

**HISTORICAL EVOLUTION OF BANGKOK(1782-1910):
FROM WATER-BASEDCITY TO THE EMERGENCE OF
ROAD-BASED CITY**



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วิวัฒนาการทางประวัติศาสตร์ของกรุงเทพฯ(1782 to 1910):จากนครที่อาศัยการคมนาคม
ทางน้ำมาสู่กำเนิดของการใช้ถนน



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
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ชุนนี หวู : วัฒนาการทางประวัติศาสตร์ของกรุงเทพฯ(1782 to 1910): จากนครที่อาศัยการคมนาคมทางน้ำ มาสู่กำเนิดของการใช้ถนน . (HISTORICAL EVOLUTION OF BANGKOK(1782-1910): FROM WATER-BASEDCITY TO THE EMERGENCE OF ROAD-BASED CITY) อ.ที่ปรึกษาหลัก : ศศ. ดร.ธีระ นุชเปี่ยม

งานวิจัยเรื่องนี้มุ่งความสนใจไปที่กระบวนการพัฒนากรุงเทพฯ ให้เป็นนครที่อาศัยถนนแทนการอาศัยการคมนาคมทางน้ำเป็นหลัก แม้ว่าการพัฒนาในลักษณะนี้จะมีได้เกี่ยวข้องกับที่กรุงเทพฯ ก้าวขึ้นมาเป็น “ศูนย์กลางแท้จริง” ของอาณาจักรในช่วง ค.ศ. 1782-1910 แต่พัฒนาการนี้ก็มีส่วนสำคัญในยกระดับสถานะดังกล่าวของกรุงเทพฯ หลังจากกรุงเทพฯ ได้รับการกำหนดให้เป็นศูนย์กลางแห่งกษัตริย์ราชวงศ์จักรีใน ค.ศ. 1782 ก็ค่อยๆ พัฒนาเป็นนครที่อาศัยทางน้ำเป็นหลัก โดยมีเครือข่ายการคมนาคมขนส่งทางน้ำที่รุ่งเรือง อันเป็นผลมาจากความพยายามในการดำเนินงานด้านนี้ในช่วง 3 รัชกาลแรกของกรุงรัตนโกสินทร์ ตั้งแต่ ค.ศ. 1861 เป็นต้นมา ถนนสมัยใหม่ก็เริ่มปรากฏในนครที่เป็นศูนย์กลางแห่งนี้ และสามารถแข่งขันกับเส้นทางน้ำที่มีอยู่มากขึ้นทุกที เส้นทางน้ำเหล่านี้ยังคงบ่งบอกอย่างสำคัญต่อทั้งลักษณะและหน้าที่ของกรุงเทพฯ ขณะนั้น ยิ่งไปกว่านั้น กรุงเทพฯ เริ่มกำหนดบทบาทของตนเองใหม่เพื่อให้เป็น “ศูนย์กลางที่แท้จริง” ของอาณาจักรทั้งในทางการเมือง เศรษฐกิจ และวัฒนธรรม อันเป็นผลมาจากการเปลี่ยนแปลงอย่างค่อยเป็นค่อยไปผ่านกระบวนการสร้างความเป็นสมัยใหม่และการโยกอำนาจเข้าสู่ศูนย์กลางของประเทศในช่วงรัชกาลที่ 4-5 งานวิจัยเรื่องนี้พิจารณากระบวนการเปลี่ยนแปลงระบบการขนส่งคมนาคมในกรุงเทพฯ ในช่วง ค.ศ. 1861-1910 ประเด็นที่พิจารณา คือ การพัฒนารูปแบบการขนส่งคมนาคมให้เป็นสมัยใหม่ส่งผลกระทบต่อพัฒนาการของนครหลวงแห่งนี้ในแง่เอกลักษณ์อย่างไร ปัจจัยอะไรบ้างที่มีส่วนนำไปสู่การสร้างถนนในช่วงรัชกาลที่ 4-5?

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BASED CITY. Advisor: Asst. Prof. Theera Nuchpam, Ph.D.

This paper focuses on the development process of Bangkok involving its transformation into a road-based city and eventually the ‘real center’ of Siam during 1782-1910. Even though its development into a road-based city was not directly related to its transformation into the real center of the kingdom, this important change significantly enhanced its power-center status. From the time Bangkok was designated to be the seat of royal government in 1782, the city gradually became a ‘floating city’ with a relatively prosperous network of waterways through continuous efforts of the former three sovereigns before King Rama IV and King Rama V ascended the throne. From 1861 onwards, modern roads emerged in this central city and increasingly could compete with the original waterways, which had significantly represented and supported the features and the function of the city at that time. What is more, Bangkok began to redefine its role as the ‘real center’ of the kingdom in political, economic and cultural terms, which chiefly owed to its gradual transformation through the modernization and centralization of the country during the reigns of King Rama IV-V. This article discusses the transformation of transportation means in Bangkok during 1861-1910. What was the impact of the modernization of transport modes upon the development of the capital city in terms of its identity? What contributed to the construction of roadways during the reigns of King Rama IV-V?



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Chapter 1

Introduction

1.1 Rationale

Bangkok became an important city in Siam, which mainly owed to it serving as the seat of political power from the beginning of Bangkok period which started in 1782. Soon afterwards, this central city was starting increasing influence on the new kingdom in political, economic and cultural terms. After its establishment as a new capital, Bangkok gradually became a ‘floating city’ with relatively prosperous network of waterways developed with continuous efforts of the first three sovereigns. It is well known that waterways, as the sole transport means, dominated the transportation in the city by the middle of nineteenth century, which not only provided the ideal sites for settlement, commercial activities and recreations but also contributed to the development of the city. No doubt, most daily life activities of the city took place on the banks of the rivers and canals at that time, which brought about an amphibious lifestyle. As a largely water-based city for about eight decades, this unique feature of Bangkok fascinated the people who ever visited the city. Some aspects of this early feature remained visible in present-day metropolitan Bangkok.

Countless canals were constructed and an extensive network of waterways therefore came into being in the reign of King Rama IV- V , which provided Bangkok with access to even distant provinces, though transportation remained slow during that time[Graham,1924]. Roads as a new transport mode were introduced to this central

city in 1861 by the fourth ruler of Bangkok period. This marked the beginning of a new image of Bangkok. However, the transformation of Bangkok into a road-based city was proceeding very slowly since few roads existed in the first three decades after its emergence in the city. Contrary to this, numerous roads and bridges were built in the last two decades of King Rama V's reign, which increasingly formed an emergent network of roadways along with the existing roads, the growing network would later transform the city in its various respects. Noticeably, canals and roadways coexisted and competed with each other, and this resulted in the dual feature of Bangkok; that is, its dual reliance on both canal and road networks before becoming a road-based city with the expansion of roadways.

At the same time, railways as a main transportation means were also increasingly influencing the kingdom in the centralization process as the communication between the capital and the remote provinces was becoming more convenient and faster to a large extent than ever before. Therefore, it could be said that Bangkok by degrees was becoming the real center of Siam with the centralization of the country under the reign of King Chulalongkorn.

Even though the topic on the evolution of Bangkok has attracted some attention from scholars and researchers, the relevant studies have mainly focused on the development of the transport means or the urbanization of Bangkok, while the change of Bangkok's role in the country with its development brought about by the transformation of transportation was scarcely been discussed. In addition, the studies on the relationships between its transformation into a road-based city and development as a real center of the country are particularly rare. Thus, the present

study aims to fill this gap by focusing on the development of Bangkok as the capital city and how it became the ‘real center’ of Siam through its development as a road-based city and the factors related to roadway construction in Bangkok between 1782-1910.

1.2 Objectives:

The objectives of this study are as follows:

1. To analyze the modernization of transportation means in Bangkok from 1782 to 1910.
2. To explore the historical background of Siam during the reign of King Rama IV-V.
3. To analyze the factors contributing to the construction of roads during the reign of King Rama IV-V.

1.3 Hypotheses:

The transformation of Bangkok into a road-based city from an aquatic city, dominated by waterways, was taking place at the same time with the development of Bangkok as the “real center” of Siam.

1.4 Theoretical framework:

According to Marc Askew (2002), the physical and ecological aspects had great influence in shaping the characteristics of Bangkok as “a living environment” for different levels in terms of urbanism, which represents the relationships between the interests of the state, the capital, historic conditions and the demands of urban

residents for the growth. From 1782 onwards, Bangkok experienced great changes in terms of its physical and ecological aspects. Originally Bangkok was just a small settlement when it was designated as a new seat of Siam's government. However, the city was gradually transformed into a 'semi-aquatic' city, and later became a 'modern' city with the continuous development efforts in the following decades.

In addition, the relationships between the city's identity and transportation have also attracted attention of scholars and researchers. Gerhard Hitge and Andile Gqaji (2001) point out the interplay between a city's transportation systems and its urban landscape. Transportation systems are of great importance in "shaping the societal characteristics of a city's inhabitants". In addition, Crystal (2017) argues that "transportation shapes the cities". Over the past two hundred years, the transportation and communication means in Bangkok experienced a huge change, which shaped the city with waterways and boats since the beginning of Bangkok period, while from 1861 onwards it was reshaped by roadways as a result of the development of road-based transportation systems.

This research carries and combines the above arguments. According to the relationships between a city's identity and transportation as well as the relationships between the interests of the state, historical conditions and the demands of urban residents, Bangkok was by degrees transformed to be a road-based city through the transformation of communication means, which influenced this capital city in its development as the 'real center' of the kingdom in this period.

1.5 Research methodology:

The study is based on the documentary methods.

1. The study started with the collection data on canal and road construction from Historical Records Office.

2. The relevant information on history, roadway history, as well as the lifestyle of Bangkok was gathered from books, articles, dissertations, website in both Thai and English.

1.6 Literature review:

As mentioned in the previous parts, Bangkok was recognized as a ‘floating’ city prior to 1861, which mainly owed to the rivers and canals in the city serving as the sole transportation means. From the 1860s onwards, the transformation of transport modes in the city significantly impacted upon this central city, which resulted in the physical changes of Bangkok. These changes of Bangkok have attracted attention from scholars, whereas the studies focusing on the interplay between the change of Bangkok’s role in the process of Siam’s centralization and Bangkok as a road-based city brought about by the transformation of communication means are rare, as the studies on the reasons for roadway building in this period.

In this section, I will analyze some pieces of literature related to the transportation means in Bangkok as well as the lifestyle of Bangkok in different periods since its establishment. The relevant literature can be divided into four categories; namely, 1) the historical development of *Khlong* in Bangkok; 2) the historical development of roadway transport; 3) the way of life in Bangkok; 4) the transformation and urbanization of Bangkok.

(1) The historical development of *Khlong* in Bangkok

In her book titled *Khlong in Bangkok*, Piyanart(1982) introduces the development of *Khlong* in Bangkok and its adjacent areas from 1782 to 1982, which chiefly served various purposes of defense, transportation and irrigation needs as well as economic imperatives with the growth of commerce. In addition, the author also explains the effect of canals on present-day Bangkok. However, in this book very little can be found on how to maintain or revitalize canals for practical purposes in present-day Bangkok.

Other publications go further and analyze the revitalization and maintenance of canals in modern Bangkok for practical purposes. Dolruthai(2015) introduces the development of canals in Bangkok during the former seven reigns of the Chakri dynasty as well as their current conditions. She classifies the uses of canals to present Bangkok in terms of wastewater sewerage, transportation, irrigation, historic heritage and tourism. Furthermore, she highlights the necessity to maintain and revitalize the canals and provides some practical suggestions on how to achieve the revitalization goal with popular participation on various levels. And Unakul(2012) discusses the historic evolution of Bangkok's waterways and emphasizes the significance of canals in revitalizing the ecological and socio-cultural sustainability in modern Bangkok rather than only for the aesthetic purpose, but as supplementary transportation channels to ease the traffic pressure in the city.

(2) The historical development of roadway transport

Nij(1982) explains the evolution of road and bridge construction in Bangkok in the past 200 years. According to Nij, the technology of building roads improved during the fifth reign. He argues that the first road of Bangkok was the Rama IV Road built in 1857 as a result of the petition of westerners. However, the economic patterns brought about by roads are found less in the article even though the construction of shop-houses are touched upon. The article of Porphant Ouyyanont(1999) goes further, which not only explains the physical changes of Bangkok from 1851 to 1925 by examining the development of transportation means, but also analyzes the new economic patterns brought about by the expansion of roads. He points out that roads influenced the settlement pattern in the city, which became more and more visible by the 1890s.

In addition, Piyanart(1975) introduces all types of communication systems by water and on land in the reign of King Rama V. The causes, objectives, developmental processes and obstacles concerning to the communication system are analyzed in her book. And she argues that the most important cause for construction of the communication system was to be “high centralization”. D. Insor(1963) explains the development of roads and the road-based transport system during the middle of the nineteenth century. Furthermore, the author argues that canals became a secondary transport means in Bangkok, but about half the Thai population still maintained the amphibious lifestyle. Additionally, Nomura(1996) explains the development of the public urban transport system in Bangkok. Anyway, the change of transportation means in Bangkok had great influence on the modernization of Bangkok.

(3) The way of life in Bangkok

Sumet Jumsai(1997) explains the water-based lifestyle in Bangkok. He points out that the construction of Bangkok was to “recreate the splendor of Ayutthaya” built upon the perspective of cosmology. Additionally, he argues that the land-based characteristic of Bangkok should be dated back to 1857 rather than 1861. Furthermore, the author argues that the latter-day land-based Bangkok was “an alien organism”, which lost connection with the original water-based image.

According to Sir John Bowring(1857), Bangkok represented an amphibious lifestyle during the middle of the nineteenth century. All the structures were adjacent to the river or canal banks, and boats were the only transport means for city’s residents. Importantly, Sir John introduces the water-deficient conditions of canals during the dry season in April, May and June, which obstructed the transportation of city’s residents. In addition, Mr. and Mrs. Emile Jottrand(1996) describe the day-to-day life and appearance of Bangkok from 1898 to 1902, which allow us to understand that the land-based residences had become more visible even though the land-based transport system was not perfect but workable. However, they also point out that the residences along the banks of rivers and canals were still popular among common people in this period.

(4) The transformation and urbanization of Bangkok

In his influential book, Marc Askew(2002) provides a comprehensive analysis of the historical transformation and urbanization of Bangkok in terms of urbanism. He highlights the interplay among the interests of the state, the capital, historical conditions and the demands of urban residents for the growth, which resulted in the

transformation of Bangkok in the whole historical process. Furthermore, he introduces a new 'semi-aquatic' term to define the landscape of Bangkok from the 1890s onwards. In his other essay, Marc Askew provides a comprehensive analysis of the historical transformation and development of Bangkok in terms of urbanization, especially the creation of Bangkok as the royal center as well as water-based dwellings. He argues that the transformation of Bangkok resulted in the change of Bangkok's identity in terms of architecture and culture, which led Bangkok to become an 'alien'.

In her book, Abha(1987) provides an overview of the main facts in Bangkok from the reign of King Rama I, particularly the main structures, canals and streets, which allow us to understand what happened in the city of Bangkok after it had been built as a capital city. However, Abha only classifies these things into different categories such as palaces, canals, streets and the like, and then describes each separately. As such, it is impossible to depict the whole urbanization process of Bangkok without integrating those facts together.

1.7 Significance and usefulness of the study

This research will provide knowledge of the factors according to the transformation of Bangkok during the reigns of King Rama IV and V. The transformation of communication means influenced the modernization of this capital city and even the role of Bangkok greatly in the development of the whole country. Therefore, the studies on the changes of transportation facilities of Bangkok let us

understand the development of the capital city into the seat of the centralized kingdom in this period.

1.8 Statement of defining the boundary of Bangkok's identity

As mentioned in the previous parts, the question about the first road in Bangkok is controversial. Some scholars argue that the first road of Bangkok was *Thanon Trong* (the straight road) parallel with *Khlong Thanon Trong*, which was built in 1857. Porphant Ouyyanont, however, has a different view and highlights that it was not exactly a 'road' in the western sense but a by-product of canal digging [Ouyyanont, 1999].

Indeed, according to the Cambridge Dictionary, 'road' means "a long, hard surface built for vehicles to travel along", while it seemed that *Thanon Trong* was more like a walkway rather than an actual road. Compared to *Thanon Trong*, *Thanon Charoen Krung* constructed in 1861 was a real road based on its actual use. Therefore, it can be concluded that the latter was the first road in the city, which is followed in this study.

1.9 Structure of the thesis

This thesis is comprised of five chapters, as follows.

Chapter I : Introduction part gives some background information on the study, including its objectives, the theoretical framework, the research methodology and the structure of the study.

Chapter II: Bangkok as a complete water-based city (1782-1861). This chapter talks about the development of Bangkok as a complete water-based city prior to the emergence of road. Similar to the previous dynasties, canals excavation gained special attention for different purposes under the historical background of those days from the beginning of the Bangkok period. Thus, the new canals, along with the former canals of the past, contributed to Bangkok as a complete water-based city, which facilitated the communication within the city and some nearby provinces. However, the connections between this central city and the remote provinces were quite weak due to the poor transportation facilities at that time, which weakened the influence of the capital on the common provinces to some extent.

Chapter III: The Emergence of Bangkok as a Road-based City. This chapter analyzes the changing process of Bangkok from a water-based city to the emergence of a road-based city by focusing on canal and road construction from 1861 to the 1880s under the complicated circumstances. An initial network of roadways emerged by transforming the transportation means, together with the traditional waterways, which facilitated not only the communication within the city but also between the capital and the even distant provinces to some extent.

Chapter IV: Bangkok: Becoming a road-based city and the real center of Siam. This chapter explains the transformation of Bangkok into a road-based city in the context of national centralization between 1890-1910. With the explosion of roads and other kinds of roadways, Bangkok was becoming a road-based city. Meanwhile, with centralizing policy of Siam, Bangkok as a principal city of the country, was

transforming to be more than the seat of political power but the “real center” of the country in this period.

Chapter V: Conclusions presents the transformation of the transportation system and its impact on the physical image and the role of Bangkok, as well as the factors influencing the construction of roadways in the reigns of King Mongkut and King Chulalongkorn. As a result, Bangkok was becoming the “real center” of Siam in the process of transforming Bangkok into a road-based city.





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Chapter II

Bangkok as a complete water-based city (1782-1861)

In 1782, Bangkok was established to be the seat of royal power as soon as King Rama I founded the present Chakri dynasty. Unlike present-day Bangkok, during the years 1782-1861 a picturesque image of Bangkok as a water-based city was considerably eminent, which mainly owed to the rivers and numerous canals around and through the city with successive construction efforts of Siam's rulers from the beginning of the Bangkok period. At that point, the banks of the Chao Phraya River and the main canals were chosen to be ideal sites not only for the settlements of the greater proportion of the population, but also for commercial activities and entertainment.

Throughout Bangkok's history, in particular prior to 1861, it should be emphasized that rivers and canals had extensively impacts on the physical image and the development of this central city itself. Therefore, in the process of the development of Bangkok, this period has to be taken into consideration. What is more, these waterways affected the role of the capital city in the country as a whole. In this chapter, I will analyze the development of Bangkok as a water-based city by describing the construction of canals in Bangkok, according to the time sequence, in order to explore how and why the development of the water-based city affected the change of the role of the capital city in the country before the emergence of railways in Siam. An understanding of the developmental process of Bangkok as a water-based

city prior to 1861 is of great importance to an understanding of the development of the capital city to be the real center of Siam by the early twentieth century.

2.1 Bangkok as a complete water-based city (prior to 1861)

“The Venice of the East”, as European travelers used to say, was extremely appropriate to describe the physical image of Bangkok up to the early twentieth century. Particularly, a complete water-based city of Bangkok had been maintained largely by 1861 prior to the emergence of the first road in Bangkok, in which a comparatively prosperous network of waterways had formed and affected all the aspects of the city. Such a unique and picturesque profile of Bangkok, of course, did not form in short time but rather through continuing efforts of the former reigns.

2.1.1 The construction of Bangkok as a water-based city in the First Reign

The foundation of Bangkok

As soon as King Rama I ascended to the throne in 1782, a new capital was relocated to the east bank of the Chao Phraya River, just opposite to the palace of Thonburi period, which, in a sense, had symbolized the reunification of the fragmented kingdom of the day. Of course, there were factors that influenced the decision of the new ruler on moving the capital to Bangkok. Geographically, it was the location of a significant fortress in the star shape and a commercial center since Ayutthaya period[Sumet,1997]. Compared to the western side of the river, Bangkok was encompassed by the Chao Phraya River and Khlong Khu Meaung Derm, which was the city moat during Thonburi dynasty. Thus, this strategic location made it easier

to resist the invasion from outside, Burma in particular, so as to protect the city[Thiphakorawong,1978].

Besides, at that point Bangkok was just a small settlement of Chinese merchants, which made it much easier to provide enough land for housing the palaces and building a new capital[Thiphakorawong,1978]. Thirdly, the decision on relocating a new capital to Bangkok rather than remaining at the former western bank of Thonburi was, that the new ruler intended to establish a new dynasty not to succeed the Thonburi kingdom.

In addition to relocating the new capital to Bangkok, it is noticeable that the building of this capital city was modelled upon the former capital city of Ayutthaya. Strictly speaking, there were probably some reasons for the new ruler to make such a decision. Firstly, there were some facts to prove that the new kingdom was still faced with serious internal problems at that time. Although a new capital was designated at Bangkok, the country was still under troublesome circumstances. Undoubtedly, the problem of reuniting this fractured country and recreating the glory of the kingdom was a real one for the new ruler at that point. Therefore, it would be logical for the new ruler to recognize that the construction of Bangkok replicating the old Ayutthaya was perhaps conducive to the new reign's efforts to reunite and rebuild the country on account of the people, who were familiar with and still remained strongly reminiscent about the former Ayutthaya dynasty, and in return the construction of Bangkok in the Ayutthaya pattern would build confidence for people[Nivat, D.,1955; Piyanart,1982].

On the other hand, the construction perhaps involved taking into consideration the need to gain legitimacy for the new court by modeling it upon the glorious

Ayutthaya to some extent. It would be reasonable for the new king to do so since there were still several alleged “courts” in the country, which was still fragmented and disordered when Bangkok was established as a new capital of the new kingdom. Therefore, taking the example of former capital surrounded by water was, to a certain extent, conducive to keeping the capital safe based on the temporal historical circumstances.

The construction of Bangkok started in 1782, and was completed in 1785 just after three years[Wenk,1968]. Like many other ancient capital cities in Southeast Asia, Bangkok was mainly river-based. A description by David K. Wyatt of the settlements of Bangkok at the time of the First Reign is as follows:

“Princes and officials constructed homes along the network of canals radiating eastward from the palace and Chinese and Indian merchants built their shops and warehouses along the river to the south.”[Wyatt, 1984]

From David K. Wyatt, we can learn that the banks of the river and main canals were not only the ideal sites of the settlements for nobilities and even commoners, but also the main places where commercial activities took place.

Waterways construction in the reign of King Rama I

In addition to constructing residences and houses along the river and main canals, it is worth mentioning that the activities of digging canals were given extensively attention by King Rama I throughout his Reign, and a water-based transport system was created in the city during the period.

The reasons why the new king decided to re-dredge and construct canals were various. The first and most important purpose was to protect the city since at that point Siam was still under an external threat, especially from Burma. Secondly, transportation and communication were very significant for the city. Aside from defense and transportation purposes, entertainment use was taken into consideration as well, much the same as during the preceding Ayutthaya and Thonburi dynasties. Besides, the government of King Rama I also used canals to separate the various districts in the city [Thiphakorawong, 1965; Piyanart, 1982].

In general, the construction of about five major canals was undertaken in the reign according to the reliable resources, which took place around and through this capital city [Piyanart, 1982].

Khlong Rop Krung

In the reign of King Rama I, Khlong Khu Meaung Derm in the Thonburi period was re-dredged at the time of constructing the new capital, which was to form the first city ring for defense and transportation purposes. In addition to re-dredging the old canal, the construction of new canals was undertaken as well throughout the reign. In 1785¹, the construction of a new canal was ordered by the new king. Named Khlong Rop Krung (canal surrounding the city), the new canal started from Wat Samplum to Bang Lumpoo surrounding the Rattanakosin city with water. This new canal was to form a city moat with a length of 7.098 kilometers for the defense

¹ There is a different argument about the date of digging this new canal by some scholars. Ouyyanont argued Khlong Rop Krung was dug in 1783. See, Ouyyanont Porphant, 1999. And according to the translation version, Thadeus also noted its construction in 1783. See Thiphakorawong, 1978. Translated by Thadeus and Chadin Flood. pp58

purpose. Thousands of Khmer soldiers, who were left after a defeat were mobilized to its construction [Piyanart,1982; Sombat,2002].

In addition, it is noticeable that the canal was called by different names according to different localities. For example, the section of the canal from Bang Lumpoo to Wat Saket was named Khlong Bang Lumpoo, and the section passing Span Hun was called Khlong Span Hun, which later was replaced by the name Khlong Ong Ang[Sombat,2002]. Moreover, this canal was recognized as the second city ring of the capital, which was to encircle the city, together with Chao Phraya river. Furthermore, it should be emphasized that the boundaries of the capital city had been delimited within the circle at that point, which had been followed for the first three reigns until 1851, as another new city moat was made[Thiphakorawong,1965].

Khlong Lot

Thereafter, another two new canals were constructed to connect Khlong Khu Meaung Derm with Khlong Rop Krung, which were real Khlong Lot (a straight canal), passing by Wat Buranasiri Amatayaram and Wat Rajabophit respectively[Piyanart,1982]. Noticeably, these two canals provided water for the daily life of city's residents within the city walls as well. King Rama II once described Khlong Lot in his literary work "Inao":

Khlong Lot stretches as far as the eyes can see, knows no shortage of water even during an ebbing tide. (Plainoi,2002)

Khlong Mahanak

In 1797, King Rama I ordered the construction of Khlong Mahanak, outside the city wall, which was well recorded in the astrologer's archives. The archives documented: "In the year of small serpent, in the Thai lesser era of 1159, coinciding with B.E. 2340 (1797), the digging of Khlong Mahanak began" [Plainoi,2002]. What is more, it is noticed that unlike those previous canals, the principal purpose of this canal was chiefly for public water festivities rather than for security and transportation purposes, which just followed the custom in the Ayutthaya period. As Chao Phraya Thiphakorawong in *Chronicles* noted that:

"Be a place where the people of the capital city could go boating and singing and reciting poems during the high-water season, just like the custom observed in the former capital at Ayutthaya." [Thiphakorawong,1978]

Therefore, a conclusion can now be drawn: by the end of the First Reign the whole capital was surrounded by water; the river and canals crisscrossed the city and bustled with traffic as the sole transportation means. Indeed, after the completion of the construction of the capital, the most outstanding features of Ayutthaya had been recreated in this capital city with extensive efforts during the First Reign, which, according to David K. Wyatt, represented "a subtle revolution" [Wyatt,1982]. Also, Stanley J. Tambiah suggested that is "restoration and reform" [Tambiah,1999]. Since then, a picturesque image of Bangkok as a water-based city began to form at that point.

Viewing the First Reign as a whole, we have an impression that the new leader was to rebuild the country and recover Siam's former territory. Constructing the new capital city with the example of the former Ayutthaya was also of great significance. Therefore, the years 1782 to 1810 can be recognized to be one of the most vital period for Bangkok's development. The period was to establish Bangkok as a pure 'floating city'. Furthermore, the limits of the capital city had been delimited in the reign, encircled by Chao Phraya river and Khlong Rop Krung.

Eventually, with the establishment and development of Bangkok in the reign, this young city increasingly became a primate city of the country and a main port for international trade at the time of water-based city in the following decades. In order to make it happen, one thing was necessary, that is, navigable waterways.

2.1.2 Bangkok as a water-based city in the reign of King Rama II - III

With a great endeavor throughout the First Reign, the physical image of the capital city was becoming visible, and the construction of this water-based city was continued during the reigns of King Rama II and King Rama III. An excellent description of the physical scene of Bangkok was written by George Finlayson, who visited Bangkok, along with a commission sent by the Governor-General of Bengal in 1821:

“The city is continuous with the palace, extending on both sides of the river to the distance of three or four miles; it lies principally on the left bank, and the most populous as well as the wealthiest part lies nearly opposite to the house of the Pra-klang.....The houses rarely extend more than one more two hundred

yards from the river..... there are but few, I had almost said, no roads or even pathways. To every house, floating or not, there is attached a boat, generally very small, for the use of the family.....the principal shops, however, and the most valuable merchandise, are found along the river in the floating-houses.”

[Finlayson, 1988]

According to Finlayson’s records, it can be seen that an aquatic city of Bangkok was particularly evident in the Second Reign. Unlike present Bangkok, the vast majority of people resided in the houses along both sides of the river, as they used to be in the preceding reign. Besides, the banks of the river were the main sites of commercial activities since most shops were set up in those floating houses as well. Still, there were no roads in the city, waterways and boats were the main means of transportation and communication for residents at the time.

Waterways construction in the Second Reign

According to historical records, only the construction of Khlong Lat Khuean Khan was ordered by King Rama II. This canal linking Nakhon Khuean Khan to Bangkok, was constructed principally for the transportation between Bangkok and Nakhon Khuean Khan as the ‘outpost’ of the capital. In addition, the construction of this new canal involved the security purposes as well, which perhaps indicated that Siam’s ruler began to take into consideration the need to protect nearby areas beyond the capital, which itself benefited from such protection.

Moreover, there was considerable change during the Second Reign in the use of work force for canal construction. Noticeably, rather than just depending on the

traditional free-service system, Chinese corvee began to be hired as the main labor force for civil construction of new Siam in the reign, which had huge impacts on the labor system of the public works in the following several decades, since it generally was more economical than the latter [Piyanart,1982; Cady,1964].

Waterways construction in the Third Reign

The year 1824 was a period that King Rama III ascended to the throne after his father's death. In the Third Reign, two more new canals were excavated in the city, that is, Khlong Sansaeb(1837) and Khlong Nhue Meaung Nakhon Khuean Khan(1850). In addition, three canals beyond the capital were re-dredged in this period, including Khlong Bang Khun Thian(1831), Khlong Sunak Hon(1834), and Khlong Phra Kanong(1837)[Piyanart,1982].

It is worth mentioning that, aside from Khlong Sunak Hon and Khlong Nhue Meaung Nakhon Khuean Khan mainly for the security of the capital and even nearby provinces, another three canals were mainly to link the vicinity of the capital city to the nearby areas, which facilitated the communication and commercial activities between the capital and nearby areas to a great extent. What is more, Khlong Sansaeb later became a very significant canal for commercial activities in the city, which connected the capital to other nearby settlements. It is said that the original purpose to construct Khlong Sansaeb was to use it in war; however, the purpose as planned originally never came into practice [Piyanart,1982].

Besides, with respect to the method of constructing canals, a new method was introduced for deepening Khlong Sunak Hon in the reign, probably for other canals as well [Piyanart, 1982].

It is worth mentioning that during the Second and Third Reigns, as mentioned above, the connections between the capital and nearby areas by water began to receive attention from Siam's rulers. Perhaps, there were some reasons based on the circumstances. One major purpose was to maintain the security of the capital, such as Khlong Lat Khuean Khan in the Second Reign. Secondly, the demand of transporting goods or raw materials to the capital was of great importance, in particular during the Third Reign. The facilitation of collecting revenue and flowing to the capital led the government of King Rama III to promote and improve the waterway. Moreover, it is also noted that the canals also facilitated the development of internal trade as well as the irrigation for farming in the Third Reign [Vella, 1957]. Above all else, though, we should stress that these waterways, to some extent, affected the role of the capital city in the country, which will be discussed further in the "Discussion" section of this chapter.

Undoubtedly, it can be concluded that, the most prominent characteristics of the capital were the river and canals, which contributed to the particularity of the water-based city and the development of Bangkok to a certain extent.

2.1.3 Bangkok as a water-based city in the Fourth Reign (prior to 1861)

34 years after the visit of Finlayson, Sir John Bowring visited Bangkok in 1855, in order to negotiate with Siam's government on commercial trade for the

British. According to what he had seen and heard, later he published a book with 2 volumes, named “The Kingdom and People of Siam”. In his book, Sir John gave little more information about this water-based city:

“The limits of the city are marked by a semicircle of the Meinam on the western side, and by a canal on the eastern, whose two extremities joining the river make the city almost circular. There is an inner island, formed by another canal, also joining the Meinam. There are two other canals, viz., one from north to south, and another from east to west, crossing the city at right lines, besides auxiliary canals on both sides the river. The highways of Bangkok are not streets or roads, but the river and canals. Boats are the universal means of conveyance and communication. Except about the palaces of the Kings, horses or carriages are rarely seen.....but a boat is necessary part of every person’s household.”[Bowring,1857]

From Sir John Bowring, we can learn how a striking water-based city of Bangkok figured in the middle of nineteenth century. The city was encircled by the Chao Phraya river and Khlong Rop Krung, which had delimited the boundaries of the capital city from the First Reign. At the same time, numerous canals crisscrossed the city, together with the river, providing access for residents to move around in the city. Noticeably, there were no roads in the city, while waterways still were the sole transport means at the time.

Waterways Construction in the Fourth Reign(prior to 1861)

Unsurprisingly, the activities of digging canals also received extensive attention in the Fifth Reign as in the former three reigns. However, it is worth

mentioning that there were some changes in canals' functions in the reign; that is, canals mainly served for communication, transporting goods and trade purposes, rather than for defense and security as in the past[Piyanart,1982].

Khlong Padung Krung Kasem

When King Rama IV ascended to the throne in 1851, there were obvious changes in the capital city. Firstly, with continuing endeavors of the first three reigns, the capital had become a little more thriving at the time. Moreover, the population of the capital increased dramatically². These changes influenced the decision of the king to build a new canal, namely Khlong Padung Krung Kasem, in order to meet the transport demand and relieve the traffic pressure at the time[Thiphakorawong,1965]. Also, this canal was the last one constructed prior to signing the Bowring Treaty[Piyanart,1982].

This new canal was beyond Khlong Rop Krung and mostly parallel with it, encircling the capital city together with Chao Phraya river. Therefore, it also was recognized as the third canal ring of the capital[Ross,2017]. Furthermore, this canal was of great importance to the capital city, which enlarged the limits of the capital during the first three reigns, to more than doubled the area of the city[Sternstein,1966].

Khlong Thanon Trong

² The population of Bangkok in the mid-19th century has received some attentions from some scholars. Sternstein, in 1966, noted that: "Broadly then, Bangkok with a population of not less than 300,000, was surrounded by some hundred-odd centres within the kingdom proper(almost all being provincial capitals) whose size tended to increase with distance from the capital, but seldom exceeded five thousand"[Sternstein,1966:69].

From the previous passages, we can learn that the decisions on digging canals were affected mainly by Siam itself; however, there was one canal, namely Khlong Thanon Trong, differing from the former. It is said that foreign consuls and merchants signed a petition and complained Bangkok was far away, and shipping goods to the capital took much time, since in that period most westerners resided in the southern part of Bangkok along the east side of Chao Phraya river. Especially in the rainy days, it would take more time on the way. Therefore, they asked permission to re-build trading shops at Bangnaa. Also, they asked Siam's government to construct a canal from Bangnaa to Khlong Padung Krung Kasem. Then, after consulting with officials, the king ordered the construction of the canal[Thipakornwong,1965].

Therefore, it can be seen that Khlong Thanon Trong was mainly to facilitate westerners to trade inside the city. However, the canal did not realize its original purpose as planned because most westerners preferred to reside near the city center[Thipakornwong,1965].

In the middle of the 19th century, due to the impacts of the Bowring Treaty signed in 1855, Siam began to open the door to the West and there were some changes in the capital city. Many foreigners surged into the capital for trading and even settled in the city. Constance M. Wilson even suggested the Treaty "...marks the beginning of Thailand's transition from a traditional Southeast Asian kingdom to a modern state"[Wilson,1989]. Under these circumstances, some new canals were constructed to facilitate the growth of both internal and international trades of Siam. It is worth noting that canals constructed after the Bowring Treaty, were mainly to connect the capital to other provinces in order to facilitate transporting goods, and

also helped to exert control on the latter to a certain extent, such as Khlong Maha Sawat(1860) linking the west bank of Chao Phraya river to the east bank of Nakhon Chaisri River[Thiphakorawong,1965; Piyant,1982].

Just after five years of the Treaty, an Australia Newspaper reported the situation of Bangkok in 1861:

“Spacious foreign stores and neat foreign houses ornament the part where most of the foreigners reside; the British consular buildings look imposing, if not handsome; a huge ungainly building..... There is more traffic and stir in the river, and there is doubtless a freer circulation of money among the common people, as might be expected from the fact that the quantity of rice sent from the country has increased from an average of 200,000 piculs a year before 1856, to nearly 1,500,000 piculs already in 1861.” [The Argus,1861]

From the report we can learn that, indeed there were obvious changes in the houses and commerce due to the impacts of the Treaty. Rice trade appeared to increase dramatically. Also, the river bustled with traffic, busier than ever before. It should be emphasized that these commercial activities and the arrival of Europeans, however, did not affect the physical nature of this central city immediately but until the following decade of the Fourth Reign. It can be clearly seen that by 1861, based on the above, canals and rivers were the only communication channels in Bangkok, which led it to maintain a complete water-based city statue. A tranquil and picturesque image of Bangkok was extremely prominent at the time.

Then, the role of the capital at the time as a complete water-based city prior to 1861 shall be discussed next.

2.2 Discussion: Bangkok as no more than the seat of royal power

As we know, based on the preceding pages, the city of Bangkok was established to be the seat of Siam's court as soon as King Rama I founded up the new Siam in 1782. Also, the city was constructed as mainly water-based by 1861, which contributed to the formation of a physical image of a complete water-based city at the time. Prior to 1861, there were no roads and only the river and canals provided access for communication and transportation within the city and beyond in the period.

Viewing the whole period 1782-1861, despite little changes in the physical features and boundaries of Bangkok in comparison to the First Reign, there were some indications that the capital city of Bangkok had changed in many respects. In particular, perhaps there was some progress in Bangkok's role in the country.

Firstly, it appears that Bangkok was, in part at least, becoming the focal point of the country in terms of politics since the headquarters of all departments had been in Bangkok by the Third Reign. As mentioned in the previous pages, the connections between the capital and nearby areas had received some attention and some canals were constructed mainly for war, tax collection, and the like[Vella,1957]. These canals, together with former canals and rivers, provided the capital's access to the provinces that could be reached through navigable routes, which probably facilitated the control of central government on provinces to some extent.

However, the existing waterways were far from sufficiency for communication between the capital and the outlying provinces; they were not always navigable, perhaps which would also impact on the communication between the capital and the provincial areas, especially those remote areas. It should be emphasized that Walter F. Vella discussed the decentralization of Siam's central government by 1850 about fifty five years ago(in 1955)³. In a sense, the poor transportation means influenced the control of central government on the provinces to a large extent.

In addition, at the time the central government of Siam did not directly administer the internal affairs of the provinces too much due to the traditional administrative system. Therefore, we cannot strictly speak of this capital city that was already the center of the country in political respects under the situation of the decentralization of the country and the inadequate transportation system between the capital and the provinces. Compared to the former two reigns, however, there was some progress in the role of the city in the country politically.

Secondly, from the early 1820s onwards, this capital city was becoming a primate port due to its strategic location and navigable waterways. There were some facts that make it possible to prove this, as followed:

“The eastern branch of the Me-nam, or that of Bangkok, is the great port of Siam. This is navigable with ease and safety to all merchant vessels under 250 tons.”[Crawford,1915]

³ Walter F. Vella noted that: “...poor transportation and communication facilities made a large degree of decentralization of power inevitable...the degree of control maintained by the central government over the provinces tended to decrease as the distance from the capital increased”[Vella,1955].

“The inland and coasting trade is very considerable: the principal part of this domestic traffic is carried on the Menam and its branches, and the produce is carried in flat boats, or on large rafts of bamboo. The upper part of the Menam where it begins to be navigable, is practicable in the months of August and September. Boats which quit Lao in these months, do not arrive at Bangkok until November and December, when the river is crowded with them. Grain, salt, cotton, sapanwood. oil, and timber, are brought to the capital by this mode of conveyance.”[Crawfurd,1830]

From Crawfurd, we learn that there were the advantageous location and the Chao Phraya River linking Bangkok to the world. Goods were shipped from the interior to the capital by water in the period, mainly for export rather than selling there. It is worth mentioning that the export activities were mostly conducted by Chinese in the period, although in the third reign, when Siam was reopened to Western nations, however, the impacts on international trade of Siam were not obvious until the Bowring Treaty[Ingram,1955]. Undoubtedly, in the period Bangkok indeed became the main center of the east coast trade and the significance of Bangkok in terms of international trade had increased to some extent.

Although Bangkok was becoming the vital port for international trade, however, it did not mean the importance of the capital in terms of internal economy had improved a lot in the period. By the early 1850s, goods flowed to the capital from the interior by water, mostly for the payment of taxes but not for economic exchange, and barter appeared to be very important within villages and between regions[Ingram,1955]. Besides, according to Vella’s discussion, the population of Siam were mostly self-sufficient farmers, which was probably to affect the internal

trade[Vella,1957]. Indeed, it appears that the traditional lifestyle of Siam by itself made it difficult to surpass the existing status of the economy in internal trade perspective.

By 1861, it is difficult to evaluate the impacts of the Treaty on the internal economy since the time was so short, just five years after the Bowring Treaty had been put into practice. Therefore, it is reasonable to recognize that the internal economy of Siam was still relatively small, which would be impossible for the capital city to play a key role in the internal economy of the country at the time of complete water-based city.

So, based on the discussion above, we learn that the river and canals had significant impacts on the physical image of the capital city, which led it to become a complete water-based city by 1861. Also, waterways facilitated communication and transportation within the capital and even with nearby provinces, which contributed to the development of the capital city to a certain degree in the period. On the other hand, it is noted that canals were constructed mainly to use for the defense, war, transportation purposes, and the like, but few of them were meant for trade prior to 1861, in particular in the first three reigns. Also, new canals at the time were principally within the capital; there were but few for the linkages between the capital and nearby provinces, or the outlying areas. Under these circumstances, an adequate transportation system impacted the connections between the capital and provinces, especially the distant provinces to a large extent, this situation largely affected the control of the central government on provinces.

Therefore, it is not hard to account for the significance of Bangkok to the country at that point. Although founded as soon as 1782, it appears that this capital city at the time of complete water-based city, probably, was no more than the seat of political power during the period, although there were some improvements in its role in commerce perspective.



Chapter III

The emergence of Bangkok as a road-based city

“...There the old barbarous splendor of the realm culminated, and there the new life sprang up that is beginning to throb to the utmost bound of the sleepy old kingdom.”[Cort, M. L.,1886]

The description was written by Mary Lovina Cort, who lived in Siam since 1874, which reveals the transformation of Bangkok at that point. Indeed, it is a very complicated, yet important topic for understanding the transforming of Bangkok between the period 1861-1910, which reflected the transformation of Bangkok from being an aquatic city, dominated by waterways, toward a road-based city with a comparatively comprehensive network of roadways.

Rev. N. A. MacDonald was an American missionary, who stayed in Siam between the period 1860-1870. In his book, he described the water traffic of Bangkok as followed:

“The river is the “Broadway” of the city, whilst canals form the principal cross streets or avenues. Chiefly all travel in the city, and indeed everywhere in Siam, is done in boats. If a person wishes to go to church, to market, to call on a friend--in short, any where, he goes in a boat. The rivers are the great avenues of trade, whilst the whole country near the Gulf is intersected by a network of canals. But in those portions distant from the rivers or canals resort must be had to ox-carts and elephants.” [McDonald, N. A.,1999]

These words tell us two things, firstly that waterways indeed were of great importance, which still played a dominant role in the transportation of the city in the period. However, from the 1860s onwards, the modern road was introduced to the city, canals began to be bridged, which gradually contributed to form a network of roads. Undoubtedly, the introduction of roads profoundly affected this aquatic city of Bangkok in terms of physical character and function. Under these circumstances, some people began to move along some main roads from banks of the river and canals, and some commercial activities along main roads began to take initial shape, which contributed to the form of a land-based city to a certain extent.

Noticeably, in the period waterways and boats were not the only means of communication and transportation anymore, while street traffic provided another choice for people and commercial activities. It is also noted that the transforming of Bangkok from an aquatic city toward a road-based city did not happen in a short time but needed several decades. Dual transport modes coexisted and competed with each other, which not only facilitated the development of the capital of Bangkok but also impacted the physical character and function of the capital to a certain extent.

Before going any further, due to the importance of transportation systems in the transforming process of Bangkok and even the country, it was of course necessary to learn about the circumstances related to the modernization of Siam, especially the transformation of Bangkok between the period 1861-1910. It will be useful for us to understand why and how this aquatic city of Bangkok had transformed in this time period.

3.1 The Historical Background

From the mid-19th century onwards, Siam encountered massive pressure from the European powers, especially Great Britain and France, which profoundly threatened the territorial integrity and national independence of Siam in the context of the imperialist expansion of the West. The letter of King Mongkut to Phraya Suriyawongse Vayavadhana in 1864, will be useful for us to learn about how worse situation Siam was under at that point:

“...Being, as we are now, surrounded on two or three sides by powerful nations, what can a small nation like us do?... The only weapons that will be of real use to us in the future will be our mouths and our hearts, constituted so as to be full of sense and wisdom for the better protection of ourselves.” [MR, S. P.,1987]

The quotation of the letter reflected the fact that the sovereignty of Siam was facing a high threat from Great Britain and France during the reign of King Mongkut. Indeed, at the western border, the sphere of British influence penetrated Burma as the result of the first Anglo-Burmese War of 1824-1826[Hall,1981]. At the south, according to the Anglo-Dutch Treaty of 1824, the British extended their influence upon the Malaya Peninsula further after the establishment of Singapore in 1819[Hall,1981]. Meanwhile, as the result of a treaty between the French and Cambodia of 1863, the French began to penetrate their influence into the country of Cambodia. Moreover, according to the Treaty of Saigon of 1862, Vietnam's three provinces(Bien Hoa, Dinh Tuong, and Gia Dinh) were ceded to the French. Even

more, by 1867, entire southern Vietnam fell into the hands of France[John,1998]. As mentioned above, France therefore touched the eastern frontier of Siam in the reign.

What is more, due to the Bowring Treaty of 1855 as the result of Sir John Bowring's negotiation, Siam was opened to the European world and granted the British to trade in Siam with no state interference as Chinese had. Aside from commercial influence, perhaps the most important impact was, according to the provisions of the Treaty, that Siam began to lose the jurisdiction toward the British subjects in the territory of Siam[FO 94/492]. Soon afterward, many similar treaties were concluded between Siam and other European countries.⁴ These treaties affected Siam greatly in the following decades.

Under these circumstances, the problem of how to retain the independence of the country was the real one for Siamese rulers at that point. In order to let it happen, as mentioned above, Siamese rulers were well aware of the fact that the country of Siam, including the capital of Bangkok, was needed to transform into a new Western standard. Moreover, the isolation from the outside world, particularly European powers, was impossible to continue in this period. Either open it voluntarily, or it would be forced to open from outside sooner or later, just like China and Japan.

Viewing the Fourth Reign as a whole, the most impressive was that the intelligent king of Siam preserved the self-sovereignty of the country from European powers, whereby shifting the policy to befriend the West and modernize his country in a Western trend. In a sense, Siam avoided following the footsteps of other

⁴ Similar treaties including: United State(1856), France(1856), Denmark(1858), Hanseatic Republic(1858), Portugal(1858), Netherlands(1860), Prussia(Germany,1861), Norway(1868), Sweden(1868), Belgium(1868), Italy(1868), Austria-Hungary(1869), Spain(1870), Japan(1898) and Russia(1899). See Thiphakorawong,1965; Crosby,1920.

neighboring countries in the region and became the only independent country of the region at that time.

When King Chulalongkorn ascended the throne in 1868, the external pressure from the British and the French worsened severely, which led the country of Siam to confront unprecedented challenges and difficulties during King Chulalongkorn's era. It is not hard to understand how tough the situation the government of King Chulalongkorn was faced with, especially the last two decades of the reign. It was indicated that some outlying provinces and dependencies were even ceded to the British and the French, in order to preserve the independence of Siam.⁵ In return, the British and the French were to surrender extraterritoriality[Crosby,1920].

Aside from the political threat of European imperialism, Udomporn Teeraviriyakul points out that the expansion of foreign trade contributed to the modernization of Siam and the capital of Bangkok as well[Teeraviriyakul,2012]. Although resumed commercial relations with the West as early as 1826 due to the Burney Treaty, it was since the reign of King Mongkut that a considerable growth of commercial trade in the country of Siam took place, especially after the Bowring Treaty of 1855. According to the provisions of the Bowring Treaty and other similar treaties as mentioned above, Siam liberalized foreign trade and granted Europeans to trade in Siam with no state interference.

In this context, more and more European merchants came to Bangkok for trade and even resided in the city, which induced a significant expansion of

⁵ According to the Anglo-Siamese Treaty of 1909, Siam lost her suzerainty over four states of the Malay Peninsula, including Kelantan, Trengganu, Kedah, and Perlis. To the French, Siam lost the whole territories of the Mekong by 1904, and further lost Battambang, Siemrat, and Srisophon as the result of the Franco-Siamese Treaty of 1907. See Crosby,1920.

commercial trade. In particular, rice export grew dramatically, from around 60,000 tons of 1857 to around 960,000 tons by the end of the 1900s[Van der Heide, J. H.,1907; Graham,1913]. In consequence, the growth of trade induced steamships, rice mills, warehouses, foreign enterprises, and the like, which were to meet the demand of the world trade trend.

Moreover, perhaps being forced to get involved in foreign trade with a global trend, dominated by Britain at the beginning; however, there were ample indications that Siamese rulers greatly encouraged the commercial activities because they well realized the importance of trade for the country. A speech by King Chulalongkorn in 1907 gives us a little more information about it, as followed:

“The pioneers of Siamese commerce have in truth been the merchants of foreign countries... It is highly beneficial to the commerce of our country that the merchants of all nations should meet and trade here, alike to their advantage and to that of our State. We fully appreciate the great advance of the commerce of Siam and, knowing that there is no more important factor in promoting the material progress and welfare of a country than successful commerce, we have always had deeply at heart the encouragement of trade within our dominions.”[Graham, W. A.,1913 pp401]

As mentioned above, it would be possible to conclude that commercial trade indeed contributed to the modernity and development of Siam largely. Besides, the speech of the King reveals the fact that the encouragement of the Siamese governments in terms of trade during this period time, probably had some positive impact on the commercial growth of Siam as well. With the surge of commercial

trade in the period, in order to meet the demand and facilitate commercial activities, it seemed to be logical for Siamese governments to transform Siam itself, especially the administrative center of Bangkok, by adopting a Western trend.

Moreover, imperialist expansion and commercial activities of the West, as mentioned above, were unprecedented challenges to the ancient Siam, which had a considerable impact upon the “self-sovereignty” and royal monopoly of a trading system. However, perhaps it should not only emphasize the side effect of the Western coming. Perhaps, at least in part, it also could be recognized as an opportunity for the “old Siam” in the period. The pressure of European imperialism mobilized the country to transform and modernize itself for becoming a *civilized* nation in a standard of westernization because the Western World, in a sense, represented advance and modernity of the day[King, R.,2011].

Viewing Siamese history in the period, the Europeans were mostly merchants and missionaries, which brought new technologies, Western medicine, ways of life, and the like. The arrival of them enabled the Siamese, especially the small group of nobles, to learn about the Western world and influenced this central city of Siam to a certain extent[Vichit-Vadakan,1976]. In addition to learning new things from the Westerners who visited Siam, some Siamese also took a visit to European countries or European colonial cities, where they touched a new *civilized* trend of the Western world. What they had seen there perhaps impacted the following modernization of Siam, especially the transforming of Bangkok.

As mentioned above, Siam was closely entwined with the West in the period, which had a great impact on the sovereignty of Siam. In response to the challenges

and changes, it was under these circumstances the Siamese rulers realized the necessity of transforming and modernizing the country in a "*civilized*" standard of the West. In order to let it happen, a series of transformations had been implemented in this period time. Significantly, through the transforming, initiated by King Mongkut and continued by his successor King Chulalongkorn, Siamese rulers successfully reshaped their country with a '*civilized and modern*' nation of Siam, which also led Siam to be the sole independent state in the region in spite of sacrificing some territories.

Indeed, it was the period between 1861-1910 that massive changes in Bangkok took place in the context of modernizing the city so as to fit a "modern" trend. Communication and transportation systems were to promote and transform for meeting the increasing demand and fitting a new standard of "modern city", which profoundly affected the city of Bangkok. Furthermore, according to the constructing activities of roads in the city, the transforming process of Bangkok toward a road-based city will be divided into two phases, namely, 1861-1880s and 1890-1910⁶. The next section will discuss the first phase between the 1861-1880s.

⁶ According to Piyant Bunnag, the first road of King Chulalongkorn's era was made in 1887, which was coincident with the second round of canals excavation of the reign [Piyant, 1982]. Therefore, in order to reveal the transformation of Bangkok from being a water-based city to become a road-based city clearly, this present study discusses the road's construction based on this division.

3.2 Bangkok and the transformation of the transportation system(1861 to 1880s)

Prior to the modernization of Bangkok, as discussed in Chapter 2, this central city indeed was a “floating city”, solely relying on waterways as transportation routes. During the period of the former three reigns, residential houses and commercial activities mainly concentrated along the banks of Chao Phraya River and canals. Thus, waterways were of great importance, which not only served as the dominant transportation means for dwellers' daily life but also provided access for vendors and merchants to transport goods. Innumerable boats of every variety were served for people to move around in the city. As a result, a tranquil scene of an aquatic city was formed.

From the 1850s onwards, especially after the Bowring Treaty of 1855, as mentioned in the previous pages, the surge of Westerners and the rapid growth of foreign trade challenged the contemporary transportation systems of Siam, particularly the administrative center of Bangkok, which of course enabled Bangkok to promote and transform its communication and transportation systems, to fit the increasing demand and the development of a civilized city in European eyes. Significantly, from the 1860s onwards, the Western-style roads were introduced to Bangkok, which had a significant impact on the physical features and role of the capital.

Yet, the adoption of western roadways is not to deny the importance of waterways. Contrary to it, canal excavations received extensive attention from Siamese governments in this period time, and numerous canals were made in order to meet the increasing demand for modernizing the city. In addition to re-dredging the

old canals, numerous new canals were made for various purposes, including defense and transportation purposes, facilitating transporting goods for trade as well as agricultural irrigation. Together with the existing waterways, these canals contributed to the form of a little more comprehensive network of waterways, which not only facilitated the development of the capital and commercial trade but also linked the capital to the provincial towns to a certain extent.

3.2.1 Waterways construction in Bangkok (1861 to 1910)

Prior to the advent of a Western-style road of 1861, as we discussed in the previous part, waterways were the sole means of communication and transportation in Bangkok. Although adopted road traffic as early as 1861 in the reign, interestingly, King Mongkut also put extensive efforts on constructing canals.

Waterways construction in the Fourth Reign(1861-1868)

It was in 1866, after constructing the first road of 1861 in the capital, one more new canal was ordered to excavate for linking Khlong Bangkok Yai to Nakhon Chaisri, that is Khlong Phasi Charoen, which originally was asked for trade purpose by Phra Phasi Sombat Boribun, who was a tax concessionaire. This canal later served as an important route for intercourse between Nakhon Chaisri and the capital. Also, worth mentioning the canal was used for the private business interests by Phra Phasi Sombat Borihun[Thiphakorawong,1965].

Aside from Khlong Phasi Charoen, another four canals were made in the last several years of the reign, including Khlong Damnoen Saduak(1866), Khlong Banglee(1868), Khlong Lat Ok Yee San(1868) and Khlong Lat

Khun(1868)[Thiphakorawong,1965; Piyanart,1982]. Also, these canals facilitated the intercourse between the nearby provinces and the vicinity along the canals to the capital city to a certain extent.

So, it is noted that most canals in the reign were principally to link the nearby provinces and surrounding areas to the capital of Bangkok, especially after signing the Bowring Treaty. Aside from meeting the increasing demand of transportation and commercial trade, undoubtedly these canals also helped to exert direct control over these nearby provinces from the central government of the capital to some extent, such as Khlong Chedi Bhucha, which initially was to facilitate getting around for royal officials from the capital to Nakhon Chaisri[Meeting and Announcement during the Fourth Reign,1923].

Noticeably, with the dramatic growth of rice export in this period, the excavation of new canals was to open lands for available rice fields as well. As a result, the lands along both sides of most new canals were exploited to be rice fields, which became more popular in the reign of King Chulalongkorn. Besides, many canals linked the capital to the provincial towns, which facilitated the communication and affected the function of the capital in the country to a certain extent.

Waterways construction in the Fifth Reign(1868-1910)

It was indicated that, based on the discussion in the previous passages, a little more comprehensive network of waterways had been formed in this central city of Bangkok by the end of King Mongkut, which provided navigable accesses for the connection between the capital and nearby provinces. Surely, by 1868, Bangkok still

firmly tied to water transport. However, there were ample indications that the existing transport system could not meet the increasing demand for developing the capital and even the country.

Also, although several roads were constructed during the preceding Fourth Reign, it is interesting that when King Chulalongkorn ascended the throne in 1868, the excavation of canals still gained as much concern as used to be in the former four reigns. Similar to the former reigns of Bangkok period, King Chulalongkorn was well aware of the importance of canals, and also put great efforts on digging canals in order to meet the increasing demand, which could be demonstrated by his speech:

"...For the Kingdom of Siam, canals are important. In each year, at least one canal should be excavated since it will increase the prosperity of the country. Although it costs thousands and thousands of Baht, it is worth investment"[THAICID,2002].

Even King Chulalongkorn gave more concern on canals excavation but less on road construction, especially in the first two decades of the reign. Indeed, aside from re-dredging the old canals, a multitude of new canals were made for various purposes, including transportation, transporting goods, commercial trade as well as agricultural irrigation, rather than only for the transportation and defense purposes of the past[Piyant,1982]. Before going any further, it is useful to learn about the construction of waterways in the reign.

It is said that about one hundred new canals were excavated in Siam during the reign of King Chulalongkorn, in particular, 56 new canals were made from 1886 to the end of King Chulalongkorn era. However, according to evidentiary

documentation, only four new canals were dug within the capital of Bangkok. In particular, these four canals were made together with road construction with the same name, such as Rachadamri(1902), Sathon(1895). Besides, another twelve canals were dug within the capital in the reign, despite impossible to tell the exact year of constructing, including Khlong Samsen, Khlong Bang Khun Phrom, Khlong Orchon, Khlong Wat Phra Piren, Khlong Wat Jakrawat, Khlong Wat Sam Jeen, Khlong Meng Seng, Khlong Baan Dokmai, Khlong Wat Somanus, Khlong Tok Tao, Khlong Som Poy, and Khlong Rang Ngeun[Piyanart,1982].

Therefore, it can be seen that by 1910, a little more comprehensive network of waterways had been formed. These canals, together with existing canals dug in the preceding reigns, not only facilitated transportation within and beyond the capital but also facilitated transporting goods from the provinces to the capital, commercial trade, and opening lands for rice cultivation. Thus, the contemporary water-based system did contribute to the development of Bangkok.

Noticeably, Ouyyanont Porphant points out that no less than 15 canals were made to link the capital of Bangkok to the provinces between the period 1860-1910[Ouyyanont, P.,1999]. Table 3.1 presents the main new canals linking Bangkok to the provinces during the reigns of King Mongkut and King Chulalongkorn prior to 1890. We can see from Table 3.1, compared to the former three reigns, King Mongkut and his successor King Chulalongkorn put extensive attention on digging canals for linking the nearby provinces to the capital of Bangkok. These canals not only facilitated transportation, transporting goods, trade as well as agricultural irrigation. Significantly, the canals linked the provinces to the capital city of Bangkok, which

formed a network of waterways between the capital and the provinces. Under this situation, this water-based system was conducive to the intercourse between the capital and the provinces to a certain extent.

Table 3.1 A List of Main Canals linking Bangkok to the provinces(1850-1890)

Year	Canal
1853	Khlong Chedi Bhucha
1860	Khlong Maha Sawat
1866	Khlong Phasi Charoen
1866	Khlong Damnoen Saduak
1870	Khlong Sawatdi Pream Prachakon
1876	Khlong Nakhon Neaung Khet
1878	Khlong Prawet Buri Rom
1878	branch of Khlong Tawee Watana
1878	Khlong Nara Pirom
1890	Khlong Rangsit
1890	Khlong Charoen

Source: [Piyanart,1982:50-87]

It is worth mentioning there was no existing canal filled with earth as well. In addition to constructing numerous new canals in the reign, King Chulalongkorn also concentrated on canals maintenance, which was the so-called "Khlong Conservation Act Rattanakosin Era 121", in order to prevent canals shallowness and regulate the use of canals. Besides, the sanitation of canals was emphasized in this period[Piyanart,1982]. Also, King Chulalongkorn established the Canal Department under the Ministry of Agriculture in 1902, which took charge of dredging as well[THAICID,2002].

In this era, the government of King Chulalongkorn realized that existing canals could not fit the expanding demand, and the government itself did not have enough capital to support new canals construction. Thus, some wealthy merchants and nobilities were encouraged to invest the canal's excavation by the government, such as Khlong Sathon invested by a Chinese merchant named Luang Sathon Rajayukta for the use as the main route to his rice trade [Piyanart, 1982].

So, based on the previous pages, it is certain that water transport still played a significant role in Bangkok's development and people's lives by the end of King Chulalongkorn's reign. A network of waterways touched most respects of Bangkok's society, which contributed to transportation, transporting products, commercial trade, rice cultivation as well as the settlements. Also, these waterways connected the nearby provinces to the capital, which, at least in part, helped the following centralization and affected the change of the capital's role in the country.

However, from 1910 onwards, the importance of canals decreased inside Bangkok. No new canal was excavated inside and outside Bangkok after 1915, canals construction totally ceased [Beek, 1995]. Hence, it could be considered that, for the most part, the glorious age of canals in Bangkok was over since 1915, and it is impossible to exaggerate the continuing importance of canals in Bangkok since the early of 20th century. However, it is worthy to notice that, to the whole nation, the existing canals were still maintenance and played a crucial role in transportation use during this era. Even in the 1930s, more than 80 percent of rice trade still relied on canals transportation from the hinterland to rice mills, which continued to the 1940s [Ouyyanont, 1999].

3.2.2 Roads construction in Bangkok (1861 to 1880s)

As mentioned above, numerous canals were dug between the period 1861-1910, which formed a comprehensive network of waterways and attempted to meet the increasing demand of trade and rice cultivation. Meanwhile, a Western-style road was introduced to this central city in this period time. There were no doubt ample indications that the adoption of Western-style roads had deeply affected this aquatic city at that point. With the expansion of roads in the city, the physical features of Bangkok had changed and began to create a new shape in this period time. This new image was principally based on the fact that people began to move around by street traffic, and a certain number of residents moved to reside along the main roads. Thus, according to the influence of roadways on the city, it is of course necessary to look at the construction of roads between the period 1861-1910.

Roads construction in Bangkok during the reign of King Rama IV

Before going any further on constructing a Western-style road in Bangkok, it will be helpful to understand the situation of streets in the city prior to the emergence of the first road. This was usually described in those books and articles by westerners, who visited Bangkok in the nineteenth century. In 1822, George Finlayson told us the information about the streets in the city:

"The few streets that Bangkok boasts are passable on foot only in dry weather: the principal shops, however, and the most valuable merchandise, are found along the river in the floating-houses." [George,1988]

Sir John Bowring also pointed out the situation of streets in his book, based on his visit to Bangkok in 1855:

"Much inconvenience is experienced by the inhabitants from the want of highways or paths, for, with the exception of some principal streets within the walls, and a smaller number without, the land passages are scarcely passable, and frequently will not allow two persons to walk abreast." [Sir John Bowring, 1857]

We can learn from the above descriptions that, there were some but few streets in the city at the time. Meanwhile, the condition of these streets was very poor, which no doubt resulted in the fact that it was impossible to move around in the city by land conveniently.

Moreover, Nij Hincheeranun also tells us a little more about the streets of Bangkok during the first three reigns of the Bangkok period, which were categorized with three patterns. Also, different from the present uses of roads, the purposes of these streets in this period were mainly for the palace decorations, royal ceremonies, and the like [Nij, 1982]. Therefore, it is not hard to conceive the bad impression on ancient streets of the city from Westerners, who surged into the capital city after Siam was opened to the world based on the provisions of the Bowring Treaty and other similar treaties.

Surely, this situation continued several years after the visit of Sir John Bowring of 1855. However, it is worth mentioning the Western-style road as one new transport means, was introduced to the capital of Siam in 1861 during the reign of King Mongkut. This was Charoen Krung road, also known as New Road. The

construction of New Road began in 1861, which was built with the earth by excavating the Bangrak Canal. With the completion of constructing, the road therefore was opened to public use in the year of 1863[Thipakorawong,1965]. Probably, it also could be recognized as the first road of Bangkok.⁷

New Road later became the main artery of the city, which affected the city profoundly. Even, it is fair to say that the road could compete with the Chao Phraya River, especially from the late nineteenth century. Furthermore, due to the construction of the New Road, the original profile of the aquatic city had changed towards a road-based city in the following decades. Thus, the New Road was of course very important. So, what exactly resulted in the construction of the first road.

It is recorded that, according to Dynastic Chronicles, a petition signed by all Western consuls was presented to King Mongkut, in which they complained about poor health because they could not ride horses or walk around for exercises as they used to do in their own countries. As pointed out in the preceding section, Siam granted the Western countries to establish consulates in the capital based on the provisions of the Bowring Treaty and other similar treaties, as shown in Table 3.2.

Table 3.2 A list of Foreign Consulate Established in Bangkok (1820-1860)

Foreign Consulate	Time
Portuguese Consulate	1820
British Consulate	June 1856
French Consulate	July 1856

⁷ Nij argued that the first road in Bangkok was Thanon Trong, built in 1857, which was mainly based on the petition of Europeans. See, Nij,1982, pp16. While Ouyyanont Porphant argued that it was not a "road" in the western sense but a by-product of canal digging. See, Ouyyanont Porphant,1999. In my opinion, I agree with Ouyyanont, and it appeared that Thanon Trong was a walkway rather than an actual road.

Danish Consulate	1858
Consulate of the U.S. of America	May 1859
Hanseatic Republic Consulate	October 1858
Netherlands Consulate	December 1860

Source: Bangkok Calendar,1862.

Based on the previous section, we can learn Siam was facing great pressure from European imperialists in this period time, especially Great Britain and France. It appeared impossible for Siam to compete with these Western Powers, so perhaps a better way was to avoid direct conflict with these countries. Moreover, these consuls represented the aforementioned European countries. In these circumstances, it was sensible for the king to decide to construct a Western-style road in Bangkok[Thiphakorawong,1965].

Also from Bangkok Calendar of 1862, Bradley mentioned about constructing the first road in Bangkok:

"His Majesty the king very graciously complied with the memorial of the foreign community, requesting him to construct a good road after European style, in the rear of their Mercantile and Consulate establishments, on the east side of the river. "[Bradley,1862]

Moreover, Siamese diplomatic missions were sent to Great Britain and France in 1857 and 1860 respectively, and they described what they had seen in these European cities to King Mongkut, including modern transportation. While, as mentioned above, it can be seen that the condition of streets in the city was not good. Probably, this also affected the decision of the king to build a new road for the

beatification of the capital. As a result, a new road was made to link the consulate district and the foreign residential area to the Grand Palace as a response to the petition[Thiphakorawong,1965].

Similar to the New Road, it is said that the request of Western people mainly contributed to the construction of Silom Road in 1861. Bangkok Times of 1900 tells us about the construction of Silom Road as followed:

“The road was made in the time of the late King, I believe at the request of Sir T. G. Knox and in those early days the greatest care was taken that the cattle traders should not monopolize it. Their cattle were only allowed to pass single file in order that it might not be cut up. Barrot, a French cattle trader, used to give much trouble and he was arrested again and again for cutting the road up. It was considered so important a road that Mr. Newman of the British Consulate has instructions to exercise a general supervision over it. When Sir Thomas Knox took his rides morning and evening along it, the Klings were wary of meeting him.”[Bangkok Times,1900-09]

Aside from New Road and Silom Road, another two important roads were constructed during King Rama IV era, namely, Bumrung Muang Road(1863) and Fuang Nakhon Road(1863). Moreover, the earth for some road building was provided by canals excavation at that time[Thiphakorawong,1965,1966; Nij,1982].

So, in addition to the petition of those European consuls, perhaps there were other factors contributed to the road's construction of the 1860s. Firstly, considering that more and more Europeans came to Bangkok for trade and even settled in the city from the mid-1850s onwards due to the provisions of the Bowring Treaties and

similar treaties of the 1850s, which brought about a big expansion of commercial trade. In these circumstances, the existing transport system could not meet the growing demand, which perhaps would impact commercial activities to some extent. As a result, a more comprehensive network of transportation was needed to facilitate commercial activities. Thus, the adoption of a Western-style road perhaps was a reasonable choice. And this factor was becoming more and more important in constructing roads from the 1890s onwards.

Secondly, before the emergence of the modern road in the city, Bangkok entirely relied on water transport. The river and canals as arteries provided the transportation route for people and the city's development, and boats were the universal means of conveyance. Thus, it is hard to imagine that such kind of water-based daily life and activities depending on waterways in the city could carry on under lack of enough water in the canals. This phenomenon was revealed in his book by Sir John Bowring:

“...In April, May, and June, many of the canals are dry during several hours of the day, when communication is interrupted. These canals, which are multitudinous, are the principal means of intercourse. Much inconvenience is experienced by the inhabitants from the want of highways or paths, for, with the exception of some principal streets within the walls, and a smaller number without, the land passages are scarcely passable, and frequently will not allow two persons to walk abreast.” [Bowring, J.,1969]

From the words of Sir John Bowring of 1855, some canals did not have enough water during the drought season, which perhaps set the hindrance to

conveyance in the city. Since it was impossible to avoid drought season, and all the life in the city totally tied to the river and canals, thus, it could be said that the normal life of the city's residents had been impacted under the situation of deficient water during the drought season.

Therefore, taking into account these factors, street traffic like western countries perhaps was a rational and available transportation mode, which not only could address this severe problem of transportation in drought seasons, but also provide a new transportation mode for the city to facilitate the commercial trade and modernize the city in a Western trend. Therefore, these two internal factors, as well as the petition of western consuls, contributed to the building of roads of the 1860s in Bangkok.

Noticeably, New Road run parallel with Chao Phraya River for the most part, which provided an example for the following roads construction in Bangkok. From then on, most of the new roads were to be done in this way for several decades, such as Thanon Sathon parallel with Khlong Sathon. Also, 17 new bridges were built crossing the aforementioned roads, which were funded by nobles and wealthy Chinese for merit after the completion of roads in this period[Thiphakorawong,1966]. The new roads and bridges were to form an initial network of roads in the city, which were of great importance in the transforming process of Bangkok.

What is more, a land-based commercial pattern began to take place at that time along the New Road. Thiphakorawong wrote: "...An order was given to build brick buildings and market-places along both sides of the road. These were to be rented out to merchants." [Thiphakorawong,1966]

However, there were only four roads in the city in the reign of King Mongkut; it, therefore, should not exaggerate the importance of roads in Bangkok too much in the reign. Most of the residents still lived along banks of the river and canals as they used to be, and it is no doubt that waterways still dominated transportation during this period. Therefore, until the end of the King Mongkut's era, the original image as a water-based city of Bangkok was still apparent. However, it can be considered that the 1860s was a prologue for Bangkok as a road-based city.

Moreover, according to Piyanart Bunnag, the first road of King Chulalongkorn's reign was constructed as late as 1887 [Piyanart, 1982]. Prior to constructing the first road of 1887, only Bumrung Muang Road was widened in 1870; simultaneously, rowhouses were constructed along the roads imitating the style of Singapore. Thus, there were only five roads in Bangkok until the 1880s. So, what exactly constrained constructing roads in the capital at that time? Firstly, it may be constrained by Bangkok's geography as a delta, because the water and land were almost level during the rainy season, which caused roads affected badly. Also, the high maintenance costs perhaps had an impact on constructing roads since the maintenance of canals costed less than roads [Ouyyanont, P., 1999]. Thirdly, perhaps at that time, most people still preferred and got used to taking waterways to get around in the city, since the settlements still mainly concentrated along the river and canals.

However, it is noted that communities and commercial trades took initial shape along some main roads by the early of the 1880s, such as New Road and Bumrung Muang Road. Also, these main roads gradually could compete with the traditional canals by the early of the 1880s, since a certain percentage of residents of

Bangkok moved to reside along the main roads from banks of the river and canals, as shown in Table 3.3 and Table 3.4.

Table 3.3 Houses along Main Roads in Bangkok in 1883

Roads	Houses
Charoen Krung Nai	213
Charoen Krung Nok	1226
Bumrung Muang	400
Fuang Nakhon	349

Source: The Department of Post and Telegraph. 1883b.

Table 3.4 Ethnic Distribution along Main Roads in Bangkok in 1883

Roads	Thai	Chinese	Indian	Farang(Westerner)	Other	Total
Charoen Krung Nai	98	86	6	3	1	194
Charoen Krung Nok	224	780	79	35	15	1133
Bumrung Muang	114	210	23	1	6	354
Fuang Nakhon	163	145	7	5	–	320

Source: Wilson, 1989, pp54.

Table 3.3 and Table 3.4 reveal the fact that a land-based lifestyle became obvious along some main roads. Also, 8135 houses occupied along roads and lanes [The Department of Post and Telegraph, 1883b]. However, it is impossible to exaggerate the physical change of Bangkok prior to 1890, due to only five roads in the city.

“...You could spend days, yea, weeks, in sight-seeing in and around Bangkok, and yet go everywhere in your own boat.” [Cort, M. L., 1886]

From the words of Mary Lovina Cort, it can be seen that water transport maintained the dominant role in the city at that point, and most of the city's residents still settled along the banks of rivers and canals. Also, roads still served as the secondary means of transportation and communication.

In conclusion, based on the previous pages, there were several roads in the city, and land-based settlements and commercial activities began to take initial shape along some main roads until the 1880s, which reflected that Bangkok, at least in part, began to transform toward a road-based city in this period. Yet, Bangkok still maintained its water-based image substantially, due to no more than five roads in the city at the time. No doubt, waterways transport still dominated transportation within the capital as well as the country.

Meanwhile, numerous canals were excavated to meet the increasing demand in this period, which indeed contributed to the rapid economic growth as well as the development of Bangkok at that time. Also, by 1890, there were a little more canals linking Bangkok to the provinces, which were conducive for the connections between the capital and some nearby provinces in the hinterland of Siam to a certain extent. In this context, it is possible to say that a sense of 'central city' of Siam formed and was strengthening with the increasing intercourse between the capital and the provinces by water in this period time. However, the communications between the capital and the remote provinces were still weak due to an adequate transportation system. Therefore, it is hard to draw a conclusion that the connections between the capital of Bangkok and the provinces in this period were great progressive, especially in the political aspect.

However, this central city of Bangkok came up with considerable changes in the following years of King Chulalongkorn's era. With the explosion of roads as well as the construction of other kinds of roadways, including trams and bridges, this aquatic city increasingly was becoming a road-based city. Simultaneously, the role of the capital changed substantially with the improvement of the transportation system between Bangkok and the provinces, especially the construction of railways, under the situation of national centralization. Therefore, in the next chapter we will take a look at the transforming of Bangkok toward a road-based city in the last two decades of King Chulalongkorn's reign.



Bangkok: Becoming a road-based city and the real center of Siam

The transformation of Bangkok from being a water-based city toward a road-based city, as mentioned in the preceding chapter, exactly took place from the 1860s onwards. Until the 1880s, some roads could compete with the waterways, and some settlements and trade activities took initial shape alongside them. Yet, the transforming of Bangkok into a road-based city was somewhat tardy. Prior to the

1890s, Bangkok still chiefly relied on its waterways, while roads served as secondary means of communication in the city. In this context, Bangkok maintained its original profile as an aquatic city to a great extent by the end of the 1880s.

However, this tardy situation of the transforming of Bangkok wholly altered in the following two decades between 1890-1910. In this period, the number of roads boosted remarkably, accompanying with numerous bridges crossing the canals, which increasingly formed a comparatively comprehensive network of roads. Together with its waterways, dual means of communication facilitated the development of the capital. Under this situation, the physical appearance of Bangkok had visible change.

Also, from the mid-19th century onwards, it was the period Siamese government attempted to modernize the sovereignty so as to portray Siam as a *civilized* state and to avoid under the status of a colony in the context of European imperialism. Significantly, in the process of modernizing the country, especially under King Chulalongkorn, the Siamese government attempted to centralize the country in many terms, in order to transform “a loosely structured country” into “a coherent state”. In this context, Bangkok, as a principal city of Siam, its function had significant changes in every sense, especially politics, judiciary, finance, and economy.

Is it possible both changes were taking place at the same time? This chapter will look at the transformation of Bangkok to be a road-based city in the context of national centralization.

4.1 Transforming Bangkok to be a road-based city

From the 1860s onwards, constructing Western-style roads reflected that this aquatic city indeed began to transform into a road-based city, dominated by road transport so as to fit a Western trend, albeit slow and tardy. However, this tardy situation completely changed from the 1890s onwards. In the process of transforming Bangkok to be a “*modern city*”, multitudinous roads and bridges were constructed in the city. Meanwhile, tramways and railways were introduced to Siam at that point, as well. Thus, these no doubt induced remarkable changes in the physical appearance and the function in this aquatic city of Bangkok.

4.1.1 Needs for transforming Bangkok into a road-based city between 1890-1910

Before going any further, it will be useful for us to take a look at the factors influencing the transforming of Bangkok into a road-based city during the period. As mentioned in the preceding chapters, from the mid-1850s onwards, Siam was facing unprecedented pressure from European imperialism. Also, due to a series of treaties since the 1850s, more and more Westerners came to visit Bangkok for various purposes. It is no exaggeration to say that Bangkok was the frontier of the country of Siam. Under this situation, the Siamese government under King Mongkut and King Chulalongkorn strove to transform this aquatic city of Bangkok in a European trend.

Worth mentioning roads were introduced to the city as early as the 1860s. However, we can learn from Chapter 3 that only four roads were made in the reign of King Mongkut. Noticeably, roads-making was almost stagnant in the first half of King Chulalongkorn’s era, which resulted in the fact that there were no more than five roads in the city until the 1880s, after about thirty years since its introduction to the

city. Therefore, based on the practice of roads-making by 1880s, it can be said that the great threats from European powers did not result in the transforming of Bangkok into a road-based city directly, despite this factor led Siamese government realized the imperative to transform Bangkok to be a “*European-like city*” in the eyes of Europe.

As Rev. Dan Beach Bradley pointed out in *Bangkok Recorder* of 1866, a comprehensive network of transport was of great significance for a country, which facilitated the circulation of products and trade for the prosperity of the country. Notably, he introduced the transport means of France. In his following article of the same month, he continued to emphasize that it was, of course, necessary for Bangkok to take into consideration for better roads if the city wanted to portray its new image in the eyes of Europe. Also, he argued that the country with fewer roads appeared to be "barbarian", whereas it was a "civilized nation"[The Bangkok Recorder,1866].

We can learn from Rev. Dan Beach Bradley, that a network of roads was very important for the city of Bangkok. No doubt, the contemporary situation of the transport system in Bangkok was far from enough to meet this “Western standard”. Furthermore, Bangkok was of great significance, which served to be the seat of the central government since the establishment of the Bangkok Period. Compared to other European-like cities that the king or Siamese elites ever visited, for example, Singapore, Batavia, and Rangoon, Bangkok indeed was needed to transform itself to be a "modern city"⁸. Building a *civilized* Bangkok and transforming means of communication of the city no doubt helped Bangkok and Siam to portray a fresh image in the eyes of Europe.

⁸ For the full discussion, see Teeraviriyakul, U. (2012).

Commercially, Bangkok grew to be the most important port city of Siam in the past hundred years. Particularly, from the 1860s onwards, the trade of Siam increased dramatically due to the treaties of the 1850s and 1860s.⁹ Noticeably, in the period trading activities beyond Bangkok primarily relied on its waterways, albeit navigable but slow. Meanwhile, as mentioned in Chapter 3, land-based commercial centers alongside some main roads took initial shape until the 1880s, which inevitably became more and more prominent in the following years. In order to meet the economic demand and fit the global trend of trade, a better transport system in Bangkok was absolutely needed, which no doubt impacted the transforming of Bangkok. Meanwhile, better transportation linking the capital and the provinces was needed as well in order to facilitate the development of trade, which pushed the Siamese government to adopt railways in the following decades.

Therefore, it can be believed that the need to transform Bangkok to be a *civilized* city in the eyes of Europe and to fit the demand of commercial growth was the main factor directly bringing about the transformation of Bangkok into a road-based city, so as to facilitate the development of the capital. Undoubtedly, the transformation of Bangkok strengthened its status in Siam as well as the region. At the same time, the transforming of transportation between the capital and the provinces not only facilitated trading activities but also improved the communication between Bangkok and the provinces to a great extent. So, is it possible to say that the transforming of Bangkok into a road-based city was conducive to enable this central

⁹ For the full discussion, see Ingram, J. C. (1955).

city to define its role as a “real center” of Siam in the process of centralizing the country and will be discussed in this chapter of 4.2 section.

4.1.2 Bangkok and a road-based city between 1890-1910

From the 1890s onwards, one most important change of Bangkok in this period was that a physical profile of a road-based city was becoming more and more visible in many parts of the city. Numerous roads were constructed in the city, and innumerable bridges were constructed crossing its waterways, which increasingly formed a comparatively comprehensive network of roads. With the explosion of roads and bridges, road transport increasingly played a vital role and competed with the water traffic in some parts of the city.

The construction of roads in Bangkok between 1890-1910

As we know, the situation of roads-making was quite tardy until the 1880s. However, from the 1890s onward, the number of roads boosted dramatically. One important project of constructing roads must be the Amphur Sampeng project in 1890, proposed by Prince Narisaranuwatiwong from the Ministry of Public Works. As the Proclamation pointed out, Sampeng district was an important commercial center of the city since the establishment of Bangkok as a new capital. However, the contemporary condition of roads in the district was too narrow to move around for business activities, which would probably hinder its development [Department of Fine Arts, 1962]. From the Proclamation, it is possible to say that the government of Chulalongkorn recognized more and more importance of roads in developing trade and the city itself, perhaps even more than canals in this case of Sampeng district to

some extent. Thus, the government decided to build more roads for the trading and the prosperity of the city. It is said that no less than 18 roads were to be cut in Sampeng district [Ouyyanont, 1999].

Another significant road of Bangkok began to construct in 1899, which is Ratchadamnoen Road, linking the Grand Palace to the Dusit Palace. With the completion of 1903, this road was rather broad, accompanying with sidewalks and trees on both sides [Government Gazette, no.16]. Furthermore, this road incorporated three segments, that is, Rachadamnoen Nok, Rachadamnoen Klang, and Rachadamnoen Nai. This avenue was the most expensive and the widest avenue of Bangkok during King Rama V's era. In the meanwhile, government offices were constructed alongside Rachadamnoen Road. However, with the expansion of modern transportation, the width of this road could not fit the demand; at last, the trees were cut down so as to widen the road [Askew, 2002].

No doubt, multitudinous roads were constructed in the city during the period. Table 4.1 presents some main roads of Bangkok built between the period 1890-1910. It is said that over 129 roads were built in Bangkok from 1890 to the end of King Chulalongkorn's era, which meant that around six roads were built per year within the last two decades of the reign [Ouyyanont, 1999]. Moreover, the building of roads in Bangkok accompanied by constructing Singaporean-style sidewalks, as well as planting trees alongside roads [Department of Fine Arts, 1962].

Table 4.1 A list of Main Roads construction in Bangkok from 1890 to 1910

Time	Roads	Source
1891	Yaowarat Road with the length of 1430 meters	Government Gazette, no.8, pp410

1891	Ratchawong Road with a length of 670 meters	Department of Fine Arts,1962, pp39
1891	Sanam Khuai Road	Nij (1982)
1892	Khaosan Road with a length of 412 meters	Government Gazette, no.9, pp46
1892	Jakrawadi Road with a length of 804 meters	[<i>ibid.</i> : 66]
1892	Burapha Road with a length of 246 meters	[<i>ibid.</i> : 151]
1893	Unakan Road with a length of 525 meters	Department of Fine Arts,1962, pp62
1897	Suriwong Road	Government Gazette, no.14, pp148
1897	Decho Road with a length of 300 meters	As above
1898	Dinso Road with a length of 850 meters	Government Gazette, no.15, pp227
1898	Unakan Road with a length of 720 meters	[<i>ibid.</i> : 410]
1898	Widened Luang Road	[<i>ibid.</i> : 435]
1899	Ratchadamnoen Road with	Government Gazette, no.16, pp276
1899	Theweyuryak Road	[<i>ibid.</i> : 389]
1906	Cutting roads in Dambun Sanchao Khao	Government Gazette, no.23, pp52
1906	Cutting roads in Dambun Dalat Noi	[<i>ibid.</i> : 1237]

Source: Most information on the table obtained from the Department of Fine Arts(1962) and Nij (1982).

Bridges construction in Bangkok between 1890-1910

In addition to constructing numerous roads, innumerable bridges with the new technique were made in Bangkok, replacing the old iron and wooden bridges. There were only nine old-fashion bridges in Bangkok of 1883 registered for public facilities[Wilson,1989]. Noticeably, an evident change was steel bridge construction. Moreover, according to the study of Kittipong Pruksachat, constructing bridges in the reign of King Chulalongkorn amounted to 169 bridges[Kittipong Pruksachat,2011].

So, it is possible to say that from 1883 onwards until the end of the reign, about 160 bridges were built in Bangkok.¹⁰

One most important project of constructing bridges must be Chalem Bridges Series. The first bridge with the king's donation was built in 1895 to commemorate his birthday and as a gift to the city. From 1895 onwards, the king annually built a bridge at his expense named Chalem Bridges Series, which were total seventeen bridges, including the last one dedicating to King Chulalongkorn, which donated by his successor King Rama VI [Piyant,1975].

As a result, roads, together with bridges, increasingly formed a relatively comprehensive network of transportation by land, which made it possible to move about in the city by roads rather than only by boats more conveniently. An American Consul named Hamilton King, described the situation of roads transport in Bangkok of 1900 as followed:

“...Thirty five years ago there were no streets in Bangkok. All traffic was carried on by boats. Numerous canals still compete with the street traffic. At late as 10 years ago, there were no more than nine miles of paved streets in the whole city. Today, there are over 47 miles and many new streets are being opened up each year. Moreover, the old iron and wooden bridges are being replaced by modern steel bridges... Seventy miles of canals traverse the city of Bangkok, a large percentage of which has been added in recent years. The tendency, however, is to make streets instead.”[Bangkok Times,1900-06]

¹⁰ According to the data attained from *Sarabanchi* of 1883 by Wilson, there were only nine bridges as public facilities. While Van Beek, in 2008, pointed out that more than 2000 bridges crossed the canals in Bangkok by 1900[Van Beek,2008].

From the description of Hamilton, it could be seen that canals still could compete with roads by 1900. Even though numerous roads were constructed and a considerable percentage of people moved to settle alongside some main roads in the 1890s. Surely, roads replacing canals as the most important means of transportation still needed some time.

Just after four years, in a book titled *The Kingdom of Siam*, A. Cecil Carter, who ever served as the Secretary-General of Royal Commission in King Chulalongkorn's time, provided some description about the contemporary condition of roads transport in the capital of 1903:

“...It has a good service of electric trams. Running between these two main roads are many subsidiary roads; the total length of carriage roads being some one hundred and twenty miles.”[Carter, A. C.,1904]

Based on two descriptions above, that there was an incredibly rapid growth in road transport during the last two decades of King Chulalongkorn's time. Surely, this trend continued in the following years of the reign. By 1910, a comparatively comprehensive network of roads had formed in Bangkok; numerous roads provided access for transportation and commercial trade. A large number of shophouses were constructed along roads[Marc Askew, 2002]. However, it did not mean that the waterways were already supplanted by roads at the time, these dual means of transportation existed together, and this phenomenon remained several decades. An Italian nobleman named Salvatore Besso ever observed on his visit to Bangkok in 1911:

“...The Venice of the Far East-the capital still wrapped in mystery, in spite of the thousand efforts of modernism amid its maze of canals.” [Sternstein,1982]

Moreover, although a large number of roads and bridges were constructed between 1890-1910, however, the most impressive thing is that no canal was ever filled with earth in his era. Water transport maintained its essential role and coexisted with roads [Piyanart,1982]. Furthermore, there were some cars in the city, but obviously, the number of cars was quite a few with only 251 cars, which was impossible to meet the demand of most people, and just some wealthy merchants or noblemen could afford them due to the high price. In doing so, it could be imagined that quite many people still moved around by boats in Bangkok by 1910.

Also, it should be noted that road construction reflected a new characteristic in the period. It is noted that most roads in Bangkok used to construct parallel with canals or rivers since the beginning of the first road building in Bangkok; however, some new roads were built without a canal during this period, such as Siphya Road completed in 1906 [Steve, 2008]. Moreover, no new canal was excavated after 1915 [Van Beek,1995]. It is possible to say that the importance of canals began to decrease by the end of the Fifth Reign. Yet, roads replacing canals as the most significant means of communication still needed some time. Nevertheless, by 1910, Bangkok was transforming into a road-based city with the explosion of roads and bridges. This trend continued in the following reigns, which resulted in transforming Bangkok to be a complete road-based city.

In the process of transforming Bangkok into a road-based city in the period, improving transportation between Bangkok and the provinces had been undertaken as

well, which facilitated the communication between the capital and the provinces to a certain extent. In the context of centralizing the sovereignty of Siam between 1890-1910, there were of course some influences upon the role of Bangkok and will be looked at in some detail next.

4.2 Bangkok and the center of the country

Until the 1880s, the status of Bangkok had tremendous progress in commercial respect, which no doubt grew to be the most important city of Siam. However, it does not mean the fact that this central city was becoming the "real center" of the country at that point, although it was, in theory, attempted to establish as the capital of Siam in the year of 1782. From the 1890s onwards, however, it was in the context of national centralization that the role of Bangkok changed substantially.

In order to learn about the change of the role of Bangkok between 1890-1910, we will take a look at the changes influencing its change first.

4.2.1 Improving transport between Bangkok and the provinces(the 1850s-1900s)

The transportation between the capital and the provinces gained a little more attention from the Siamese government during the period under King Mongkut and King Chulalongkorn. It indeed made some progress, especially in the latter half of King Chulalongkorn's era. As mentioned in Chapter 3, more canals were excavated to connect Bangkok with the provincial towns. Besides, the railway as a means of transportation was introduced to Siam.

Before going any further, we will take a look at the necessity to improve transportation of both waterways and land transport between Bangkok and the provinces between the 1850s-1900s first. It will help us to understand the importance of the transportation system on the change of Bangkok's role.

Firstly, prior to the construction of railways not until the latter half of the nineteenth century, as mentioned in preceding pages, the communications between Bangkok and the provinces mainly relied on the waterways and bullock transport, albeit accessible but slow. Due to poor transportation, it meant that it took a long time to travel anywhere in the country. As John Crawford pointed out, the upper part of the Chao Phraya river was only navigable in August and September. Moreover, he went on pointing out that it would take around four months transporting the produce from Laos to Bangkok by Chao Phraya River and its branch in the 1820s[Crawford,1830]. Besides, it would take forty-nine days for the trip from Bangkok to Chiangmai in 1864[Tej Bunnag,1969]. So, it can be seen that the situation of transport and the length of time led the transportation to many parts of the territories of Siam considerably difficult and impossible.

Secondly, a lack of a comprehensive network of transport for the transportation of produce and trade should be considered. From the preceding pages, until the 1880s, we can learn that no less than 15 canals were linking the nearby provinces to the capital of Bangkok during the Bangkok Period. Together with Chao Phraya River and its tributaries, these waterways provided navigable access for transporting cattle, rice, and other products from the interior to Bangkok.

Compared to the fact that only four canals were made to connect the nearby provinces with Bangkok by the end of the Third Reign, the transportation system between the capital and the provinces by the 1880s was a little more progressive. However, it was still not enough for opening the outlying provinces so as to develop the economy and the country. In order to facilitate the transportation of produce and trade, it was, therefore, a necessity to improve the transportation systems between them.

Moreover, due to an inadequate transportation system, some areas appeared to be the petty states with semi-independence. As Sternstein argued that, Chiangmai and Nakhon Si Thammarat appeared to be "nominal capitals" of their "kingdoms"[Sternstein,1966]. Due to poor transportation facilities, the communications between them were rather limited. Unsurprisingly, it could be seen that the remoter a province was, the poorer the central government directly connected with in many terms.

Indeed, compared with the above two factors, perhaps its effects on the administration of Siam were minor and appeared to be negligible at that point. Furthermore, such influence and control over the provinces from the central government were mainly a result of the traditional administrative system itself. However, I still consider it was very important in the case of the territory of Siam. The inefficiency of the transport system between the capital and the provinces, especially those outlying regions and remote dependencies, was an obstacle for exerting direct control over the latter by the central government to some extent. In the context of centralizing the sovereignty of Siam under King Chulalongkorn, a little

more efficient transportation system was considerably important. Therefore, the need to facilitate political administration should be considered, even this cause probably was the most important one under the period of national centralization.

Finally, it must be remembered that the external threat from the West, especially France and Great Britain, was unprecedented, and the spheres of influence of them touched Siamese borders, as mentioned in Chapter 3. Therefore, the problem of national security and territorial integrity was concerned. It was mentioned that it took Siamese troops one month from Bangkok to the Mekong, as the crisis of 1893 was taking place [Tej Bunnag, 1969]. In this context, a more comprehensive transport system was needed. As war would take place, a little more efficient transportation system would help the government to transport, such as troops and war materials to the frontiers more conveniently and faster.

So, what exactly role did this factor play in improving the transportation system between the capital and the provinces? We can learn from previous pages, prior to the advent of railways, that the Siamese government gave a little more attention to digging canals connecting the capital with nearby provinces for various purposes. No less than 11 canals were excavated to link the provincial towns to Bangkok between the 1850s and 1880s. However, based on the purposes of digging waterways as mentioned earlier in Chapter 3, I, however, argue that this cause did not affect the improvement of water transport between the capital and the provinces too much.

On the other hand, some scholars argued that the European threat forced the Siamese government to adopt railways. Yet, Kakizaki Ichiro had a different opinion,

and he emphasized a desire to improve land transport of Siam was the most important cause of constructing railways. Moreover, according to the opinion of Prince Damrong towards the State Railway Construction Plan of 1906, three aspects, including income, administration, and national security, were concerned[Kakizaki,2005].

Based on the previous pages, probably the presence of European Powers led the Siamese government to recognize the need to improve the transportation system between the capital and the provinces itself. Yet, it was not the most important cause. Instead, improving the transportation system between the capital and the provinces was mainly because the Siamese government was desirous to transform it for the development of the country, as well as the state centralization.

As a consequence, apart from improving the transport system within Bangkok during the second half of the reign, at the same time, the government of King Chulalongkorn strove to improve the communication and transportation system of both waterways and land transport between the capital of Bangkok and the provinces as well.

Improving Waterways

Based on Chapter 3, no less than 10 canals were made to link the provinces to Bangkok between 1860-1890. Furthermore, by 1910, the number of waterways increased to more than 15 canals[Ouyyanont,1999]. It meant that by the end of the Fifth reign, more than 20 canals linked the provinces to the capital of Bangkok in the country, together with river transport, which were conducive to the transportation and

communication between them to a certain extent. Since waterways construction is discussed in the preceding chapter, this section will look at the construction of railways.

The Pak Nam line

The history of the Siamese railway network could trace back to the Pak Nam line, a distance of 21km, which was built between 1887 and 1893. This line linked the capital of Bangkok to Pak Nam at Nakhon Samut Prakan, which was the anchorage for sea-going vessels. Therefore, this route largely shortened the length of time traveling between them, which led the government not only to get in touch with the outside world more convenient and faster but also to facilitate transporting troops and war materials there as war would take place [Piyant, 1975].

The Bangkok to Nakhon Ratchasima line

The history of this line could trace back to the Survey of 1888-1889 under a surveyor of the Royal Engineers, Puchard. This route started from Bangkok to the north of Chiangmai, with even several sections. The survey attempted to examine the interests of such a route for the country as well as the estimate of costs [Royal Gazette, 1888]. The result of the survey was submitted to the government in late 1891 [R. Ramaer, 2009].

The first section of this line began to be built in 1891. With the completion of 1896, the first section was opened for traffic, linking Bangkok to Ayutthaya, a distance of 70km. In the same year, this line extended to Khaen Khoi. Until 1900, constructing the whole line from Bangkok to Nakhon Ratchasima was completed, a

distance of 265 kilometers[Piyanat,1975;Department of Railways,1941]. Through this line, the transportation could freely radiate towards the North and the North-east of the territories of Siam.

The Southern line

In 1901, a new line was ordered to build, starting from the western side of Bangkok to Phetchaburi, a distance of 152 kilometers. With the completion of 1902, this line was opened for traffic in 1903. It later constituted one section of the southern line. In 1909, this line from Phetchaburi was extending towards the Federated Malay States, through the southern part of Siam[Piyanart,1975]. Through this line, a railway network from Bangkok radiated towards the south of the country.

The Northern line

At the first stage, this line, carrying railhead of the Nakhon Ratchasima line, passed the ancient town of Lopburi onwards until Paknampho at Nakhon Sawan, which was proclaimed in 1902. With the completion of 1905, this line was opened for traffic, a distance of 117 kilometers[Department of Railways,1941]. Eventually, this line was extending to Mae Phuak at Changwat Prae in the reign of King Chulalongkorn[Piyanart,1975].

The Eastern line

The first section Bangkok-Chachoengsao of this line was ordered to build in 1905, crossing a densely populated rice-field region. A distance of this line was 63.4

kilometers[Department of Railways,1941]. This line was not opened for traffic until March 1907[Piyanart,1975].

Aside from these main lines, some branch lines were also built in this period. By the end of the Fifth Reign, it can be imagined that a new network of railways system began to make its shape, although still far from comprehensive. Through this network, the capital of Bangkok was becoming the focal point, radiating towards many directions of the territories. Also, this trend continued in the following years. Together with a network of waterways, both of them were facilitating the transportation and communication between Bangkok and the provinces more convenient and faster than ever before. What is more, a network of railways facilitated to fulfill the political aim of national centralization in the reign. In this context, the role of the capital was of course impacted.

4.2.2 The reform of state centralization

Admittedly, the efficiency of the transportation system had a positive influence on the change of Bangkok's role in the country. The reform of the latter half of King Chulalongkorn's era also should be considered, which centralized the state in many terms. Under this situation, Bangkok, as the seat of the central government, was of course mainly affected.

Prior to implementing the reform of a centralized system of administration of the 1890s, Siam was a "loosely structured kingdom". Even though in the reign of King Rama III, as mentioned in Chapter 2, the headquarters of all departments located in Bangkok. However, the central government directly administered only a small area

surrounding the precinct of Bangkok, called the Ratchathani, while other provinces, especially the outer provinces and tributary states, had basic autonomy in various respects, including the administration of common people, financial and judicial terms. Particularly, as the Siamese government was relatively weak, foreign policy was even allowed to own by some of them[Tej Bunnag,1968]. Therefore, it is in this context that it is possible to say that this central city of Bangkok appeared to be no more than a “nominal capital” to a great extent.

A big twist took place not until the 1890s, as the government of King Chulalongkorn launched the reforms of a centralized system of both the central government and provincial administration, which was in charge of the Ministry of the Interior, transformed by the Ministry of the North in 1892. It was a great endeavor that the government of King Chulalongkorn was to attain national interests of territorial integrity because Siam was under great external threat from European Powers, especially Great Britain and France, as mentioned in the preceding chapter. Also, it was imperative for the king to achieve the aim of strengthening the power of the monarchy.

Significantly, the central government had significant progress towards direct administration of many aspects, including common people, financial and judicial terms, as a result of a series of reforms during the last two decades of the reign. Furthermore, from 1899 onwards, the outer provinces and tributary states were to integrate into the Thesaphiban system of provincial administration under the Ministry of the Interior[Tej Bunnag,1968]. In this context, a sense of the “Nation” of Siam was

formed and strengthened deeply. So, Bangkok, as the seat of the central government, was of course affected.

In conclusion, the construction of numerous roads and bridges in the last two decades of King Chulalongkorn's reign were mainly to meet the demand of the development of Bangkok, which resulted in the considerable change of Bangkok's image. It can be said that this central city was transforming into a road-based city to a great extent by 1910.

At the same time, the role of the capital of Bangkok transformed mostly in the period of state centralization and modernization. With great efforts in constructing both water transport and railways, the transportation system between Bangkok and the provinces had significant improvement. Bangkok was becoming a focal point of these transport networks, radiating towards every direction of the whole territories of Siam. Moreover, this trend continued. Furthermore, the reform of state centralization under King Chulalongkorn led its central government to administer in terms of politics, finance and judiciary directly. In doing so, Bangkok, as the administrative center of Siam, was of course affected. Therefore, it is possible to say that the capital of Bangkok was becoming the "real center" of the country by the end of King Chulalongkorn's reign.

Chapter V

Conclusion

Bangkok now is the center of Thailand in terms of politics, business, finance, judiciary, and the like. Also, this city strongly relies on its road transport network, crisscrossing the city in all directions. If we trace back to the year 1910, Bangkok probably had assumed its present image, as well as the role in the country. However, it did not happen in a short time.

First of all, Bangkok of 1910 was transforming into a road-based city from a floating city largely. Since its establishment of 1782, this central city purely was tied up with its waterways. At that point, Chao Phraya River and canals as arteries dominated the transportation in the city. Banks of the river and main canals provided ideal sites for settlements, commercial activities, and entertainment. With continuous efforts of the former three reigns, a comparatively comprehensive network of waterways gradually formed, which contributed to form a unique image of Bangkok as a water-based city.

The turning point of Bangkok took place in 1861 because the road as a new means of transportation was introduced to Bangkok. From the 1860s onwards, especially in the latter half of King Chulalongkorn's era, the construction of road transport profoundly affected this aquatic city of Bangkok. During this period, canals excavation accompanied by constructing roads and bridges, and dual means of transportation coexisted and competed with each other. Until the 1880s, there were five roads in the city, land-based settlements and commercial activities began to take

initial shape along some main roads. In doing so, the appearance of Bangkok gradually changed. Nevertheless, the physical image of Bangkok did not have visible change until the 1900s.

Worth mentioning that the adoption of road transport took place in the face of European threats. By examining the transforming process of Bangkok in this period, this factor indeed influenced the adoption of roads at the beginning. This cause was only a minor factor in constructing roads between the 1860s-1900s. However, the external threats mainly led the Siamese government to recognize the need to modernize Bangkok and Siam. Under the period of modernization, it is reasonable to believe that, mainly due to the demand of local transportation and trade, Siamese government strove to transform the status quo of transportation in the city by adopting Western-style street traffic, to facilitate the development of the city and the country in many terms. In other words, a desire to transform its transportation system mainly pushed the government to adopt and even construct many roads and bridges in the city, rather than the European threats.

On the other hand, the role of Bangkok also transformed substantially in the period of national centralization. By the end of King Chulalongkorn's reign, Bangkok was more than the seat of political power. By 1910, if Bangkok was not yet a real center of the country, but at least this central city was on its way toward change. Probably, two main factors were influencing its change.

Firstly, the transportation and communication between Bangkok and the provinces mainly relied on its waterways prior to the emergence of railways. The Siamese government began to concern the transportation between Bangkok and the

provincial towns and ordered to excavate canals connecting them since the Second Reign. By the end of the Third Reign, no more than four canals linked the capital to the provinces. In this context, the communication between the capital and the provinces was rather weak. The remoter a province was, the weaker the central government influenced.

Under King Mongkut and King Chulalongkorn, national security and territorial integrity of Siam were facing enormous threats from European Powers. In this context, the threats led the Siamese government to recognize the need to transform the transportation system between the Capital and the provinces. Rather than the reaction to European threats, the need to transform it resulted in the fact that the Siamese government gave more attention to the transportation between Bangkok and the provinces, to facilitate the development of the country and trade.

Between the 1850s to 1900s, no less than 15 canals were dug mainly to connect the capital with the provinces. Together with the former canals, the number of canals between them amounted to 20 canals. In addition to improving transportation systems by water, railways as a means of transportation were introduced to Siam under the period of modernization and centralization. By the end of King Chulalongkorn's era, the Siamese railway network assumed its present shape, although still far from comprehensive. Through this network, the capital of Bangkok was becoming the focal point, radiating towards many directions of the territories. Together with a network of waterways, railway network made the transportation and communication between the capital and the provinces more convenient and faster than

ever before, which provided available precondition for political aim under the period of state centralization. In doing so, the role of Bangkok was mainly affected.

Besides, as we know, Bangkok was the seat of royal power since its establishment of 1782. Before the reform of the 1890s, this central city appeared to be a “nominal capital”, because the central government in Bangkok only directly administered a small area surrounding the central city. Due to the traditional administrative system, the country of Siam was under the situation of decentralization. So, it is impossible to say that Bangkok was the administrative center of the country in that period.

From the 1890s onwards, the government of King Chulalongkorn launched a reform of state centralization, which led the central government to have significant progress towards direct administration of many aspects, including administrative, financial, and judicial systems. Besides, the outer provinces and tributary states also were to integrate into the Thesaphiban system of provincial administration. In this context, a sense of the "Nation" of Siam was formed and strengthened sincerely. Bangkok, as the seat of the central government, was gradually transforming to be the real administrative center of Siam. Also, this city was becoming the center of financial and judicial terms under the period of centralization.

Commercially, Bangkok became the most important port city of Siam in the past hundred years. From the mid-nineteenth century onwards, the trade of Siam increased dramatically due to the treaties of the 1850s-1860s. Prior to the mid-19th century, the Chinese played a dominant role in the trade of Siam. After the treaties of the 1850s, more and more European merchants came to Bangkok for trading. Before

the emergence of railways, the transportation between the capital and the provinces mainly relied on waterways. In doing so, Canals between Bangkok and the provinces, together with Chao Phraya River and its tributaries, facilitated the transportation of produces from the provinces to the capital.

Meanwhile, foreign products were transported to Bangkok, then distributed to the provinces by water. Besides, land-based commercial centers took initial shape alongside some main roads until the 1880s. This trend continued and became more and more prominent in the city. In doing so, the city of Bangkok gradually became the business center of the country.

Significantly, under the period of transforming Bangkok into a road-based city by 1910, this central city was transforming to be more than the seat of the central government but the 'real center' of the country as well. Worth mentioning the transforming of Bangkok into a road-based city did not directly result in the development of its role as the real center of the country. However, this central city itself had considerable development in the process of transforming its image, which was conducive to strengthen the status of the capital city and carry on its function in the country.

REFERENCES



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

- Askew, M. (2002). *Bangkok: Place, Practice and Representation*. Routledge.
- Bhamorabutr, A. (1987). *The History of Bangkok: Summary of Political and Cultural Events from the Age...* Department of Corrections Press.
- Bowring, J. (1857). *The Kingdom and People of Siam: With a Narrative of the Mission to that Country in 1855*(Vol. 1). John W. Parker and Son. pp402, pp405.
- Bradley, D. B. (1862). *The Bangkok Calendar*. pp109
- Burney, H. (1911). *The Burney papers..* (Vol. 2). pp187.
- Bunnag, T., D. B. (1969). *The provincial administration of Siam from 1892 to 1915: a study of the creation, the growth, the achievements, and the implications for modern Siam, of the Ministry of the Interior under Prince Damrong Rachanuphap*. Diss. University of Oxford, 1969. pp6-pp7, pp34.
- Cady, J. F. (1964). *Southeast Asia: its historical development*. McGraw-Hill. pp323-pp352.
- Carter, A. C. (Ed.). (1904). *The Kingdom of Siam*. Putnam. pp107-pp108.
- Cort, M. L. (1886). *Siam: Or, The Heart of Farther India*. ADF Randolph & Company. pp29-pp30.
- Crawfurd, J. (1915). *The Crawfurd Papers. Bangkok: the Vajiranana National Library*. pp105-pp120, pp186.
- Crawfurd, J. (1830). *Journal of an embassy from the Govern-General of India to the courts of Siam and Cochin China, Vol.2*. London: Henry Colburn and Richard Bentley. pp152-pp153.
- Crosby, J. (1920). *Siam: By Josiah Crosby. (Handbook...of the Foreign Office.)*. HM Stationery Office. pp4.
- Department of Fine Arts. (1962). *Thaneamnam Phak 4 Thanon Nai Changwat Phranakorn lae Thonburi*. (in Thai). pp70.
- Department of Publicity, Thailand(1940). *How Thailand Lost Her Territories to France*.

- Department of Railways, Thailand(1941). *Reungkan Rotphay Thai*(The affairs on railways of Thailand). (in Thai). pp36, pp118, pp136-pp137, pp150-151.
- Finlayson, G. (1988). *The mission to Siam and Hué, 1821-1822*. Oxford University Press in association with the Siam Society, Bangkok. pp212.
- Graham, W. A. (1913). *Siam: a handbook of practical, commercial, and political information*. FG Browne. pp389, pp401.
- Graham, W. A. (1924). *Siam* (Vol. 2). A. Moring Limited. pp127.
- Hall, D. G. E. (1981). *A History of South-east Asia*. Macmillan, London. pp469, pp511.
- Insor, D. (1963). *Thailand: A Political, Social, and Economic Analysis*, (London: 1965)
- Ingram, J. C. (1955). *Economic change in Thailand since 1850*. pp20-pp29.
- Jiarakul, D. *KHLONG: BANGKOK CANALS REVITALIZATION* (Doctoral dissertation, Silapakorn University)
- Jottrand, É. (1996). *In Siam: the diary of a legal adviser of King Chulalongkorn's government*. White Lotus Co Ltd.
- Kakizaki, I. (2005). *Laying the tracks: the Thai economy and its railways 1885-1935*(Vol. 10). ISBS. pp78.
- King, R. (2011). *Reading Bangkok*. Singapore: Nus Press. pp35-pp36.
- Kittipong Pruksachat, M. A (2011). *Bridges in Bangkok during of the Fifth Reign*. Bangkok: Chulalongkorn University. (in Thai).
- McDonald, N. A. (1999). *A Missionary in Siam (1860-1870)*. White Lotus Press. pp28.
- Meeting and Announcement during the Fourth Reign(1923), Vol. 4. Sophon Phiphatthanakorn Press. (in Thai). pp20.
- MR, S. P. (1987). *A king of Siam speaks*. Siam Society. pp178.
- Natthawut Sutthisongkhram (2008). *Somdet Chaophraya Sisuriyawong* (Vol. 1). Bangkok: Sangsan Book Company Limited. (in Thai). pp141-pp155.

Nij Hincheeranun(1982). Road: Evolution within 200 Years. Academic Seminar on the Occasion of Rattanakosin Sompj 200 Years. 21-22 June,1982, Chulalongkorn University, Bangkok. (in Thai). pp16.

Niwat, D., & Prince, H. H. (1955). The Reconstruction of Rama I of the Chakri Dynasty. *JSS*, 43(1), 21-47.

Ouyyanont, P. (1999). Physical and Economic Change in Bangkok, 1851-1925. *Japanese Journal of Southeast Asian Studies*, 36(4), 437-474.

Piyanart Bunnag(1975). The Foundation of Communications in the Reign of King Chulalongkorn. Chulalongkorn University. (in Thai). pp123-pp147.

Piyanart Bunnag, D. B. (1982). Khlong in Bangkok. Bangkok: Chulalongkorn University. (in Thai). pp20-pp29, pp36, pp48-pp54, pp64-pp91.

Plainoi, S. (2002). *Thai Life along the Canal*. Office of the National Culture Commission, Ministry of Education. pp3-pp6.

Ramaer, R. (2009). *The Railways of Thailand*. White Lotus. pp3.

Recorder, B. (1866). Various principal roads. *Bangkok Recorder*, 7 December 1866. (in Thai)

Recorder, B. (1866). Principal roads in Bangkok. *Bangkok Recorder*, 22 December 1866. (in Thai)

Royal Gazette(1888)(Vol.5). (in Thai). pp14-pp15.

Sternstein, L. (1966). The distribution of Thai centres at mid-nineteenth century. *Journal of Southeast Asian History*, 7(1), 66-72.

Sumet Jumsai(1997). Naga: Cultural Origins in Siam and the West Pacific. Chalermnit Press and DD Books.

Tambiah, S. J. (1999). *The Shaping of Thailand by the Chakri Dynasty*. Thai Khadi Research Institute, Thammasat University.

Teeraviriyakul, U. (2012). "Bangkok modern": the transformation of Bangkok with Singapore and Batavia as models(1861-1897)(Doctoral dissertation, Chulalongkorn University).

THAICID(2002). History of Water Resources Development in Thailand. Bangkok: THAICID. pp188-pp189.

The Bangkok Times(1900-06).

The Bangkok Times(1900-09).

The National Archives of the UK(TNA) (1855). Treaty of Friendship and Commerce between Great Britain and Siam. Reference: FO 94/492.

The Department of Post and Telegraphy, Thailand. (1883b). *Sarabanchi Suan Thi 2 Kue Rasadorn Nai Changwat Thanon lae Trok Samrap Chao Phanakngan Krom Praisani Krungthep Mahanakorn Tangtae Chumnuan Pi Mamae Benchasok Chulasakararat 1245*[List, Part 2, Citizens in Provinces, at the Roads and Lanes, 1245 Thai Era, Volume 2]. (in Thai)

Thiphakorawong, C. (1965). The Dynastic Chronicles, Bangkok Era, The Fourth Reign, B.E.2394-2411(A.D.1851-1868) (Vol. 1) Translated by Chadin (Kanjavanit) Flood, with the Assistance of E. Thadeus. Centre for East Asian cultural studies. pp73, pp90, pp175, pp260-pp261.

Thiphakorawong, C. (1978). The Dynastic Chronicles Bangkok Era The First Reign (Vol. 1). *Trans. Thadeus and Chadin Flood, I*. pp58-pp59.

Unakul, M. H. (2012). Reconnecting Bangkok's heritage landscape: urban waterways and the modern city. *The Journal of the Siam Society, 100*, 183-208.

Van der Heide, J. H. (1907). *The economic development of Siam during the last half century*. Siam Society. pp83.

Van Beek, S. (2008). Bangkok, then and now(No. 908(593)). Wind & Water,.

Van Beek, S. (1995). The Chao Phya: river in transition. Oxford University Press, USA. pp62.

Vella, W. F. (1957). *Siam under Rama III 1824-1851*(No. 4). Published by JJ Augustin. pp14-pp15, pp19, pp22, pp24, pp115, pp117-pp118, pp124.

Vella, W. F. (1955). *The impact of the West on government in Thailand*. University of California Press. pp327.

Vichit-Vadakan, V. (1976). Land Use Policy in Thailand with Special Reference to the Bangkok Metropolitan Area. In *the cities of Asia: a study of urban solutions and urban finance: papers presented at the International Seminar on Urban Land Use Policy, Taxation, and Economic Development*(pp. 237-246).

Vimala Nomura Tooryu(1996). The Development of the Urban Transport System in Metropolitan Bangkok: 1887-1968. Bangkok: IAHA 14th Conference. May 20-24,1996.

Wyatt, D. K. (1984). Thailand: A Short History. *New Haven: Yale UP.* pp145, pp165-pp166.

Wenk, K. (1968). The Restoration of Thailand under Rama I, Tucson. pp19, pp43.

Wilson, C. (1989). Bangkok in the 1883: an economic and social profile. *Journal of the Siam Society*, 77(2), 49-58.

Newspaper:

The Argus, 23 Sep,1861. *Bangkok.* Page 7.

<https://trove.nla.gov.au/newspaper/article/5704302?searchTerm=Bangkok&searchLimits=>

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