



Development dynamics of port-cities interface in the Arab Middle Eastern world - The case of Dubai global hub port-city

Mina Akhavan*

Department of Architecture and Urban Studies (DASTU), Politecnico di Milano, Italy

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ABSTRACT

Many scholars in the field of architecture, urban planning, transportation, geography, economics and sociology have studied port-cities from different perspectives. Yet, the majority of literature on this topic is concerned about the Developed Western and East Asian World. With the aim to contribute to the existing studies and to fill this gap in the literature, this paper makes an attempt to study an example in the fast-developing Arab States in the Middle East, which has recently drawn a particular attention among the scholars. Dubai provides an interesting case study, as it currently hosts the major transshipment hubport of the region. Centred on a single case-study approach, a four-phase model is hypothesized as a tool to investigate the changing spatial and functional dynamics at the port-city interface from the 1900s to the 2010s. The argument is based on a reciprocal relationship between the port and the city, since the advent of a free port. Historically the port has been the economic backbone. Consequently the Creek dredging and newly constructed ports integrated with ancillary infrastructures (such as FTZs) have played an important role in boosting the growth. Some concluding remarks underline the main trends in Dubai's port-city development, compared to the existing European and Asian models. This dynamic evolution is influenced by internal factors, such as oil revenues and governmental strategies, as well as external ones, like the regional and global forces. Despite sharing common features with the Asian consolidation model, this study suggests that Dubai may demonstrate a particular pattern of port-city development.

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1. Introduction

Port-cities have long fascinated architects, urban planners, geographers, economists, and sociologists, as centres of exchange in which different cultures and environments meet, at the boundaries between land and sea. The two components of port-cities: ports as nodes within a transport system, and cities as central places of a wider socio-economic system, are mainly considered interconnected in their location, development, activities and issues (Hoyle, 1997).

Scholars in the field of architecture, urban planning, transportation, geography, economics and sociology have studied port-cities from different perspectives: (i) waterfront redevelopments (Breen & Rigby, 1996; Bruttomesso and International Centre Cities on Water, 1993; Marshall, 2004); (ii) new port infrastructure and regional development (Hoyle & Pinder, 1981; Notteboom & Rodrigue, 2005); (iii) socio-economic impact of the port (Bottasso, Conti, Ferrari, Merk, & Tei, 2013; Ferrari, Percoco, & Tedeschi, 2010; Hall, 2008); (iv) ports within the global supply chain (Jacobs & Hall, 2007; Robinson, 2002; Wang, Olivier, Notteboom, & Slack, 2007); (v) globalization, port hierarchy

and the inter-port network structure (Ducruet & Lee, 2006; Jacobs, Ducruet, & De Langen, 2010) and etc. The varied aforementioned studies tend to explore ports and cities as two separate assets. Indeed ports are not only embedded within the global logistics, but also occupy urban spaces and contribute to the urban development.

The majority of port-city studies are focused on the Western developed world, with limited research on the underdeveloped and developing countries, including the Middle East. This lack of research concerning the historical importance of major Middle Eastern ports and their interaction with city development exists, despite the fact that there is a vast literature concerned with Middle Eastern urban and architectural development (Acuto, 2010; Broeze, 1999; Bouman, Khoubrou, & Koolhaas, 2007; Davidson, 2008; Elsheshtawy, 2004, 2008; Hvidt, 2009; Kazim, 1999; Ponzini, 2011; Rizzo, 2014 and etc.). This paper, hence, proposes to fill this gap in the literature. In doing so it aims to move beyond Western and East Asian theories; and examine the dynamics of Dubai's port-city interface via an interdisciplinary approach.

Focusing on cases with major (container) ports in the Persian Gulf region, here Dubai is selected as an appropriate case to conduct this study. Furthermore, given the strategic location and thanks to the natural resource revenues heavily invested in infrastructure development,

* N. 9, Bonardi Street, Postcode 20133 Milan, Italy.
E-mail address: mina.akhavan@polimi.it.

Dubai has experienced a rapid growth from a small fishing village of the 1900s into the first global city¹ of the region in the early 2000s. Following the newly constructed transport infrastructures (air and maritime), since the 1980s Dubai has emerged as a regional hub port-city (Akhavan, 2015a) while mediating the flows of people, goods, capital, knowledge and ideas. Dubai provides an interesting case not only because it may imply useful insights for other major port-cities of the region, but also the speed of its development from a regional *entrepôt*² into a global hub port-city raises important questions concerning the origins, factors and characteristics of such pattern of growth and its future implications.

Dubai's spatial and socio-economic development path has been well documented in the recent literature (see Akhavan, 2014; Bagaee, 2007; Bloch, 2010; Broeze, 1999; Davidson, 2008; Elsheshtawy, 2004, 2010; Hvidt, 2009; Pacione, 2005; Ramos, 2010). Jacobs and Hall (2007) have studied the factors associated with the successful emergence of Dubai's port into the global supply chain. Some scholars have conducted comparative studies on Dubai's development into a logistics hub (Fernandes & Rodrigues, 2009; Akhavan, 2016). Last but not least, Sigler (2013) explored Dubai's urban change in the global context within the framework of 'relational cities', as a new form of gateway cities and *entrepôts*. The present paper intends to contribute to the existing literature, focusing on the importance of the port infrastructure in the development process with reference to the existing port-city models and theories of the Western and Asian Eastern world.

Considering the outlined framework, this study is centred on a single case-study approach. A four-phase model is hypothesized as a tool to investigate the changing spatial and functional aspects of Dubai's port-city interface from the 1900s to the 2010s. This dynamic evolution is influenced by internal factors, such as oil revenues and governmental strategies, as well as external ones, like the regional and global forces. The data at the city and port level is collected from various sources (for instance the official portal of Dubai Government; official portal of Dubai Municipality, Dubai Statistics Center and the published Statistical Yearbooks; Jebel Ali Free Zone and etc.), and also through reviewing the existing literature and archival documents. It is worth mentioning that throughout the research several discussions have been taken (in conferences/ seminars and during the study visit) with international scholars, specialized in port-city studies in general and Dubai (or the region) in particular, which has been a great help in concluding the results.

The remainder of the paper proceeds as follows. Section 2 briefly reviews the existing literature on Western and Eastern port-city evolutionary models, and the notion of port-city interface. The development dynamic of Dubai's port-city interface is then studied in Section 3. The last part is devoted to the discussion based on the question: *To what extent is the pattern of Dubai port-city evolution comparable to the existing European and Asian based models?* The paper is concluded by summarizing the main trends in the introduced model, while underlining the significance of Dubai as the main global hub port-city of the region, and the necessity for a more in-depth port-city study in the entire region.

2. A conceptual framework for studying port-cities in transition

Since the 1970s, a large body of literature has grown around the topics of the development dynamics of port-cities and the complex relationship between the port and city (Fujita & Mori, 1996; Daamen & Vries, 2013; Gleave, 1997; Hoyle & Charlier, 1995; Hoyle & Hilling, 1970; Ünlü, 2013 and etc.). Some preliminary studies have used simple

diagrams or models to analyse and interpret the evolutionary trends of ports. These models have been widely studied and updated in the light of changing contexts. One of the first attempts to develop a systematic understanding of port development was introduced by Bird (1963), through his research on British ports. Based on this so-called *Anyport* model, ports evolution may acquire three main characteristics: (i) *setting*: the port is closely dependent on its geographical consideration; (ii) *expansion*: industrialization leads to an expansion of the quays and docks construction, which affects the port activities; and (iii) *specialization*: development of specialized piers to handle larger ships and containerization. Due to the need for more space and handling capacities, some ports are forced to relocate away from the city. The original port site may thus become abandoned.

Bird's model was considered a useful concept to describe the general morphological evolution of a port system and how it interacts with its hinterland. Yet, it fell short while studying the changing port/city relationship and the features related to the effects of the maritime, technological and logistics advancement on the urban development. Hoyle's (1989) modified version of the *Anyport* model describes the port-city development in five main phases: (i) *primitive city-port*; (ii) *expanding city-port*; (iii) *modern industrial city-port*; (iv) *retreat from the waterfront*; (v) *redevelopment of the waterfront*. Stating that '*Economically and geographically, ports and cities have grown apart*' (Hoyle, 1989, p.430), Hoyle's model described the evolution of the port-city interface in terms of the spatial, economic and land-use issues since the medieval time up to the late of 20th century.

Critically, whilst Hoyle's model demonstrates the changing spatial and functional dynamics at the port-city interface for the Western cases, it failed to describe how ports and cities evolved together in other regions. Contrasted to the Hoyle's model of separation, Lee, Song, and Ducruet (2008) proposed a six-stage Asian consolidation model, based on their detailed study on Hong Kong and Singapore from the medieval time up to beginning of the 21st century. *It comprised six stages: (i) Fishing Coastal Village; (ii) colonial city-port; (iii) entrepôt city-port; (iv) free trade port-city; (v) hub port-city; (vi) global hub port-city.*

During the colonization period, Asian ports in general played an important role in global trade, allowing direct connection with the Western world. Although the two models demonstrate different evolutionary trends, the 'new port-infrastructures' extended beyond the historical city presents a key share feature. The relocation of port activities towards outer areas is due to the need for more space and accessibility to deep water, which ensures continuing growth in trade. In Western port-cities, the traditional port spaces have been mainly re-developed for more urban functions, yet in East Asian cities former port sites are still crucial for port-related activities. Therefore the inner and outer port sites are working as interdependent complex entities.

According to Hayuth (1981), the 'port-city interface' is an area in transition through a threefold dimension of changes: spatial, economic and ecological. In spatial terms, the interface is where port activities and urban functions meet. Through local and global pressures, this overlapping area of port and city has been constantly under transformation, not only spatially but also functionally (Lee & Ducruet, 2009). From an urban planning point of view, this area can be both problematic, as well as an opportunity for the city and its actors at different levels. As demonstrated in the models, the dynamics of change in the interface zone includes the migration of port activities away from the traditional site towards more land and deeper water. Therefore, competition raises for mixed-use developments- such as complex projects for housing, offices, recreational, commercial activities, etc. - on the former port site along the waterfront. From a maritime perspective, demand increases for berth space and water-related activities such as cruising. For Hoyle (1988), the port-city interface is a zone of conflict and/or cooperation and competition, emerging as a highly sensitive area, which then requires careful planning and assessment prior to development and intervention.

¹ Base on the recent world city roster by the Globalization and World Cities Research Network (GaWC, 2014).

² Not to be confused with the French meaning of warehouse, an *entrepôt* is a city or a trading post, strategically situated at the conjunction node of major trading routes, where goods are imported, stored and/or re-exported.

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