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by Freta Oktarina

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Urban History in the Development of Digital Industrial Mapping: A Study of the Emergence of Textile Industrial Estate in the Karet Area, Jakarta in the 1970s

Freta Oktarina¹

¹ Architecture Department, Universitas Multimedia Nusantara, Scientia Boulevard Gading Serpong, Curug Sangereng, Kab. Tangerang, Banten 15810, Indonesia
freta.oktarina@umn.ac.id

Abstract. This research delves into the significance of historical insight in the field of urban planning. Through archival and document studies, the research investigates the influence of the city's historical journey on government policies regarding the establishment of industrial zones within the urban landscape. By examining the city's history dating back half a century, the study aims to uncover the layers of Jakarta's structure, specifically focusing on the designation of textile industrial estate in the Karet area during the 1970s. The adoption of historical-based industrial mapping by the government demonstrates its role in not only harnessing the area's potential and shaping its distinctive characteristics but also guiding the region and its surroundings on a continuous path. Studying the past and considering the abundance of data in digital era today, this research underscores the importance of historical foundations for the advancement of industrial mapping in Indonesia. Furthermore, the study suggests that the digitalization mapping, integrating urban history and industry can be considered to foster sustainable urban development.

Keywords: Urban History, Digital, Industrial Mapping, Textile.

1 Introduction

The production of space is deeply intertwined with historical processes. Urban spaces are a tapestry of accumulated layers shaped through spatial transformation, shaping the existence of cities. As the result, in the field of urban planning studies, historical insights play a significant role in understanding and addressing the dynamics of cities [1,2,3].

Moreover, the need for sustainable urban planning has increasingly captured attention worldwide. In Indonesia, this focus has been amplified by the growing population and the demand for economic development. With ongoing city developments throughout the regions and the emergence of new cities, urban planning has become a pivotal area of focus. Consequently, there is a pressing need for effective guidance in transforming cities into creative and productive spaces, especially in industrial areas [5, 6, 7, 8].

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Industries possess the potential to unlock a city's full capabilities and contribute to sustainable futures. To plan cities effectively, it is crucial to comprehend the industrial landscape and leverage its unique assets. Industrial mapping requires comprehensive analysis to identify potential areas for growth. Considering critical factors, such as the socio-cultural and historical context, provides valuable insights into the spatial journey of a city and the driving forces behind its development, which have influenced a city's dynamics throughout its journey [9, 10].

In the digital age, the integration of historical studies and digital mapping technologies presents an opportunity to better understand urban spaces and guide policy decisions towards sustainable urban development. Virtual digital environments have emerged as vital tools for comprehensively understanding cities. Several cities have developed digital platforms to reconstruct historical traces, connecting the present with the past and enabling people to gain comprehensive insights into the dynamics of rich urban environments with multiple layers [11, 12, 13, 14].

This research delves into the significance of historical insight within the field of urban planning, with a specific focus on Jakarta's textile industrial estate in the Karet area during the 1970s. Jakarta, initially built as a colonial city with an extensive history [15], serves as an intriguing case study for exploring the metamorphosis of urban space. As the capital city of Indonesia, Jakarta has faced opportunities to enhance its urban quality alongside various challenges. Particularly in the 1970s, during the second post-independence period and the start of the New Order era, Jakarta experienced a transformative phase as it evolved into a metropolitan city. Behind its shining facade, Jakarta grappled with population growth and urbanization, leading to an increasing demand for livable urban spaces, the need for greater economic development, and the necessity to boost the industrial sectors. By examining the structure of Jakarta in the 1970s, this research seeks to further explore the relationship between industrial mapping and historical insight.

Through archival and document studies, this research investigates government policies aimed at developing the potential of different regions in the city and dividing Jakarta into several industrial zones, including the designation of the Karet area in Central Jakarta as a batik industry estate. This designation has had a lasting impact on the area's development. Over time, Karet transformed into a significant textile production hub, supporting the thriving Tanah Abang Market. The emergence of the textile industry in Karet not only shaped its character as an economic generator but also influenced and interacted with the surrounding environment.

The vibrancy of the Karet area and its neighboring districts, especially after the area became part of the golden triangle, the prestigious city center areas of Jakarta, can still be observed today. This evidence underscores the enduring impact of historical insight on Jakarta's industrial mapping. This research aims to contribute to a deeper exploration of industrial mapping within urban planning by emphasizing the importance of historical analysis as the foundation for data excavation. By recognizing and utilizing historical perspectives, cities can develop more comprehensive and nuanced strategies for creative urban planning. These findings provide valuable guidance for design methodologies that embrace a city's historical roots and unlock its potential for creating vibrant

and sustainable urban environments. Ultimately, this research enriches the digitalization of urban planning data through advancements in technology, highlighting the role of historically based industrial mapping as an efficient strategy for gathering significant data and informing comprehensive, future-oriented urban planning.

2 Methodology

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The aim of this research methodology is to utilize historical analysis as a foundation for industrial mapping and as part of the urban planning process. The study is conducted by uncovering the hidden layers of Jakarta and revealing the city's configuration in the 1970s, which marked the second phase after independence, the transition from the Old Order to the New Order in 1966. While Jakarta started its journey as the capital city and the birth of the city center during the first phase under Soekarno, its development expanded further during the New Order era. Behind the façade of Jakarta's transformation into a modern city, the city itself was facing numerous challenges including population density, urbanization, the need for decent living conditions, and the demand to revitalize industries to support people's livelihoods.

By utilizing the literature study "Sejarah Kota Jakarta 1950 - 1980" [16], this research aims to delve deeper into statistical data and ethnographic maps of post-independence Jakarta, spanning from 1950 to 1980, particularly focusing on the 1970s to gain an understanding of the city's structure during that period. This study combines Jakarta's population data with archival research and documents using maps and manuscripts to examine the city's journey and the transformation of its spaces.

The research aims to provide an overview of how the traces and characteristics of a city built through industrial activities can shape a strong region. It seeks to demonstrate how spatial mapping based on historical traces not only serves as a strong foundation for the sustainability of an area but also provides valuable insights for considering the direction of future area development.

The historical analysis method employed in this research serves as the initial foundation for the steps taken to understand industrial potential and create mappings for specific areas. Particularly with the advancements in the digital world, integrating historical perspectives with digital techniques in industrial mapping can create an integrated catalog that comprehensively stores specific data on the city's evolution and industrial movements across different time periods.

3 Result and Discussion

3.1 Jakarta in the 1970s: A City of Migrants

The 1970s marked a new period for Jakarta following the end of the Old Order era, led by Soekarno, and the beginning of the New Order era in 1966. With the transition to the New Order, not only did the government change, but several new programs were launched. These programs, initiated by the New Order government, encompassed both

urban development and efforts to enhance the economy. This phase is a continuation of Jakarta's early journey as the capital city.

After gaining independence in 1945, Jakarta underwent various transformations, including changes in its status as the capital city. In 1946, with the return of the Dutch, the Indonesian government secretly moved the capital to Yogyakarta. However, due to the military aggression that occurred in Yogyakarta on December 19, 1948, to establish emergency government, the capital was moved to Bukittinggi. On December 27, 1949, the Dutch handed over sovereignty to the Indonesian government, and RIS, the Republik Indonesia Serikat (United States of Indonesia), was established with Yogyakarta once again becoming the capital. Finally, on August 17, 1950, the RIS was dissolved, replaced by the Negara Kesatuan Republik Indonesia (unitary state of the Republic of Indonesia), and Jakarta regained its status as the capital.

Despite Soekarno's efforts to develop Jakarta into a global city during his tenure (1945-1965), the reality was that Jakarta, which was filled with a predominantly migrant population, resembled a large village. Various areas of Jakarta were occupied by settlers from different regions of Indonesia. By 1950, the influx of migrants was largely due to Jakarta's status as the capital city. Soekarno's speeches about Jakarta attracted people from outside areas who sought to experience the progress of the capital and find opportunities. The city's vibrant image gave the impression that a prosperous life was attainable, and word-of-mouth news about Jakarta spread among migrants, further fueling the influx of people.

Post-independence, the population of Jakarta experienced significant growth in 1948 and 1949, with growth rates of 37.2% and 62.8%. This period witnessed the highest population increase between 1941 and 1970. As the city continued to develop, the number of migrants entering Jakarta steadily increased, resulting in a densely populated city during the New Order era. With an area of 590.11 square kilometers, Jakarta's population had reached 2,910,858 by 1960, doubling from around 1,432,085 in 1950 [16].

The diversity of the population is a defining characteristic of Jakarta in its early years. Although commonly referred to as the people of Jakarta, the city is actually a melting pot where various ethnic groups gather, including Sundanese, Javanese, Chinese, Batak, and others, making it a vessel for the blending of different cultures. It becomes difficult to define an original Jakarta community. Starting as a colonial city established by the Dutch known as Batavia, individuals who have resided in either the pre-colonial or post-Batavia period can be regarded as the indigenous population of Jakarta. However, it is widely recognized that the Betawi people are considered the original inhabitants of Jakarta, although they predominantly reside in the city's outskirts.

In a study conducted by Lance Castle in 1961, he described Jakarta as a "mosaic, reproducing in microcosm the rivalries of the wider society." Jakarta's residents are not solely influenced by the intense metropolitan life but also have their own distinct lives and rhythms. On one hand, Jakarta serves as a focal point oriented towards the world, where ideas, styles, and influences from outside find their presence. This makes Jakarta the city most influenced by external factors compared to other cities in Indonesia. Castle noted that the indigenous population of Jakarta accounted for less than one-third of the total population, with the majority being migrants [17].

Between 1961 and 1971, population records indicated that the majority of migrants in Jakarta came from West Java. However, during the period from 1971 to 1981, there was a decrease in ³² the number of migrants from West Java, while there was an increase in migrants from Central Java, East Java, North Sumatra, West Sumatra, and additional arrivals from West Kalimantan. Clifford Geertz observed that the increase in migrants from Central Java and East Java was partly driven by diminishing agricultural land and hierarchical political conditions in Java that did not support business development. This differed from Sumatra. The presence of Sumatran business groups in Jakarta was an extension of their business activities in their respective regions. Meanwhile, for the migrants from North Sumatra, the natural environment was one of the motivations for them to seek livelihoods outside their homeland [17, 18].



Fig. 1. The Map of Jakarta Before and After Independence (Source: Reproduction from the Collection of Leiden University Libraries).



Fig. 2. The Boulevard of Jakarta, Mohammad Husni Thamrin Road 1971 (Source: <https://www.datatempo.co/foto/detail/P2110201400013/jalan-thamrin-di-jakarta>).

Estimated Ethnic Composition of Djakarta's Population				
	A		B	
	1930 Whole Indigenous Pop.		1961 Immigrant Indigenous Pop.	
Batavians (incl. Depokkers etc.)	419,800	64.3%	25,700	2.0%
Sundanese	150,300	24.5	591,400	46.6
Javanese	80,300	9.2	509,400	40.0
Atjehnese	x	0.0	4,600	0.3
Batak	1,300	0.2	20,700	1.6
Minangkabeu	3,200	0.5	42,800	3.4
South Sumatra groups	800	0.1	25,700	2.0
Bandjarese	x	0.0	3,600	0.3
South Sulawesi groups	x	0.0	12,900	1.0
North Sulawesi groups	3,800	0.6	13,000	1.0
Maluku and Irian groups	2,000	0.3	7,300	0.6
East Nusatenggara groups	x	0.0	3,600	0.3
West Nusatenggara groups	x	0.0	1,000	0.1
Balinese	x	0.0	1,400	0.1
Malays and other Outer Island groups	5,300	0.8	10,700	0.8
Other and unknown*	6,900	1.1	-	-
	653,400	100.0	1,275,200	100.0
x = included in "other and unknown."				

Fig. 3. The Ethnic Composition of Jakarta's Population in 1930 - 1961 [17].

3.2 Urban Issues and Government Policies

Upon entering its governance period, the New Order government faced a deteriorating economic situation in Indonesia, characterized by rising prices and high inflation. As a political statement and in an effort to address the economic challenges and stimulate development across various sectors, the government launched the Five-Year Development Plan known as REPELITA (Rencana Pembangunan Lima Tahun). From 1969 to 1974, the initial phase of REPELITA prioritized housing regulation, including a specific program aimed at improving the quality of housing for the population in Jakarta [16, 19]

Migrants, forming the majority of Jakarta's population, occupied the largest areas within the urban space. However, the majority of these newcomers had low education and income levels, making it challenging for them to access urban living standards. They filled the gaps between organized city blocks and constructed living spaces under limited conditions. Over time, these settlements grew rapidly, becoming densely populated pockets and eventually transforming into slum areas throughout the city. In 1961, 60% of Jakarta's population lived in these kampungs or urban villages. The kampungs in Central Jakarta had the highest population density, with 23,142 people per square kilometer in its 54.46 square kilometers [16].

The conditions in the kampungs were extremely poor. Built on swamps and rice fields, the unpaved roads in the kampungs would become muddy paths filled with water during the rainy season. The houses were tightly packed together, lacking a proper drainage system, which worsened the environmental conditions. The influx of newcom-

ers put pressure on the city to undertake spatial planning. In 1969, the government initiated the Kampung Improvement Program, also known as the Mohammad Husni Thamrin Project or MHT Project, with the aim of enhancing kampungs throughout Jakarta. The MHT Project aimed to ensure equal government services for all segments of society by improving the quality of settlements. By 1975, improvements had been made to a total area of 4,694 hectares across Jakarta, resulting in the transformation of villages to the formation of kampung kota settlements. These improvements included the construction of paved roads with drainage systems, provision of clean water, establishment of MCK facilities (bathing, washing, toilet), and the establishment of Puskesmas (Community Health Centers). The residents, who previously followed rural customs, were gradually encouraged to adapt. However, this spatial transformation did not significantly change the overall habits of the population. Until the 1980s, many kampungs, including those sticking to the city center areas, had open drains used for various household activities. Regarding small space, some residents extended their private areas onto public roads and placed household items in front of their houses. There was no clear boundary between private residences and public roads. This adaptation indicated that the rural background still strongly influenced the residents, shaping the social structure in urban kampung settlements in Jakarta [15, 20].

In the 1970s, in addition to the Kampung Improvement Program, Ali Sadikin, the Governor of Jakarta, implemented a policy to boost the city's economy and promote the industrial sector by designating specific areas as industrial zones. For instance, Ancol, Tanjung Priok, and Pasar Ikan were designated as maritime industrial zones, while the Karet and Palmerah areas were designated as batik industrial areas, and the wood industry was located in the Marunda area [16].

The government's designation of industrial zones was not arbitrary. Ancol, Tanjung Priok, and Pasar Ikan became maritime industrial zones due to their locations on the northern side of the city near the seaport. These areas had served as gateways and meeting points for various traders and merchants involved in maritime trade. The decision to establish the Karet area in Central Jakarta as the center of the batik industry was influenced by its proximity to the Tanah Abang Market. The market, established in 1735, initially functioned as a household market but gradually evolved into a textile market in the 19th century [21]. The growth of textile commerce and extensive networks developed between batik workers from Central Java and traders in Batavia eventually transformed Tanah Abang Market into a large textile industry hub. The market served as a meeting place for traders and manufacturers involved in a wide range of textile productions, including incoming batiks from coastal cities such as Pekalongan and Cirebon. By 1901, it was evident that batik-making activities in Batavia had expanded considerably, and the Karet, Bendungan Hilir, Mampang, and Tebet areas had emerged as batik production centers [22, 23]. The decision to designate the Karet area as the textile hub reflects the journey of each area and how the region's characteristics heavily influenced the government's urban planning considerations.

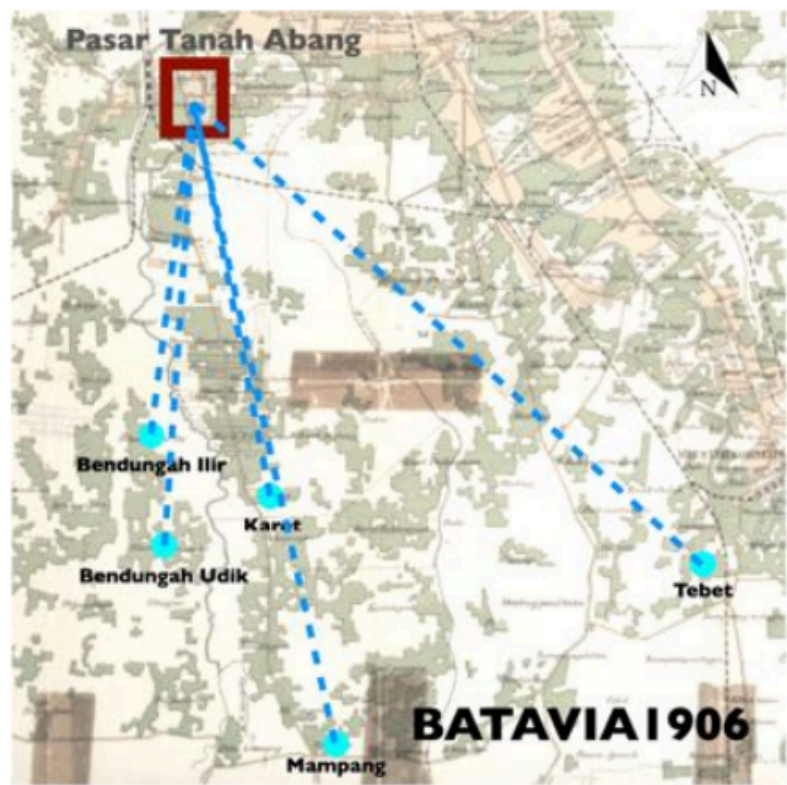


Fig. 4. The Map of Jakarta 1901 (Source: Reproduction from the Collection of Leiden University Libraries).

- D. Kain Karet. Batik's uit kampoeng Karet en elders te Batavia, met eigen kleur-type, niet zonder Chineeschen invloed.
- 181. Saroeng-Karet. Patroon: djoebinan (vloersteen-achtig). Wat grof. De toempal-kapala in 't midden. (2040).
 - 182. Dito. Vrij gewoon; gelige grond. (2050).
 - 183. Dito. Vrij gewoon; rossig. (2043).
 - 184. Dito. Goed. Grond gelig met vrij veel rood. De toempal-kapala in 't midden. (2031).
 - *185. Dito. Goede, mooi-kleurige Karet. De kapala dito. (2047).
 - *186. Dito. Ook mooi-kleurige Karet, met zeer donkeren grond; fraai somber. De toempal-kapala aan 't eene uiteinde. (2036).
 - 187. Dito. Met dof rood. De toempal-kapala in 't midden. (2035).
 - *188. Saroeng van kampoeng Tanah Abang. Sterk Chineesch van kleur. Wel mooi. De kapala dito. (2042).
 - 189. Dito. Met blauwzwarten grond, waarop patronen in grijswit en lichtblauw. De kapala dito. (2038).

14. 5. List of batik production from the Karet area exhibit in Rotterdam Museum, 1902 (Source: Tentoonstelling van Oost-Indische Weefsels en Batik's April 1902, Museum voor Land en Volkenkunde en Maritiem Museum "Prins Hendrik" te Rotterdam).

3.3 Industrial Mapping and the Growth of the Karet Area

Like the Karet area, other industrial estates in Jakarta had a significant impact on the city, not only determining the specific activities of the areas but also triggering population movements and concentrating the density of each region. This situation directed the city's movements and created a new configuration in the city's fabric.

The history of Jakarta reveals that the growth of areas within the city is a long journey that encompasses layers of production. In the early stages of Jakarta's development, known as Batavia at the time, the city was built in the northern areas near the harbor, enclosed by city walls, while the areas outside remained dedicated to agriculture and plantations. As the city expanded and underwent a shift in its center to Weltevreden in the 1800s, the previously green areas started to diminish. One notable example is the journey of the Karet area, named "karet" due to the rubber plantations that once occupied the region [23]. With the city's expansion, as depicted in the map of Jakarta in 1945, the Karet area, along with neighboring areas like Kebon Pala (nutmeg plantation), Kebon Sirih (betel plantation), and Kebon Kacang (nut plantation), had become kampongs surrounded by a few remaining plantations and rice fields. Particularly with the presence of Tanah Abang Market, which served as an economic generator, the areas around the market became attractive destinations for immigrants seeking economic opportunities in Jakarta, transforming the formerly agricultural and plantation regions into residential areas.

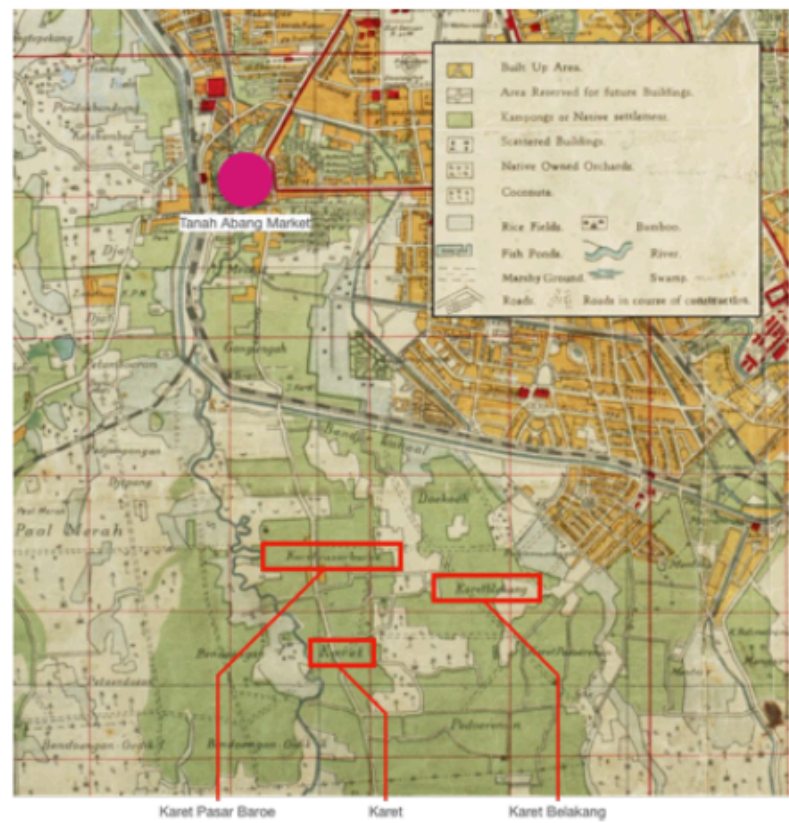


Fig. 6. The Karet Area in the Jakarta's Map 1945. The plantations Tranformed into Kampongs (Source: Reproduction from the Collection of Leiden University Libraries).

The Karet area initially served as a transit hub for Javanese batik artisans who traveled from Java to conduct business with Tanah Abang Market [21, 22]. As the market expanded and offered wider business opportunities, some batik producers sought to enhance production efficiency and reduce travel distance. They began establishing workshops near the market and relocating their artisans to settle in the Karet area. Over time, the area attracted traders and businessmen from various regions, including entrepreneurs from West Sumatra who were also engaged in trade at Tanah Abang Market. These individuals chose to stay in Karet and establish their own textile businesses.

The designation of Karet as a textile industrial zone did not alter the area's structure. Instead, it further strengthened its identity as a supporting area for Tanah Abang Market and an extension of the textile industry. As part of the Kampung Improvement Program, the Karet area, along with the surrounding areas, still maintains closely packed houses divided by small alleys. Furthermore, the settlement attracted migrants from Java, West Sumatra, and other regions, resulting in a diverse and multicultural structure. Beginning as a batik village, the gradual growth of textile industry-related businesses transformed the environment of Karet. Alongside regular residents, some houses were repurposed into small-scale working spaces, serving as seamstresses' workshops, clothing convections, and accessory manufacturers. This transformation has turned the Karet area into a mixed-use zone, combining residential and commercial functions.

Located in the heart of Jakarta, adjacent to government and business districts, and directly connected to the largest textile market, Karet has established itself as one of the city's prominent areas. Despite being an urban kampung settlement, Karet holds significant importance, serving as a bustling hub and experiencing heavy traffic congestion. The increasing prominence of Karet has also led to the development and transformation of surrounding spaces, including Bendungan Hilir, which has evolved into commercial areas over time.

During the revitalization of markets in Jakarta, the government also constructed the Bendungan Hilir Market in 1974, alongside the development of Tanah Abang Market in 1973. The Bendungan Hilir Market not only offers a wide range of commodities, including products related to the textile industry, but also features some blocks where tenants have transformed their kiosks into work areas for seamstresses. These dedicated areas cater specifically to individuals in need of fabric sewing services, further enhancing the market's offerings.

The development of areas surrounding Tanah Abang Market, as an extension of market activities, exemplifies how local roots heavily influence government policies and guide the city's direction. The batik villages initiated by Javanese artisans and traders have become strong foundations for Karet, which continuously grows as a textile industry hub. Furthermore, the availability of job opportunities and residents' interest in settling near industrial zones, as offered in the Karet and Bendungan Hilir areas, have led to new spatial arrangements in the region and contributed to the formation of distinct characteristics in the area.

Until the 1990s, Karet remained an active textile industrial district, renowned for its clothing convection industries, and played a significant role in supporting trading activities in Tanah Abang Market. However, as Jakarta's business district, known as the

Golden Triangle, expanded and the urban planning of the city changed, the Karet area, along with other urban kampung settlements in Central Jakarta, began to undergo evictions and transformations into commercial spaces dominated by high-rise buildings. Some residents moved to the outskirts of Jakarta and reestablished their clothing businesses in the new area.



Fig. 7. (Left) Bendungan Hilir Market; (Right) Block filled with tailors in Bendungan Hilir Market 2014 (Source: <https://www.liputan6.com/news/read/722985/pasar-benhil-direvitalisasi-mayoritas-pedagang-masih-menolak> & <https://sindikasi.republika.co.id/berita/n0mjcw/rencana-revitalisasi-pasar-benhil>).

3.4 Historical Insight in Virtual Industrial Mapping

The government's efforts in mapping industrial areas in Jakarta during the 1970s had a long-term impact on economic growth and the city's structure. Through industrial mapping, the government harnessed the city's potential, shaped its characteristics, and guided its development journey. Even today, regions such as Karet, Ancol, Tanjung Priok, Cilandak, and Pulo Gadung remain essential for industry and business. This demonstrates the significance of historical insights, including understanding an area's traces and recognizing its potential, in shaping a city's development strategies. Urban planning is not merely about spatial division; it requires a rooted industrial mapping approach to revitalize economic activity while aligning with the area's character and socio-cultural aspects. The government's foresight in the 1970s was insightful, and it should be further explored as a foundation for future industrial mapping in regions across Indonesia.

In the future, the abundance of available data can provide valuable insights for urban planning. Moreover, the digital technology era necessitates an integrated approach to ensure comprehensive spatial data can be gathered and optimally utilized. As cities develop creatively, some initiatives have involved virtual arrangements and historical elements to bring aspects of the city to life. For instance, the Rome Reborn Project is a reality project that recreates the city of Rome in the year 320 AD in a virtual format. It consists of apps and videos that allow users to experience a digital reconstruction of Rome, exploring the city's spaces during that time period, including various monuments. This project serves as an educational tool for the community, raising awareness of the city's archaeological heritage. The Amsterdam Time Machine (ATM) in the Netherlands is another example, which serves as a digital time machine for the city of

Amsterdam. This infrastructure provides socio-cultural historical information that allows people to navigate the city in the past, gaining insights into how people lived in different centuries at the neighborhood, street, and house levels [25, 26].

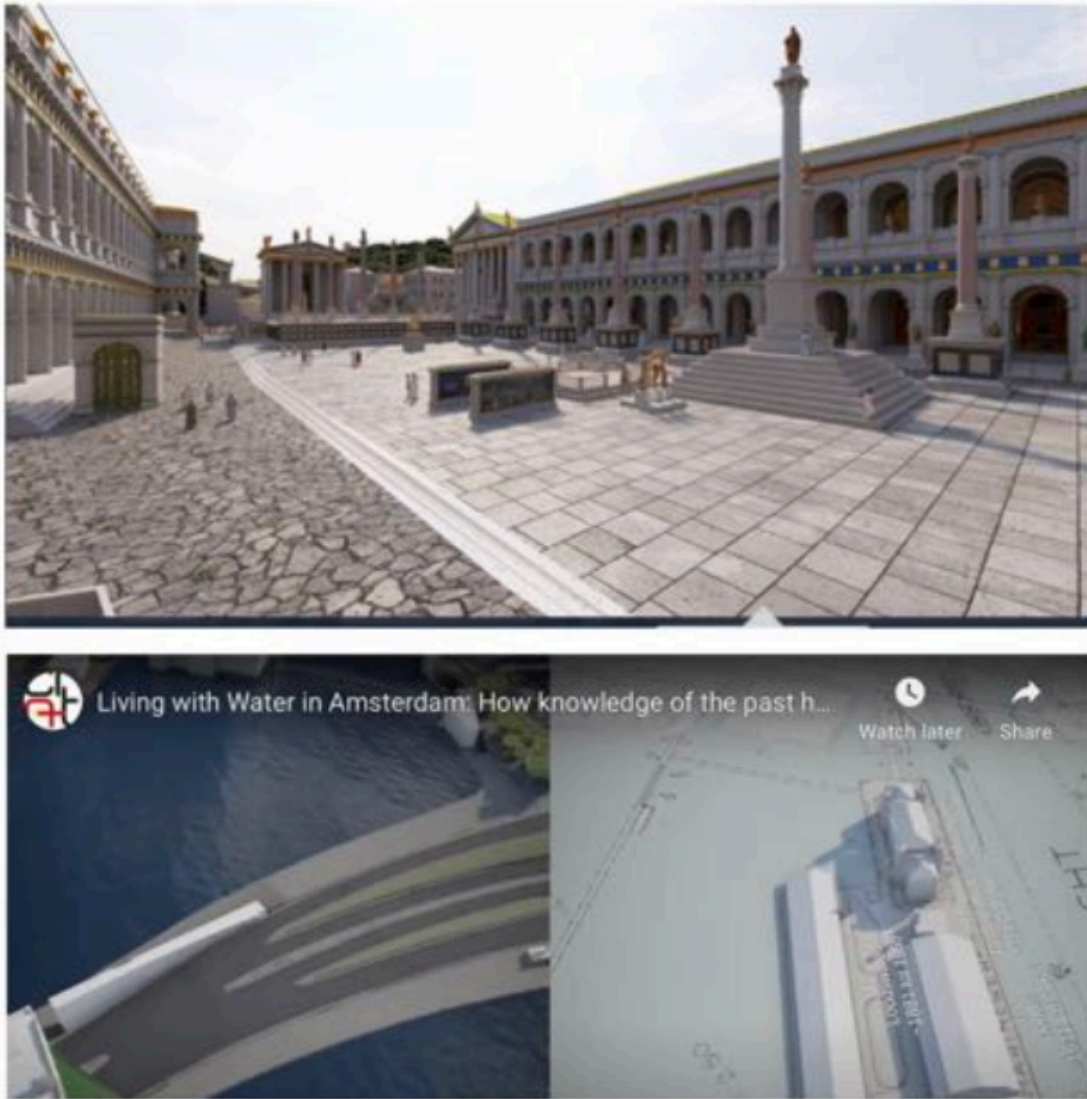


Fig. 8. (Upper) Rome Reborn; (Bottom) Amsterdam Time Machine (Source: https://store.steam-powered.com/app/923270/Rome_Reborn_Roman_Forum/ and <https://www.amsterdamtime-machine.nl> accessed June 2023).

While these examples may initially seem like tourism tools, what Rome and Amsterdam have achieved represents a model for delivering historical information about a city that can be developed for various purposes, including exploring a city's industrial potential. The longer a city's journey, the more layers it accumulates, contributing to its existence today. Just like the textile industry area in the Karet area, which is no longer present on Jakarta's current city map, that area is part of the historical trace that has contributed to the development of Indonesia's textile industry today.

4 Conclusion

By examining the structure of Jakarta in the 1970s and analyzing government policies aimed at addressing the city's issues, it becomes clear that history has played a significant role in the establishment of important industrial zones within the city. A rooted industrial mapping approach has proven to contribute to sustainable urban development and the growth of these areas. It is crucial to strategically consider the designation of areas based on historical insights for the future development of industrial mapping in Indonesia.

With advancements in virtual technology, a future digital map can be created that not only incorporates current factual data about the city but also integrates documentation from the past. This comprehensive tool would serve as a valuable resource for gathering and recording the layered historical traces of urban spaces in each region. Such an approach can filter information, unlock the potential of these areas, and provide a deep understanding of the city's spatial journey, which can be experienced firsthand today. Drawing parallels with Rome and Amsterdam, the ability to travel back in time or reconstruct past urban activities offers a holistic approach, enabling individuals to witness the spatial evolution and gain insights into the city's journey beyond what can be observed in the present. This approach enhances our understanding of the city's development and provides valuable insights for shaping its future.

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