years, but this success achieved elsewhere does not automatically have to translate into failure for European ports. Respondent 6 explains that we should frame maritime competitiveness regionally: '*Our [Dutch] competitors are Antwerp and Hamburg. People sometimes complain about Singapore having such a large port and what a shame that is for Rotterdam, but this says nothing. Containers are loaded and off-loaded in the area where the demand for cargo is located. Our [Dutch] competition is therefore North-West Europe and I think that at the moment, we are doing that fine. But it remains something to be focused on*'.

As we have established above that we should address competition regionally, respondents also see that major ports work together in consolidating their regional position. Respondent 5 remarks that the ports from Northwestern Europe (Antwerp, Le Havre, Hamburg, Rotterdam and Amsterdam) have formed a (informal) conglomerate and cooperate to a certain degree. It is therefore perhaps better to speak of regional coopetition, the process of dualistic competition in certain areas and cooperation on certain other areas. Coopetition can take place within a single nation as well, even in a small country as the Netherlands. Respondent 5 can imagine that the government will attempt to bundle the forces of both Dutch port-cities. He argues to let the current strongpoints of both ports persist, as a cargo is easily and quickly transferred to the other port-city region by means of other transport modes. Respondent 6 states how the Dutch port-cities also compete with Schiphol Airport. Schiphol is another entry point of cargo and if speed is needed, Schiphol can arrange cargo flights. Respondent 5 thinks that Schiphol can complement the ports in this regard, but it might also be a competitor. Schiphol thus provides another mode of transportation, one with higher speeds but higher costs as well.

Respondent 6 states that labor provision and the associated costs of cargo transfer can have a strong impact on the port's regional competitiveness. He exemplifies Maersk, which has its own terminal operator (APT), which operates a terminal in Rotterdam but not in Antwerp: '*The minute that Antwerp delivers cheaper cargo transfers they will march right past their own terminal and dock in Antwerp. It is just a low-cost game, you have to watch that out for that*'. From what respondent 6 can see, the Dutch authorities and organizations are sharply monitoring these cost structures. Concerning these fluctuations, he adds that this "*is the nice thing about the huge petrochemical industry [in Rotterdam], it is not footloose*". This industry has built up a very strong cluster in Rotterdam and will not leave this place in the short term either, as a refinery elsewhere is not build in a day. However, most business in the maritime sector is still earned from container docks and respondent 6 states that that business is rather fluid.

Concerning future developments, most respondents agree that Rotterdam should profile itself more as an international maritime center (IMC). AMPS firms clearly identify the formulation and execution of IMC ambition as instrumental to achieving IMC status. In this regard, respondent 10 states that "*Rotterdam is well-positioned to become an IMC, we might even be one already. But we must embody this reputation together. The RMSC [Box 4] wants to stimulate this*". In his opinion, a port-city can state: "*'We are an IMC', but this should also show itself, it must visible and tangible"*. In other words, the maritime (services) cluster must holistically embrace the ambition to become an IMC. An important step herein is to establish unity among the maritime (services) actors as unity appears to underline the reputation of an IMC or port-city. A coordinated institutional framework can properly transfer reputation and ambition to outside actors.

> *"Stating a holistic ambition to become a renowned IMC is essential" (respondent 10)*

Respondent 2 adds that Rotterdam must profile itself more on the international level as it '*has suffered from an inferiority complex [to Amsterdam and in general] for too long*'. We have addressed this problem previously;

Rotterdam has been cautious. Respondent 7 argues that '*the city must now be brave. Rotterdam must speak the ambition to becoming a world-leading IMC. It must shift focus from cargo to services and the city itself must attain a global reputation aside from the port alone*'. The respondents see a growing role and size for the services sectors. Respondent 6 adds that he thinks that *'words are more important than actions in achieving global status. To participate with the big players that ambition must be set and exercised*'. Words here mean the transferal of reputation, ambition and trust. Respondent 6 is adamant in stating that Rotterdam has relied on letting its actions [traditional port activities] for too long. He sees that this lies at the core of the maritime lock-in that Rotterdam used to face, whereas Amsterdam has achieved more by relying on 'words'.

Chapter 5 - Synthesis

This final chapter will connect the observed empirical findings (chapter 4) with the theory found (chapter 3) to see where this thesis can endorse previous findings made, contradict previous findings made or enrich theory with new insights based on these cases. The aim is to present a full connection of theory and findings, whether they are major or minor elements to the narrative. For a list of major conclusions, please see the executive summary included in the beginnings of this thesis, primarily for this reason. The structure of this chapter is based upon the empirical chapter, given that it is the dependent chapter that I base my conclusions on.

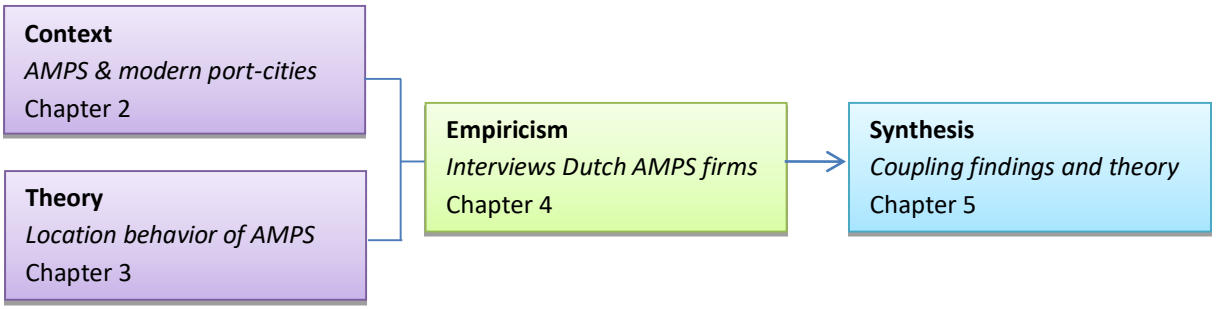


Figure 8 – General structuration of thesis (author's contribution)

5.1 The Nature of Advanced Maritime Producer Servicing

The findings of this research on the AMPS sector(s) strongly acknowledge previous findings by Lambregts (2008) on the nature of servicing in general APS sector(s). He underlines the need for a relational perspective towards the nature of AMPS, which is anchored in personal, trust-based relationships. All respondents in this research acknowledge this logic.

Advanced (maritime) producer services are provided through extensive and intensive interaction between the seller and the buyer, which requires reliable and rapid communication best conveyed through personal contacts. Remembering the four different types of service provision identified by Martinelli & Moulaert (1993), AMPS can clearly be identified as services related to strategic management and decision-making, in which communication processes and face-to-face contact are essential. As Strambach (2008) concludes, the service provision of AMPS firms therefore cannot be perceived as a mere provision of standardized external services, as the in-depth interaction between clients and (inter) AMPS firms create cumulative knowledge creation processes that create unique and personalized services. Their personal nature is further enhanced by the fact that the respondents unanimously state the relevance of becoming and remaining a '*preferred supplier*' for their clients and using their existing network to get short-listed for projects in their relevant subsector; both processes thrive on personal contacts and trust. Delivering quality work to existing clients, building up a reputation and a distinctive identity are found to be processes essential to AMPS firms in securing their livelihood.

Regarding the nature of the service provision, Tidd & Hull's notion (2006) of APS firms as '*pseudo manufacturers*' was also confirmed for the selected Dutch AMPS firms. AMPS provide expert knowledge which they are able to develop continually and are able to quickly problem solve using their extensive personal business networks, in which the lies the real nature of their service provision. Their services is intangible, but also often assembled in a likewise manner to actual products and goods. Cross-sectoral teams bring together key people, tacit knowledge, and external networking with (research) organizations, through which services are '*constructed*' piece by piece much alike intermediate production processes. It is in this regard that I feel we can freely speak about AMPS as '*intermediate servicing*', a process in which services are assembled by different firms and agencies, cross-sectoral and in a piece by piece fashion. With increased intermediate servicing and thus hiring more 'outside' services, extra relevance is given to personal contacts in local networks. The respondents in this research therefore signal an increasing trend toward consultancy-like activities as an increasing part of their service provision.

As Wood (2009) finds, service knowledge creation and innovation in the AMPS sector appears to largely arise through inter-firm interactions in the creation and delivery of services. Knowledge cycles leading to AMPS

innovation result, at least partly, from interactions between different categories of actors. Because these innovations in the AMPS sector are co-created, they are inevitably embedded in local social, economic, political and cultural contexts; they are context-dependent and have a systemic character (Muller & Zenker, 2001). The knowledge created in these processes, which are de facto R&D processes, can also be used later in different local or global settings. As AMPS knowledge is found to be easily transferable over distance, these knowledge relationships have distinct spatial impacts that most prominently express themselves in glocalization processes, which will be addressed further in paragraph 5.2.

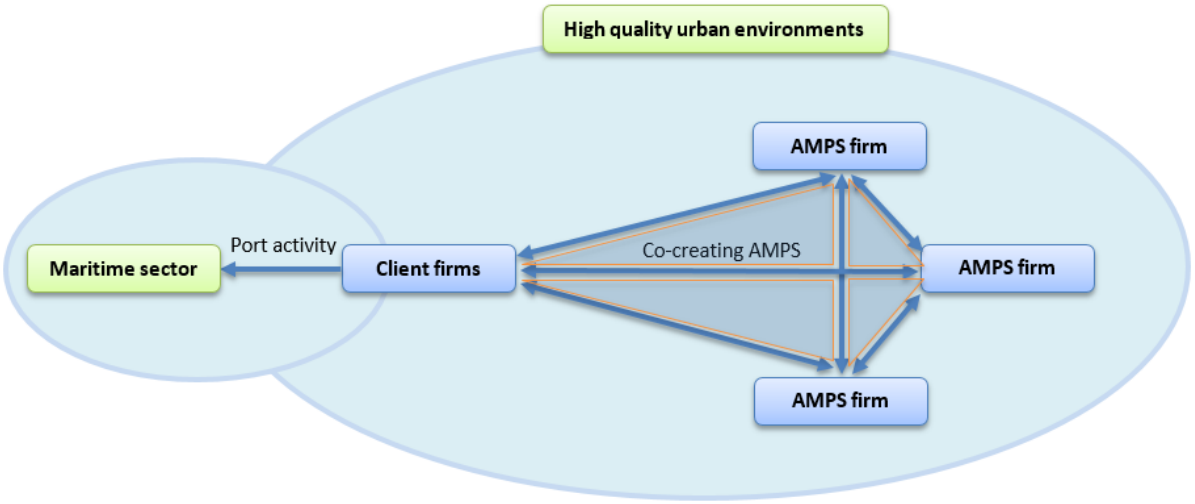


Figure 9 – The co-creation space of AMPS provision (author's contribution)

Putting these findings together, figure 9 illustrates the process of AMPS co-creation. As more work has become project-based, AMPS firms co-create their services with their clients but also other AMPS firms, each performing parts of the tasks at the hand. It creates a co-creating space (a local buzz) in which all of these actors interact with one another, sharing and creating knowledge. Typically, this space is located in urban structures and is only indirectly linked to port activities, as AMPS typically do not directly engage with port activities. Paragraph 5.3 will explain the workings of this local buzz in further detail.

5.2 Spatial structures

The nature of AMPS servicing and knowledge creation has specific spatial impacts that will be outlined in this paragraph. As you might recall, this thesis answered the call from Bentlage et al. (2014) for: *'A closer and inductive look into the composition of, and relationships within, the maritime economy in order to evaluate the role AMPS in knowledge transfer for spatial development, the interdependence of activity fields and interaction of spatial co-location and distant collaboration'.* An important element in this call are *'glocal'* structures; local systems and their global connections. Overall, the respondents confirm the notion by De Roo (1994) who states that the sustainability and efficiency of port cities is better represented by their ability to connect to these different scales than by its ability to increase their traffics. That helps to explain why all the respondents were found to have an (extensive) international network and to conduct international projects in most cases as well. Respondents are found to be significantly functionally and relationally interwoven with both the global and local level.

In creating knowledge, the respondents confirm that explains that no matter how knowledgeable and creative regional actors are, it is likely that other parts of the world develop some new and valuable knowledge either earlier or in an advanced form (Lambregts, 2008). Regions and AMPS firms therefore need to form deep connections between their local knowledge base ('local buzz') and similar regions elsewhere in the world ('global pipelines'). Knowledge creation processes must also be 'glocal', connecting local knowledge processes with global processes in a continuous recombination process. The claim made by Bentlage et al. (2014), stating that glocalization of knowledge can be even more pronounced in the AMPS sector as the maritime sector in its nature is internationally oriented, was confirmed. AMPS firms, even the locally-based types, have (extensive) international networks that provide them with knowledge.

In their practices, global AMPS firms (those with multiple offices around the world) hold various knowledge architectures in place and seek to achieve relational proximity across their distant sites (Lambregts, 2008; Taylor, 2004; Amin & Cohendet, 2004). All of the global AMPS respondents have established expertise centers, maritime hub offices and global practice groups that secure the circulation of the above mentioned flows of knowledge. AMPS firms either ask their own people or these agents to deliver a standard product, which then is customized at the regional offices according to the wishes of their client here. This tightly connected network of offices serves as a means to create strengthened local knowledge bases around the world, as experiences or expertise from elsewhere can be called in to assist with local issues.

As respondent 8 states in referral to their London offices: 'You have London canons in backup, whenever you encounter a complex issue'. The sum of parts is greater than its whole. These spatial structures are found to be mainly driven by gaining economies of scale and glocal competitive advantages. Looking at economies of scale, the respondents indicate that service provision to multinational clients can open up opportunities across different nations. In addition, these organizations also have a tendency to engage themselves with larger projects. Glocal competitive advantages are gained as global AMPS firms share their specialized know-how, tacit knowledge and relational proximity in a cross-border network with quick and easy flows of information as indicated by Parnreiter (2015), to attain the abovementioned strengthened local presences.

Appold (1995) states how AMPS firms can help MNEs overcome frictions of distance or the liability of foreignness (LOF). The respondents clearly indicate that their knowledge of the national and local regulation, market and cultures is valuable to their client firms. The use of AMPS serves as a means to decrease the costs of doing international business for MNEs, who in turn then become relevant to locate in closer proximity to (Jacobs, Koster & Van Oort, 2014). This thesis finds that one of the most important reasons for having a local office is to gain access to local markets, local regulation and local cultures, as AMPS provision can be limited by language, values and culture, which the respondents full-heartedly confirm. These factors play a significant role on the international level, but also on the national level between the examined Dutch cities. The Amsterdam-Rotterdam rivalry creates two distinct local networks and local cultures that are not easily penetrable for 'outsiders'. AMPS offices can service their clients better if they have local access to networks as they can properly adapt their service provision to local cultures, business environments and laws (Hanssens, Derudder & Witlox, 2013). The great relevance of personal relations and networks clearly adds a distinct local or regional dimension to AMPS firms.

However, the need for proximity is also found to be limited in some regards. The respondents indicate how they can service their clients easily over distance, certainly in the Dutch context of limited physical distances. Clients located outside the maritime hubs are found to be able to acquire AMPS from these clusters as they can be traded across regions and over medium-long distances, compensating local supply weaknesses. In the case of respondent 6, their clients in Terneuzen and Breda are clear-cut examples of these 'imports'. In this regard, it is indeed a fallacy to imply that many A(M)PS cannot be transported or transferred (Martinelli & Moulaert, 1993). However, this transfer is often limited to national boundaries as over larger international distance firms face cultural, physical and regulation obstacles. Actual AMPS provision can be more difficult to exchange over long (international or continental) distances, as it sometimes requires a (short or long term) physical presence. Respondents frequently fly to meet clients in person for projects or locate themselves closer to actors with whom they interact more frequently in conducting their services, such as other AMPS firms or maritime institutions. On a critical note, some respondents indicate that they have established good personal relationships with clients wherein services were provided without this frequent face-to-face contact. Especially in embedded relationships, trust is so high that service provision can occur well by means of telecommunication too. However, this seems to be more of an exception to the rule.

Sassen (2001; 2010) has suggested that APS firms exert command and control functions over global economic activity by accumulating organizational commodities, creating an urban hierarchy. This implies a functional and networked logic between international A(M)PS offices (Hannsens, Derudder &Witlox, 2015). The findings of this thesis however find that while there certainly is a networked logic between AMPS offices, this logic has no or little formal hierarchy. Relational global networks are thus widely assumed to harbor a specific hierarchy, but the findings of this thesis agree with the argument made by Parnreiter (2015) that hierarchy cannot be simply deduced result from office size, as these are determined by market size. Size differentials do not appear to create hierarchies. Also, the work of national divisions of global AMPS firms does not originate and/or gets

strategically planned from headquarters, contrary to the findings posed by Wood (2002) and O'Connor, Derudder & Witlox (2015).

AMPS firms typically are characterized by a flat organizational structure in which there is an informal hierarchy based on knowledge exchanges, which in most of the respondent's cases is initiated bottom-up rather than top-down. Maritime knowledge hubs are used by local offices as they seek answer to their local issues, rather than local offices being used and directed as front offices by headquarters. What is apparent, that more specialized AMPS firms face little need for international offices and increased need for locality. In other words, with specialization appears to come embedded localization, as the specific location adheres to the chosen specialization of the firm.

The four multiscalar spatial models listed in paragraph 3.3.1 (centralization, partial centralization, decentralization and partial decentralization) provided by Hanssens, Derudder & Witlox (2012) are useful to frame the AMPS-related inter and intrafirm linkages or the spatial hierarchy among global networks of AMPS and their clients. As indicated, international AMPS firms clearly share a flat organizational structure, with a minor degree of hierarchy to manage the entire business structure. Informally, the inter-offices hierarchy is more pronounced in the form of flows of knowledge and practices between maritime centers and local offices. However, these flows are initiated bottom-up rather than top-down. As previously stated, there both exists a need for international AMPS firms to have a local presence in the form of many offices across the world, as well as a need for tight international connections between these offices to provide a strengthened local presence.

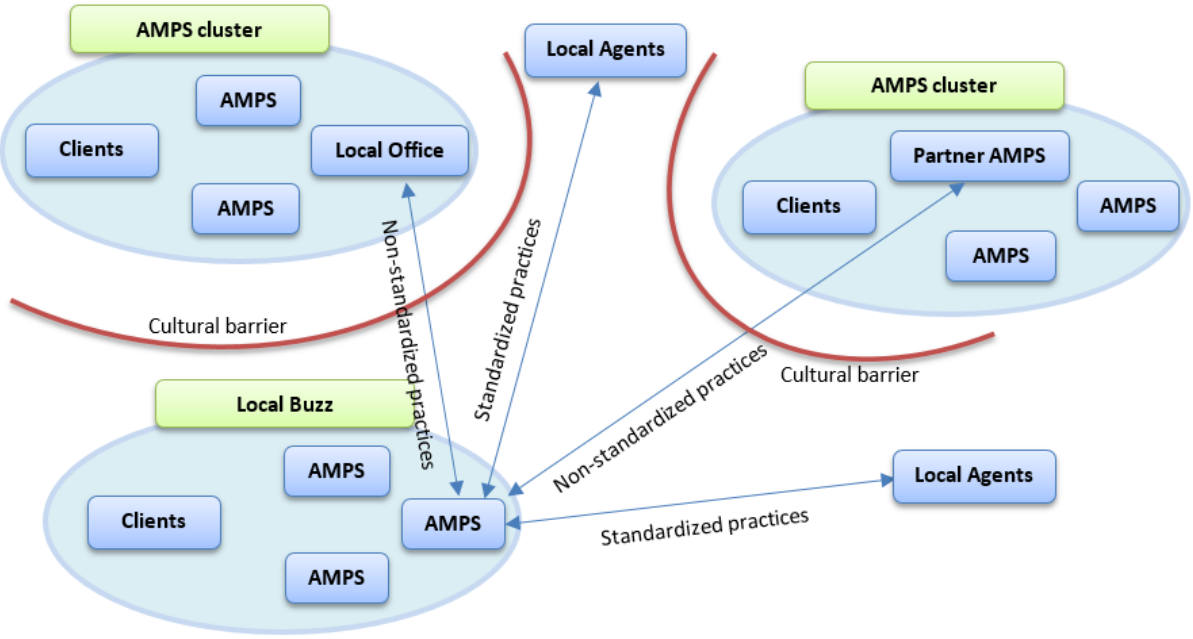


Figure 10 – Spatial glocality of AMPS firms (author's contribution)

This glocal spatial structure (figure 10, based on the AMPS co-creation dynamic outlined in figure 7) resembles the model of partial centralization by Hanssens, Derudder & Witlox (2012; outlined fully in paragraph 3.3) best. In this model, both multinational clients and AMPS firms create international networks of offices in both first order (maritime hubs) and second order (specialized clusters) decision-service cities. While allowing for some deconcentration through the opening of branch offices in lower level regions, APS also foster a functional division of space within the service production/delivery process itself, spatial concentrating the most advanced and strategic functions within each of these activities (Martinelli & Moulaert, 1993). In relation to this model, (Global) AMPS firms are similarly found to in engage in partnerships (linkage to the top-right cluster) or in multi-office networks (linkage to the top-left cluster) to create global pipelines of information which can strengthen their local buzz (bottom-left cluster). These global pipelines compromise non-standardized practices and flows of knowledge, as specialized expertise from hubs is called in to solve local servicing cases. They require partnerships or local offices, as local networks, markets and cultures are not easily penetrable from a distance because of the aforementioned cultural barriers. Local agents can serve as means to service more

remote locations, where agents are instructed top-down to perform standardized work (f.i. administration, reports), which is then used to create custom services in the nearest central office location. In all of these connections, primary strategic knowledge is always concentrated in first order cities.

5.3 Regional Assets

Now that we have established the preferred spatial structures of AMPS firms, this paragraph focuses on what local or regional areas can do to pull AMPS firms in or to push them way, as we see what AMPS firms value in their surroundings. In literature, the most frequently named factor that explains the (co-) location of AMPS firms is proximity to clients (Keeble & Nachum, 2002; Arzaghi & Henderson, 2008; Jacobs, Koster & Van Oort, 2014). However, in this thesis we see that proximity to the market and to a high quality urban environment is found to be more important. This behavior is anchored in AMPS requiring close proximity to the locales of decision-making and other AMPS firms, as well as skilled labor, in order to execute their service provision. Dutch AMPS firms are particularly concerned with the input flows of skilled labor and knowledge creation over the output flows of services and clients when choosing their location. These inputs are found to be more sensitive to distance than these outputs.

Urban environments are a bed of related variety that help AMPS and APS firms to optimize their service provision. AMPS firms are found to locate in close proximity to diverse and vibrant urbanization economies, while strong connections with the maritime sector are also cherished (Jacobs, Koster & Hall, 2007), which is reaffirmed by the respondents in this research. Underlying their answers, literature suggests that urban density helps to support the production and absorption of knowledge and to stimulate innovative behavior. Processes of knowledge recombination are more likely to occur if firms are located in close proximity, sharing the same institutional conditions and have more opportunities to meet face-to-face. The cooperation between AMPS firms, both in projects and in institutions, then constitute a maritime form of related variety. The respondents clearly indicate that a degree of collective learning processes take place in co-creating services and projects, and networking with other AMPS firms. These processes are facilitated by a high degree of personal relations and the cognitive proximity, trust and sharing of human capital that these relations bring. Ultimately, these processes help them to improve the quality and quantity of services they provide.

In addition, the location of maritime activity certainly does not need to be co-located with the locations of decision-making. While localized process of knowledge acquisition, development and networking are indeed crucial to the AMPS firms (Keeble & Nachum, 2002), these processes can take place outside of the location of the maritime sector, certainly so if the distances between the maritime sector and AMPS firms are as limited as in the Dutch context. Frequent face-to-face contact with clients can thus be achieved whilst locating in another (urban) environment. However, it is harder to penetrate local networks and markets as an 'outsider'. Lambregts (2008) outlines how the *'practice of acquiring operational market-related information concerns the employment of a deep (tacit) understanding of a market in order to secure access to exclusive information that is often distributed among a (very) few people only'*. In other words, acquiring operational market-related knowledge, which as previously described is crucial in AMPS, is very much a 'story of being there', there meaning the locales of decision-making and inter-firm interactions.

However, 'being there' with an office does not necessarily mean that personnel are always 'there' too. Work can be done from locations outside of the office. And as we discussed, the personal relations of employees play a big role in AMPS provision. Hermelin (1998) discussed how the location of actual service practices in the AMPS sector can have spatial implications of their own. He states how work takes place in any of these four locations*: 1) at the office of the firm, 2) at the client's premises, 3) at meeting-places or 4) telework done from home*. Hermelin's work greatly matches with the results of this thesis. Respondents that indicate a higher relevance to their offices, also state that they favor a central location for their employees, close to transit connections and close to attractive urban environments. They are also the firms who are primarily focused on the input of skilled labor. The attractiveness of the urban environment has a strong effect on attracting these employees, which is why the respondents indicate a strong conjoint relation between central location, urban environments and skilled labor. On the other hand, we see that firms whose employees work relatively more at client's premises, also see a greater need to be located to the producing sectors, to the port or to clients.

Respondents confirm Vandermotten et al.'s (2006) argument that AMPS locations can serve larger regional or national areas. In most cases, the AMPS firms cover the entire Dutch nation from their office location or at least serve a larger region than the urban area they are located in. For Rotterdam, the greater area of the city serves as a regional cluster in which the city is its focal point. This regional clustering is found to be a form of competitive firm advantage for many types of firms, as this total cluster has a very strong reputation nationally and internationally. Firms see the port-city of Rotterdam as a region, rather than it being confined to city limits only. Vandermotten et al.'s (2006) argument that this regional clustering can mainly be attributed to a need for centralization and the availability of well-developed infrastructure is of limited relevance in the Dutch context, because the respondents indicate that distances play a smaller role in client relations. Rather, the centrality of AMPS firms is a result of the abovementioned clustering of their inputs.

A key locational factor is thus found in the supply of skilled labor. A high quality urban environment and proximity to a skilled labor pool are the foremost reasons for AMPS firms to locate where they do. In this regard, Rotterdam is found to have an inferior urban reputation to that of Amsterdam, having formed a reason for some AMPS subsectors to locate themselves in the Amsterdam region and not in Rotterdam. This shift is most apparent in legal and financial services. These service providers used to be more prominently present in both cities, but now have centralized in Amsterdam. The respondents indicate that this shift occurred primarily because of the presence of headquarters and skilled labor in Amsterdam, which in turn sought out that city because of its high quality urban environment. It is therefore crucial for governments to seek to better match their urban environment to the needs of the labor pools, as a way of simultaneously promoting the city and contributing to potential value-added of the port as firms appear to follow people. In line with the findings of Pereira & Derudder (2010), the presence of a skilled labor force is among the most-cited drivers for attracting globalized APS firms, as this input enables them to become organized into international networks.

The location of AMPS then appears to be the result of two opposing agglomeration forces: *AMPS firms find their output in port localization economies in port-cities, but also derive inputs from urbanization economies found in global cities.* In choosing their location, it appears that they value inputs over outputs but they are inevitably strongly connected to both the maritime sector and the urban economy. With maritime localization economies, I hereby mean the presence of port-related industry and not the volume of cargo flows, aligning with Jacobs, Koster & Hall (2011). There is merely a weak relation between commodity flow patterns in ports and AMPS localization in port cities, as these firms seek inputs from urban locations. On the other hand, Jacobs, Ducruet & Delangen (2010) identified specific cases such as Houston and Hamburg where the concentration of physical flows coincides with the location of specialized AMPS functions, suggesting co-location benefits of maritime APS with supply chain activities. Here I can remark that very specialized AMPS firms appear to more likely embedded in localization economies, having stronger and deeper embedded relations with port-related activities. With specialization comes embedded localization, as AMPS firms cater to a narrowly defined set of outputs which creates more need for proximity to these outputs, instead of inputs. This is why sub-sectoral AMPS research into niche AMPS activities might expose different spatial patterns.

Summarizing, we see the contours of the local buzz arising; the local/regional assets, linkages and interactions that AMPS firms prefer to engage with (figure 11). AMPS firms value high quality urban environments as they contain the (input) regional assets they seek; high quality of life, attractive urban areas, large pools of skilled labor, (maritime & urban) reputation, maritime institutes and social functions for their sector. These assets help to secure their inputs and to sustain the urban co-creating space they increasingly need for project-based servicing. They are not disconnected from maritime activities, but simply value proximity to urban inputs more than proximity to client output. Indirectly connected to most port activities, AMPS engage with clients located in port areas of their port-city, but can also service clients or their projects located outside of maritime clusters or clients or their projects located in (nearby) different maritime clusters. These outside linkages however do tend to be sensitive to cultural barriers, which is why AMPS firms do service projects in Groningen from Amsterdam, but are less likely to service projects in Keulen (Hanssens, Derudder & Witlox, 2013). If cultural barriers are high, glocal spatial structures are needed to gain access to local markets, local regulation and local cultures.

On a more critical note, the formation of maritime clusters and the location of AMPS firms was found to be path-dependent to a degree. Many respondents indicate that their firm had not relocated outside of the region

at all and that their apparent locational structure has mainly been altered by takeovers. In other words, as local AMPS firms are absorbed, by takeovers and acquisitions, into international AMPS firms, they have not altered their locational structure at all. In the case of the analyzed Dutch AMPS firms, I see that the competitiveness of these firms has gotten intertwined with regional maritime growth. Respondents indicate that they own their livelihood to the growth of the maritime sector in this region and this creates a strong regional mutual dependency that prohibits relocation. Why would you leave the hand that feeds you? As Wernerheim & Sharpe (2003) state; *'by creating a local demand for advanced service inputs, the firms that use them are in turn seen to stimulate the local supply of these inputs in what amounts to a virtuous feedback mechanism'*.

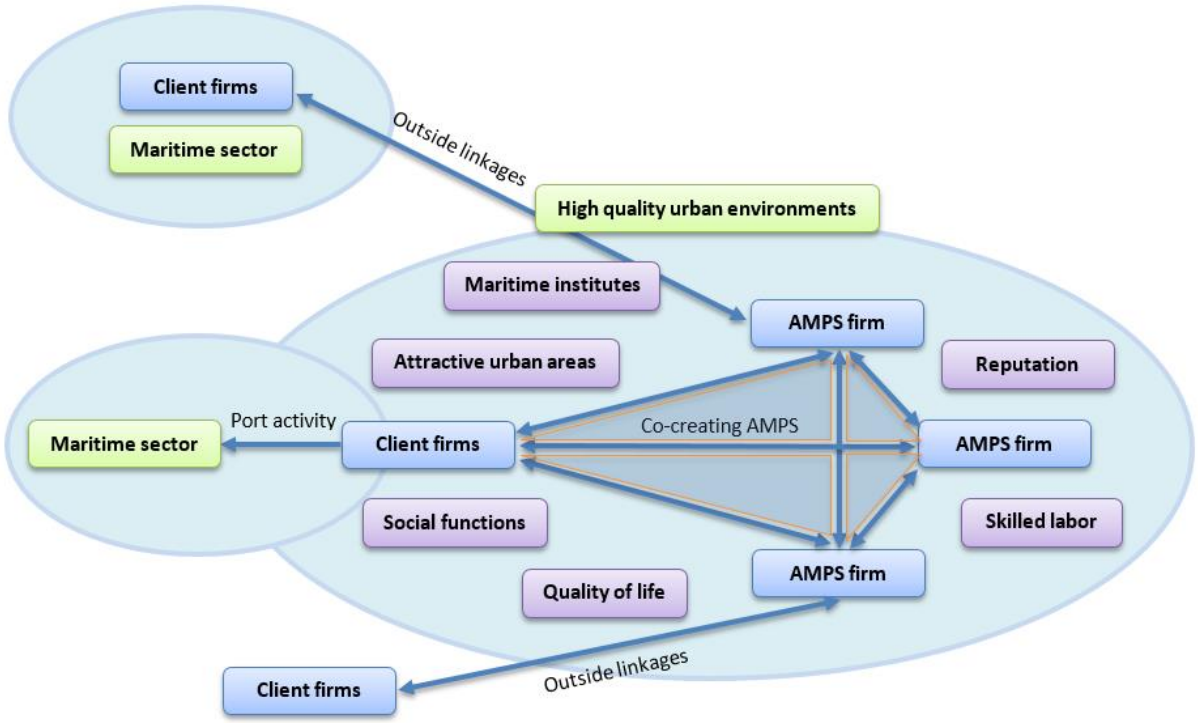


Figure 11 – The assets, linkages & interactions in and to the local AMPS buzz (author's contribution)

Wernerheim & Sharpe hereby imply that the patterns of location and interregional competition rest upon historical factors, that typically lie beyond the service sector itself. However, these factors are supposed to be in reach of government agencies to steer, stimulate and facilitate. Arguably, Rotterdam faced a lack of this governmental steering which had created a lock-in scenario in which the city became dependent on the maritime sector. The lack of related variety in the regional economy created a path dependency on the maritime sector which has been hard to redirect and diversify. Recently, the city has moved on to do so through investments in the urban (non-maritime) environment, promoting urban functions and the urban economy in order to diversify its population and regional economics. Despite its relatively early beginnings, the respondents are enthusiastic about these efforts and their effects.

On a last path dependency related note, I wanted to address the disconnect between my findings and the literature on isomorphic mimicry or locational herding behavior. The process of isomorphic mimicry does not appear to play a large role on the firm level in the Dutch context. AMPS firms do typically seek out other AMPS firms; however this appears to be moreover a deliberate choice in market proximity and local network entry. Locational herding behavior does appear to be a larger factor in the skilled labor input of AMPS firms. The reputation of the Dutch port-cities was stated to have a significant influence on the locational behavior of skilled laborers, which often favor Amsterdam above Rotterdam based on reputation levels. Locational herding is therefore not disqualified in locational behavior, but in this context only indirectly concerns the behavior of AMPS firms. Please bear in mind that this effect is merely an indication, as the data of this thesis was collected on firms and not on skilled laborers.

5.4 (IMC) Policy recommendations

As Merk & Notteboom (2013) and Merk & Dang (2013) identify, the challenge for many port-cities is to find a way to use the existing port cluster as an asset for a high value added services economy and in turn wider urban economic development. It is in this light, that some port-cities are aspiring to become *'international maritime centers' (IMCs).*

In this transformation, respondent 2 sees that Dutch port-cities are taking a new approach: "*We have to think about the Rotterdam port as a supplier of value added, how we are going achieve that?".* This value added approach fits in perfectly with a more AMPS centered approach. Centering on AMPS firms, the respondents clearly indicate that they require maritime governance to be pro-active in its maritime connectivity, use of technology and institutional framework. They are clearly mixed in their perceptions of the current pro-activeness of (maritime) governance in the Dutch port-cities. Looking at maritime connectivity, respondent 2 argues that the port authority is not international enough and does not hold the ambition it should. Respondent 9 indicates that there are too many clubs, organizations and institutes at the moment that concerns themselves with maritime activities at the moment: "*Rotterdam does see the value of the maritime climate and wants to contribute, but is that not something to do more centralized? Now there are numerous initiatives including the RSMC, but why so many*?". More respondents indicate an apparent lack of coordination in the maritime (services) sector. This sense of fragmentation of different initiatives ultimately results in Dutch port-cities being less attractive, or less able to transfer their attractiveness to outside actors.

Regarding the development and support of the maritime sector as a whole, this research finds the role of the Dutch government to be instrumental in facilitating international relations. In answering who 'couples strategically', I find that governments attempt to attract AMPS firms to the region by engaging in triple helix institutions (institutions, firms and governments) and therefore initiate most of the regional cooperation. Given this role, it is then also up to the government to identify, support and stimulate the maritime subsectors that have potential for the future.

As discussed in chapter 2, port-cities can exist out of different combinations of port and city functions. Rotterdam's port is what is known as a gateway port, with high centrality for maritime functions and only medium centrality for urban functions. Amsterdam's port more closely resembles a coastal city or a coastal metropolis in which the maritime functions are relatively small compared to the urban functions. Being a gateway port-city, Rotterdam is well positioned in GPN-GCC-GVCs because of its well-functioning physical infrastructure, large throughput volumes and substantial market share (Hayuth 1981; Notteboom 1997; Ducruet & Jeong, 2010). But we also see that while Rotterdam certainly has a fair share of AMPS functions, these however do not match the size of the maritime sector as they do in IMCs such as Hamburg, Hong Kong and Singapore. In these highly integrated port-cities, we see ports and cities strengthening one another.

If Rotterdam seeks to create more port-city synergy, it should balance both the maritime sector and the maritime services sector; global maritime connectivity with a high quality urban environment. These synergetic effects allow port-cities to move 'beyond the lock-in' and cater to the demands of a sustainable future (Atzema, Boelens & Veltman, 2010). Wang and Cheng (2010) have showed that the service functions of major port cities can evolve into IMCs as their service activities look beyond traditional port activity. Building on Wang and Cheng (2010), respondent 1 implies that more traditional port activities have fewer linkages to the city economy. Amsterdam on the other hand, has found its proper place in the maritime sector and maritime services sector. It simply lacks the space to expand its maritime activities to match its urban functions and therefore has limited potential in achieving more port-city synergy. The potential areas for synergy in Amsterdam are already in continuous development according to the respondents (cruise ships and ship supplies respectively).

From both a spatial and relational perspective, the AMPS sector is found to shape the interrelation of urban and port functions. AMPS firms have a strong link with both the maritime sector (output) and the urban environment (input). As the link to both the urban and port economies is strong within the AMPS sector, we see that major maritime hubs use a strong local presence of AMPS firms to serve as a bridge between the two. There is a clear willingness to sustain healthy port-city relations in the Dutch port-cities, but the displaced port

activities now create limited exposure for the urban area. For many, it therefore goes unnoticed that there is for instance a large overlap between the port infrastructure and city infrastructure.

Another area of synergy between port and city is found in the maritime institutional framework. Respondent 3 states that it is in social events and social surroundings that maritime firms can root themselves in the urban structure. They form grounds for interaction between urban and port functions. The maritime organization Rotterdam Maritime Service Community (RMSC) hosts diverse and numerous AMPS firms, organizing networking events for their maritime community. As respondent 10 puts it: "*The city is very busy with Rotterdam promotion and it is logical that we want to put a strongly present cluster, that of AMPS, on the map*". Cooperation in the RMSC or likewise organizations can strengthen the cluster, which all respondents agree upon. Respondent 5 therefore speaks of a strongly developed informal entrepreneurial climate present in the Dutch port-cities. According to him, "*there is a network here which is maintained by the diverse people active in this business*".

Whereas Verhetsel & Sel (2009) argue that AMPS firms have a tendency to locate in cities where general maritime policy and regulations are given shape, the respondents only indicate small relevance to the presence of maritime policy and regulatory agencies for their firms, pointing out instead that their relevant knowledge is generated in inter-firm relations. However, most of the respondents do have some degree of (formal) relations with research and education institutes. These institutes provide plentiful high-skilled labor and knowledge to the Dutch port-city regions. In addition, they provide strong marketing aspects to help put Rotterdam on the map as a maritime expertise hub. Export of knowledge can be an important factor in the transition to a highly developed port-city economy. Respondent 2 sees these organizations as '*an extension of our personal network. Here we can create innovation built on bridging opportunities.* Respondent 8 stresses the importance of events like MARIN and FERMA, as being perfect meeting places to meet diverse clients and actors. The maritime institutes therefore can serve an important role by connecting the different subsectors of AMPS firms in ways that lie out of the reach of normal business contact.

The institutional framework helps to increase the level of port-city reputation by hosting broad ranges of maritime activities and united AMPS subsectors supporting them. This is important, as port-city reputation is heavily competed for. Respondent 6 explained that we should frame maritime competitiveness regionally, as trade follows are primarily interregional in nature. But this is no unidimensional process. Respondent 5 remarks that the ports from Northwestern Europe (Antwerp, Le Havre, Hamburg, Rotterdam and Amsterdam) also have formed a (informal) conglomerate and cooperate to a certain degree. It is therefore perhaps better to speak of regional coopetition in the context of Europe's port-cities; the process of dualistic competition in certain areas and cooperation on certain other areas (Song, 2003).

Coming back to institutions, the respondents also point out that the many existing maritime initiatives in Rotterdam are in need of centralization and coordination. Now, these initiatives overlap considerably and work contradictory to their cause as their fragmentation undermines the holistic ambition towards international maritime status, whereas the respondents strongly emphasize that port-cities should form a comprehensive ambition and holistic strategies for developing and sustaining an IMC or AMPS cluster (Merk & Dang, 2013). Embracing this ambition holistically is found to be a need for a maritime (services) cluster to become an IMC. An important step herein is to establish unity among the maritime (services) actors as unity appears to underline the reputation of an IMC or port-city. A coordinated institutional framework can properly transfer reputation and ambition to outside actors.

In order to strategically couple more AMPS firms to Dutch port-cities, regional actors need to use, coordinate and develop their regional assets and weaknesses, as more advanced functions also requires more advanced regional assets (Jacobs & Van Dongen, 2012). Aside from facilitating a business environment conducive and favorable to maritime services, a very important condition is to create a high-quality urban environment attractive enough for high value added firms, headquarters and talent. Quality of life and a vibrant maritime community is an important element of this urban environment (Merk & Li, 2013).. These aspects help to provide AMPS firms with the input they value and seek in a region; a large pool of maritime-related skilled labor that is needed to provide enough staff for the IMC cluster, an institutional framework that helps to develop knowledge creation and (other AMPS) offices where (inter)national decision-making is located.

5.5 Limitations & further areas for research

Concluding this research, I want to take a moment to reflect on the merits and deficits of these findings. This thesis attempted to shed a light on the location behavior of high value added AMPS firms, helping out researchers and professionals to understand how to further develop port-city regions. It did so by using a unusual method; by providing an inside-out qualitative perspective on the practices of sectoral maritime APS research. This approach has not been without its limitations and has in addition raised some notions which deserve further research.

First, further research could address the maritime services sector in a more broadened scope as the scope of my thesis is understandably limited. I mean this both in a numerical sense as well as in a spatial sense. Including more respondents from different subsectors can enrich the findings, while it would certainly be interesting to see whether these findings apply for firms in different cultures and different port-cities. As the role of locality was certainly found to be a contributing factor in AMPS provision, extending this method to other regions could be most interesting as the local contexts would then differ. In addition, strength in qualitative research is found in repetition as each research creates pieces of a thematic puzzle, which can be matched with likewise qualitative researches to help frame the most accurate mosaic of these processes and perspectives.

Second, including analysis on countries with greater distances between port-cities or focusing on international port-city coopetition can enrich the findings of the field. Especially legal and finance firms active in the maritime services sector have seen little nuisance in overcoming distances between the Dutch port-cities or clients located elsewhere, for their service provision. They consider themselves quite footloose from the maritime activities because these limited distances allow for client visits if need be. This begs the question whether they remain footloose and disconnected from the maritime activities in case of greater distances as is the case in for instance France, U.S. or Brazil. Also, it could be interesting to examine the role of proximity and distance with regard to cross-border operating AMPS firms, who for instance service several countries from a single port-city office. In these cases, locational decision-making might also be more prominently part of strategic management than was in the case in this research.

Third, a possibility for further research would be to examine only cases wherein firms recently relocated (outside of their region). Many of the respondents barely appear to relocate outside of their current region, as the sample of firms had seen little reasons to move elsewhere and to a degree are mutually embedded with their region. The ‘extreme’ cases in which AMPS firms leave their existing cluster could prove very interesting for analyzing their locational motives, as these decisions then become more politicized and a ‘hard’ practical case rather than a more ‘soft’ collection of motives and perspectives regarding their current locations. Focusing on relocation procedures only can enhance the field with specific locational behavior processes and deepen inside-out perspectives.

Fourth, City University Hong Kong et al. (2013) suggest that the absence of a maritime exchange cultivates a dynamic in port-cities in which AMPS is moreover conducted by means of personal relationships rather than a mature market system. These personal networks can cultivate a situation in which younger generations face high entry barriers to the maritime sector. As both Dutch port-cities lack an exchange but both are very driven by personal relations, this dynamic could certainly prove very interesting when focusing on AMPS skilled labor inputs in these port-cities.

Last, this research is enriched and limited by its focus. The firm perspective taken is unidimensional (on purpose) and excludes other maritime actors and their insights regarding the AMPS sector. As indicated in paragraph 5.3, a focus on the location behavior of skilled labor for AMPS firms could prove insightful as well, as AMPS firms are by no means sole actors. Further research could therefore include different actors within the maritime services sector such as maritime institutions or government agencies and match their perspectives to the findings of this research.

References

Aharoni, Y., & Nachum, L. (Eds.). (2002). Globalization of services: Some implications for theory and practice. *Routledge.*

Amin, A., & Roberts, J. (2008). Knowing in action: Beyond communities of practice. *Research policy*, 37(2), 353-369.

Amin, A., & Thrift, N. (1992). Neo-Marshallian nodes in global networks. *International journal of urban and regional research*, 16(4), 571-587.

Andersson, M., & Hellerstedt, K. (2009). Location Attributes And Start-Ups In Knowledge-Intensive Business Services. *Industry & Innovation*, *16*(1), 103–121.

Appold, Stephen J. (1995). Agglomeration, interorganizational networks, and competitive performance in the US metalworking sector. *Economic geography* 71.1: 27-54.

Arzaghi, M., & Henderson, J. V. (2008). Networking off madison avenue. *The Review of Economic Studies*, 75(4), 1011-1038.

Atzema, O., Boelens, L., & Veldman, B. (2009). Voorbij de Lock-in. Een economische institutionele herpositionering van de Rotterdamse haven, *Universiteit van Utrecht, Strategem Group The Hague*.

Bathelt, H., & Taylor, M. (2002). Clusters, power and place: inequality and local growth in time–space. *Geografiska Annaler: Series B, Human Geography*, 84(2), 93-109.

Beaverstock, J. V., Smith, R. G., & Taylor, P. J. (1999). A roster of world cities. *Cities,* 16(6), 445-458.

Bennathan, E. And Walters, A. A., 1979, Port Pricing and Investment Policy for Developing Countries, *Oxford University Press*, New York.

Bentlage, M., Wiese, A., Brandt, A., Thierstein, A., & Witlox, F. (2014). Revealing Relevant Proximities. Knowledge Networks In The Maritime Economy In A Spatial, Functional And Relational Perspective. *Raumforschung Und Raumordnung*, *72*(4), 275–291.

Bird, J. H. (1963). The major seaports of the United Kingdom. *Hutchinson.*

Boschma, R. (2005). Proximity and innovation: a critical assessment. *Regional studies*, 39(1), 61-74.

Boschma, R. A., & Frenken, K. (2006). Why is economic geography not an evolutionary science? Towards an evolutionary economic geography. *Journal of economic geography*, 6(3), 273-302.

Boschma, R., & Iammarino, S. (2009). Related variety, trade linkages, and regional growth in Italy. *Economic geography,* 85(3), 289-311.

Boyer, J. C., & Vigarié, A. (1982). Les ports et l'organisation urbaine et régionale. *Bulletin de l'association des Géographes Français,* 487, 159-182.

Brenner, N. (1998). Global Cities, Glocal States: Global City Formation And State Territorial Restructuring In Contemporary Europe. *Review Of International Political Economy*, *5*(1), 1–37.

Breschi, S., & Lissoni, F. (2001). Knowledge spillovers and local innovation systems: a critical survey. *Industrial and corporate change,* 10(4), 975-1005.

Capineri, C., Leinbach, T. R., & Gips, D. (2006). Freight transport, seamlessness, and competitive advantage in the global economy. *European Journal of Transport and Infrastructure Research,* 6(1), 23-38.

Charlier, J. J. (1988). Structural change in the Belgian port system, 1980–1986. *Maritime Policy & Management*, 15(4), 315-326.

City University Hong Kong, One Country Two Systems Research Institute & Centre for Transport, Trade and Financial Studies (2013). How to Position Hong Kong as a Maritime Centre for the Asia-Pacific Region. *Joint study*.

Coe, N. M., Dicken, P., & Hess, M. (2008). Global Production Networks: Realizing The Potential. *Journal Of Economic Geography*, *8*(05), 271–295.

Coe, N. M., Hess, M., Yeung, H. W., Dicken, P., & Yeungt, H. W. (2013). ' Globalizing ' Regional Development : A Global Production Networks Perspective, *29*(4), 468–484.

Coffey, W. J. (2000). The geographies of producer services. *Urban geography*, 21(2), 170-183.

Czarnitzki, D., & Spielkamp, A. (2003). Business services in Germany: bridges for innovation. *The Service Industries Journal*, 23(2), 1-30.

Daamen, T. (2007). Sustainable Development Of The European Port-City Interface. *Enhr-Conference.* June, 25–28.

Daamen, T. A., & Vries, I. (2013). Governing The European Port-City Interface: Institutional Impacts On Spatial Projects Between City And Port. *Journal Of Transport Geography*, *27*, 4–13.

Daniels, P. W. (1993). Service industries in the world economy. *Blackwell.*

De Langen, P. W. (2003). The performance of seaport clusters. *Erim, Erasmus University Rotterdam*, Netherlands.

De Roo, P. (1994). Marseille: de l'aire portuaire à l'aire métropolitaine. Ville et Port XVIIIe–XXe siècles, *L'Harmattan, Paris*, 107-113.

Dicken, P. (2007). Global shift: Mapping the changing contours of the world economy. *SAGE Publications Ltd.*

Dong-Wook Song (2003). Port co-opetition in concept and practice. *Maritime Policy & Management, 30:1, 29-44*

Ducruet, C., & Jeong, O.-J. (2005). *European Port-City Interface And Its Asian Application*. Retrieved From Https://Halshs.Archives-Ouvertes.Fr/Halshs-00458542/

Ducruet, C., Itoh, H., & Joly, O. (2013). Ports And The Local Embedding Of Commodity Flows. *Papers In Regional Science*, *94*(24730259).

Ducruet, C., Itoh, H., & Joly, O. (2015). Ports and the local embedding of commodity flows. *Papers in Regional Science*, 94(3), 607-627.

Eriksson, R. H. (2011). Localized spillovers and knowledge flows: how does proximity influence the performance of plants?. *Economic Geography,* 87(2), 127-152.

Feldman, M. P. (1994). Knowledge complementarity and innovation. *Small business economics*, 6(5), 363-372.

Ferrari, C., Merk, O., Bottasso, A., Conti, M., & Tei, A. (2012). Ports And Regional Development: *A European Perspective*.

Fischer, M. M., & Varga, A. (2002). Technological Innovation And Interfirm Cooperation. *International Journal Of Technology Management*, *24*, 724.

Flere, W. A. (1967). Port Economics. Ward & Foxlow.

Frenken, K., Van Oort, F., & Verburg, T. (2007). Related Variety, Unrelated Variety And Regional Economic Growth. *Regional Studies*, *41*(5), 685–697.

Fujita, M., & Mori, T. (1996). The Role Of Ports In The Making Of Major Cities: Self-Agglomeration And Hub-Effect. *Journal Of Development Economics*, *49*, 93–120.

Gertler, M. S. (2003). Tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). *Journal of economic geography*, 3(1), 75-99.

Glaeser, E. L., Kallal, H. D., Scheinkman, J. A., & Shleifer, A. (1992). Growth in cities. *Journal of political economy*, 100(6), 1126-1152.

Glückler, J. (2007). Geography of reputation: the city as the locus of business opportunity. *Regional Studies*, 41(7), 949-961.

Goerzen, A., Geisler Asmussen, C., & Nielsen, B. B. (2013). Global Cities And Multinational Enterprise Location Strategy. *Journal Of International Business Studies*, *44*, 427–450.

Gordon, I. R., & McCann, P. (2000). Industrial clusters: complexes, agglomeration and/or social networks?. *Urban studies,* 37(3), 513-532.

Goss, R. O. (1990). Economic policies and seaports: The economic functions of seaports. *Maritime Policy & Management,* 17(3), 207-219.

Goss, R. O., (1968). Studies in Maritime Economics, Cambridge University Press, Cambridge; and 1982, Advances in Maritime Economics, *Cambridge University Press,* Cambridge.

Gosss, R. O., (1979). A Comparative Study of Seaport Management and Administration, Department of Industry, *Trade and Prices and Consumer Protection*, London.

Grossmann, I. (2008). Perspectives For Hamburg As A Port City In The Context Of A Changing Global Environment. *Geoforum*, *39*(6), 2062–2072.

Hall, P. V. (2015). Book Review. *Journal Of Transport Geography*, *47*, 143–145.

Hall, P. V., & Jacobs, W. (2010). Shifting Proximities: The Maritime Ports Sector In An Era Of Global Supply Chains. *Regional Studies*, *44*(9), 1103–1115.

Hall, P. V., & Jacobs, W. (2012). Why Are Maritime Ports (Still) Urban, And Why Should Policy-Makers Care? *Maritime Policy & Management*, *39*(2), 189–206.

Hanssens, H., DeRudder B. and Witlox, F. (2012). Managing Organizational And Geographical Complexity : The ' Positionality Of Advanced Producer Services in The Globalizing Economies Of Metropolitan Regions. *Erdkunde*. 45–55.

Hanssens, H., Derudder, B., & Witlox, F. (2013). Are Advanced Producer Services Connectors For Regional Economies? An Exploration Of The Geographies Of Advanced Producer Service Procurement In Belgium. *Geoforum*, *47*, 12–21.

Harrington, J. W., & Daniels, P. W. (Eds.). (2006). Knowledge-based services, internationalization and regional development. *Ashgate Publishing, Ltd.*.

Harvey, K. L., & Martin, S. F. (1973). Ephemeral active regions. *Solar Physics,* 32(2), 389-402.

Hayut, Y. (1981). Containerization and the load center concept. *Economic geography,* 57(2), 160-176.

Hayuth, Y. (1982). Intermodal transportation and the hinterland concept. *Tijdschrift voor economische en sociale geografie*, 73(1), 13-21.

Hayuth, Y. (1987). Intermodality, concept and practice: Structural changes in the ocean freight transport industry. *Lloyd's of London Press Limited*

Henderson, J., Dicken, P., Hess, M., Coe, N., & Yeung, H. W. C. (2002). Global Production Networks And The Analysis Of Economic Development. *Review Of International Political Economy*, *9*(3), 436–464.

Hermelin, B. (1998). Location of Professional Business Services Conceptual Discussion and a Swedish Case-Study. *European Urban and Regional Studies*, 5(3), 263-275.

Hong, Z., Merk, O., Nan, Z., Li, J., Mingying, X., Wenqing, X., … Jinggai, W. (2013). The Competitiveness Of Global Port-Cities: The Case Of Shanghai – China. *Oecd Regional Development Working Papers*, *23*.

Hoyle, B. (2002). Urban waterfront revitalization in developing countries: the example of Zanzibar's Stone Town. *The Geographical Journal,* 168(2), 141-162.

Hoyle, B. S., & Hilling, D. (1984). Seaport systems and spatial change: technology, industry, and development strategies. *John Wiley & Sons*

Jacobs, W., Ducruet, C., & De Langen, P. (2010). Integrating world cities into production networks: the case of port cities. Global networks, 10(1), 92-113.

Jacobs, W. (2014). Windows On The Netherlands Rotterdam And Amsterdam As Trading Places ? In Search Of The Economic- Geographical Nexus Between Global, *105*(4), 483–491.

Jacobs, W., & Notteboom, T. (2011). An Evolutionary Perspective On Regional Port Systems: The Role Of Windows Of Opportunity In Shaping Seaport Competition. *Environment And Planning A*, *43*(7), 1674–1692.

Jacobs, W., Koster, H. R. A., & Van Oort, F. (2014). Co-Agglomeration Of Knowledge-Intensive Business Services And Multinational Enterprises. *Journal Of Economic Geography*, *14*(2), 443–475.

Jacobs, W., Koster, H., & Hall, P. (2011). The Location And Global Network Structure Of Maritime Advanced Producer Services. *Urban Studies*, *48*(13), 2749–2769.

Jansson, J. O. And Schneerson, D., 1982, Port Economics, *MIT Press*, Cambridge, MA.

Jessop, B. (2001). Institutional re (turns) and the strategic–relational approach. *Environment and planning A*, 33(7), 1213-1235.

Jessop, B., Brenner, N., & Jones, M. (2008). Theorizing Sociospatial Relations. *Environment And Planning D: Society And Space*, *26*(3), 389–401.

Karlsen, A. (2005). The Dynamics Of Regional Specialization And Cluster Formation: Dividing Trajectories Of Maritime Industries In Two Norwegian Regions. *Entrepreneurship & Regional Development*, *17*(5), 313–338.

Keeble, D., & Nachum, L. (2001). Why Do Business Service Firms Cluster? Small Consultancies, Clustering And Decentralisation In London And Southern England. *WP*

Keil, R. (1998). Globalization Makes States: Perspectives Of Local Governance In The Age Of The World City. *Review Of International Political Economy* (Vol. 5).

Kepplinger, Hans Mathias & Habermeier, J. (1995). From The Sage Social Science Collections . All Rights. *European Journal Of Communication*, *10*(3), 371–390.

Koch, A., & Stahlecker, T. (2006). Regional Innovation Systems And The Foundation Of Knowledge Intensive Business Services. *European Planning Studies*, *14*(2), 123–146.

Koschatzky, K., & Sternberg, R. (2000). R&D cooperation in innovation systems—some lessons from the European Regional Innovation Survey (ERIS). *European Planning Studies*, 8(4), 487-501.

Koster, H., Jacobs, W., & Hall, P. (2011). The Location And Global Network Structure Of Maritime Advanced Producer Services, *Urban Studies*, 48(13), 2749–2769.

Lambregts, B. (2008). Geographies Of Knowledge Formation In Mega-City Regions: Some Evidence From The Dutch Randstad. *Regional Studies*, *42*(8), 1173–1186.

Lee, S.-W., & Ducruet, C. (2009). Spatial Glocalization In Asia-Pacific Hub Port Cities: A Comparison Of Hong Kong And Singapore. *Urban Geography*, *30*(2), 162–184.

Lee, S.-W., Song, D.-W., & Ducruet, C. (2008). A Tale Of Asia's World Ports: The Spatial Evolution In Global Hub Port Cities. *Geoforum*, *39*(1), 372–385.

Liu, L., Wang, K. Y., & Yip, T. L. (2013). Development Of A Container Port System In Pearl River Delta: Path To Multi-Gateway Ports. *Journal Of Transport Geography*.

Luthi, S., Thierstein, A., & Goebel, V. (2010). Intra-Firm And Extra-Firm Linkages In The Knowledge Economy: The Case Of The Emerging Mega-City Region Of Munich. *Global Networks*, *10*(1), 114–137.

Lüthi, S., Thierstein, A., & Goebel, V. (2011). Intra-Firm And Extra-Firm Linkages In The Knowledge Economy: The Case Of The Emerging Mega-City Region Of Munich. *Commodity Chains And World Cities*, *1*(2001), 137–164.

Makun, P., & Macpherson, D. (1997). Externally-Assisted Product Innovation In The Manufacturing Sector: The Role Of Location, Inhouse R&Amp;D And Outside Technical Support. *Regional Studies*, *31*(7), 659–668.

Malerba, F. (2005). Sectoral systems of innovation: a framework for linking innovation to the knowledge base, structure and dynamics of sectors. *Economics of innovation and New Technology*, 14(1-2), 63-82.

Malmberg, A., & Maskell, P. (2002). The elusive concept of localization economies: towards a knowledge-based theory of spatial clustering. *Environment and planning A*, 34(3), 429-449.

Martinelli, F., & Moulaert, F. (1993). The Location of advanced producer services firms theory and illustrations. *Geographische Zeitschrift,* 1-17.

Merk, O. (2010). The Competitiveness Of Global Port-Cities : Synthesis Report, 184. *OECD*.

Merk, O., & Dang, T. T. (2012). Efficiency Of World Ports In Container And Bulk Cargo (Oil , Coal , Ores And Grain). *Regional Development Working Papers*, (2012/09), 1–28.

Merk, O., & Dang, T.-T. (2013). The Effectiveness Of Port-City Policies: A Comparative Approach, 36. *OECD.*

Merk, O., & Dang, T.-T. (N.D.). The Effectiveness Of Port- City Policies A Comparative Approach. *OECD.*

Merk, O., & Notteboom, T. (N.D.). The Competitiveness Of Global Port-Cities: The Case Of Rotterdam/Amsterdam – The Netherlands. *OECD.*

Michalak, W. Z., & Fairbairn, K. J. (1993). The producer service complex of Edmonton: the role and organization of producer services firms in a peripheral city. *Environment and Planning A,* 25(6), 761-777.

Moulaert, F., & Gallouj, C. (1993). The locational geography of advanced producer service firms: the limits of economies of agglomeration. *Service Industries Journal,* 13(2), 91-106.

Muller, E., & Zenker, A. (2001). Business Services As Actors Of Knowledge Transformation And Diffusion : Some Empirical Findings On The Role Of Kibs In Regional And National Innovation Systems. *Working Paper Firms And Regions*, *30*, 1–22.

Muller, E., & Zenker, A. (2001). Business services as actors of knowledge transformation: the role of KIBS in regional and national innovation systems. *Research policy,* 30(9), 1501-1516.

Municipality of Amsterdam (2013). Transformatiestrategie 2030. *Municipality of Amsterdam.*

Murphey, R. (1989). On the evolution of the port city. Brides of the Sea: Port Cities of Asia from the 16th-20th Centuries, *University of Hawaii Press*, Honolulu, 223-245.

Neilson, J., Pritchard, B., & Yeung, H. W. (2014). Global Value Chains And Global Production Networks In The Changing International Political Economy: An Introduction. *Review Of International Political Economy*, *21*(1), 1–8.

Ng, A. K. Y., Ducruet, C., Jacobs, W., Monios, J., Notteboom, T., Rodrigue, J. P., … Wilmsmeier, G. (2014). Port Geography At The Crossroads With Human Geography: Between Flows And Spaces. *Journal Of Transport Geography*, *41*, 84–96.

Nonaka, I., Toyama, R., & Nagata, A. (2000). A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and corporate change*, 9(1), 1-20.

Notteboom, T., & Rodrigue, J. (2004). Re-Assessing Port-Hinterland Relationships In The Context Of Global Commodity Chains. *Ports, Cities And Global Supply Chains*.

O'connor, K. (2010). Global City Regions And The Location Of Logistics Activity. *Journal Of Transport Geography*, *18*(3), 354–362.

O'connor, K., Derudder, B., & Witlox, F. (2015). Logistics Services: Global Functions And Global Cities. *Growth And Change*.

O'connor, K., Holly, B., & Clarke, A. (2012). A Case For Incorporating Logistics Services In Urban And Regional Policy: Some Insight From Us Metropolitan Areas. *Regional Science Policy & Practice*, *4*(2), 165–177.

Olivier, D., & Slack, B. (2006). Rethinking The Port. *Environment And Planning A*, *38*(8), 1409–1427.

Olivier, D., Notteboom, T., Slack, B., & Hesse, M. (2011). Book Reviews Ports , Cities And Global Supply Chains Edited By James, *Area. 43*(1), 115–120.

Parnreiter, C. (2003). Global city formation in Latin America: socioeconomic and spatial transformations in Mexico City and Santiago de Chile. *GaWC Research Bulletin*, 103.

Parnreiter, C. (2010). Global cities in global commodity chains: exploring the role of Mexico City in the geography of global economic governance. *Global Networks,* 10(1), 35-53.

Parnreiter, C. (2015). Managing And Governing Commodity Chains: The Role Of Producer Service Firms In The Secondary Global City Of Hamburg. *Erde*, *146*(1), 1–15.

Pereira, R. O., & Derudder, B. (2010). The Cities/Services-Nexus: Determinants Of The Location Dynamics Of Advanced Producer Services Firms In Global Cities. *The Service Industries Journal*, *30*(12), 2063–2080.

Pesquera, M. A., & Ruiz, J. R. (1996). Sustainable development strategies for cities and ports. *UN-United Nations.*

Porter, M. E. (1998). Clusters and the new economics of competition. *Boston: Harvard Business Review.* Vol. 76, No. 6, pp. 77-90.

Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic development quarterly*, 14(1), 15-34.

Raimbault, N., Jacobs, W., & Van Dongen, F. (2015). Port Regionalisation From A Relational Perspective: The Rise Of Venlo As Dutch International Logistics Hub. *Tijdschrift Voor Economische En Sociale Geografie*.

Raspe, O., & Van Oort, F. (2006). The knowledge economy and urban economic growth. *European Planning Studies*, 14(9), 1209-1234.

Rimmer, P. J. (1967). The changing status of New Zealand seaports, 1853–1960. *Annals of the Association of American Geographers*, 57(1), 88-100.

Robinson, J. (2002). Global And World Cities: A View From Off The Map. *International Journal Of Urban And Regional Research*, *26*(3), 531–554.

Robinson, R. (2002). Ports As Elements In Value-Driven Chain Systems: The New Paradigm. *Maritime Policy & Management*, *29*(3), 241–255.

Sassen, S. (2000). Spatialities And Temporalities Of The Global: Elements For A Theorization. *Public Culture*, *12*(1), 215–232.

Sassen, S. (2005). The Global City: Introducing A Concept. *The Brown Journal Of World Affairs*, *Xi*(2), 27–40.

Scott, A. J., Agnew, J., Soja, E. W., & Storper, M. (2001). Global city-regions: an overview. Global City Regions, *Oxford University Press,* Oxford.

Simmie, J., & Sennett, J. (1999). Innovation in the London metropolitan region. Innovative clusters and competitive cities in the UK and Europe. *Working Paper,* (182), 17-21.

Simmie, J. (2003). Innovation and urban regions as national and international nodes for the transfer and sharing of knowledge. *Regional studies,* 37(6-7), 607-620.

Simmie, J., & Strambach, S. (2006). The contribution of KIBS to innovation in cities: an evolutionary and institutional perspective. *Journal of knowledge management,* 10(5), 26-40.

Slack, B.,1993, Pawns in the game: ports in a global transportation system, *Growth and Change,* 24, 579-588.

Song, L., & Van Geenhuizen, M. (2014). Port Infrastructure Investment And Regional Economic Growth In China: Panel Evidence In Port Regions And Provinces. *Transport Policy*, *36*, 173–183.

Storper, M., & Venables, A. J. (2004). Buzz: the economic force of the city. *Journal of Economic Geography.*

Strambach, S. (2008). Knowledge-Intensive Business Services (Kibs) As Drivers Of Multilevel Knowledge Dynamics. *International Journal Of Services Technology And Management*, *10*(April), 152.

Suire, R., & Vicente, J. (2009). Why do some places succeed when others decline? A social interaction model of cluster viability. *Journal of Economic Geography*, 9(3), 381-404.

Tabuchi, T., & Thisse, J. F. (2002). Taste heterogeneity, labor mobility and economic geography. *Journal of Development Economics*, 69(1), 155-177.

Tan, T. Y. (2007). Port Cities And Hinterlands: A Comparative Study Of Singapore And Calcutta. *Political Geography*, *26*(7), 851–865.

Thorburn, T., 1960, Supply and Demand for Water Transport, *School of Economics, Stockholm.*

Vandermotten, C., Roelandts, M., Aujean, L., & Castiau, E. (2006). Central Belgium: polycentrism in a federal context. The Polycentric Metropolis*. Learning from mega-city regions in Europe, London, Earthscan*, 146-153.

Verhetsel, A., & Sel, S. (2009). World Maritime Cities: From Which Cities Do Container Shipping Companies Make Decisions? *Transport Policy*, *16*(5), 240–250.

Verlaque, M., & Tine, J. (1979). Végétation marine de toulon (Var-France): grande rade et rade-abri. *Marine nationale| Phytobenthos marin et pollution.*

Vigarié, A. (1979). Ports de commerce et vie littorale. *Hachette.*

Vind, I., & Fold, N. (2010). City networks and commodity chains: identifying global flows and local connections in Ho Chi Minh City. *Global Networks,* 10(1), 54-74.

Wang, J. J., & Cheng, M. C. (2010). From A Hub Port City To A Global Supply Chain Management Center: A Case Study Of Hong Kong. *Journal Of Transport Geography*, *18*(1), 104–115.

Wang, J. J., & Olivier, D. (2006). Port - Fez Bundles As Spaces Of Global Articulation: The Case Of Tianjin, China. *Environment And Planning A*, *38*(8), 1487–1503.

Wang, J. J., & Slack, B. (2000). The Evolution Of A Regional Container Port System: The Pearl River Delta. *Journal Of Transport Geography*, *8*(4), 263–275.

Wang, K. J., & Hong, W. C. (2011). Competitive Advantage Analysis And Strategy Formulation Of Airport City Development-The Case Of Taiwan. *Transport Policy*, *18*(1), 276–288.

Wernerheim, C. M., & Sharpe, C. A. (2003). "High Order" Producer Services In Metropolitan Canada: How Footloose Are They? *Regional Studies*, *37*(5), 469–490.

Wiegmans, B. W., & Louw, E. (2011). Changing Port-City Relations At Amsterdam: A New Phase At The Interface? *Journal Of Transport Geography*, *19*(4), 575–583.

Wood, P. (2002). Knowledge-Intensive Services And Urban. *Urban Studies*, *39*(5-6), 993–1002.

Wood, P. (2009). Service Competitiveness And Urban Innovation Policies In The Uk: The Implications Of The "London Paradox." *Regional Studies*, *43*(8), 1047–1059.

Zhang, A. (2003). Analysis Of An International Air-Cargo Hub: The Case Of Hong Kong. *Journal Of Air Transport Management*, *9*(2), 123–138.

Zhu, J., Lean, H. S., & Seah, K. Y. (2002). The Third-Party Logistics Services And Globalization Of Manufacturing. *International Planning Studies*, *7*(1), 89–104.

Appendices

Appendix A : Methodology

In this appendix, I will outline the chosen methodology for this thesis. Addressed here are the motivations for using this specific qualitative research method, the nature of the desk research, the reasoning for using a firm perspective, the focus on these specific (Dutch) port-cities, the selection method used and the nature of the interviews conducted. The appendices B (interview form), C (interview questions) & D (AMPS firms list) complement this section.

Desk research

I spent significant time performing desk research on port geography, reading (hopefully) most of the prominent articles, reports and documents on the subject. Since port geography is not part of the popular social geographic research, framing it in proper relation to the field felt like a proper and necessary starting point. This is the reason why I decided to include a context chapter in this thesis. Here, this relation is made explicit and this is where the connections to economic geography and transport geography are pronounced. Working from top to bottom, meaning starting from a broad point of view while gradually narrowing the narrative, the aim was to position the content of this thesis best as possible within economic geographic research. In this regard, the subject matter is made accessible to any reader with a background in geography rather than experts on port geography alone, hopefully creating a much needed link to this undervalued area of research. This desk research was then used as a foundation for the interviews, helping me to formulate the questions needed to answer my research questions. The last paragraph in this appendix will provide more details on these interviews.

Qualitative methodology

This thesis uses a qualitative methodology opposed to a quantative methodology. The literature research showed that qualitative research on the firm level was still lacking, as numerous researchers called for more research on the practices of A(M)PS provision. There are many assumptions in the literature regarding these practices and their effects on regional economies, however these assumptions get rarely tested as much of these practices require detailed information from private sector firms, which is not easy to obtain. Using a qualitative method, the goal was then to provide a more in-depth insight into the variables that underlie AMPS provision, their networks and the regional assets they use or prefer. To obtain these insights, this research makes use of an 'inside-out' perspective of the firm.

Semi-structured interviews were held with AMPS firm representatives in order to collect the qualitative data on the location behavior and procurement of AMPS. Too often in spatial sciences, we aggregate research to spatial levels. While this methodology certainly holds its own value, the position of the individual firms is too often neglected. Instead of seeing how firms work for the region, I wanted to see how the region works for the firms. In the end, the vitality of a region is based on the creation and location of firms. It is therefore interesting to see how a region can be conducive to the firm, using their perspective to measure the strengths and weaknesses of a region or port-city. By adding this firm perspective I hope to have contributed more understanding of the relevance of AMPS service provision, their networks and the conducive regional assets. In the end, 10 interviews were conducted with representatives from AMPS firms located in the selected Dutch port-cities of Amsterdam and Rotterdam.

Port-city focus

This thesis focuses solely on the two major Dutch port-cities. Originally, the intent was to include the major port-city of Antwerp in this research as well, however this plan was adjusted to include only the Dutch port-cities because of scope limitations. The cases of Rotterdam and Amsterdam jointly still provide an interesting and feasible (national) perspective on AMPS location behavior. Since I (later) noticed that, especially for international AMPS firms, the national scale level is quite significant in choosing locations, this national focus in the end seems to do more justice to the firm level dynamic at play. Further research could then look to extend the scope of this research, as other major ports in the region such as Le Havre, Antwerp & Hamburg would certainly be of a connected interest. Similarly, extending research to novel port-city areas in Latin America or Asia could be interesting with regard to the different socio-economic context. Focusing on more specialized

niche port-cities such as Piraeus or Oslo could also contribute to a more holistic understanding of the location variables at play in different port-cities.

Selection method of AMPS firms

Using registers, member associations, reports and academic sources, a list was compiled of 123 AMPS firms located in Dutch port-cities. This list contained information such as firm name, location(s), subsector, nationality and scope. Subsequently, this list was rather arbitrarily narrowed down to a top 25 which formed the group of firms to be contacted for an interview. I say arbitrarily, because at times the selection processes was merely based upon narrowing down the scope of our research rather than excluding firms on (any) rational basis. I then proceeded to mail or call the managers, partners or senior employees in the firm or in the firm's maritime division, which then also form the group of respondents that I spoke to later. Special care was given to striking a balance in variety; a variety of subsectors, nationality, scope and cities in order to be able to draw cautious between-group conclusions. A list of companies that cooperated in this research can be found in the acknowledgements section.

Nature of the interviews

The interviews conducted were semi-structured in nature. Following the desk research and discussions with supervisor Philip McCann, students and contact persons, I deduced all information I encountered into a 17-question interview with five sections (see appendix C for a detailed list). These questions served as a checklist and a general guide to the interviews and as such were not always asked in this specific order. Conversations were allowed to flow freely, allowing the respondent to indicate through their answers in what they found to be most important. The questions were designed to be broad in their nature and sometimes even vague. In this sense, the respondents would have to interpret the questions more and determine their own priorities in their answers. Sometimes, these questions would lead to interesting conversations, however sometimes these questions would provide the respondents with too much room to answer. Balancing the generality and specificity of questions is therefore a fine balance, which is why I made sure to include (in yellow) pointers with which I could steer the conversation more if need be. In doing semi structured interviews, it is naturally key to strike the right balance between covering the same ground across different interviews and settings, while also leaving enough room for interviewees to provide you with new and unique information based on their perspectives.

A typical interview was conducted in around 60 minutes, with some lasting significantly longer or shorter. In most cases, I would visit these firms at their offices. This was an intended choice with the aim of grasping the nature of their locational choices better if I would visit their locations as well. Only two interviews were conducted over the phone. To start off, several introductory questions were asked to provide set the respondents at ease and to cover basic grounds. These questions largely focused on the nature of service provision in the AMPS firm. Second, a set of questions were asked to gain insights in the different networks that these AMPS engage in. Central here are intra-firm structures and inter-firm relations across different scalar levels, which are used to gain an understanding of the positionality of AMPS firms. Third, a set questions focused on the relevance of several well-known variables that underlie agglomeration economies. Here, I tested how and which agglomeration processes are valuable for AMPS firms. Fourth and last, I asked some questions relating to regional assets and location behavior overall. Here, the perspective on the region in itself is put central. Which factors appear to attract or are found to be conducive for AMPS firms? What are the current weaknesses in these regions? And how does this factor into current and future locational decision-making for local and non-local AMPS firms? As a general note, it was clear that, for some respondents, these four issues were intertwined or linked. As some questions are then answered naturally, it was important to properly adjust the conversation accordingly and accommodate the order of these questions to the individual conversation.

Appendix B : Interview Form

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Interview form for informed consent

Date: _____

I hearby grant Sebastiaan Gijs de Ruigh permission to record this interview by means of audio and to use the transcripts of our oral history for educative purposes. The information shared with Sebastiaan Gijs de Ruigh will be used only for the identification of the location behavior and business networks of AMPS firms. I understand that my responses will be kept strictly confidential and anonymous. The content of the transcripts will not be accessible to any non-project staff. Project staff include the grading supervisors, supervisor prof. Philip McCann, Sebastiaan Gijs de Ruigh and if necessary department head prof. Jouke van Dijk. Before the research is made public, its content will be sent to the interviewee for control. He or she reserves the right to amend the content where necessary. When the research is made public, it will only be accessible to those who use it for educative purposes.

This consent provides no rights on using this information beyond the purposes and usages mentioned below and above. For other usages, Sebastiaan Gijs de Ruigh will have to ask permission from the interviewee.

I have the option to withdraw from this study at any time, without penalty, and I also have the right to request that (parts of) my responses will not be used.

Sebastiaan Gijs de Ruigh may state the participation of my firm to this research. ☐

Sebastiaan Gijs de Ruigh may present the research to research institutes, port authorities and government agencies active in the researched maritime sectors. ☐

Sebastiaan Gijs de Ruigh may use this research for educative purposes, including publicizing its content in an academic journal. ☐

_____	_____
Signature interviewee	Signature interviewer
_____	_____
Name	Name
_____	
Date	

Appendix C : Interview Questions

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Interview 'AMPS firms'

Interviewer 1: .....

Interviewer 2: .....

Interviewee 1: .....

Profession: .....

Interviewee 2: .....

Profession: .....

Firm: .....

Location: .....

Date: .....

Part 1 - Introduction
-First, complete Interview Consent procedure-

Well, to start off, my name is Bas de Ruigh, master student in Economic Geography and with my supervisor Philip McCann I am investigating what we call advanced maritime producer service firms or AMPS firms. The AMPS concept basically entails: the knowledge intensive service provision to the maritime sector. We have noticed that these kind of services increasingly bear a greater role in port-city transformations, as ports seek higher value added to sustain their livelihood. We therefore like to call these AMPS firms the back offices of the maritime sector, that at least partially appear to run the maritime show. Specifically, the research takes the perspective of these firms to see the networks that they create. Questions we seek to answer are: Why do AMPS firms locate where they do? Where are their clients? How do they relate to their chosen urban environment?

As every port has a unique position in global supply chains, which specific local and regional assets pull value added, and which push value away?

Intro + Servicing manner

Q1 **Can you shortly introduce yourself and your job?**

Q2 **What kind of services does your firm/office provide?**

Q3 **How do you provide these services and acquire your clientele? How do you communicate with clients?**

Q4 **Where do you conduct most work: At the office, at clients, meeting-places or from home?**

Service network analysis

Q5 **Where are most or the most important partners, clients and competitors located, nationally and internationally and why?**

Do you have networks there as well?

To what extent is your firm able to provide your services across distance, short and far?

Q6 **Do you work primarily with Dutch or Foreign, international or local companies? Does that differ for you in your service provision?**

Q7 **Can you tell me more about the spatial structure of your firm?**

What are the (power) relations between your firm's (international) offices like?

Why are there local offices needed?

Agglomeration economies

Q8 **Which maritime services do you deem important for the maritime industry? Are these well developed in your port-city?**

Q9 **How does your office/firm interact with other local businesses within the same sector and of different sectors? How important is this to your firm?**

Collective learning processes, social entrepreneurial climate, tacit knowledge spillovers?

Q10 **What is your relation with research institutes and maritime institutes?**

Q11 **Is there synergy between the port economy and urban economy? Is the city used to complement port activity?**

How important is 'triple helix' networking for your firm?

Regional assets

Q14 **Explain regional assets.** ***(Assets which characterize the region: Reputation, Office locations, Skilled Labor, Urban quality of life)***

What do you deem as regional assets for AMPS firms in Dutch port-cities? Which regional assets are most important for your firm's competitiveness?

Q15 **How do you perceive:**

- **the local business environment?**
  Tax incentives, entrepreneurial climate, legal and financial systems, headquarters
- **the local urban quality of life?**
  Urban livability, quality of amenities and availability of skilled labor
- **the vitality of the local maritime community?**
  Maritime institutions & regulations, R&D & maritime planning & policy

Final Questions: Location behavior

Q16 **Summarizing, which factors based your decision to locate your office or firm in Dutch port-cities?**

Q17 **How do you see your region's maritime competitiveness?**

Ending