

*How has tram development affected to the city development?
: A historical review of the first transit tram in Seoul
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HOW HAS TRAM DEVELOPMENT AFFECTED TO THE CITY DEVELOPMENT? : A HISTORICAL REVIEW OF THE FIRST TRANSIT TRAM IN SEOUL

PARK, Naesun, Assistant Professor, The University of Tokyo, naesun@csur.t.u-tokyo.ac.jp

ABSTRACT

This paper aimed to find the transit-oriented development prototype of Seoul by studying the correlation of tram development and city development between the late nineteenth and middle twentieth century, when the Western style urbanization and modernization started in Seoul, Korea. From the first-hand literature analysis, this research found the following important results.

First tram development succeeded the linear development tradition of Seoul. Unlike the Western zoning system, commercial activities had been appeared according to the major strips since Goryeo Dynasty (918~1392). It was proved that tram development enforced the linear commercial development by comparison and analysis of the land-use map and tram-use map in the 1930s.

Secondly, the business mind of the tram development and operation adjusted itself to the land-use and urban demand, and this correlation reinforced the stable increase of tram ridership.

Thirdly, there was a tram company which did not stop in analyzing the land-use but directly developed the real estate by itself. Gyeongseong Railway Incorporation (GRI) appreciated the demand for the leisure of Seoulites, who were experiencing the explosive urban expansion. GRI developed a comprehensive leisure area of almost 5,000 square meters at the river side and connected it to the city centre with a tram line. This can be called the first transit-oriented development in Korea.

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Two limitations, however, can be pointed out regarding to the tram and urban development in Seoul. The public sector could not play an important role under the Japanese colonial rule, and it also could not prepare the coming urban explosion property with a comprehensive long term plan due to the short of human and material resources by consecutive wars.

Keywords: transit-oriented development, tram, urban form, modernization, Seoul

1. INTRODUCTION

This purpose of this paper is to find the prototype of transit-oriented development of Seoul through the close review and analysis on the relationship of the tram and city development in Seoul. Tram, the first public transit in Seoul, appeared in the late nineteenth century when the modernization of Seoul started, thus it must affect urban development and change of Seoul significantly. Regardless of frequent use of tram, however, tram faced the fate of removal in 1969, with a disgrace of 'decrepit', 'frequent accident and malfunction', and 'the culprit of traffic congestion.'

With the development of the city, tram was just removed and forgotten. But, tram did an important role in Seoul development as the first public transit providing the transit culture and enabling the expanse of the daily movement and urban size. In addition, tram development was important in urban planning to bring a new land use development based on the transportation unlike the traditional urban development which was based on the symbolism and functionalism. The close linkage between land-use development and tram development, especially, implies the prototype of transit-oriented development.

This paper reached the following conclusion through the historical review of the relation of tram development and city development. First, tram development has highly relationship with the traditional linear development of Korea. Unlike the area-oriented development in Western cities, strip-oriented commercial development had been the traditional development pattern. The agricultural-oriented industrial policies suppressed the commercial development and expansion, thus, the permanent commercial area was basically strictly limited, and most of the commercial activities were occurred on the streets. Looking from the tram operation, trams stopped according to the passengers call, regardless of the regular stops, and the location of tram lines themselves were important not alone the location of stations. This linear urban development tradition succeeded to the bus-line-oriented development until 1980s.

Secondly, the tram in Seoul was developed in a business-based perspective rather than in a public infrastructure perspective. This strong profit-oriented development tendency was

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caused from the colonial age, because the major tram companies are run by Japanese companies. During the early 1930s, the tram companies tried the land development to create the tram demand as well as ensuring the real estate development profit. Especially, the resort area development for the weekends was a new development pattern with the modern urban development at that time.

2. THE IMPACT OF TRAM ON LAND USE AND DEVELOPMENT PATTERN OF SEOUL

2.1. Adopting First Transit, Tram

Seoul Tram was adopted by the joint-venture company of H. Collbran and the Emperor Gojong (r.1863~1907) in 1899. H. Collbran and H.R. Bostwick, who had earned the right of railway settlement between Incheon and Gyeongseong (the old name of Seoul) in 1896, suggested the Emperor Gojong to develop tram for the frequent royal trip to Hong-rung, an imperial sepulchre for the Empress Myeong-seong-hwang-hu. The two American businessmen persuaded the Emperor Gojong that tram can save the cost, about 100 thousand won a time, and time of the royal trip to Hong-rung, and that tram can be used for the daily transportation for the Seoulites (KDK 1929:47). The Korea Empire contracted the joint-venture company with H. Collbran at the investment of 750 thousand won (KDK 1929: 47~48; Sohn 2000a: 240~241).

Thus, tram ran in Seoul from 1899, which was 18 years later than in Berlin, where the first tram ran in the world, and 5 years later than in Kyoto (Sohn 2000a: 242). Collbran Ichiro Makiei, who was the engineer of Kyoto Tram, and he invited two engineers, Kounosuke Ohata and Nobunoyu Ishikuma. By the three Japanese tram engineers who had studied in America, tram was developed and started the operation on 8 April 1899 (lunar calendar).

2.2. The Use of Tram

The first experience of public transit

The opening ceremony of tram was held on the Buddha's Birthday, when all the people were enjoying the holiday on the street. "The series of 9 cars with 8 open cars and one royal car ran through Seoul east and west like a water, and people were astonished and enjoyed the strangeness crowding the railways. The tram should have to stop several times." (KDK 1929: 55; Sohn 2000a: 243)

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Seoulites had never seen such a thing, and tram was a very curious thing. Tram was very crowded with people: some did not get off the tram all day long, some came from the rural area to see the tram, and some was broken by riding tram too much (KDK 1929: 55-56)! There was no regular station, but tram stopped according to the request of passengers (Sohn 2000a: 243). Different from the original intention of tram development, the Emperor did not use tram for the royal trip, because the shape of the tram remind him a coffin (KDK 1929: 230; Sohn 2000a: 245).

Mixed with the traditional customs, Seoul tram gave a birth of unique tram culture: shading umbrella in a car and lady-only car operation. There were two kinds of cars: open cars and box car. Most of the cars were open car: people should shade them with umbrellas during the rain, and should bear the severe wind during the winter. This was because of the Korean tradition, not seating together in a closed space between unknown women and men. The seat was also arranged back to back because of this reason. The box car was only for ladies (KDK 1935:9; Sohn 2000a: 245).

Hostility to tram

Tram was a brand new phenomenon which changed not only the landscape of Seoul but also lifestyles of Seoulites. When tram operation started, the weather was drought for a while, and some people believed it was due to the tram. The rumour said “the electricity lines of tram absorb all the humidity in the air” (Sohn 2000a:243).

There was also an unfortunate accident after a week tram started. A five-year old boy was run by a running tram from Dong-dae-mun to Seo-dae-mun. When the accident happened, however, the tram did not stop, and the furious father attacked the tram with an axe. People at the stop threw stones to the tram, and finally demolished and burned the tram (KDK 1929: 56-57; Sohn 2000a: 245). Tram operation was stopped for a while because of the strike of tram workers. They went back to Japan when their request was refused: tram crews asked for them to carry guns with them and for policeman to ride the tram their safety after this accident, but it was refused (KDK 1929: 57; Sohn 2000a:245).

The hostility to tram seemed to be linked complexly to the hostility to Japanese. And this became the seed of the negative image to tram even after tram became the everyday urban transport afterwards.

Everyday transport, tram

The use of tram exploded every year. Regardless of the unkind facility to the weather, the fastness and easiness in accessing the places raised the demand to the railway expansion. Comparing 76% of the population increase between 1935 and 1942, the number of tram use

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increased almost three times during the same period (Figure 1). In the early 1940s, one out of two people used tram everyday, which means almost every working people used tram.

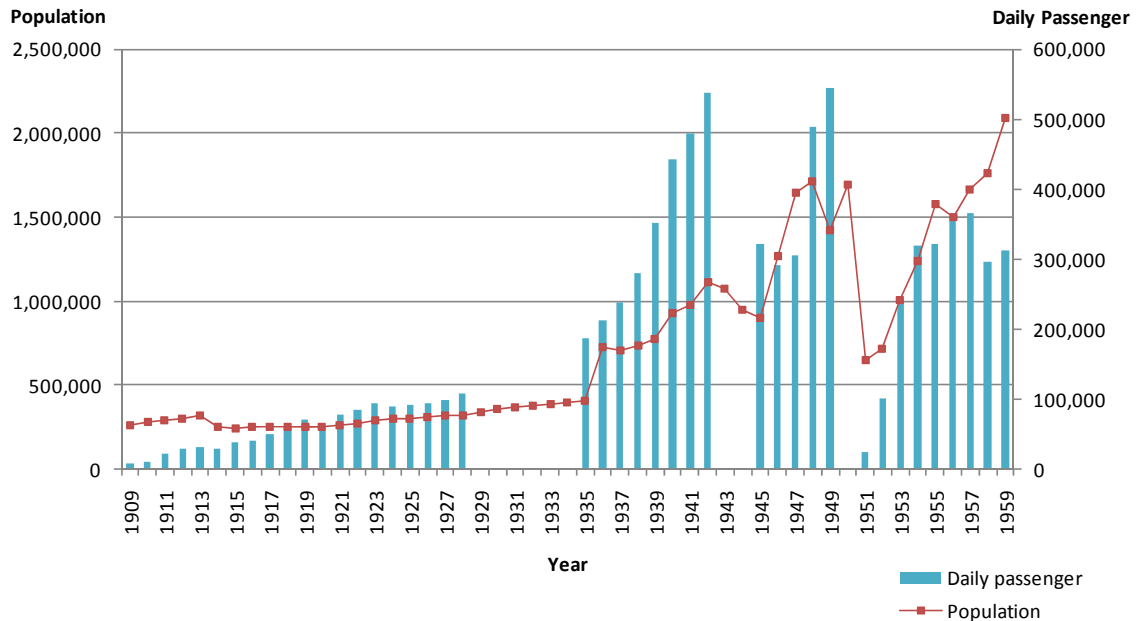


Figure 1 – The trend of population change and tram use in Seoul between 1919 and 1959

(Data: *Population : 1909-1928: Table 10: Gyeongseong Branch Tram Operation Trend, Keisei Denki Kabusiki Kaisha (1929) *Keisei Denki Kabushiki Kaisha Nijunenn Enkakushi*; 1929-1959: pp. 80-82, Seoul Metropolitan Government Information System Planning Division (2000) *Seoul Statistical Yearbook*. *Number of passenger: 1909-1928: Table 10: Gyeongseong Branch Tram Operation Trend, Keisei Denki Kabusiki Kaisha (1929) *Keisei Denki Kabushiki Kaisha Nijunenn Enkakushi*; 1935-1942: <Table 4> The Trend of Population and Passenger of Tram and Bus in Seoul (1935-1942), p.255, Sohn, J.M. (2000a); 1945-1949: <Table 2> Tram Operation in Seoul p.746, Sohn, J.M. (2000b); 1951-1959 <Table 3> Tram Operation in Seoul, p.749, Sohn, J.M. (2000b). Note: Korea War (1950-1953)

Keisei Denki Kaisha, meaning Seoul Electric Company in Japanese, recorded the tram demand and tram operation revenue increased because of economic boom and the integrated operation with bus in 1930s (KDK 1935: 50-51, 100). At the same time, the newspapers reported “tram is the transportation hell with high congestion inside the car”. (Dong-a Il-bo 4 June 1939; Sohn 2000a: 257). The lack of coordination of the traffic rule and modern transportation culture seemed to cause modern traffic accidents too. Joeng-mok Sohn indicated there were more than 15 traffic accidents in average every month due to the mixed use of road among people, automobiles and tram.

3. THE IMPACT OF TRAM ON LAND USE OF SEOUL

3.1. City Growth and Tram

How did the tram development affect the development of Seoul? It can be summarized in four aspects. Firstly, the tram development straightened and paved the roads. The basic urban form of current Seoul was planned in late 14th century with the establishment of Joseon Dynasty (1392-1897), and the major philosophy of the urban planning was Feng shui. According to this Chinese philosophy, the existing nature was respected as much as possible, and roads were developed along the original topography. Another reason roads in Joseon was not developed was because the aristocratic suppressed the development of roads. They were afraid that the frequent move of people and goods might ruin the stable agricultural society. Only the roads for Royal Parades and tributes were developed, and even those roads were maintained when they were used. The use of wheel, as a result, was underdeveloped. The road condition during this time is well described in many foreign visitors' travel records such as Bishop (1898). Tram development brought the change of roads first, and this changed the streetscape and the basic form of Seoul very much.

Secondly, the tram development expanded the boundary of Seoul. The fastness and the effortless of tram use made people's daily move farther. The advent of the concept of "commuting" was also at this time. In addition to the daily activity boundary expansion, the physical boundary of Seoul also was expanded by the demolition of the City Wall. The City Wall was surrounding the city center and working as a visible boundary of Seoul for 600 years, and the demolition of it started the actual expansion and change of urban form of Seoul.

Thirdly, tram development brought many important constructions along the tram lines. The land-use map in 1927 (Fig.2) shows the distribution of major buildings are highly concentrated according to the commercial strips, and Figure 3 shows the accordance of the commercial strips and major tram lines. Since tram was the only transit, and there was not competitive transport, the city was developed very compactly according to the tram lines. This urban form must fortified the tram-dependent life patterns and urban development too.

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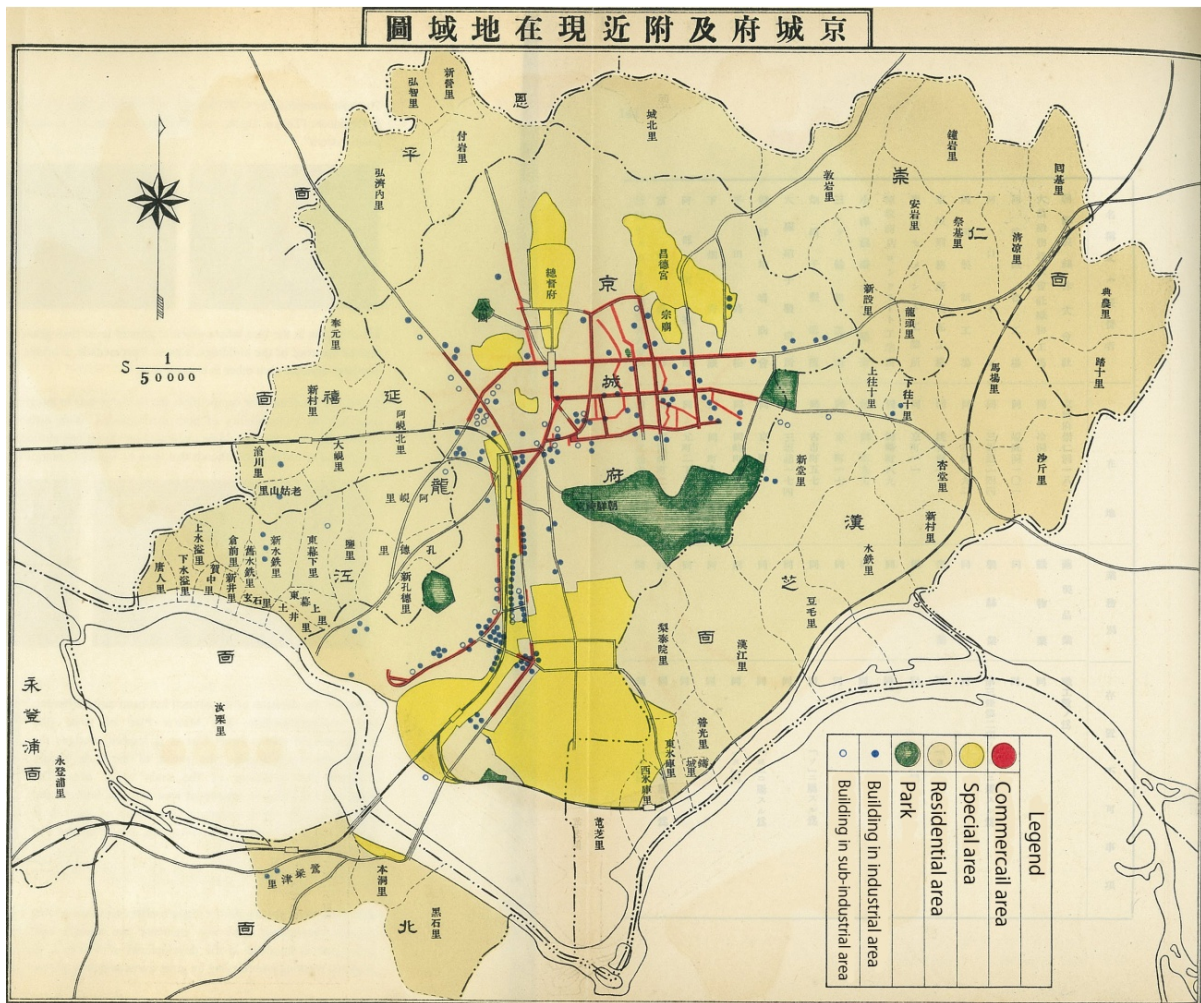


Figure 2 – Land use status of Seoul in 1927

(Legend was translated based on the original map from Keijouhu (1928) *Keijou Toshi Keikaku Choshasho*, inserted between pp.140-141)

Fourthly, tram development brought southern part development of Seoul. Yongsan area, the south part of the South Gate, was especially promoted in development with tram development. This area was owned and occupied by Japanese, and the tram line was developed with priority, under colonialism. Until the 19th century, Yongsan area was an agricultural area and wetland, but this area was speedily changed to urban areas with tram services. Many buildings were built, and the land-use was also diversified with military facilities, factories, schools, churches and public buildings (Hwangbo 2005).

3.2. Linear Urban Development

Tram line development was supported by the road improvement by *Keijou Hu*, Seoul Government during the Japanese colonization period. The left figure of Figure 3 shows the ridership of tram by the thickness of the lines. We can tell that the ridership of tram was concentrated in the Jongro Line (East-West line) and Yongsan Line (South-North line). And the tram lines also fitted to the major commercial strips. The right figure of Figure 3 is the figure overlapped the Figure 2 and the left figure of Figure 3. The development of city was only confined to the walking distance from the tram lines, and the urban form was linear. It was far from the circular, an urban form whose transportation is based on walking only.

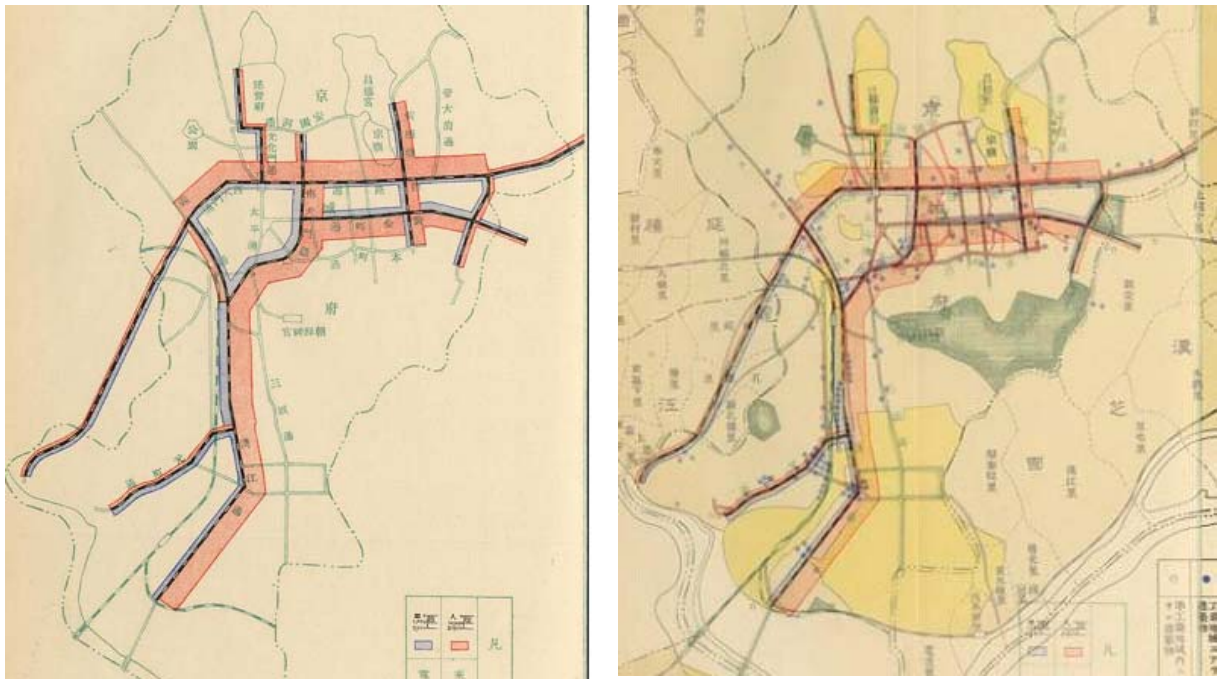


Figure 3 – Tram ridership in 1928 (left) and the accordance of tram ridership and land use (right)

(Adjusted the original map from Keijouhu (1928) *Keijou Toshi Keikaku Choshasho*, inserted between pp.218-219 (left) and pp.140-141 (right))

Even though tram runs along the rails, the urban development pattern along with tram lines is closer to buses rather than railways. Land-use along trams and buses forms linear, while that along railways forms station-concentrated. The first reason is the closeness of the stations. The distance of stations of trams or buses is much closer than that of railways, so the walkable distance buffers of the trams or buses collide and form a thick line as a result. The tram use behaviour was one of the additional reason to fortify the linear land-use form in tram in Seoul. Unlike railways now, the tram at that time was more like a taxi operating on a fixed route. Regardless of stops or stations, people stopped the tram with hand rising whenever they wanted. Tram was not so fast as to threaten pedestrians (about 15-25 km/h)

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and people often occupied the space of railways without hesitating. The right of way for trams were not offended by cars, but by pedestrians at that time (Park 2005).

Another reason for the strong linear land-use development tendency in tram was based on the characteristics of tram uses roads, not exclusive railways only. The tram in Seoul was developed with road improvement and modern urban planning too. When the Seoul Government did road improvement, it also set up the building lines and blocks. Modern buildings were built along the improved roads, and the trams also ran a side of the improved road. Innately, tram was developed based on the road side characteristics more strongly than the railway side characteristics.

This linear development pattern seemed to be highly related to the Korean traditional market development pattern. Street-based market development history goes back to the Goryeo Dynasty (918-1392). During the Joseon Dynasty, the official commercial area was restricted to Jongno Street only. The monopoly merchants who called Yukuijon supplied six kinds of commodities – tow kinds of cotton, two kinds of silk, paper, and fish – to the royal family and bureaucrats. Their market was set along with Jongno 1 Street to Jongno 3 Street. They were the only permitted and permanent market within Seoul, and their shops were developed along the streets.

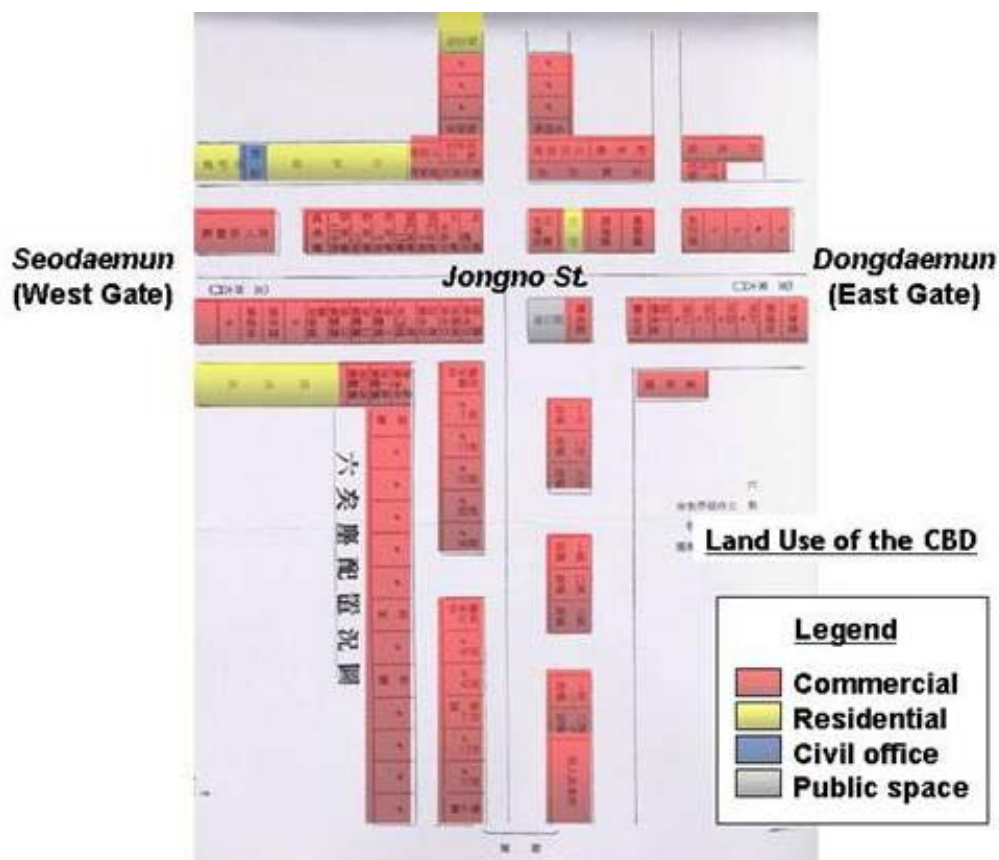


Figure 4 – Official market strip in Seoul: linear market strip was traditional way of commercial land use in Korea.

(Created with the base map of 1962 Urban Planning White Book, in page 15)

4. TRANSPORT DEMAND CREATING URABN DEVELOPEMNT

In 1935, one of the distinguishable urban developments during the tram era happened in Seoul: a tram company made a resort in suburban area of Seoul.

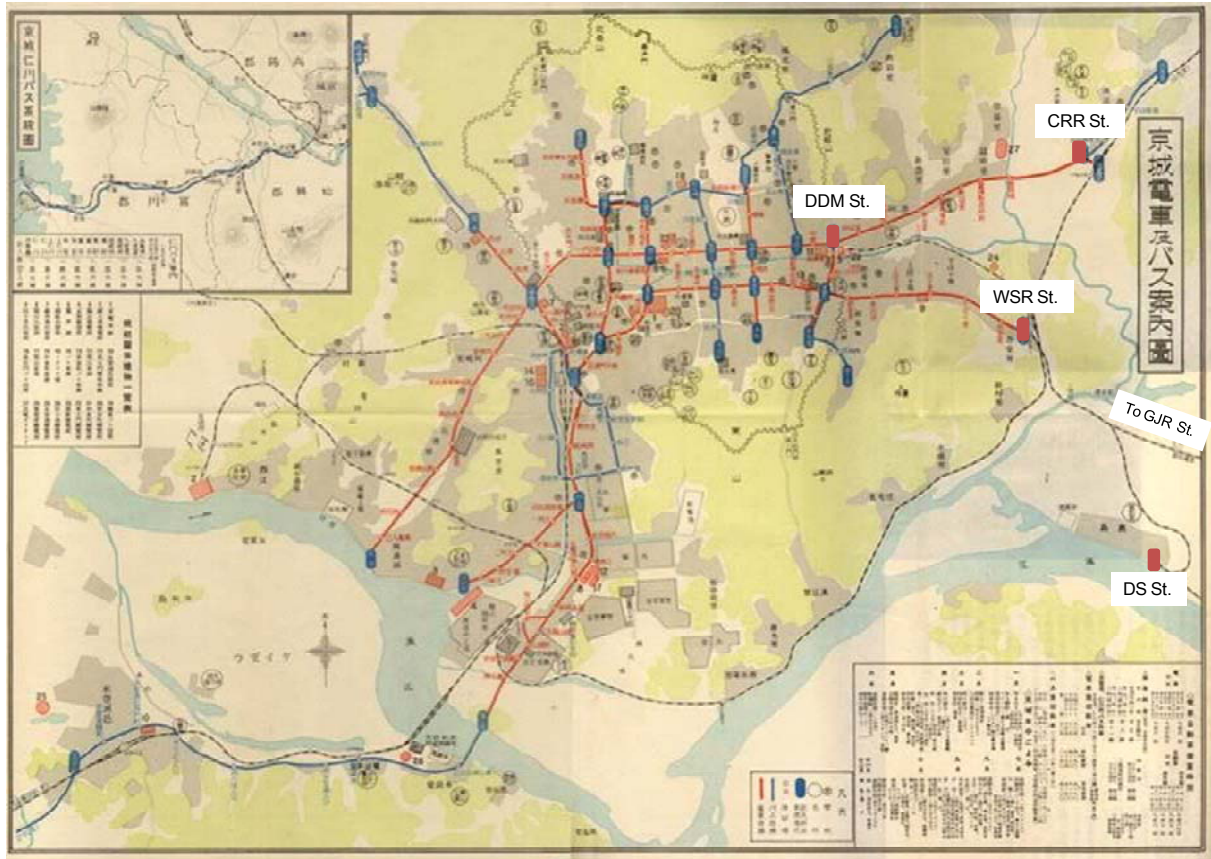


Figure 5 – Tram and bus map in 1930s: tram line expansion from the city centre to the resort area in Han River.

(Adjusted the original map from Keijou Denki Kabushiki Kaisha (1935) *Nobiyuku Keijou Denki*, inserted between pp.102-103)

To encourage the private railway development, Governor-General of Korea (1910-1945) enacted *Joseon Geyong-pyeon Cheol-do-ryeong*, meaning Korea Light Rail Law, and this law increased the subsidy of railway development from 60% in 1914, 70% in 1918, and 80% in 1919 (Sohn 2000a:275). With the economic boom, private railway development was increase as much as 2,024 km railway expansion and 7 new companies in 1919.

Keijou Kougai Kido Kabushiki Kaisha, meaning Seoul Suburban Tram Corporation, established in November 1930, started its operation with 4.3 km railways between Wangshipni (WSR St. in the Figure 5) and Ddukseom (DS St. in the Figure 5). This company is merged into the *Keijou Kido Kabushiki Kaisha (KKKK)*, meaning Seoul Tram Corporation, and the line between Dongdaemun (city center, DDM St. in the Figure 5) and Wanshipni was completed in October 1932 (Sohn 2000a: 274).

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This line was originally important in industrial meaning: carrying necessary commodities such as firewood, vegetable and gravels to the city centre. But, Dduksoem became another important place since 1935. Investing ten thousand won, KKKK bought about 50,000 square meters and developed a resort area with artificial waterfalls and pools (Sohn 2000a: 274-275). This is the first modern resort development and also the first transit-oriented development in Korea.

Table I – Dduseom Resort development related events

| Year | Event |
|------|---|
| 1912 | Enacted "Korea Light Railway Law" |
| 1914 | Subsidized private railway construction cost up to 60% |
| 1918 | Raised the subsidy ratio up to 70% of private railway construction cost |
| 1919 | Raised the subsidy ratio up to 80% of private railway construction cost |
| 1920 | Abolished "Korea Light Railway Law" |
| 1921 | Enacted "Korea Private Railway Supporting Law" |
| 1930 | Constructed tram line between Dongdaemun and Dukseom by Keijo Suburban Tram Corporation |
| 1932 | Apr.: Merged Keijo Suburban Tram Corporation into Keijo Tram Corporation Oct.: Constructed tram line between Dongdaemun and Wangshipni |
| 1934 | Constructed tram line between Sanghuwon Station and Gwangjangri |
| 1935 | Developed resort in Dduksoem of 50,000 square meters |

The first transit-oriented development by a railway company is considered as the residential area development in suburban area such as Ikea, Toyonaka, and Skurai, where are all the suburban area of Osaka, Japan. In 1909, Ichizo Kobayashi, the president of Minoarima Denki Kido Kabushiki Kaisha, meaning *Minoarima Electronic Tram Corporation*, succeeded in combining the railway development and housing area development by creating the transport demand and providing affordable housing to the citizens. This development model was adopted to large cities, especially to Tokyo, and it seemed to also inspired the Dduksoem development in Seoul (Park 2005).

Considering the construction cost between Dongdaemun and Gwangnaru (near Dduksoem) was 893,000 won (Sohn 2000a: 275), the resort development of Dduksoem could be possible with cheap price of land. This kind of combination of development brought a safety net for the high risk investment of railway in two perspectives: loyalty ridership and estate development profit. The resort development seemed very successful, as to Dduksoem became synonymous of resort area for a while since then.

5. CONCLUSION

With the abolition of tram in 1969, the history of tram in Seoul seemed disappeared together. People do not remember the existence of tram, and it is hard to find the trace or residue of tram directly. However, the tram had changed not only the outlook of Seoul and lifestyle of Seoulites in those days, as much as tram became the symbol of modernization of Seoul, but also the tram development triggered the urban expansion physically and functionally. The demolition of the City Wall with tram development can be said the visible turning point from the traditional compact city to a modern city with urban expansion.

This paper reviewed the history of tram development and discovered the linkage between the tram development and urban development, especially from the transit-oriented view point. Yongsan area was intentionally promoted in tram development and urban development, so the major building construction was concentrated. Ddukseom Resort was another example of urban development based on the tram development.

However, the tram-based urban development in Seoul had also limitations, mainly caused by the situation of the Japanese colonization. The first limitation was too much profit-inclined scheme. Regardless of the attribute of public transportation in tram, the operation company approached the tram business only from the business aspect. The Seoul Government also rather than mediate and improve tram as a public transportation, it only supported the tram business, since the tram company was Japanese. The second limitation was short-sighted plan. Especially at the end of the colonial period, the tram company did not invest to the facilities while the demand for the tram increased. This investment-lacking operation resulted in frequent accidents, inconvenient use and deterioration of the image of tram itself.

Legacy of tram development

Since there were no cars until 1950s, compact development along the tram lines within walking distance was kept. With the urban expansion pressure and the adoption of cars, however, the city forms expanded and lost control. The lack of the right of way of tram became the vulnerable point with motorization, and the lack of the long term plan based on the reasonable projection cause serious chaos in public transport and urban planning for more than 20 years. This contrast to the case of Tokyo, London or Paris, where prepared subways for the urban population. For Seoul, the tram and subway have 6 years gap between the removal of the tram and installation of the first subway.

The linkage of tram and subway in Seoul is also interesting. Tram does not seem to be connected to the subway development at all, but it is not. Tram development improved the roads, and the subway followed the main streets, thus, the subway routes in the central

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district are quite overlapped to the old tram routes. This was not intended at all, but it shows how the infrastructure network is connected by the sharing attributes.

During the last 10 years, there have been discussions whether to revival the tram to the old central district of Seoul. This has a background of European successful examples of tram development combining the urban renewal. Then, what can be learned from the tram experience in Seoul? One of the lessons is the fun of the ride. Tram in Seoul was very successful from the beginning, because people enjoyed the ride itself rather than the use from the necessity. Tram may serve the transport needs, but it also provides fun and joy for people, and this factor becomes more and more important.

Another checking point is how much the tram can serve the daily needs from the practical view point. The major reason of dismantle of tram was the failure of the fulfilment of the practical service of public transportation because of the lack of maintenance of system and the lack of the organization with the road condition.

From the transit-oriented development point of view, the tram routes and stations should match with the necessity, considering the major users based on the land-use. Since the speed of tram is slow and tram runs short distance comparable to subways or trunk buses, short distance movers will be targeted and the walking distance should be carefully calculated considering the land-uses.

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