

Innovation District : Klongsan Case

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ABSTRACT

Everyone wanting to better their own home, area they use everyday. Urban strategy is a tool to channeling thought and resource whether it is public or private. Innovation district is a buzzword and strategy for Thailand and the world now. Our government want to use the strategy to jump pass the middle income trap we are facing, having business to produce higher value goods and services, academic to produce more high sell knowledge, all in a short period of time. In order to pursue innovation district development, appropriate area analysis, plan, and measurement at the local scale is critical. This paper aims to introduce the development of Klongsan Innovation District and provide recommendations for how future “innovation districts” should be developed in the field.

Comparison studies and in depth interview composed of 6 groups of the area users; government, academia, business, landowners, residents, and visitors are used. It expected that triple helix (Business - Government - Academia) and public private frameworks provide good practices for new technology entrepreneurial ventures in conjunction with the strategic alliances with large global/ national companies. Fruitful collaborations with top level university research institutions and cluster organizations such as the KMUTT should enhance R&D-investments and result in new spin-needed to be evaluated with time. The findings, however, show that social interaction and collaboration play a key role to establish better ecosystems in our case. All parties including residents in the area need to get involve early included private real estate and landowners. Incremental development is more effective than government’s approach of master planning.

Recommendations for the development steps thus follow: identify and address issues on public infrastructure and services (transportation, water, road, and public space quality), get all parties involve and set agreement on land development approach that benefit all, promote healthy neighborhood, provide business

consultation, provide access to capital and knowledge for innovation, physically implement and promote innovation project, support for innovative projects that promote quality of life and economy in the neighborhood.

KEYWORDS: *Innovation district, planning strategy, community-based development, community-based innovation*

1. INTRODUCTION

Nowadays aspects of development are changing rapidly both globally and locally. Development are not only appeared as positive effects but also putting some contexts in decay. Many countries are moving towards aging society that will lead to the lack of working-age group. Also economic system tends to create a larger poverty gap. Populations around the world are more mobilizing. The change in global dynamic will also be culturally shifted according to the mobilization. In terms of environment, natural atmosphere is the major trouble that is hardly fixable. Natural disasters are getting severer than before. These changes will affect the way each country develops. Thailand had been attempting to shift from being agricultural country to an industrialized one. In the present, the country is aiming to become an innovation-led developed in order to get ready for changes and to catch up with the global trend. Immediate agendas those should be brought to light are; promoting human resource development, leverage the social and economics gap, stimulate competitiveness to increase the growth of country sustainably, make development plan to be environmental friendly, and to develop infrastructure, logistic system, science, technology, research, and innovation as mentioned in the 12th National Economic and Social Development Plan (2017-2021)¹

¹12th National Economic and Social Development Plan, (2017). [online] Available at: http://www.nesdb.go.th/ewt_news.php?nid=6420

Spatial planning is a tool to create opportunities and to direct the image of future city. Participation is an essential process in development pattern. Structuring inclusive capability for all level of members in the society to take parts in the plan will significantly reduce the social gap. Because cities are consisted of different fragments with their own identities, building up strategy plan from smaller units of the city is likely to be more realistic than introducing top down policies. Each district has potential to be developed into innovation district base on its own resources.

“Community-Based Innovation District” is a district that is capable of generating sustainable innovation ecosystem base on their strength. District members should be given opportunities to contribute solutions to increase new demands and supplies in terms of economics in order to drive competitiveness in local businesses. Encourage their well being by creating physical space and public facilities those fit their needs and help strengthen human network in order to build up good relationship and new ideas as an innovation cluster.

Klongsan District

In this study, the selected area is Klongsan district, an area located in Thonburi, west side of Chao Phraya river. The area is situated significantly in the near future development of Bangkok. There are new high-rises, commercial development, transportation plan, and soon follow with urban gentrification. Klongsan has been very outstanding by its own identity for a long time. First of all, its location on the waterfront was very beneficial for transportation and trading in the past when Bangkok was mainly driven by water way. Many evidences can be seen along the edge such as large warehouses which some are still in used, old communities with mixed culture and religions, and many traditional elements which came with those old settlement.

2. METHODOLOGY

Process of an area-based strategic planning, first is to study background and resource of the area. The required data will be collected in primary and secondary form. The first step in this study is visualizing the secondary data that was gathered from different sources such as internet-based data, governmental provided data, and GIS platform. By using internet-based tool, it is more convenience for collecting and sharing information. Secondly, after getting through physical and basic picture of the

district, the research will be done by primary research in order to get in-depth and detailed information for further study.

2.1 Secondary Research

Data from secondary research helps visualize the area physically, hence, functions as a platform for economic and social input. Data collecting application was developed to use with mobile device. The application is used create a pinpoint on site and brought to compared with the existing open data in order to reaffirm the correction.



Figure 1: Interface of mobile application for secondary data collection

Data are divided into 3 categories

2.1.1 Physical information

- a) Geography, topography, land configuration
- b) Current land use in the district and boundary connection
- c) Transportation network
- d) Hydro route, water network
- e) Mass transportation network of the study area and connected area
- f) Public utilities such as electricity, water supply, telephone, drainage, sewage, waste management
- g) Landmark such as academic institution, health institution, fire station, police station, park and green space

2.1.2 Social information

- h) District boundary, communities, and villages
- i) Population grouping by gender
- j) Population density
- k) Population change due to birth and death rate

l) Occupations

2.1.3 Economic information

- m) Location of shop, business, company, and investors
- n) Location of family business
- o) Location of innovation business such as, industrial, financial and properties, services, and small and medium enterprise

The collected data will be shown on online database form as an Internet web browser². Example of available information can be viewed in layers, which are; business location, landmark, land-use and its boundary, transportation route, and photos taken from specific locations. It is beneficial when data is specifically selected for analyzing the area in different dimension.

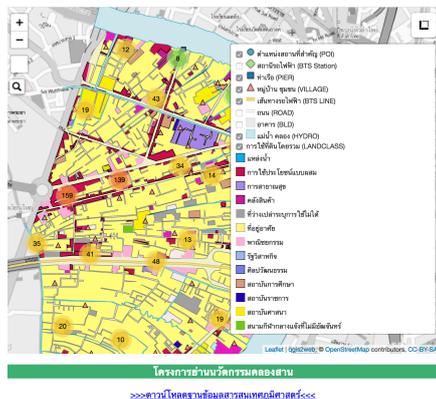


Figure 2: Interface of Klongsan Innovation District online database

2.2 Primary Research

The research method was done mostly by in-depth interview by using structural review form and meetings with small focus group. Focus groups are grouping into 6 group of stakeholders, which are; (1) developer/investor (2) landowner (3) institution/ organization (4) entrepreneur/ business owner (5) area user (6) resident. The mean of interview is to find strength, opportunities, threats, and, needs.

2.2.1 Developer/ investor

- Strength – Waterfront area and transportation options
- Opportunity – Develop the area mimic with the local lifestyle and coping with existing physical condition (waterfront)

- Threat – Water quality in Klongsan area and water management system and density of population trend
- Need – Land condition regeneration and new system of water flow

2.2.2 Landowner

- Strength – Close to inner city, convenience transportation, and waterfront
- Opportunity – Study identity of the district and develop in promising way
- Threat – Small land plots own by communities and belongs to the Treasury Department
- Need – Direction of development

2.2.3 Institution/ organization

- Strength – Former trading hub, strong tie communities
- Opportunity – Create innovation follow local lifestyle
- Threat – Lack of communication, lack of experts and funding for creating innovation
- Need – Inclusive development, funding and support from government or other organizations, district well-being innovation

2.2.4 Entrepreneur/ business owner

- Strength – District with historical background
- Opportunity – Well-known district, not over cost comparing to the inner city
- Threat – High competitive market, Lack of innovation input for products and services, Economy is in a down time
- Need – Business coach, knowledge of innovation, access to funding

2.2.5 Area user

- Strength – Convenience transportation
- Opportunity – Connect to the CBD
- Threat – No outstanding identity
- Need – Create outstanding identity or new innovation

2.2.6 Resident

- Strength – Peaceful area, a heart of Thonburi
- Opportunity – Rich in cultures
- Threat – Relationship between communities and official authorities, lack or expertise and funding
- Need – Solve communities issues, funding and official collaboration, innovation that support quality of life

3. ANALYSIS & FINDINGS

Result from stakeholders’ analysis provides indicators that reflect possible direction for developing Klongsan into an innovation district.

Innovation District identity

(a) A district that is physically equipped especially in transportation. Must be options for transportation; main roads for land transportation, mass transit system. And make the full use of water by using pier and boats.

² Klongsan Innovation District online database (2017). [online] Available at: <https://s3-ap-southeast-1.amazonaws.com/kgeoportal/klongsan/index.html#15/13.7270/100.5069>

(b) A district with peaceful livelihoods and historical background, and benefits from old trading ground.

(c) Being a heart of Thonburi that is connected to the CBD and inner part of Bangkok.

Opportunities to develop an innovation district

(d) With high possibility of physical development due to the district location, there are chances to recreate district identities and revitalize local lifestyle.

(e) Good reputation of the district and not too costly for residential, results in a room for development. Plus the connection with CBD area also gives a lot of potential to be innovation district.

Difficulties and threats

(f) Physical issues; and plots are small and with the problem with ownership, water quality and management

(g) Community and social issue; drugs, debt, and collaboration failure

(h) Economy, down time in some part of the market and high competitive locally and globally. Local entrepreneur not being able to access to innovation will be one of the major problems of innovation district development

Needs of stakeholders

(i) The need in physical development; strategy to manage the water flow and quality, and to have land development plan

(j) The need in economic development; business coaching, open innovation, funding, business incentive and management

3.1 Role of development

Local stakeholders are essential human resources that can be planned strategically how can they take parts in driving Klongsan into innovation district. From the current context, major roles can be defined into 2 groups, which are anchors and supporters.

Table 1: Grouping for role of development

	Stakeholder	Role
Anchors	Institution/ organization (KMUTT and other academic institutions)	Anchor institution and university leader – lead and build innovation network, support in human development and provide knowledge

	Entrepreneur/ business owner (traditional business and innovation business)	Anchor companies – produce innovation products and services
	Local resident/ communities	Anchor plus – collaborate in strategic planning to match with lifestyle, tradition, and culture
Supporters	Developer/ investor	Support land use and other resources such as funding or technology and involve in planning direction of innovation district
	Landowner	Support land use and involve in planning direction of innovation district
	Area user	Support local innovation, products, services as customer or collaborator

The important part of developing a community-based innovation district is to support and encourage local anchor companies to develop their own innovation, whether product or service which can be done in different ways. According to Antonelli and Gehringer (2012), the method of creating demand-pull innovation by creating basic knowledge in the supply chain in order to create a push in sell margins of local economy, which is called qualified demand. Same as what Colombelli, Kraft, and Quatraro (2011) had specified, the innovation growth from small entrepreneurs who develop skills from governmental supports will affect the growth in local businesses later on. Audretsch et al (2006), Acs et al (2009), and Audretsch (2012) introduced policy to support direct access to knowledge and research skills for small-scale business and local entrepreneur. Since passing on knowledge from large company to small-scale business might be a cause of market crash. Academic institutions will take the role of skill and knowledge upgrading both in the aspects of market and innovation. (Toner, 2011)

4. APPLICATION

Because Klongsan Community-based Innovation District will have small-scale businesses and local entrepreneurs as the main players, the question follows

as “How the district should be prepared in order to create environment that will help generate innovation”

4.1 Economic Assets

Timeline for Klongsan Innovation District is divided into big 3 phases. The first five years will emphasize on economic assets of Klongsan. Economic development will strengthen and make belief in innovation-led district. The district is very outstanding in local businesses such as leather trading, food, clothing, and jewelry. Also hosting many entrepreneur, start-up, and innovation business such as biotechnology, networking, and software. These businesses contain high potential of creating new demands and supplies. Having big institutions such as university and hospitals located in the district also gives an advantage in having innovation drivers and incubators.

In practical, these mentioned businesses and local entrepreneur, first need to be provided with guideline about how to develop themselves into innovation makers. The guideline can be demonstrated as short-term projects. Short-term projects are approachable in two ways.

(1) Demand driven innovation – Creating opportunities in business development or develop innovation from a network of users, local residents, and former customers.

(2) Supply driven innovation – Provide innovation acknowledgement, create channel to access open innovation from tech-developers or academic institutions.

Bio-soil³

Bio-soil is an innovation from faculty of environmental engineering, KMUTT that was brought to use as a supply driven project in Klongsan district. The project demonstrated potentials of well-being related innovation that can be developed into a business in the long run. A project that gives ability to produce food is convincing in terms of everyday life. And the result itself is very tangible and profitable.



Figure 3: Edible plants grow with bio-soil

Incentive

To drive community-based innovation district, there must be a strategy to encourage the local to be innovation makers. One way is to set up an incentive strategy base on local characters, including participations in all level of local members. Governmental authority should be in a supportive role especially in seed funding for a local innovation start-off.

(a) Support innovation drivers in skill training and research funding

(b) Support education institutions to be innovation cultivators not only in persons but invest in physical space as well. These institutions can function as innovation accelerators centres by providing working space, utilities, and equipment for co-creation with local entrepreneurs

(c) Prepare supportive structure, which could be financial system such as taxation that encourages new innovation business to grow. Marketing is also an important part for new businesses including international trend.

(d) Support uses of local innovation, which could be funding or tax allowance when selecting local-developed innovation to apply in their business.

4.2 Physical Assets

The second phase is to have result in physical development within ten years. Improving infrastructure and basic amenities that will support the occurrence of innovation cluster. Not only the built environment but natural environment is also included in the plan. Physical assets development plan is divided into 3 parts, which are;

4.2.1 Water management

Because Klongsan is located on the waterfront and there are many canals run through the district, improving water quality is one of the issues that could be included in the immediate plan. Canals used to be

³ Biosoil (2012) [online] Available at: <http://www.env.kmutt.ac.th/2017/เปลี่ยนของเสียเป็นดิน>

for transportation purpose, but since Bangkok has turned its back on these canals they became drainage for households. Another reason is when Chao Phraya river changes its level, the water quality in the canals are effected. Apart from cleaning the canal regularly, drainage system should be re-organized. Set up a network of people along the waterfront to look over the river and canals. Improve system of water treatment or water rehabilitation before releasing from the households. The next step is to re-connect the waterway and design walk path along these canals to increase walkability and shortcuts from residential to workplace and public space. Walking allows people to move in slower pace that will create human interactions that lead to the sense of safety in neighborhoods. In the long run, structuring public policy is the prominent process that requires participation from all district members.

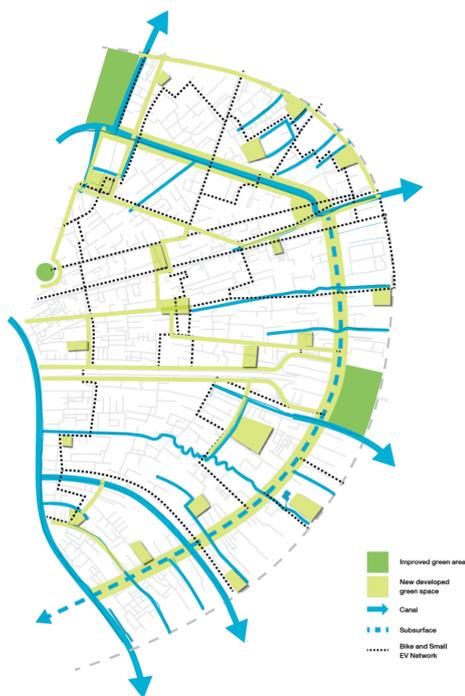


Figure 4: Water management master plan – Green and blue connection

4.2.2 Transportation

Since the district is developed from old settlement in the past, major infrastructures were built according to human scale. Many streets are small comparing to the upcoming development. Small vehicles seem to be appropriate choices of transportation. Streets should be improved for walking and set a limitation of traffic. Existing options of public transit are Chao Phraya express boat, sky train system, public buses, and smaller service trucks. All the public transit should be

fully connected in order to reduce traffic from personal vehicles. With lower amount of traffic, streets will be more safe for cycling and walking. In the long term sharing transportation will be a used majorly where people owns less personal properties but instead moving forward to the period of sharing economy.

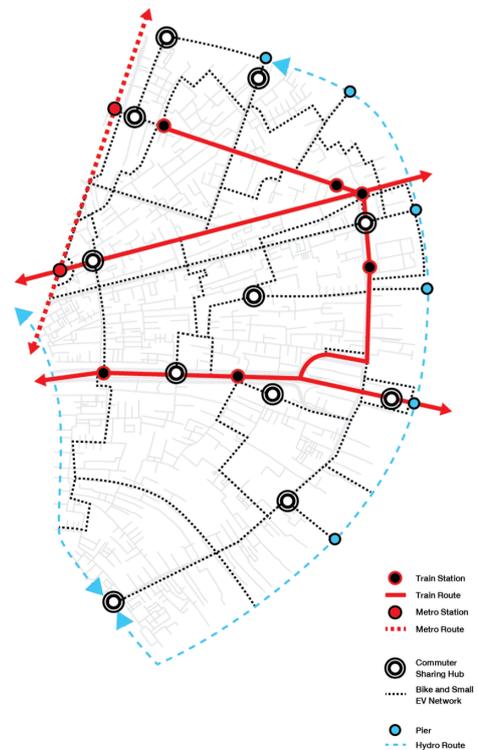


Figure 5: Transportation master plan

4.2.3 Residential and workplace

The rail system is expanding from the other side of the river along with many big scale developments. Development usually brings along more population to the area. Residential and workplaces have to be prepared for the increasing density. Mixed-use is one strategy to provide sharing space and allow residents to have meeting place and interaction. Because of land price in Klongsan district is rising rapidly especially along the waterfront. Chances of big investment are less worthwhile due to small-scale infrastructure. Many streets are single lane hence dead-ended. The solution came up to the local landowner who can take this opportunity to develop their property into mixed-use and provide space for new type of residential plus innovation business that will help driving new economics of Klongsan.



Figure 6: Mixed-use development master plan

4.3 Networking Asset

To complete an innovation ecosystem in Klongsan, the district must have strategy to be self-sustain. Therefore, innovation development must include human development planning. Connecting people together is an efficient way to pass on experiences and share new findings in order to keep the knowledge growing, especially when the district is inviting new comers to the area. Develop human resources locally, emphasizing on education will also help reducing social gap in the long run.

5. CONCLUSIONS

Overall, Klongsan contains potentials to develop into innovation district. Though there are challenging obstacles, but all stakeholders have ability to step in for collaboration. Knowing their own strengths and weaknesses will be beneficial in shaping the future of the district. And in the long run, Klong San

Innovation District can be a community-based model that was inclusively planned for

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