

PRELIMINARY STUDY ON TAK'S INDUSTRIAL ESTATE'S DISTRIBUTION CENTER

Sakgasem Ramingwong¹, Salinee Santiteerakul²

Faculty of Engineering, Chiang Mai University, Chiang Mai 50200, THAILAND

Tel: (66)-5394-4125 Fax: (66)-5394-4185

Email: ¹sakgasem@eng.cmu.ac.th, ²salinee@eng.cmu.ac.th

Abstract

Chiang Mai University (CMU) was assigned by Tak to study the feasibility on establishing Tak's industrial estate. The study has reached its conclusion where the industrial estate is barely feasible unless the special benefits and legal privilege are provided. One of the practical exercises is an establishment of the distribution center whereas it was initially exclusive from the study.

Although it is undoubtful if the distribution center is beneficial, the center's, itself, feasibility is unclear. Therefore, it is the aim of the paper to present the preliminary assessment on the issue. However, it must be noted that the results and a conclusion presented in the paper is only the preliminary assessment where the marketing, engineering, finance and management perspectives are addressed (follow the feasibility study procedure), however in an initial scale.

The study leads to a conclusion that Tak's industrial estate's distribution center is preliminarily feasible, however within assumptions and conditions applied. The results here should then be supportive to a top-management decision, should a full-scale feasibility study on the distribution center be conducted to complete the requirements.

1. INTRODUCTION

Tak is one of Thailand frontier provinces with the highest import/export trade value presently. Laying at an entrance of the Asian economic East-West corridor, adjacent to Myanmar, Tak is clearly possessing a great potential on internationally trading and national commercializing. Tak and Thai government has recently seen the potential of the issue and executed many strategic plans. One of the pilot projects is an establishment of an industrial estate. The idea was supportive by Thai government as Tak's 3 districts are promoted into a special frontier zone with many trade and socio-economic benefits. [3]

The feasibility study of Tak's industrial estate must be conducted and here Chiang Mai University (CMU) was assigned. The objective of the study is to address Tak's strategic plan should an industrial estate be established.

The study has reached its conclusion where the Tak's industrial estate itself is barely feasible, marketably and financially. [5] The obvious reported reason is that investors are yet to see the distinctive benefits of the investment on Tak's industrial estate (discussed in §2.2). It was therefore a quest for CMU research team to explore the opportunities to promote the estate and attract the investments. Of the limited period of time and the restrictive budget, the results come up as suggestions (however leading to a full-scale study if required). One of the key action plans is to establish the distribution center. As the advantage of it is renowned, the distribution center can boost the economic efficiency and cut logistics cost significantly. [2][4] However, how well

it can help the situation is the question that needs an answer. The study here is then aiming at addressing the question, however in an initial scale. The result should allow decision makers to decide if the preliminary study returns a positive result, should the study be continued in a detail, full-scale.

2. LITERATURE

2.1 Distribution Center

Distribution center exercises a concept of a centralized organization that stores and distributes goods to the customers or to other distribution centers. The distribution center is scoped larger than a warehouse where it does not only store the products but it adequately supplies to the demands using logistics and supply chain management systems. The function raises the potential of the industries by not only saving the logistic cost of the factories but managing the resources more effectively. [2] [1] [6]

2.2 Tak's Industrial Estate and Its Feasibility

Tak's industrial estate feasibility study by CMU is soon reaching its conclusion (late 2006). The period of 9 months with extensive analysis lead to an interesting however rather disappointed result. Whilst the estate holds a great expectation locally and nationally, the estate does not possess very well to that level of expectations. Conclusively, the estate is barely feasible. [5]

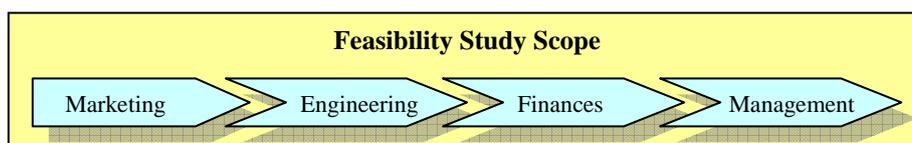


Figure 1 Typical Feasibility Study Scope

Here, to discuss the result of the study, the following present the result from the 4 feasibility study perspectives addressing marketing, engineering, finances and management feasibilities (Figure 1).

- Marketing-wise, both primary marketing survey and secondary data analysis leads to one conclusion that Tak's industrial estate exceedingly lacks of the marketing potential. The study is indicative that the prospective investors are not interested in industrial estates that locate outside Bangkok and its peripherals and the existing industrial metropolitan area. Realizing that Tak lies on the economic East-West corridor, the location advantage is not yet distinctive. It is therefore restrain local investors (comparatively less capital) to invest likewise. Here, of the industrial estate itself, locating 512 kms to Bangkok, the logistics cost alone is tremendous.
- The financial feasibility study is barely feasible likewise whereas the main income of the estate from the land rental alone is not break-even. (Initially, land sale is out of consideration.)
- However, on the engineering and management points of view, the estate is feasible. The engineering and management parts can be practically organized to address the needs (as long as the project is funded sufficiently). These two issues are not in concerned.

It was then a quest for CMU research team to explore any opportunities to resolve the issue. Many ideas are suggested as a potential, for example, a newly-organized land use (to increase a rental area), a land rent/sell option, an establishment of distribution center, etc. Here, the paper is to address the quest of the distribution center and its feasibility.

3. PRELIMINARY ASSESSMENT ON TAK'S INDUSTRIAL ESTATE'S DISTRIBUTION CENTER

As the study was limited by an available resources, ie, time, human resource and budget, it is to be noted again that the study was only conducted in the preliminary scale of assessment with some conditions applied to simplify the study. The followings are the assumption of the study:

1. The collective data on Tak's industrial estate feasibility study and the literature review are then the main resources of the study here.
2. It is the aim of the study to evaluate and assess the advantageous of the distribution center if it is established and how well it will boost the industrial estate. Therefore, the disadvantage of the location of the distribution center where it is located in Mae Sot and far from the main industrial area is neglected. Here, the scope of the study focuses on the impact of the center to the estate only.
3. The distribution center is run by private organization who rent an assigned distribution area. Here, the investment and operating costs are then be of the distribution organization alone. However, the industrial estate can have both direct benefits as an overhead charge and indirect benefits as the attraction to the prospective factories.
4. The study addresses the factors needed in consideration for establishing the distribution center in Tak's industrial estate. The topics cover the range of important issue following the feasibility study concept as 1) an initial market analysis 2) an initial engineering analysis 3) an initial financial analysis and 4) initial management analysis. The following sections discuss the issues.

3.1 Marketing Perspective

The study focuses on the advantages and the disadvantages of the distribution center in an industrial estate should it be marketably need. To simplify the marketing concept, the 7Ps perspective is exercised in Table 1.

Table 1 7Ps Marketing Perspective

P	Overviews	Pros	Cons
Product	Logistic service including warehousing, distributing, etc.	Responses from local business sectors are positive. Many are interested in using services at the distribution center.† [10]	Some still concern and consider the international trading issues with Myanmar unreliable
Place	Location in the industrial estate	1) Locating on East-West Economics Corridor; Great potential in international trade [3]; 2) Locating in the estate; many potential customers [5]	Far from current, local factories because the estate locates outside the city area [5]
Price	Logistics cost and investment cost	Leads to smaller investment (for factories); cut the logistic cost; Many potential and current factories are already interested in using distribution center services, especially warehousing and logistics service [8]	-
Promotion	To attract the factories to use the distribution services	Discount strategy for industrial estate in the starting phase which will be applicable likewise to the distribution center [5]	-
Processes	Effective internal operations	Well-managing operations lead to better servicing [4]	-
People	Recruiting operators	More employment on the area	-
Customer Service	Service mind & servicing	Well-trained service lead to more customers [4]	-

†*Mae Sot distribution center feasibility study [10] is independent to the industrial estate feasibility study, scoped to the current transportation alone, the industrial estate presence was excluded.*

As above, it can lead to only one conclusion where the industrial estate's distribution center is not only feasible but also can lead to some advantages where it can boost not only the industrial sectors and the industrial estate itself but also the macro economics system, marketing-wise.

3.2 Engineering Perspective

The engineering perspective can initially be divided into 3 topics as 1) location 2) equipments and processes and 3) distribution center conceptual design

3.2.1 Location of the distribution center

The location of the distribution center area is restrictive to the area of the industrial estate as initial objective of the study where it is rather advantageous whilst it can attract the new, prospective investments to invest in the newly-developed estate. In addition, other local industrial and business sectors can also use the services with considerably close distance (the estate located 14 kms from Mae Sot city area). The precise location of the distribution center is however inconclusive where it can locate on the close-to-highway area, the center of the estate and the furthest-of-highway area.

Figure 2 shows the location of Tak's industrial estate, site Mae Pa. (Mae Pa is among top locations nominated for the industrial estate)

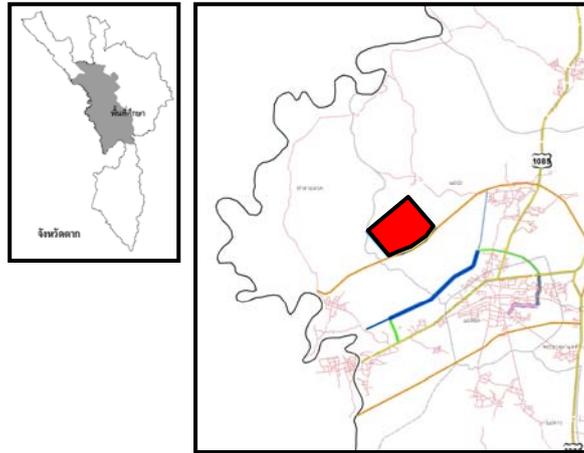


Figure 2 Tak's Industrial estate, site Mae Pa, Mapping with a prospective Highway

Figure 3 shows the conceptual design of Tak's industrial estate, Site Mae Pa and the 3 prospective zones for distribution center.

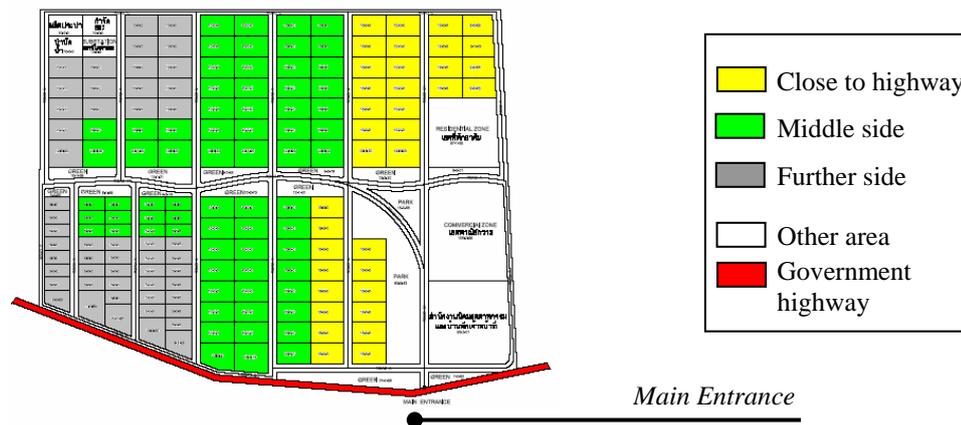


Figure 3 Industrial Estate Land Use (Tak's New Industrial Zone)

The advantages and disadvantages of these 3 areas are discussed in Table 2.

Table 2 Initial Assessment of the Distribution Center Location

Location	Pros	Cons
Close to highway	Close to highway; therefore outbound is better, logistic-wise.	The estate launches its first phase in the furthest side (with reference to the master plan) [5]
Center of the estate	When the estate is fully occupied, the middle location possesses the overall shortest distance to all factories in the estate.	The estate launches its first phase in the furthest side.
Furthest of highway	The estate launches its first phase in the furthest-side; This could attract primary investors.	Far from highway; therefore outbound is worse, logistic-wise.

The exact location of the distribution center is however far to be concluded with the present information. The decision must be made with a much greater consideration. A multi-criteria decision making means, for instant, must be used in order to

systematically and reflectively determine the suitability of sites as to what issues must they be taken into consideration and how significant.

3.2.2 Processes

The main function of the distribution center for Tak's industrial estate focuses on the outbound distribution, nationally and internationally. The scope of the function might be enlarged whilst the estate is occupied more and more services needed.

However, initially, the distribution center must not play role of only an in-plant warehouse (general merchandise and refrigerated goods) but also the function of the distribution which must link to the national logistics system (both aviation and truck system).

The activities typically required on the distribution center are receiving, storing, picking and shipping under the well-structured information and material flows (the process of repackaging is optional). [1] [2] [6] It is also suggestive from locals that the services of distribution center should include one-stop service, warehousing, container rental, cold room rental and repackaging services. [10]

There are interesting advices suggestive to any establishment of the distribution center as it should implement the high-technologies, for example RFID, realtime/online warehousing and logistics system. [6] [4] Therefore, these should be taken into consideration should any distribution organization provide these high technology and well-organized and supportive operations.

3.2.3 Distribution Center Conceptual Design

The conceptual design here is highly dependent to the functions, the available services and the storing/distributing capacity of the center.

However, for information known at present, of the current trading, without the industrial estate, the figure of 250 trucks per day, transporting in Mae Sot, Tak, alone, reflected the massive logistics system already. [10] It is to be noted that the number may add up twice or triple if the industrial estate is run full-scale. [5] Here, an area of as large as 200 rai may be needed. An estimation of the 2,000-rai industrial estate may require an area sized 2,000 sq.m. for establishing a distribution center building (warehousing, truck loading/uploading) and the rest is for truck parking area. The investment of the distribution center alone might cost more than 400 million baths. The figure known here could lead to a decision point for the distribution organization on the size of the distribution center to accommodate such operations. [7] [8] [9]

3.3 Finance Perspective

The idea of allowing the private organization to run the distribution center with the required scope addressed by the estate authority simplifies the financial consideration. Here, the income for the estate becomes as 1) rents, might be set similarly to those other rental factories and 2) an additional overhead fee that the estate will get after the distributing operates. Where case 2 gives an evident income to the estate, the approximate income is however far reachable as it highly depends on the functions operated and the capacities the center will possess.

Here, it can be concluded that on the financial perspective, the estate has nothing to lose but much more to gain from the establishment of the center. Though, it is to be noted that the distribution center is run by private organization but dependent to the estate policy-wise and the overhead charge must be paid to the estate at both-agreed level.

3.4 Management Perspective

The management of the distribution center is independent to the estate where the private organization must manage and operate the center itself. However, the management and the operation must reasonably agree in principle to those of the estate. [5] Here, the policies must be reviewed and applied to that of the distribution center as following:

1. Contingency management viewpoint with functional departmentalization
2. Supporting the expansion of the economics and industrial sectors to the East-West Economic Corridor, especially the concept of Sister City between Tak's special trade area and Myanmar developing special trade area (Myawadee)
3. Follow Tak's industrial estate's vision, philosophy, goal and objectives

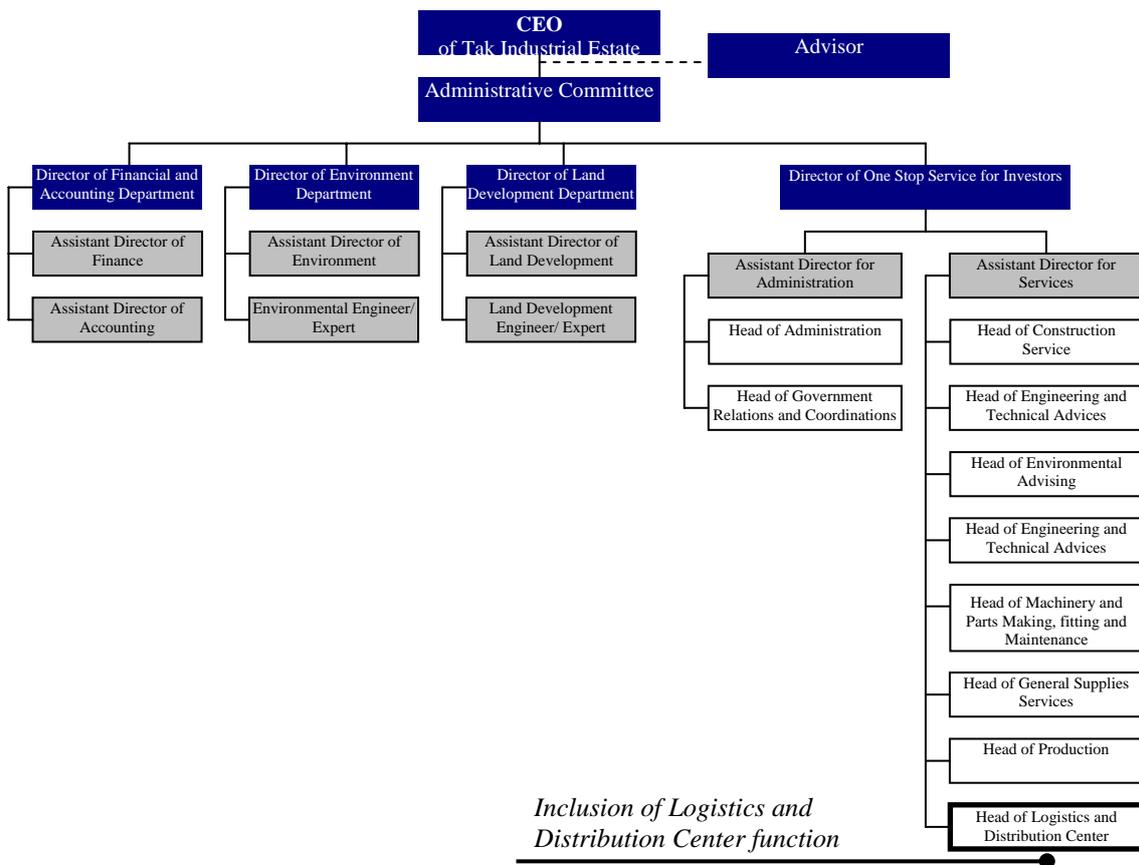


Figure 4 Positioning of Head of Logistics and Distribution Center in Tak's Industrial Estate

Although the distribution center runs independently to the estate, the estate must assign at least a top-management to overlook the center's performance and functions directly. This might slightly expands the existing management organization of the estate however with minimal modification.

Figure 4 shows positions of head of Logistics and distribution center on the organization chart, adapted from Tak's industrial estate original organization chart proposed by CMU [5].

4. CONCLUSION AND SUGGESTIONS FOR FURTHER STUDY

The study was conducted on the basis that the distribution center can boost the potential and the feasibility of industrial estate.

Of the distribution center itself, the preliminary assessment (under the assumptions and conditions) can be concluded as follow:

1. The distribution center is marketing feasible. Whilst the service of the center can boost the industrial estate occupancy, the initial survey is indicative where there is a considerably amount of interest in the services.
2. The distribution center is engineering feasible. The location, function and the building can be detailed designed according to the type of services and the warehousing and distributing capacity of the center.
3. The distribution center is financially feasible. The investment is costless as the rental area is of those available areas for factory rent. The income is however present where the overhead fee is agreed.
4. The distribution center is management feasible. Of the distribution center itself, the management and the operating is independent to the estate but in agreement with the estate's policies. Of the industrial estate, the distribution center overlooking job must be taken into consideration.

It can then be concluded that the, in the preliminary scale, based on assumptions, distribution center is feasible and implementable and the advantage, both direct and indirect, are evident. However, should the distribution center be established, more detailed study must be conduct to fulfill the standard decision making requirements. Here are some of the requirement needed:

1. Detail marketing analysis, nationally and internationally and promotion planning
2. Term and condition of the distribution center in management and finances.
3. Detail study on the logistics expansion for the industrial estate
4. Function of the distribution center in need and the complete overviews of the expected customers
5. Master plan and action plan
6. The social impact analysis (S.I.A.)
7. The environmental impact analysis (E.I.A.)

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