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Towards Innovative, Liveable, and
Prosperous Asian Megacities:
The University of the Philippines-
Ayala Land Technology Hub

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TOWARDS INNOVATIVE, LIVEABLE, AND PROSPEROUS ASIAN MEGACITIES: THE UNIVERSITY OF THE PHILIPPINES-AYALA LAND TECHNOLOGY HUB

Abstract

A city innovation is a new solution that creates additional value to people in the city by addressing urban challenges. This could be in terms of technological, institutional, organizational, political, economic and social, as long as it creates value to the city's prosperity, liveability, and social equity. The UP-Ayala Technology Hub fosters a city innovation in the heart of Quezon City. The UP-Ayala Technology Hub is a pioneer on academically-based IT Park in the Philippines that was created to face challenges of competition and economic development. This provides an area in which small-scale businesses could grow their operations through promoting industry and academe linkages. Moreover, this impacts the growth of the city from the typical residential area to introducing a business complex which caters to start-up and medium-scale businesses.

I. BACKGROUND OF THE CASE

Innovation is defined by Peter Drucker as the *change that creates a new dimension of performance*. It involves finding a new and better way of doing something. An innovation can be big or small. Brand-new or just a bit different, it does not matter. An innovation can be clearly complex or seemingly simple. Innovations are often thought of in terms of technical achievement, but can also be a design. The type, industry and style of innovation are irrelevant; an innovation's impact determines its qualification (realinnovation.com, 2006).

More than just tangible products, innovation encompasses services and business approaches. This provides a means to nurture and take advantage of opportunities in the market. It creates value for people. Thus, implementing innovative ideas should provide more benefits than costs to people. Although most innovations are in the form of physical products, it is also critical to develop innovations which pose beneficial results for the society. In this case, this is termed as the city innovation.

A city innovation is a new solution that creates additional value to people in the city by addressing urban challenges. This could be in terms of technological, institutional, organizational, political, economic and social, as long as it creates value to the city's prosperity, liveability, and social equity. This creates a leap from usual practices of people within the city to innovative changes which provide improvements in their way of life, their beliefs and their

attitudes. This entails successful implementation of changes to address the challenges experienced within a city.

The UP-Ayala Technology Hub fosters a city innovation in the heart of Quezon City. This provides an area in which small-scale businesses could grow their operations through promoting industry and academe linkages. Moreover, this impacts the growth of the city from the typical residential area to introducing a business complex which caters to start-up and medium-scale businesses.

A. History of the Technology Hub

The collaboration of UP-DOST and the Ayala group of companies for the UP-Ayala Technology Park started in 1999. Initially, UP-DOST asked Ayala group of companies to help manage the incubation facility that they envision for their students as well as for other start-up companies. Since the concept of incubation was well-fitted to their goal for education and entrepreneurship initiatives, they accepted the offer and started with the Technology Park. This grew into the idea of developing a larger facility, which is the Technology Hub, to house the growing companies who have graduated from the Technology Park. At present, the Technology Hub has available facilities for small, medium and large-scale businesses to accommodate the changing needs of start-up businesses.

1. Objectives of Ayala – Technology Business Incubator (TBI)¹

VISION: An ecosystem that enables entrepreneurs to build successful science and technology businesses with global potential.

MISSION: Develop an ecosystem through public-private-partnership projects in the areas of: finance, R&D and technology commercialization, education and culture and incubation.

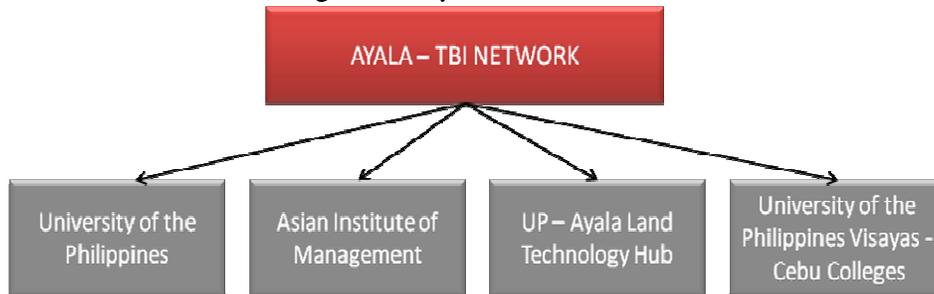
2. AyalaTBI Network

Ayala-TBI partnered with the most prestigious university and the premier business school in the Philippines for its technology incubation project. Truly, this robust collaboration between

¹ *Barcelon (2006)*

schools and a technology facility ensure an uninterrupted convergence of talent pool and a supportive business environment (AyalaTBI, 2008).

Figure 1: Ayala-TBI Network

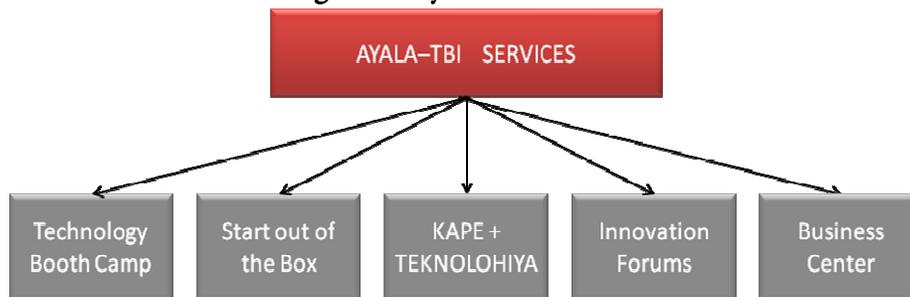


B. AyalaTBI Services

Since 2008, AyalaTBI gives the general public access to the leading thinkers and practitioners in the fields of science, technology, and enterprise through Innovation Forum and Kape + Teknolohiya. These are learning and networking forums right at the centers of business and academic excellence in the country: the Makati Business District and University of the Philippines in Diliman, respectively (AyalaTBI, 2008).

Some of the country’s brightest minds, with their bias for bold actions—technologists, policy makers, angel investors, venture capitalists, and wildly successful entrepreneurs—get together to share ideas on the potentials of high technology and the pressing needs of our society, which can change the way we do things and shape our future (AyalaTBI, 2008).

Figure 1: Ayala-TBI Services



1. Technology Booth Camp

Rigorous three-day training course designed and delivered by AyalaTBI expert mentors to help start-ups transform their ideas into profitable ventures. (AyalaTBI, 2008) In this activity, participants are asked to present their ideas to a panel of experts to gather feedback and develop their concept into real businesses. The course covers the following topics: (i) strategic visioning,

(ii) market definition, (iii) research and development, (iv) finance and accounting, and (v) product marketing.

2. Start out of the Box

Locators can focus on developing their products, AyalaTBI provide some of the administrative tasks of starting a business. This will free up valuable time, manpower, and resources for productive ends (AyalaTBI, 2008). These tasks include: (i) human resources, (ii) finance and accounting, (iii) intellectual property, (iv) legal services, and (v) networking and funding.

3. Kape +Teknolohiya

Held 6-8 times per year, Kape+Teknolohiya is a relaxed and casual venue where students elaborate their research outputs, startups pitch their products, entrepreneurs and venture capitalists share market insights, and policy makers explain government thrusts (AyalaTBI, 2008). It is located at the Ground Floor of the TechPortal at the UP-AyalaLand TechnoHub.

4. Innovation Forums

The Innovation Forum is a series of technology forums and networking sessions where science, technology, and business meet (AyalaTBI, 2008). It seeks to promote innovation and technology entrepreneurship and to cultivate a favorable ecosystem where issues of:

- (i.) patents, copyrights, trademarks, trade secrets;
- (ii.) e-commerce;
- (iii.) new technology products and approaches;
- (iv.) technology breakthroughs;
- (v.) VC/angel funding, equity;
- (vi.) new markets, new competitions specially in the information technology and Science and technology fields are given focus by mentors and experts.

These forums are held in collaboration with the Brain Gain Network, Philippine Emerging Startups Open, and various sponsors who also advocate for technology entrepreneurship, innovation, incubation and global competitiveness, the forums continue to attract the general business community, industry associations, professional organizations and/or critical players in the techno-preneurship space such as VCs, angels, IP practitioners, and tech advocates.

5. Business Center

AyalaTBI provides its locators the required business infrastructure to allow them to allocate their limited funds to more crucial requirements. AyalaTBI's portfolio of services is best described based on the role it performs (AyalaTBI, 2008).

As facilities manager, AyalaTBI provides the following²:

1. Ready and fully-equipped work stations
 - Office space areas of 35 square meters to 80 square meters
 - Each office space is provided with:
 - Phone connection with ready access to domestic and international long distance call services
 - Ready internet access
 - Connection jacks for computer network
2. Conference venue with a seating capacity of up to 200 people
3. Modern presentation equipment
4. High-speed internet access
5. Building Security
6. Ample parking space
7. Janitorial services
8. Cafeteria
9. Medical clinic
10. Business Center services (photocopy, facsimile)

As a locator services manager, AyalaTBI provides the following:

1. Office backroom services
2. Networking activities
3. Access to angel investors and/or venture capitalists
4. Pool of experienced industry experts
5. Access to technology shows and trade fairs
6. Liaison to schools and industry organizations and practitioners
7. Introduction to financial community
8. IP Referral Services
9. Showcasing locator products and services

C. Process of Incubation (from Park to Hub)

The process of incubation starts from gathering new businesses within the vicinity, specifically home-based businesses, to engage them in business incubation. This creates a network which allows sharing of ideas, knowledge, skills as well as business in order to nurture and support the growth of start-up businesses. After an incubation period, these move in the technology hub to foster larger scales of operations.

² This role is assigned to Ayala Property Management Corporation (APMC), a property management subsidiary of the Ayala Group, only for UP-AyalaLand Technohub.

Figure 2: Process of Incubation



II. ISSUES AND CONCERNS ADDRESSED BY THE INNOVATION

- (i.) Business Competitiveness
- (ii.) Unemployment/Underemployment
- (iii.) Knowledge/Skills Creation and development
- (iv.) Unified social network for innovation system

III. CITY INNOVATION

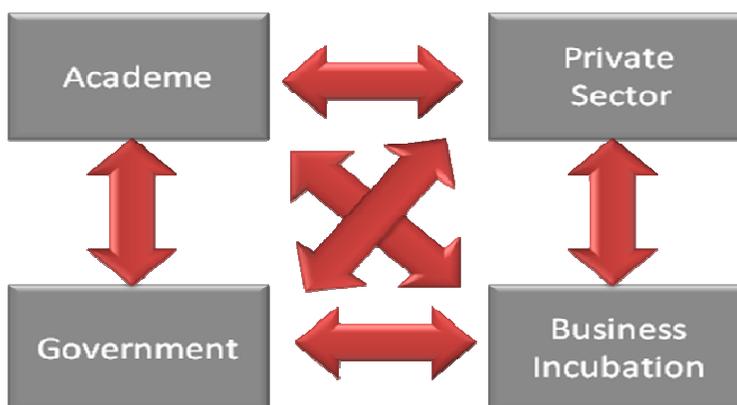
A. Why is it an innovation?

The UP-Ayala Technology Hub is a pioneer on academically-based IT Park in the Philippines that was created to face challenges of competition and economic development.

B. What value does it create?

It created a social system that facilitates the creation, diffusion and adoption of innovative solutions by integrating government, academe, private and public sector to accelerate the innovation initiatives in the mega city. Through these innovation initiatives, it hopes to foster meaningful job, sustainable businesses, develop manpower skills and knowledge.

Figure 3: Innovation System



As experienced by the locators, the location and the environment of the technology hub provides them with an appropriate venue to grow their business. This projects stability for their business to gain trust from business partners as well as an environment conducive for

productivity of their employees. Moreover, the facilities provided by the technology hub help them sustain their businesses as start-ups. Some of these facilities include the following green initiatives of the technology hub:

- (i.) **Water Recycling System.** Throughout the entire park runs a gray water piping system which supplies recycled water from the nearby sewage treatment plant for toilet flushing, irrigation and central cooling, thereby reducing potable water consumption by as much as 80%.
- (ii.) **District Cooling System.** A central plant provides chilled water for the air-conditioning of all buildings, through an underground piping loop. This allows aggregation of the varying cooling loads of each building which optimizes energy usage by reducing equipment partial loading losses and utilizing more efficient large-capacity centrifugal chillers. Energy consumption for chilled water delivery can be reduced by as much as 30%.
- (iii.) **Individually Controlled Air-conditioning System.** The building air-conditioning systems are provided with variable-frequency drives and individual energy meters, which allow tenants to control and optimize their cooling energy consumption. There are no fixed AC charges. Instead, tenants are billed by actual BTU-hrs consumed.
- (iv.) **Multi-Purpose Lagoon.** Apart from enhancing the aesthetics of the central park, the lagoons function as storm-water detention basins to prevent flooding and soil erosion at the nearby downstream communities during the rainy season. During the dry season, the lagoons are used as storage of recycled water for irrigation.
- (v.) **A Landscaped Earth Mound** made as a natural barrier along a major thoroughfare (i.e. Commonwealth Avenue). This mound was built-up from unsuitable soil materials excavated from the project. Instead of being hauled-off to distant dumpsites, the soil was put to good use thus eliminating the need to construct concrete fencing in order to block the vehicular noise along the entire frontage of Commonwealth Avenue.
- (vi.) **Building Orientation.** As much as possible, buildings were oriented on a north-south direction to minimize solar heat gain.
- (vii.) **Optimized Window Ratio.** Window-to-wall ratio is about 25 percent, just enough to allow natural lighting and outdoor visibility in the office areas, without compromising solar heat gain.

- (viii.) **Pervious Colored Pavements for Carpark Areas.** Instead of asphalt or poured concrete, colored, pervious paver blocks were used on carpark and driveway areas. The pervious blocks allow rain-water to seep through and recharge the underlying aquifer. The colored blocks also reduce the heat-island effects of the pavements.
- (ix.) **Expansive Open Space.** The development provides for an expansive open space with a minimum ratio of 40%.
- (x.) **Preservation of the Arboretum.** Included in the leased area is a large portion of the arboretum (approximately 1.5 hectares) which was deliberately preserved and treated as an aesthetic feature of the development. There are ample views of the forest areas from the office and retail buildings.
- (xi.) **A Waste Management System Complete with Recycling Facilities.** All buildings are provided with Material Recovery Facilities (MRFs) where all garbage are sorted and stored. A park-administered waste management system is put into place, similar to all the other Ayala developments.
- (xii.) **Commuter-Friendly Facilities.** The location along Commonwealth Avenue provides commuters direct access to public transportation to almost any part of Manila, via safe and convenient pedestrian walkways. Inside the park, all buildings are accessible by paved and covered walkways, thereby reducing vehicular traffic within the development and carbon emissions as a result.
- (xiii.) **Improved Indoor Environment Quality** through the use of low VOC building materials and adequate pre-cooled fresh air supply. Optimum-sized glass windows provide refreshing views of the arboretum, landscaped central park, and the university campus.
- (xiv.) **Community Connectivity.** Basic services are available both within and around the development (e.g., retail establishments, residential facilities, institutions, hospital services, and places of worship).

The analysis of UP-Ayala Technology Hub as an innovation is further discussed in the succeeding sections:

C. Novelty

UP-Ayala Technology Hub is a pioneer on academically-based IT Park in the Philippines and it is strategically located along Commonwealth Avenue in Quezon City (Macapagal-Arroyo, 2008). The Techno Hub occupies a total land area of 20 Hectares as part of the 37.5-hectare

UP North Science and Technology Park (PMS, 2008). It will house firms in the high-technology fields and high-value business process outsourcing (BPO) services, start-up companies, and incubate companies (Suarez, 2008).

The technology hub also addresses the dynamics of growing businesses. It uses the technology park to cultivate business concepts into start-up businesses. This normally takes approximately one to two years in the technology park. At this stage, they are provided necessary trainings such as feasibility researches, management concepts and business models. They are also supported with facilities that are sufficient to establish their businesses. After which, they are transferred to the technology hub for a bigger space and a better opportunity to grow which typically ranges from three to five years. In this stage, they are provided with an improved infrastructure to attract more customers. Moreover, they are still provided seminars from time-to-time which allows them to learn from the experiences of other organizations and to share their own experiences as well. This enables them to continuously improve on their business models to expand and to prepare for better opportunities when they graduate. Unlike other incubators, the Ayala TBI allows the businesses to have a freehand in exploring their fields such that they learn to become independent in running their businesses after the incubation period. This also builds business connections through social interactions to encourage a healthy competition between organizations through sharing experiences, knowledge and resources such as manpower and facilities.

With respect to the social aspect of the UP-Ayala Technology hub, it promotes a balanced quality of living through an infrastructure which does not only provide a venue to cultivate businesses, it also provides a venue for interacting with friends and family through food establishments and park facilities, an ambience conducive for learning, and an environment-friendly atmosphere.

D. Impacts

The proximity of the technology hub to academic institutions will not only provide a venue for job opportunities. The Ayala TBI will encourage students to cultivate their ideas and translate these into business models for commercialization. The cooperation between the academe, Ayala TBI and the government could promote entrepreneurial skills and attitudes among the younger generations. More than those business majors, the idea of incubation could specifically impact on engineering majors to help them develop their management and business skills. This could

promote the creation of high-valued technological products and services to enhance business processes of other organizations and to improve the day-to-day activities of people.

In particular, the UP-Ayala Technology hub will have an impact through the following:

- (i.) The Technology hub is planned to be a center where research and technology-based collaborative projects between industry and academe thrive (Suarez, 2008).
- (ii.) UP also sees the park to be a “catalyst for development” of information technology and IT-enabled services, which would pave the way for “transforming innovative ideas” into products and services of the companies in the park (Suarez, 2008).
- (iii.) The park would also provide a two-way flow of ideas between the companies in the park and the UP community, and is envisioned to be a vehicle for collaboration between the industry and the academe (PMS, 2008).
- (iv.) This park will serve as the Philippines’s foremost IT laboratory, training ground and incubator of new and high-value adding products and services together with the science and technology complex and the science and technology park, it will provide the nurturing environment for new IT based businesses that transform new technologies into useful and commercially viable services (PMS, 2008).
- (v.) The proximity to U.P. will offer the academics a better appreciation of the needs and risks of businesses while the entrepreneurs will gain valuable information about R&D (Macapagal-Arroyo, 2008).
- (vi.) The park will also provide opportunities for on-the-job training and employment for UP’s students and alumni, and, for students and professors into research, open up opportunities to work with companies along their line of interest (Suarez, 2008).
- (vii.) In the long run, the park would be home to “high-end” services such as wealth management, financial analysis, software development, and design and engineering services (Suarez, 2008).

E. Equity

The technology hub was conceptualized to capture start-up businesses which include students, people who want to have their own business facilities. These are not established companies who have the capability to provide their own needs. The facility in the technology hub is subsidized by the Ayala Corporation to help businesses at their initial stage. Technologies were installed

within the technology hub to ensure that utilities are at its minimum. This will lower the costs of start-up companies, which would allow them to use their resources on the actual development of their businesses. The Ayala TBI does not only offer its facilities to Quezon City but also to other parts of the National Capital Region, or in some instances, even for those in the other regions of the country.

In particular, the UP-Ayala technology hub is an innovation because of the following:

- (i.) The park would generate employment of 30,000 to 40,000. These would mostly be people with “specialized knowledge” such as engineers, scientists, and financial analysts, as well as those working in support services (ALI Project Development Manager Marc Reyes, (Suarez, 2008)).
- (ii.) The government would also stand to benefit, mainly in taxes from the companies operating in the park (Suarez, 2008).

F. Economic and Financial Feasibility

- (i.) The park – a P6.5 billion investment by ALI – was designed with these companies in mind, specifically IT start-ups or “those that literally start in garages or small rooms with only a few people manning operations,” (ALI Project Development Manager Marc Reyes, (Suarez, 2008)).
- (ii.) The park is projected to earn P200 million a year upon full development, which, Alonzo said, would be a “substantial addition” to U.P.’s operating income and dwindling government subsidy (Suarez, 2008).
- (iii.) Throughout the lease period it is projected that the park will earn P4 billion. However the actual income would depend on existing market conditions (UP vice-president for development Ruperto Alonzo, (Suarez, 2008)).

G. Environmental Sustainability

- (i.) The design of the IT park is environment- and pedestrian-friendly, with numerous green spaces and allotments for covered pedestrian walks between buildings to lessen vehicular traffic in the complex (Suarez, 2008).
- (ii.) The park also has a park with a lagoon in the middle that would have recycled water, and a centralized air conditioning facility for efficient energy use (Suarez, 2008).

H. Transferability

In the future, the UP North S&T Park would be a landmark as well as a symbol of progress, as well as a benchmark for similar parks that industries and other universities might put up in the near future (Ruperto Alonzo and Marc Reyes, (Suarez, 2008)).

1. Political Acceptability

- (i.) President Gloria said in her speech keynoting the inaugural rites, “This is an important step together with the P3-billion that the government has been investing in R&D (research and development) and manpower development and the P1-billion in the National Budget for UP to build its own science and technology complex,” (Macapagal-Arroyo, 2008)
- (ii.) The President said technology advocacy forms part of her administration’s plans and programs to bring the country into the threshold of First World status in 20 years (PMS, 2008).

IV. ANALYSIS OF THE CITY INNOVATION SYSTEM

A. Product

The innovative product is the technology hub acting as an incubator of start-up businesses. This gathers start-up businesses within the vicinity of Quezon City to nurture their capabilities such that they would be able to grow their businesses into larger scales. This acts as a venue to interact with academe as well as other businesses in order to have an exchange of ideas and experiences.

1. Physical Space

a. Technology Hub

The technology hub is the actual venue wherein businesses grow their businesses. Its location is strategically positioned in the proximity of universities such as the University of the Philippines and the Ateneo De Manila University to achieve an industry and academe linkage such that the academe provides researches and manpower to strengthen the business models strategies of medium-scale businesses. This creates social networks which encourage the sharing of ideas and resources. The technology hub also provides job opportunities for students, whether on training or for actual employment. This could address the unemployment and underemployment issues being experienced in the Philippines. This also houses large-scale

businesses to provide income for the technology hub. This allows the hub to sustain and support the operations of start-up to medium-scale businesses while it is in the incubation stage. Moreover, these large businesses act as a model which could share their experiences to these developing start-ups. The technology hub provides an environment to which organizations could grow their business models to achieve an edge over its foreign and local competitors.

b. Office space for businesses

The information space include: (i) consultants/academe, (ii) kape@teknolohiya, (iii) entrepreneurs, and (iv) manpower in the same field of business. While the sharing of ideas and technologies as well as related research from the academe form its cognitive space.

2. Process

The UP-Ayala technology hub makes use of an incubation process as a means to nurture and grow businesses from small-scale to medium-scale or from medium-scale to large-scale businesses. The incubation process uses the collaboration between UP and Ayala to provide basic knowledge and skills training necessary in businesses for start-ups.

The physical space is comprised of the UP-Ayala Technology Park while the information space is comprised of: (i) training, (ii) workshops, and (iii) kape@teknolohiya. The cognitive space is collaboration with other businesses, and the idea is to offer products or services to clients and collaborate with other businesses in the same field to serve the needs of clients. This way, business not only grows for one company but for several companies which collaborate through the technology hub.

B. Service

The technology hub creates a network which links the academe and industry to help start-up companies to grow their businesses. These businesses could share ideas, technologies as well as manpower available within the hub to come up with a means to grow their businesses.

The physical space is the location of the Technology Hub and Park while the information space would be the informal partnerships through Kape@Teknolohiya, which include talks, workshops, trainings from experts as well as informal exchanges of ideas between participants. This expands the networks of small-scale businesses in order to build support systems as they develop their businesses. This allows the organizations to explore business strategies which they

could use to improve on their businesses. Moreover, this creates a ground to which people could interact with their competitors and entrepreneurs in other industries for future opportunities.

C. Institution

The structure is a commercial complex which combines industry and academe. Industry provides the real-world ground to practice theoretically researched ideas and knowledge from academe. Manpower is desirably shared across businesses of the same field.

Its information space includes the entrepreneurs and the academe. The entrepreneurs are proponents of small-scale businesses specifically from home-based operations within the vicinity of Quezon City. Their experiences are relevant in providing reality-based knowledge not only to help other start-up businesses but the academe as well. This provides inputs as to how other businesses should create their business models and it also acts as a ground for students to explore their knowledge in terms of real-world scenarios. The academe, meanwhile, is primarily composed of U.P. and Ateneo wherein these provide the skills, knowledge and manpower to support start-up businesses in strategic, tactical and operational decision-making.

D. Paradigm

The technology hub seeks to promote the sharing of ideas, technologies across businesses. This encourages cooperation in competition to have synergy across companies within the same field to improve on the total performance of the industry such that it can compete with other countries.

E. Position

The technology hub positions itself as a commercial complex built to link businesses within the same field. This seeks to nurture start-ups and get support from more stable or large businesses through their technologies, ideas and available manpower.

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