

Prospecting the Future of Taipei



Taipei Future Industrial Development in 2030
White Paper | Succinct Version

Table of Contents

Chapter 1.



03 Preface

39 III. Common Policy Tools for Future Key Industries

42 IV. Summary of the Development Strategies for Future Key Industries

Chapter 2.



05 Future Industry Development Strategies of Taipei City

06 I. Policy Framework for Future Key Industries of Taipei City

08 II. Future Key Industries of Taipei City

08 (I) Smart Retail Industry

14 (II) Exhibition Industry

19 (III) Tourism Industry

23 (IV) Digital Content Industry

27 (V) Smart Health Industry

31 (VI) Smart Energy Industry

35 (VII) Circular Design Industry

Chapter 3.



45 Conclusion

Chapter 4.



48 References



Figures

Figure ①

07 Policy Framework for Future Key Industries of Taipei City

Figure ②

08 Schematic Diagram of Future Scenarios in the Smart Retail Industry

Figure ③

14 Schematic Diagram of Future Scenarios in the Smart Energy Industry

Figure ④

19 Schematic Diagram of Future Scenarios in the Smart Tourist Industry

Figure ⑤

23 Schematic Diagram of Future Scenarios in the Smart Digital Content Industry

Figure ⑥

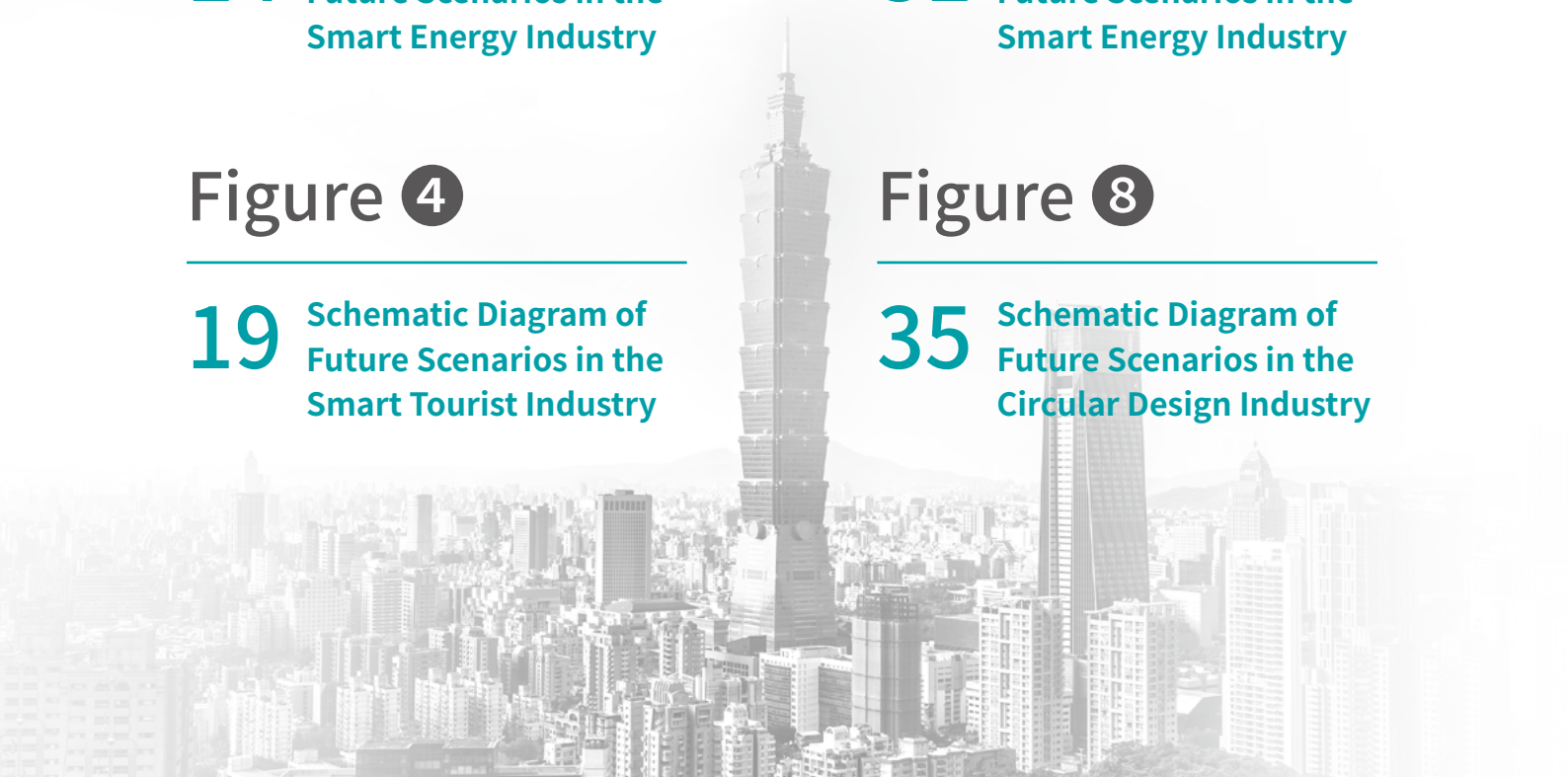
27 Schematic Diagram of Future Scenarios in the Smart Health Industry

Figure ⑦

31 Schematic Diagram of Future Scenarios in the Smart Energy Industry

Figure ⑧

35 Schematic Diagram of Future Scenarios in the Circular Design Industry





Preface

1

Chapter 1.

Preface

Looking at the global development trend in recent years, the rapid progress in the application of emerging technologies has pushed enterprises to actively carry out digital transformation and upgrading as well as to develop innovative business models. Meanwhile, the US-China trade competition, the rise of India and Southeast Asian countries, and the pandemic of the severe infectious Covid-19 have led to drastic changes in the trend of global economic trade, such that countries need to re-examine the layout of their industrial chains on a global scale. In addition, environmental sustainability issues such as extreme climate disasters caused by the greenhouse effect, accelerated ecological catastrophes caused by excessive resource consumption, etc. are important challenges that countries around the world cannot ignore .

Cities are the center of a country's population and economy, as well as a microcosm of the country's development. In order to pursue quality of life, people tend to choose to reside and lie in urban areas in order to secure more and better job opportunities, daily necessities and services (such as education or health care). It is estimated by the United Nations that the proportion of population living in cities will increase from 55% in 2018 to 68% in 2050. Essentially, the problems that countries around the world are currently facing, such as resource allocation, rights protection, or optimization of the living environment, will become more challenging by 2050. These issues poses an extreme challenge to city managers in terms of how to maintain the competitiveness and prosperity of cities.

Taipei City is equipped with adequate urban infrastructure, friendly and safe living environment, plus high-tech industries and innovative energy in line with the world, making it an important financial, commercial and high-tech city in Taiwan and the Asia region. Looking towards major challenges in the future, the Taipei City Government upholds a vision of "making Taipei a livable and sustainable city". By analyzing global forward-looking development trends and the current situations of Taipei's industry, future key industries of Taipei City that can help deal with future challenges while meeting the needs of the international market are targeted for planning of the promotion strategies of relevant policies. It is expected, through the guidance and drive of the urban resources, that existing industries can get a boost for upgrade and transformation and emerging industries can successfully enter the market quickly. Ultimately, the core strength of Taipei City for sustainable development will be enhanced.



Future Industry Development Strategies of Taipei City

2

Chapter 2.

Future Industry Development Strategies of Taipei City

I. Policy Framework for Future Key Industries of Taipei City

Through the analysis of the future development trends at home and abroad and an overview of the current industry status of Taipei City, Taipei City Government found that under Taipei's vision of a "livable and sustainable" city, the City may adopt "smart living", "healthy living" and "sustainable environment" as the direction for urban development in the future. In addition, future industrial development will be formed by existing industrial clusters through cross-domain and cross-industry cooperation, along with innovative technologies across horizontal applications. Digital transformation will be undertaken to form emerging industrial patterns.

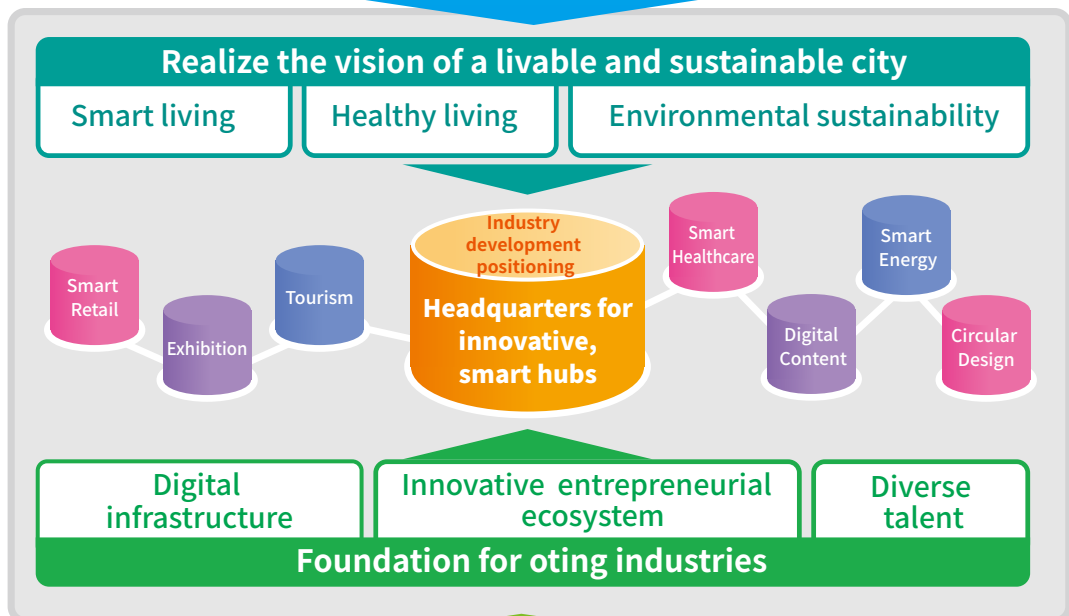
As one of the important gateways for Taiwan's foreign trade and economic cooperation, Taipei City has the advantages of digital infrastructure, a complete ecosystem of innovation and entrepreneurship, and the convergence of diverse talents. At the moment when foreign capital and Taiwanese businesses are investing more than ever in Taiwan, in line with Taipei City's vision of a "livable and sustainable" city and the City's development direction of "smart living", "healthy living" and "sustainable environment", it is suitable to

position Taipei City as an "innovative and smart hub headquarters" for enterprises while promoting seven industries, namely "Smart Retail", "Exhibition Industry", "Tourism Industry", "Digital Content", "Smart Health", "Smart Energy" and "Circular Design", as the key industries in the future that are suitable for the development of Taipei City. It is expected, with the characteristics of quality digital infrastructure, a mature ecosystem of innovation and entrepreneurship, and the convergence of diverse talents, that the foundation for the promotion of Taipei's industries can be built for the prosperous development of the seven key industries in Taipei in the future.



Global forward-looking development trends	Environmental changes in Taiwan	Keys for future city development
<ul style="list-style-type: none"> • Aging society and low birth rate • Smart economy and industry transformation • Public participation and public affairs • Environmental sustainability and the energy crisis • Talent flow and education 	<ul style="list-style-type: none"> • An aging population and an imbalance in the demographic structure • Technology diffusion and cross-industry innovation • Resource scarcity and environmental sustainability • Changes in the international situation and the rise of civil awareness 	<ul style="list-style-type: none"> • Green services ecosphere • Urban governance and local culture • Convenient facilities and innovative entrepreneurship • Living labs and healthcare

Future scenario analysis



Status of Taipei' s industries

Characteristics of the industry environment	Key/niche industries	Overview of industry clusters
<ul style="list-style-type: none"> • Clustering and entrepreneurial atmosphere • Strong ICT and cultural foundation • High international visibility and ample high-end talent • Comprehensive industry foundation 	<ul style="list-style-type: none"> • High-tech industry: Electronic ICT, biotech and medicine • Commodities: Retail, healthcare and social services, publishing/video production and broadcasting, and ICT services • High added-value industries: Professional science and technology services, financial services 	<ul style="list-style-type: none"> • Traditional industry clusters (e.g., the garment industry, designed and sold in Taipei City and manufactured in New Taipei City/Yilan/Keelung) • High-tech industry clusters (e.g., the computer electronics and ICT industry, R&D and applications ervice design conducted in Taipei city; manufacturing takes place in New Taipei City/Taoyuan/Hsinchu) • High value-added professional service clusters (e.g., finance; media and culture; and professional, scientific, and technical services)

Figure 1. Policy Framework for Future Key Industries of Taipei City

II. Future Key Industries of Taipei City

(I) Smart Retail Industry

Smart retail refers to a data-driven retail model centered on consumer experience, which utilizes technologies such as the Internet of Things (IoT), big data, artificial intelligence, electronic payment, and experience technology, while

incorporating business intelligence analysis into the construction of a new consumer service model of "personalization" and "customization".

1. Future industrial scenarios

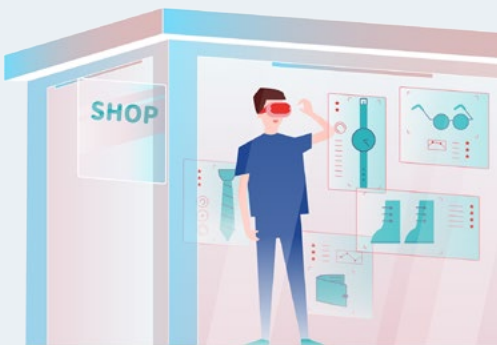
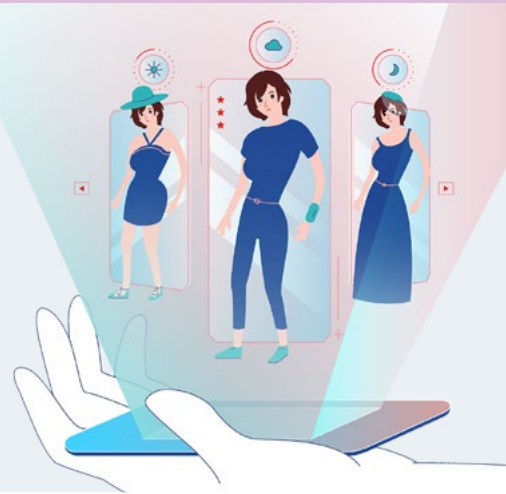
The smart retail industry can integrate and analyze consumers' purchase information through digital technology, so as to provide accurate and convenient services for different consumers with suitable product

+ **Smart Retail** buy anytime, pickup anywhere.
Creating a convenient, smart city that supports

Shopping Made Easy with Virtual Wardrobes

Utilize AR/VR/MR technology paired with your measurements to rapidly mix and match clothes and accessories that you like, making every store a part of your wardrobe and building your own fashion profile!

#Hologram #BigDataAnalysis #AI



Shopping With VR

Virtualized brick-and-mortar stores lengthen the anticipation we feel when shopping and make the experience less tedious and tiring. With big data analysis, you are better able to find products that satisfy your demands, making shopping efficient and fun

#IntegratingTheVirtualWithReality
#VR #BigDataAnalysis

Figure 2. Schematic Diagram of Future Scenarios in the Smart Retail Industry

recommendations before shopping, and experience the suitability and applicability of fashion and products through virtual reality technology during shopping. As well, consumers can choose multiple payment methods through tools such as online platforms, mobile vehicles, or physical means according to customers' preferences during shopping, and can automatically have commodities delivered to locations of consumers' choices for pickup through

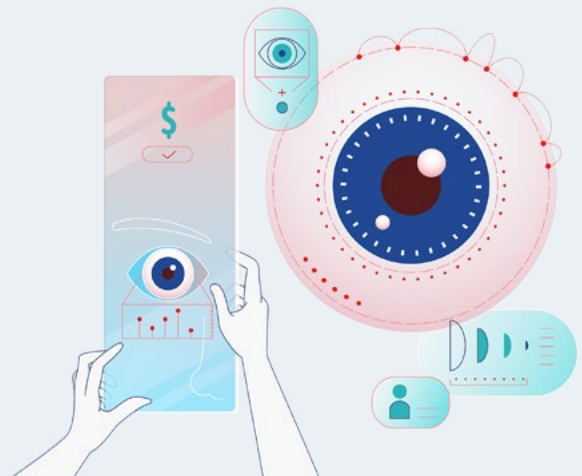
distribution systems such as drone vehicles or smart logistics after shopping. Moreover, delivery status can be sent back to the system to ensure consumers and retailers are updated on the delivery status of the commodities. Overall, customers get to enjoy the convenience of a "free-hand" style of shopping without having to carry purchases on their own from the shopping trip.

+ **Smart Retail** buy anytime, pickup anywhere.
Creating a convenient, smart city that supports

Pay with a Blink of the Eye!

Utilize biometric technology anytime for authentication purposes. Integrate different payment methods to enable convenient payment and better expenditure-tracking.

#Biometrics #IntegratedPayment
#InformationSecurity



Hands-free Shopping

Let drones deliver the products you buy to free your hands; never feel overwhelmed by shopping bags anymore.

#DroneLogistics #BigDataAnalysis
#SpatialDimensionComputing #IoT

Figure 2. Schematic Diagram of Future Scenarios in the Smart Retail Industry

2. Industrial Development Strategies

In order to promote the development of the smart retail industry, first it is necessary to improve the infrastructure of innovative services and application capabilities to meet the needs of industrial transformation. As well, we are to encourage the industry's willingness for industrial transformation and innovation investment, support the provision of accurate support services across domains and industries, and strengthen the availability and convenience of retail innovative services, in order to increase the output value and optimize the consumption experience. It is expected that Taipei will be built into a convenient and smart city with the retail capacity of "shopping anytime, picking-up anywhere". The relevant industrial development strategies are as follows:

Strategy 1 : Improvement on infrastructure

The strategy is to strengthen the infrastructure of information flow, cash flow and logistics to meet the needs of industrial transformation.

- (1) Employment of information and communication equipment: The work is to assist the City's commercial venues in improving their infrastructure of IoT information and communications, such as Wi-Fi networks and optical fiber fixed lines, to support the transformation and upgrading of the retail service industry.
- (2) Promotion of electronic payment: To provide convenience for consumers, support mechanisms are planned

for electronic payment infrastructure to accelerate the popularization of electronic payment. In addition, the work is also to assist in facilitating the sharing services of cross-platform electronic payment. Not only is the preparation for the introduction of electronic payments to be streamlined, but also the ultimate goal of payment channel sharing is implemented, thereby retailers' willingness to introduce electronic payments is strengthened.

- (3) Introduction of smart logistics: The idea is to build a common consumption platform through linking retailers in business circles, optimize the shopping experience and marketing efficiency through a single channel, and shape exclusive services in the business circle, such as cross-border e-commerce, home delivery on demand, etc., to ultimately create economies of scale through the integration of the overall needs of retailers in the business circle. In addition, the concept is also to form strategic cooperation with logistics platforms to quickly implement smart logistics services in accordance with the characteristics and conditions of different business circles, including consideration of limited resources and technical capabilities. Work can also be done in the deployment of an exclusive smart logistics maintenance system and team for the advantages of diverse distribution and better understanding of consumer groups over time.



Strategy 2 : Encouragement for Industrial innovation

The strategy is to encourage industries to participate in digital transformation while introducing innovative applications of emerging technologies.

- (1) Fostering of introduction of technology:
The idea is to provide related support services for businesses interested in introducing retail technologies. Other than incentives and subsidies or preferential loans to businesses, plans of incentive measures are promoted for retail transformation , including consulting subsidies available to featured retailers for their image-reshaping design, applicable discounts due to their transformation expenses, rent reduction, preferential interests rates, and tax reduction, among other related supporting measures.
- (2) Acceleration in innovative applications: In view of service demand gaps existing in the retail business venue or related industry , localized innovative application services

are explored, including holding creative competitions such as hackathons to accelerate the exploration and collection of ideas about innovative applications. Also, matchmaking between retail industry players and technical teams is underway to improve consumer complaints, aiming to resolve challenges that regional business circles face. In addition, the challenges is also to shape the innovative cooperation atmosphere through the B2G (Business-to-Government) public services, accelerate the co-prosperity cooperation of the retail service value chain, and advance public applications while creating rigid demand for retail technologies, to ultimately give birth to the implementation of commercialization of potential retail services.

- (3) Strengthening the empirical venues: The idea is to expand the empirical venues to enable the opening (e.g. business circles) and closing (e.g. underground business streets) of real business settings, etc., to ensure that innovative services can meet the actual consumption sce-

narios, and to form a value chain to support services in accordance with different venues and characteristics. This will ultimately shape a service ecosystem based on retail technologies through cross-domain service integration and localized field trials. In addition, the goal is to build common infrastructure for significant business venues, including IOT, 5G communications, cloud services, smart sensing and other software and hardware, to assist micro-retailers in reducing their initial resource consumption up front. Finally, cooperation is underway with enterprises to develop, test and verify products and services in special empirical zones where field experiment plans are conducted for innovative retail services such as AVR and other

technical applications to implement thematic empirical venues.

Strategy 3 : Assistance to stores for transformation

The strategy is to accelerate the introduction of retail technologies by local retailers while increasing output value and optimizing consumers' experience

- (1) Establishment of a business information platform: The plan is to build a smart sensing service network, integrate and introduce sensing devices to connect transportation hubs and commercial venues, and to provide useful information related to retail innovation transformation and value-added services through integration of the commercial data stored by the Taipei City Government, including information of businesses stored in the Department of Economic Development, information of traffic flow, people flow in the MRT, surveillance images, and consumption records under EasyCard, etc. stored in the Department of Transportation. The aim is to implement independent data



exchange and data sharing through the connection of commercial data via API interfaces. In addition, business information is displayed on a graphic dashboard in real-time, and target information is converged and sorted based on modular analysis and forecasting tools according to the needs and purposes of optimized public services. For example, manufacturer's logistics distribution and consumers' behaviors are analyzed according to characteristics and target groups of different business venues, to improve service efficiency. Moreover, with reminders of abnormal events, the aim is to strengthen the municipal government's response efficiency to changes in the industrial environment, as well as the benefits of urban smart governance and business decision-making. Finally, the concept is to gradually optimize the most suitable products and services, business models, and supporting policy tools for each business circle in accordance with differentiated analysis, while testifying the effectiveness of policies in the promotion of the retail industry with objective data to enhance the efficiency of the municipal government's administration.

- (2) Optimizing consumers' experience: The idea is to create retail transformation guidelines to assist retailers in allocating suitable transformation plans, demand resources and recommend practices, as well as to further accelerate service promotion through the collaboration of innovative exhibitions, workshops

and other approaches. In addition, the plan is also to expand consultation for retailers' transformation. Apart from the existing brand image and design consultation, emerging technologies and innovative applications are introduced into the retailers' transformation counseling project, while benchmark cases are established with a beacon effect. Moreover, relevant activities are held, such as workshops, field visits to retailer sites, and sales demonstrations, to showcase the substantial transformation benefits, thus enhancing the willingness of retailers for retail transformation and to further catalyze the chain effect of engagement in retail transformation by various business circles.

- (3) Strengthening transformation capability: To ensure the sustainable operation of the new retail model, assistances is provided to enterprises in cultivating internal operating teams where business owners and employees are trained to cultivate their awareness and the capacity of innovative applications and their problem-solving experience through the collaborative approach of industry, academia and research, based on practical scenarios as a training field.

(II) Exhibition Industry

The exhibition industry upholds the basis of services, the means of resource integration, and the theme of conventions and exhibitions, creating an industry to serve the purpose of driving other satellite industries. In the future, the exhibition industry is to identify new business opportunities based on Internet technologies through the collection and analysis of various data, striving to establish a "user-centric" platform for information

exchange, thus further integrating information of transportation, catering, and leisure for the offering of customized itineraries.

1. Future industrial scenarios

The exhibition industry is to integrate the ecosystem of exhibition services and peripheral supporting industries, and to accumulate business information about relevant behaviors of exhibitors and visitors to the exhibitions. Accordingly, information is converged and summarized about

+ Exhibition Creating the Greatest MICE-Friendly City in Asia

Making MICE Attendance Exciting!

Big data analysis techniques will be employed to dissect visitor preferences. The data will then be processed using AI to design travel itineraries that embrace local humanities and culture. Who said that exhibitions were only about work.? Life-centered digital applications bring visitors closer to our city.

#BigDataAnalysis #SmartCity #AI



Boarding the Exhibition Visual Express!

Augmented reality and virtual reality applications will be used to introduce product and service content to transcend spatial limitations and provide a refreshing visual experience. These applications eliminate tedious paper-based introductions while fully conveying product content, significantly enhancing transaction opportunities.

#ARApplication #VirtualRepresentation
#NewServicePromotionAndInteraction



Figure 3. Schematic Diagram of Future Scenarios in the Smart Energy Industry

the preferences of targeted participating groups, while technologies such as virtual reality are introduced to deepen the experience of both the exhibitors and the visitors during the exhibition process. In addition, in line with the theme of the exhibition, exhibitors and visitors are to receive marketing feeds for potential cooperation opportunities to increase mutual business contact and negotiation opportunities. During the exhibition period, advices on the planning of food, clothing, housing, transportation, and

entertainment are to be provided to visitors to the exhibition in accordance with their characteristics. Also, a one-stop integrated service to shorten the lead time and searching costs of the visitors is used, so that visitors may engage in other business, recreational and consumption activities during the exhibition period; therefore, serving the purpose of extending the link between the City and exhibitors and visitors, and expanding the overall economic benefits of the exhibition industry and the theme industry.

+ **Exhibition** **Creating the Greatest MICE-Friendly City in Asia**

Connecting Virtual Exhibition Ecospheres!

AR/VR devices and technologies will be used to lift geographic and mobility restrictions. The virtual exhibition will make remote attendance possible. For example, medical equipment exhibitions will be able to demonstrate surgical procedures, while tourism exhibitions will showcase popular overseas destinations. Exhibition venues can be expanded into the horizon by merging service and application.



#VR #AR #IntegratedDisplay #ExhibitionWithoutB orders



Facial Recognition Made Easy: Your Personal Exhibition Friend

Consumer preferences can be determined through facial recognition/detection and big data analysis, providing attendees with the most accurate content, greatly enhancing efficiency.

#FacialRecognition #BigDataAnalysis #PreferenceAnalysis

Figure 3. Schematic Diagram of Future Scenarios in the Smart Energy Industry

2. Industrial Development Strategies

To promote the development of the exhibition industry, first of all, it is necessary to improve the common infrastructure of innovative services, strengthen the introduction and training of exhibition service professionals, and integrate exhibition-related support services, so as to increase the rate of reusing the exhibition services. It is expected that Taipei City is to become the first friendly city providing "turn-key customized solutions" in the Asian MICE community. The relevant industrial development strategies are as follows:

Strategy 1: Integration of the ecosystem of supporting services

The strategy is to integrate peripheral support services surrounding the exhibition while optimizing the service ecosystem.

(1) Connection with high-quality manufacturers: The idea is to connect Taipei's exhibition and peripheral support industry participants, as well as information of products and services, to improve the information of the value ecosystem of the exhibition industry, and to accelerate the cross-domain integration planning of products and services. Moreover, through the screening of high-quality manufacturers, identifying enterprises with potential or leading capacity which can be integrated to jointly strengthen the pre-demands of the service value chain and to enhance service quality and customer satisfaction.

(2) Integration of necessary services: The



plan is to design future service scenarios and to modularize products and services throughout stages in accordance with the development needs of the exhibition industry and the gap existing in the supply of derivative services. Accordingly, assistances is provided to international business travelers for their planning and arrangements prior to their trips, including accommodation, transportation, food, etc. where the most suitable advices and one-stop booking, payment and other service platforms are available according to customers' preferences and needs.

(3) Creation of experience in leisure and recreation: The concept is to collect relevant information about participants at international exhibitions in Taipei,

analyze and study the characteristics of major business visitors to Taiwan, especially their behavior preferences related to leisure and recreation on top of their basic personal information. Accordingly, thematic leisure programs and marketing exposure strategies can be formed in accordance with resources such as Taipei City's rich cultural characteristics, historical sites and special recreational attractions in the region where site visiting embedded with unique and humanistic itineraries can be arranged by seasons and festivals, thus overall boosting the substantial benefits to peripheral industries.

Strategy 2 : Deployment of IOT infrastructure

The strategy is to construct the IOT infrastructure for the exhibition venues by linking information, communications and telecommunications industries.

- (1) Construction of the IoT infrastructure: The idea is to construct common infrastructure for signifying exhibition venues, including IOT, 5G communications, cloud services, smart sensing and other software and hardware, so as to reduce resource consumption for the exhibition venues and the exhibitors prior to the exhibition.
- (2) Planning of a win-win model: The plan is to allow individual enterprises to implement cross-industry applications of common products and services through cooperation models such as technol-

ogy licensing, benefit sharing, or user charge. Accordingly, not only is assistances available to the exhibition with access to innovation technologies, and to exhibition providers with the ability to expand their service scope and increase their corporate users, but also assistances are available from the exhibition providers to assist exhibition participants in obtaining a more convenient and comfortable experience while participating in the exhibition. Overall, this model is to strengthen customer loyalty and return rate, while creating a long-term source of income for the industry.

- (3) Integration of virtual and real services: The concept is to assist exhibitors or business travelers who encounter special conditions (such as pandemics, natural disasters, etc.) to participate in on-line exhibitions, through virtual reality or robotics and other technologies, to give full play to the on-site effect, thereby expanding the benefits of the exhibition.

Strategy 3 : Strengthening the capacity of the industry professionals

The strategy is to assist exhibition professionals in acquiring necessary skills through consultation and trainings provided.

- (1) Creating a learning hub: The concept is to integrate industry-academia-research resources and construct relevant courses for building capacities required for constructing innovation services for the exhibition. In addition to static teaching resources, actual practice training is car-



ried out in combination with practical environments signifying exhibitions.

- (2) Consultation for on-the-job training: The idea is to assist relevant enterprises in the exhibition ecosystem to conduct on-the-job trainings for talent training and skill upgrading, to strengthen talent transformation, and , to provide consultation and guidance on value-added applications, while expanding promotion benefits, based on the required forward-looking skills, such as event data analysis, applications of technological aids, value-added services, etc.

(III) Tourism Industry

The tourism industry includes the travel industry, the hotel industry, and the tourism and amusement industry. In the future, the tourism industry is to integrate tourism services and the use of information technology to provide passengers with seamless and friendly travel information services before, during and after passengers' travel. As well, the tourism industry is to master the huge data analysis function of cloud technology, grasp the development trend of social media and mobile technology, and gradually integrate and promote new tourism services. Through the improvement of tourism and recreation services.

1. Future industrial scenarios

The tourism industry is to integrate information about catering and accommodation, tourist attractions, transportation, and tourist preferences, and to provide tourists planning suggestions through a single information service platform during the tourists' itinerary planning stage and before their departure, so tourists can choose the recreational attractions of interest. Moreover, tourists may plan their routes and timing of touring according to the traffic and weather conditions of the day, as well as be provided with integrated services such as transportation arrangement, tickets to attraction sites, tour guide reservation, and souvenir reservation and delivery. During the touring processes, tourists are provided with

+ Tourism Shaping Taipei City into the preferred tourism city in Asia.

Communication Has Never Been Easier with Your Personal Translation Assistant!

With a translation assistant, you'll never have to worry about the language barrier, allowing you to not only enjoy local culture but also interact with the friendly locals.

- #AI
- #BigDataAnalysis
- #RFID
- #RadioFrequencyTechnology



Figure 4. Schematic Diagram of Future Scenarios in the Smart Tourist Industry

smart translation and tour guide services to deepen their experience throughout the recreation process. Accordingly, tourists can also make instant adjustment such as making additions, deletions, and corrections in their touring plan based on their per-

sonal conditions, to improve their tourism and recreation experience. Ultimately, it is aimed to create long lasting benefits to the common prosperity of the ecosystem of the tourism industry.

+ **Tourism** **Shaping Taipei City into the preferred tourism city in Asia.**



Choose Your Adventure with Your Own Two Eyes!

Never feel the despair of being lost again with the smart navigation APP. The APP provides clear directions that will navigate the city unimpeded.

#SmartDevice #AI #AR

Know All, Do All!

Receive recommendations from locals and must-visit destinations by foreigners; open up endless travel possibilities, and never miss an exciting moment again!

#BigDataAnalysis #HolographicProject #VRintegration



City Access At Your Fingertips!

Self-drive vehicles equipped with 5G IoT applications will provide safe and cost-effective transportation for travelers.

#AI #DriverlessVehicles #IoT #BigDataAnalysis



Figure 4. Schematic Diagram of Future Scenarios in the Smart Tourist Industry

2. Industrial Development Strategies

In order to promote the development of the tourism industry, first of all, it is necessary to improve the infrastructure of tracking recreational behaviors, to encourage tourism-related businesses to collaborate with technical innovators on cross-domain resolutions, and to accelerate the grasp of business conditions of target markets and service transformation. The aim is to build Taipei City into a tourism city with the ability of "on-demand preview", which offers the best tourism quality and boasts the highest revisit rate in Asia. The relevant industrial development strategies are as follows:

Strategy 1 : Promotion collaboration with technical innovators

The strategy is to encourage technical innovators to offer innovative technical services with respect to common complaints in the tourism industry.

(1) Encouragement on the creation of cross-domain resolutions: Themed on the needs of key tourist groups (e.g. deepening the travel experience) or common complaints (e.g. the sharp drop in the number of tourists due to the global pandemic), the plan is to encourage and reward technical innovators to propose scientific and technological problem-solving schemes, to identify significant innovative technology services, and to plan and assist in expanding the experimental fields surrounding the themes, including implementing business models or verification of technical resolutions.



(2) Creation of a beacon effect: The idea is to build up highlight cases of technological tourism, to expand the demonstration and sharing of the concept of technology and business models, and to collaborate with workshops, exchange meetings and other activities, so that the offline resources of the tourism industry can be connected more effectively with different industries, while accelerating their service propagation and creation of reinforced economic benefits through imitating success benchmarks.

Strategy 2 : Precise grasp of recreational behaviors

The strategy is to construct smart sensor facilities while strengthening the grasp of the recreational behaviors of tourists at home and abroad.

(1) Expansion of data collection: In line with the needs of the development of the smart city, the idea is to deploy, at key points in the city, various data collection infrastructures that meet

the regulations on personal data to further accumulate, filter and de-identify personal information for the production of a variety of commercially usable data. Meanwhile, the private sector is encouraged to conduct data exchanges and cooperation to expand the data base.

- (2) Strengthening the analysis on passengers: Based on data analysis of common tourism needs, the idea is to discover key needs and complaints of target tourist groups, and to design differentiated tourism themes and marketing strategies according to the characteristics of tourists and the living requirements of residents in the region.

Strategy 3 : Extension of connection with innovative cooperation

The strategy is to connect different tourism nodes while guiding tourists to engage in in-depth local recreational touring.

- (1) Integration of horizontal resources: The concept is to integrate resources of the Department of Cultural Affairs, Department of Information and Tourism, Department of Transportation, and the Department of Economic Development, and to design different themed itineraries and peripheral support based on Taipei's unique culture, scenic spots, celebrations or events, and tourists' preferences for food and shopping in the City, so tourists can make their own customized itineraries or participate in itineraries featuring unique experience.

- (2) Creation of themed activities: According to the needs of tourists before, during and after their tours, the plan is to construct the tourism experience, including medical esthetics, food, culture, etc. Meanwhile, industry players of interest are to be constantly invited to participate in exchange and cooperation activities. In line with Taipei's brand image of international tourism, sustainable incentives to attract tourists to Taipei City for touring are designed with elements such as culture and local characteristics.
- (3) Optimization of planned tourism: Through real-time or historical data analysis, the idea is to guide and divert tourists to different scenic spots for slow travel, while integrating culture and technology to deepen the tourist experience.

(IV) Digital Content Industry

Digital content refers to the industry that digitizes various types of data and integrates data with technologies, products or services. In addition to digital technology and digital integration services, digital content is one of the key elements in driving the development of the digital economy and the industry. Furthermore, according to the definition of digital content by the Industrial Development Bureau, Ministry

of Economic Affairs in 2016, the industry of digital content consists of five core sub-industries, namely digital gaming, computer animation, digital publishing and collection, digital learning, and digital audio and video, and three relevant sub-industries of mobile applications, network services, and content software.

1. Future industrial scenarios

The digital content industry can design content that meets the preferences

+ Digital Content Building a high-added value innovative base for digital content industry

Turning technology into the stepping stone of education!

With AI and big data analytics, students are allowed to find the most suitable learning resource while teachers are allowed to promote teaching effectively. No need for specific room in virtual teaching. Desire for knowledge is the only thing you need. Learning becomes easy and natural.

#digital learning # big data analytics #AI #adaptive learning





AR music concert is a vicarious experience of attending a real music concert.

AR/VR technology makes people around the world to attend concert without limit. No more boundaries and restrictions. It's free to choose a VIP area of a rock zone. No need to worry about the ticket price at all.

#virtual reality # digital application of performance #realtime attendance

Figure 5. Schematic Diagram of Future Scenarios in the Smart Digital Content Industry

of different consumers according to the characteristics and preferences of different consumers, and allow consumers to obtain in-depth experience with their high degree of willingness based on the scenarios they are in and devices they are holding. During consumers' experience, information of activities and coupons offered by relevant businesses, and surrounding stores is to be forwarded to consumers, thus offering precise personalized marketing activities. In addition, consumers can be put under scenarios similar to movie plots where

they partake in story narration or treasure hunting through obstacle breakthroughs by utilizing the scenes consumers are situated in along with the integration of technologies such as virtual reality, audio-visual special effects, etc. Under these scenarios, consumers can purchase the products and services available from cross-domain cooperative businesses in the digital content industry; thus in turn driving the development of the digital content industry.

+ Digital Content Building a high-added value innovative base for digital content industry

Drop the gamepad and go to the Utopia of imagination!

Apply virtual reality and social network to give a whole new experience when playing games. Imagination will no longer be limited by a monitor. There' s no boundaries in the virtual world.

**#virtual reality #social application
#digital imagination**



Fulfill a dream of walking into movie scenes!

With shooting method supporting AR and VR technology, a movie is no longer a narrative footage. It provides a vicarious enjoyment and makes you feel like stepping into the movie world.

**#AR technology #stereoscopic narrative
#magical kingdom**



Figure 5. Schematic Diagram of Future Scenarios in the Smart Digital Content Industry

2. Industrial Development Strategies

In order to promote the development of the digital content industry, first of all, it is necessary to integrate manufacturers' energy, assist innovative teams in implementation of commercialization, promote industrial collaboration and matchmaking of business opportunities, and to revitalize realm spaces and facilitate local cooperation. It is expected that Taipei City is to be built into a "new innovative base for the digital content industry with high attached values". The relevant industrial development strategies are as follows:

Strategy 1 : Expansion of teamwork and applications

The strategy is to promote team integration while expanding content efficiency and organizing exchange and matchmaking activities.

- (1) Promotion of cross-team integration: The plan is to facilitate cooperation between emerging technologies and the digital content industry, promote cross-team integration by transforming cooperation into innovative applications in specific fields and scenarios, and accelerate the implementation of commercialization of technologies and industrial upgrading, such as cooperation among AR/VR, tradition industry, and innovator teams, so as to ultimately drive the benefits of development of digitalization by traditional industries.
- (2) Holding regular exchange activities: strengthen creative opportunities or

refer to Google's matchmaking meeting held in September every year to match the exchange between listed companies and startup teams, including domestic and overseas industry exchange forums, creative alliances, Angels Fund matching, awards and subsidies, etc.

- (3) Holding a game fair: refer to the Shanghai Game Project Fair (Travel Fair) to allow domestic and foreign content providers, publishers, and operators to negotiate IP, capital, and product release, linking to the international market, and stimulate The development of the domestic game industry.

Strategy 2 : Utilization of venues to promote cooperation

The strategy is to revitalize exhibition venues and experience halls while promoting local cooperation between local teams.

- (1) Addition of regular exhibition venues and digital experience pavilions: The idea is to use existing venue spaces combined with digital content value-added services, as regular venues for digital content for content exchange and display, such as AR/VR combined with digital content. This approach is suitable for development in various venues in Taipei City to promote the experience and habits of the public. It can also promote the development of the industry, such as exhibition pavilions, market venues, and museums, thus promoting shopping, consumption and international tourism.

- (2) Fostering local industry talents and innovator teams: The plan is to combine local IP and experience activities, local culture and public construction (including IP utilization, digital marketing, community building, etc.) to develop useful local IPs in Taiwan. In addition, for domestic well-known IPs, the government may fund these teams to conduct business planning, such as foreign market layout, subsidies for media exposure, etc., to enhance the international image.
- (3) Cooperation between digital content and local schools: The concept is to incorporate digital content into the local atmosphere, digitize the venues, stimulate the development of the integrated digital content industry, show the value of industrial clusters in driving the digital economy, and encourage creative development with open concepts, ideas and verification.

Strategy 3 : Strengthening the infrastructure while promoting growth

The strategy is to establish accelerators or incubators to assist in counseling, while properly referring strategic partners of venture capital to preferential discounts for creation and innovation.

- (1) Establishment of incubators and accelerators: The idea is to screen and select innovator teams with commercial potential for incentives during their initial startup stage, and subsidize them with government funds (where 50% of funds

are from government subsidy and 50% of the funds from the enterprise itself) during the implementation stage. The subsidies from the government shall be advanced in accordance with progress stated in the KPI. The idea lies in that the manufacturers are to develop their business models while the government is to subsidize part of the funds required to assist the growth of innovator teams and promote the development of the industry .

- (2) Counselling the innovator teams for creation and innovation: The plan is to assist the innovator teams in their funding needs during their seed and angel rounds, and to provide these innovator teams with personnel subsidies, tax deductions and other entrepreneurial benefits, to help accelerate the product development process and assess development risks.
- (3) Promotion of industry-academia collaboration and professional teaching: The concept is to promote an internship mechanism to bridge the gap between industry and academia, and to support the growth momentum of the industry. Moreover, training institutions are to be set up, where professional instructors are to guide students to complete work through learning by doing. Accordingly, the digital content industry can also be assisted with the acquisition of talents from personnel in military service designated for research and development service.

(V) Smart Health Industry

According to the definition of the World Health Organization (WHO), smart health care (eHealth) is the "application of information and communication technology (ICT) in the field of health and medical care". The idea is to use information and communication technology (ICT) in the world to promote and strengthen the development of the

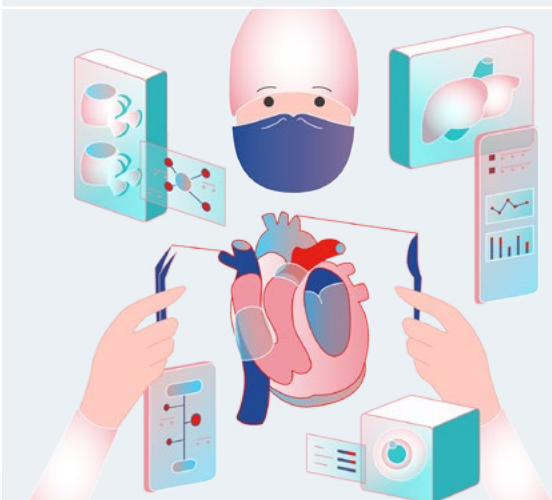
health field, enhance the accessibility and benefit of medical care, and reduce medical costs. Therefore, "smart health" as defined in this study is about the combination of information and communication technology and biotechnology within the health and welfare industry. The scope of the industry shall correspond to the industry standard classification as specified by Directorate General of Budget, Accounting and

+ Smart Health Build a smart and healthy city for all-age home services Smart Health City

Virtual clinic room: The room that cares about your health most

With the support of holographic projection technology, the doctor can be projected from the hospital to the patient's home, to reduce the time cost of going see a doctor.

#Virtual Reality #Holographic Image
#CloudMedical Record



Virtual preoperative drill. Get to see all details.

Use holographic projection technology to present the lesions that have worried the patient for a long time. Provide a clearer description of the patient's condition and help the medical team reach a consensus with the patient. Seeing a doctor is no longer an unimaginable issue.

#Holographic Image #Virtual Application
#Precision Medical #Artificial Intelligence

Figure 6. Schematic Diagram of Future Scenarios in the Smart Health Industry

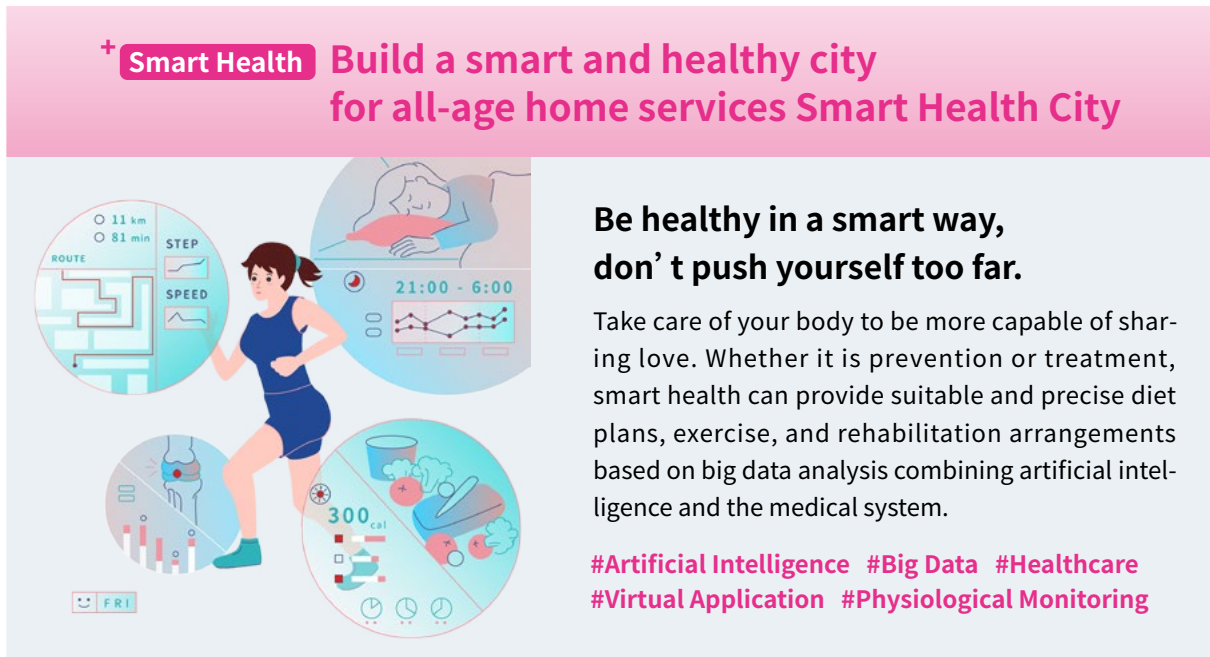


Figure 6. Schematic Diagram of Future Scenarios in the Smart Health Industry

2. Industrial Development Strategies

In order to promote the development of the smart health industry, first of all, it is necessary to improve the support system around the biomedical field, to promote cross-industry collaboration, verification and maintenance of venues, to encourage industry-government-academia-research-medicine collaboration, and to accelerate improvement in the convenience and medical efficiency of holistic health services, to ultimately build Taipei City into a "smart and healthy city with home services for all ages". The relevant industrial development strategies are as follows:

Strategy 1 : Deepening innovative energy within the industry

The strategy is to link academic and research resources to facilitate exchanges over networks while promoting innovation momentum in the industry.

- (1) Promotion of technology transactions: The concept is to establish a patent database of biotech manufacturers in Taipei, which is to be made public on the Bio@Taipei website to allow information-searching, quick patent-screening, or technology transfers by innovator teams or manufacturers looking for cooperative partners. Accordingly, the commercialization of innovative technologies can be accelerated, and product or technology display and exchange space can be provided in relevant industrial clusters, thus technological matchmaking between domestic and foreign manufacturers can be promoted.
- (2) Promotion of network exchanges: The idea is to utilize relevant incubation venues located in Taipei Biotechnology Park and the future Beitou-Shilin Science

and Technology Park to promote residence in the parks by academic and research institutions who focus on health, or by law and intellectual property firms acting as a supporting industry. Also, professional exchange activities with the theme on smart health (such as keynote speeches, experience sharing, and cross domain exchanges by authoritative personnel) are to be held to promote the collaboration between cross domain technical innovators and biomedical practitioners, and to strengthen resource integration and cluster benefits.

Strategy 2 : Verification of feasibility of services in the realm

The strategy is to promote the verification of innovative applications and expedited services while shaping all-age service models.

- (1) Verification of service model: The plan is to assist relevant smart health enterprises to participate in the experimental field through vendor proposals for empirical demonstration, to assist the exposure of those manufacturers involved in POC cases under the Taipei Smart City Industrial Field Experimental Pilot Project, and to Improve the chances of implementation of the empirical demonstration projects.
- (2) Increasing biotechnology awards: The Taipei Biotechnology Award is to further incorporate awards related to smart health applications, to promote the introduction of public and private field,

and to establish benchmark application examples.

Strategy 3 : Linkage to International Market

The strategy is to assist biotechnology enterprises in their sales overseas so that the enterprises can expand their global markets and increase their international influence.

- (1) Matchmaking for business opportunity: The concept is to assist the City's biotechnology enterprises and innovator teams to negotiate business one-on-one with domestic and foreign manufacturers. The matchmaking is to be accurate to create business opportunities and accelerate the commercialization for technologies of newly created products.
- (2) Layout in the global market: The idea is to Integrate and organize enterprises into groups to participate in overseas exhibitions, so that technical exchanges can be enhanced, new international ideas and trends can be observed, and international visibility can be elevated.

(VI) Smart Energy Industry

Although there is no consensus on the definition of smart energy presently around the globe, this study, after compilation and summarization from multiple reports, defines the smart energy industry as an industry that "applies information technologies such as the Internet of Things (IOT) to the real-time monitoring and analysis of the production, storage, transmission and distribution, and use of energy; and conducts real-time detection, analysis, and optimization management through big data and cloud computing, thus forming a mechanism for emerging production and comprehensive management with optimization, transparency, decentralization, customization, and social networking." Accordingly, it can be seen that the smart energy industry is to include four facets,

namely "energy creation", "transmission and distribution", "energy use" and "energy service".

1. Future industrial scenarios

The smart energy industry is to connect relevant energy devices in people's daily lives, such as energy-generating and energy-storing micro-devices, energy-consuming appliances, etc. through smart technology, collect, analyze, and estimate data on the normal energy consumption habits of people. Furthermore, the customized smart use combining renewable energy such as biomass, solar energy and high-efficiency devices will enable everyone to take advantage of smart energy, either while mobile or at home, without being restrained due to environmental sustainability considerations, while still satisfying the goal of energy saving and carbon reduction in global cities.

+ Smart energy Building a metropolitan-type development base for the smart energy industry

Sustainable connection of smart home appliances

Using artificial intelligence and Internet of Things technology to integrate all electrical appliances in the household not only can pre-prepare your bath water before your returning home and considerably set the indoor temperature with air-conditioning adjustment, but also can assist in preheating your pre-prepared meals. With all-around smart controlling, the application of smart appliances can perfectly meet your demands, and through precise energy management, electricity use can be more effective, thus saving on your electricity bills.

#IoT Application #Artificial Intelligence #Big Data Analysis



Figure 7. Schematic Diagram of Future Scenarios in the Smart Energy Industry

+ **Smart energy** Building a metropolitan-type development base for the smart energy industry



A new symbiosis between renewable energy and the living environment!

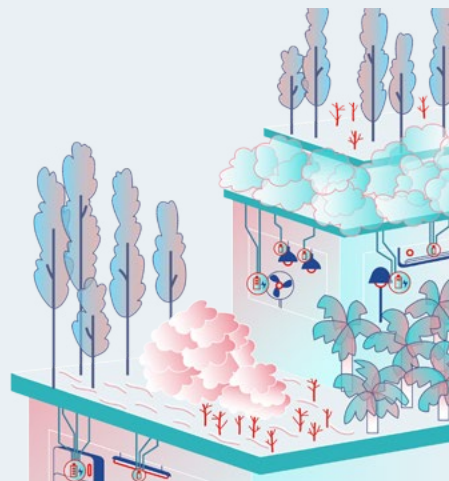
Utilizing the conversion of common natural energy such as solar energy and wind energy, the energy from nature is turned into the power for life. With renewable energy effectively created and the planning of home appliances embedded with artificial intelligence, saving excess electricity at home becomes possible. How amazing it is to have your own micro power plant right at your own home!

**#Artificial Intelligence #Renewable Energy
#Energy Circulation**

The everlasting biomass energy!

Biomass energy is extensively used as a new type of power generation source. Constructing a green energy garden on the roof of the building can not only reduce the heat accumulation effect caused by solar radiation, but also convert the organic waste and other agricultural and forest waste resulting from the plant life cycle into marsh gas to be used as the main source of biomass energy, thus realizing a wonderful life of circular energizing.

**#Biomass Energy #Circular Energizing
#Environmentally-friendly Powering**



Smart mobility enables the energy-saving!

Under the integration of big data analysis and artificial intelligence, various electrical mobile appliances can provide users with more accurate and proper electricity management and charging suggestions based on factors such as real-time traffic conditions, road conditions and distances, thus reducing traffic accidents and enabling a wiser use of energy and resources.

**#Big Data Analysis #Artificial Intelligence
#IoT Application # Mobile Electricity**



Figure 7. Schematic Diagram of Future Scenarios in the Smart Energy Industry

2. Industrial Development Strategies

In order to promote the development of the smart energy industry, first it is necessary to strengthen the linkage and application of energy data information, to assist the industry in linking innovative development resources, to encourage industry players to propose the portfolios and operating mechanism of smart energy resolutions, and to enhance citizens' awareness and willingness to accept the introduction of smart energy. It is expected that Taipei City is to become a "Metropolitan Base for the development of the Smart Energy Industry." The relevant industrial development strategies are as follows:

Strategy 1 : Environment construction through public-private collaboration

The strategy is to establish the fundamental environment required for the development of the smart energy industry.

- (1) Construction of the energy information network in Taipei City: The challenge is to connect the energy information collected in public venues by different administrative regions in Taipei City in the past. Where information is connected in order starting from public venues and important business offices in different administrative regions, then gradually expanded to general communities and buildings, the infrastructure network for energy information in the entire Taipei City can be completed.

- (2) Exchange and sharing of value-added data : Not only can energy and relevant data help the municipal government achieve more effective management, but it can also help the industry create business designs closer to consumers' needs. Therefore, the Taipei City Government strives to conduct collaborative work in bridging the data gap existing in the development of smart energy by allocating data and information of commercial value in the public sector, as well as by engaging in data exchange and data sharing with the private sector through the "Taipei City Data Platform".

Strategy 2 : Attraction to engagement in market expansion

The strategy is to attract citizens to introduce energy improvement resolutions while enlarging the market scale in order to attract more smart energy participants to invest.

- (1) Knowledge education and exchange of new knowledge: First, it is necessary to strategically guide citizens to form proper awareness of the energy improvement resolutions, so that they can potentially revise their concept that "the improvement process is complex, the investment cost is high, and the recovery efficiency is low", and then can boost their willingness for energy improvement, thus being urged to voluntarily participate in and purchase the energy improvement resolutions.

(2) Strengthening the use of resources and attracting participation: The plan is to strengthen the existing counseling services, that is, to adjust the model from the current "on-site diagnosis by the on-line counseling team" into "single window consultation → on-site diagnosis → promotion and publicity of excellent energy saving." Through the single-window consultation, suitable industrial and commercial participants and community management committees are selected to improve the effectiveness of the implementation of the policy and the resources of "on-site diagnosis". In addition, we are to set up performance commendation activities to establish benchmark examples to catalyze the chain effect through imitation by the industry.

Strategy 3 : Resource linkage and industry innovation

The aim is to provide the resources needed for the growth of the industry and assist relevant enterprises to establish a cooperative network.

(1) Linking of capital resources: The idea is to assist the energy industry in linking different funds to meet their development needs, for example, the energy industry can cooperate with the financial industry to provide loans with preferential interest rates, or innovative incentives and subsidies; or participants in the smart energy industry can obtain adequate funds through the green procurement mechanism of the municipal government, so that they can continue to operate and grow.

(2) Linking technical resources: The plan is to invite relevant domestic and foreign large enterprises in the smart energy industry, research institutes, guilds and associations to cooperate with relevant innovator teams in the smart energy industry in Taipei, where smart technology software and hardware components are provided by large enterprises, and creative ideas are provided by the innovator teams for the construction of the innovative cooperative network. Through the cooperation, large enterprises can obtain more creative ideas and innovator teams can obtain hardware and software technical support. Thus, the development of products and services can be completed in a more accelerated way, hence, a win-win result.

(3) Linking verification resources: Through the model of theme proposal by the City Government and resolution proposal by the industry, energy-related industries are encouraged to propose creative solutions among which the ones with better feasibility are selected. The government is then to provide the coordination for the selected proposals in terms of verification venues and resources required, to help the industry obtain credible result data and expand their market.

(VII) Circular Design Industry

Circular design refers to the introduction of new technologies and new ideas into the various stages of product manufacturing, use, and disposal by design, before giving new life to the product and improving the efficiency of the use of various resources. The scope of circular design includes

materials, manufacturing, service, and life cycle extension. Therefore, circular design does not only refer to the design industry, but also requires cross-domain innovation with new materials and new technologies.

1. Future industrial scenarios

The circular design industry focuses on introducing the concept of circular econo-

+ Circular design **Leading resources and enterprises** **A model city for sustainable development trends**

Create a zero-waste relationship for the environment and people!

Right from product design, environmentally-friendly raw materials are selected, and after-sales services such as replacement, upgrade with low cost, etc. can help changing people's habits. This practice can also construct a positive circulation of making good use of resources and being kind to the environment, thus achieving the goal of zero waste.

#Big Data Analysis #9 Artificial Intelligence
#Circular Regeneration #Green Energy Options



Effortlessly creating things by hand

Using technologies of augmented reality and holographic imaging to create, edit, copy the imagination in your mind. Use easy-to-recycle or easy-to-decompose materials and 3D printing to quickly print out the objects you need. Everyone can create their own customized components to meet their simple Do-It-Yourself (DIY) needs.

#3D Printing #Virtual Applications #Hand-made Objects

Figure 8. Schematic Diagram of Future Scenarios in the Circular Design Industry

my at the source. Through different designs of engineering, service, management, or business models, consumers may naturally come up with new idea of waste reuse when using goods or services without noticing the impact; Or, customers may auto-

matically provide the waste to the recycling industry for the waste to be transformed into production materials for other products. Ultimately, the aim is to achieve the goal of a sustainable circular development with zero waste for the globe as a whole.

+ **Circular design** Leading resources and enterprises A model city for sustainable development trends

Smart leasing - everyone can collect rent

With the new business model of “to lease not to buy”, everyone can lease out what they own to other people in need, whether it is photographic equipment that is temporarily unused by oneself, sports equipment that is only used once in a while, or cars that are less-used. According to a person’s usage habits, required time, and budget constraints, one can find the most suitable leasing plan available. This smart leasing not only can save your storage space, but also can enhance a new life of sharing beautiful things.



#Big Data Analysis #Artificial Intelligent # Smart Leasing

Discovery of product lifeline - lies in you and me!

The use of three-dimensional scanning skills combined with artificial intelligence and big data computing not only can allow us to grasp the consumption status and the remaining capacity of the object in real-time, but also can integrate the common demands of other people for the same object in either exchange or sharing format. This practice allows us to create more effective objects, thus a model of making the complete use of the object.



#Big Data Analysis #Artificial Intelligent #3D Scanning

Figure 8. Schematic Diagram of Future Scenarios in the Circular Design Industry

2. Industrial Development Strategies

In order to promote the development of the circular design industry, it is necessary to improve the software and hardware infrastructure related to circular design, to support the cross-domain/cross-industry coordination and cooperation of industry, government, and academia, and to explore creative transformation to attract enterprises to respond and promote a virtuous circle. The goal is to shape Taipei City into a “model city that leads the trend of sustainable development of resources and enterprises”. The relevant industrial development strategies are as follows:

Strategy 1 : Digital transformation for resource efficiency

The aim is to introduce smart technology to recycling bases, processing sites, and other units for them to grasp the resource flow information.

- (1) Construction of a precise mechanism for waste management: The plan is to encourage and assist major waste recycling bases and processing institutions in Taipei City to install monitoring devices with IoT and other technologies, so that the information related to waste collection, concentration, transportation, processing, or remanufacturing can be more transparent and real-time, while the management efficiency can be enhanced.
- (2) Refinement of the recycling mechanism: The idea is to regularly analyze and dis-

close the information of each recycling location for enterprises to optimize existing recycling or disposal mechanisms, and to help the industry participants improve the efficiency of the processing resources.

- (3) A Resource Exchange Platform Database on the main waste flow and flow rate of Taipei City is shared on the open data platform to assist relevant recycling design enterprises to quickly connect with each other, while identifying key nodes with business opportunities.

Strategy 2 : Circular design for innovative thinking

The strategy is to provide counselling to relevant circular design enterprises on their innovative transformation design from the source.

- (1) Introduction of support to design thinking: Assistance is to be provided, through courses or workshops, to those who are interested in joining the circular economy industry for them to understand the concept of design thinking, while successful cases are to be referred to guide manufacturers to propose their unique innovative practices.
- (2) Consultation, counselling, and assistance on transformation: The strategy is to provide consultation and counselling measures for relevant circular design enterprises, match other related resources for the enterprises, and to assist the

industry in implementing their design results.

- (3) Counselling for marketing promotion: For enterprises that desire to develop a circular economy, counselling for marketing promotion is provided to assist enterprises in preparing different marketing plans and striving for more capital investment or sales increase.

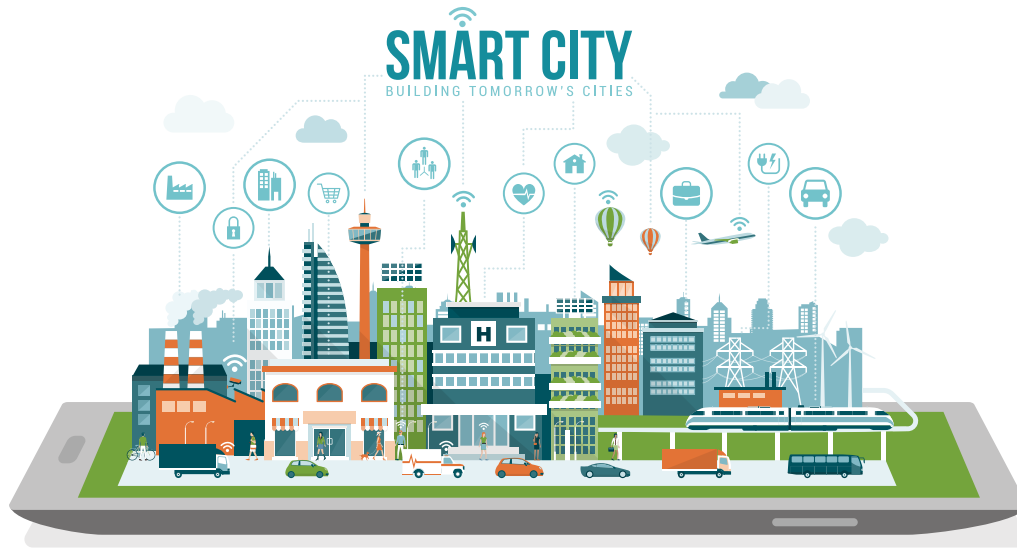
Strategy 3 : Construction of a network of resource collaboration

The strategy is to encourage the industry, government, academia, and research to engage in cross-industry or cross-domain exchanges and cooperation.

- (1) Platform for the industry-government-academia-research exchange: The idea is to match up different recycling & disposal enterprises and enterprises utilizing circular resources for exchanges, for them to discuss and review resolutions to common needs or key challenges, so as to assist the circular design industry in its long-term development.
- (2) Green financial investment: The idea is to assist the circular design industry in negotiations with financial institutions, so that loans with low interest rates are provided to relevant circular design industries to encourage venture capital enterprises to invest.
- (3) Promotion of green procurement: The idea is to start with the public sector first. Through the concept of "to lease not to buy" and "purchasing services" or the approach of "preferentially adopt-



ing business models that support the development of circular economy", it is aimed to drive enterprises to accelerate the circular product design and the innovation of circular business models for product servicing.



III. Common Policy Tools for Future Key Industries

In addition to providing assistance to individual industries, Taipei City Government also proposes the following five approaches to the resource needs of common policies in future key industries to improve the infrastructure required for industrial development.

1. Construction of infrastructure such as IoT and improvement of innovative laws and regulations to optimize the foundation for promotion of the industry

In view of the relatively high resource consumption and risks in early stages of new technology services, the development strategy of "Basic + Add-on" is adopted where the Taipei City Government is to support relevant industries in integrating technological resources of research and development to build necessary infrastructure projects required by the

entire industry, such as projects of 5G communication environment, cloud services, software and hardware related to Intelligent sensing, etc. Also, resources for technology development are provided for sharing.

In addition, while enterprises are conducting the development, testing and verification for their innovative services, subsidies, investment deductions or other tax incentives are supplemented for enterprises to enhance their willingness to introduce innovative technologies and drive industrial investment. In addition, assistance is in place for the introduction of innovative laws and regulations and the optimization of the foundation for the development of the industry. For those enterprises that intend to invest in R&D and services in line with the trends of new technological services and applications (such as unmanned vehicles, autonomous driving equipment, telemedicine, and financial payment technology), they are to be referred to the responsible authority for

the interpretation and flexible application of laws and regulations to accelerate the diffusion of innovative services.

2. Planning of special empirical zones to accelerate the diffusion of innovative concepts through local service trials

Many enterprises lack empirical field testing when proposing innovative technology applications. The Taipei City Government tries to allow access to public venues to conduct cross-domain testing and verification for products and services, as well as to meet the gaps in market demand in different fields, and to assist in the adjustment of innovative concepts in POC cases. The idea is to encourage the public to participate in innovative technological solutions, while eliminating gaps in perception between service providers and the public. This ultimately will assist enterprises in accelerating the adjustment and optimization of innovative products and services and speed the implementation of commercialization.

3. Creation of innovative services and promotion of a matching platform to develop a high-quality ecosystem for business services

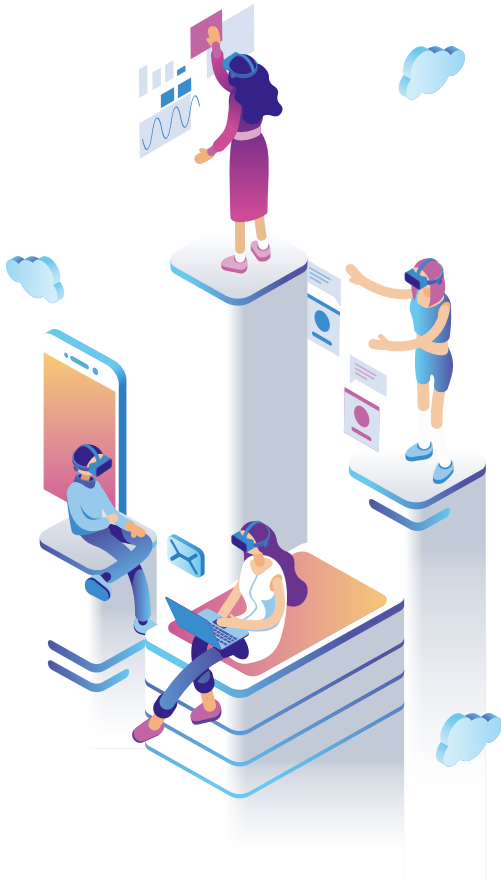
To drive the initial market development of new technology services, meet the needs of the people, and improve the quality of urban life, the Taipei City Government has shaped an atmosphere of technological innovation applications through innovation

competitions, such as hackathons, innovative application exhibitions, etc. Accordingly, localization of innovative application services has been explored with respect to gaps between public policies and urban demands, and public services are used to support the development and empirical demonstration of applications of the new technology service industry. In addition, small and medium enterprises are assisted in linking venture capital resources to enhance their willingness to introduce innovative technologies. The aimed is to drive industrial investment and cross-domain cooperation, to create a new industrial ecology.

4. Open data base and exchange are to be expanded to release the value of commercial data, and enhance the efficiency of industrial operation

The new technology service industry is the cornerstone of supporting the digital transformation of the industry. Data plays a key role in the digital transformation of the industry. How to safely and effectively trade and integrate various data and create greater value through diverse and cross-applications becomes major issue in the development of new technology services.

In the future, efforts will be devoted to horizontally linking data with commercial value within the Taipei City Government, expanding the open data base, and encouraging enterprises to participate in commercial data sharing and value-added initiatives. The goal is to expand the existing



open data base, gradually improve the exchange mechanism of the data market and ultimately enhance the operational efficiency of the industry.

5. Talent within the technology service are to be cultivated and the integration of cross-domain knowledge is to be strengthened to drive the momentum of industrial upgrading and transformation

Innovative talents provides a key element for the successful transformation of an enterprise, as well an obstacle for enterprises to invest in emerging technologies or introduce innovative applications. From the selection of suitable

technology projects to shaping new service scenarios and business models, through the final process of eliminating the inferior and keeping the superior in order to maintain operation and create growth momentum, business owners and employees often lack the corresponding innovative capabilities, which subsequently affect their willingness to participate in the digital transformation.

In view of this, professional consultation, successful cases of corporate transformation, and on-the-job training courses are provided through the integration of industry-academia-research resources. In accordance with the operational complaints encountered in corporate transformation, through benchmark cases and practices, business owners and employees are guided to strengthen their own capacity for digitalization and related skills. In addition, Taipei City boasts its rich resources of colleges and universities that are the most abundant in Taiwan. Through matchmaking and referring of innovative teams from schools to enterprises that intend to participate in digital transformation, the teams can undergo practice in actual business venues. The Taipei City Government is to further assist enterprises in allocating potential business transformation solutions within limited resources and time. From these solutions, the innovative transformation required for an enterprise to boost their business is sought to create a win-win situation through the innovative matchmaking of supply and demand of manpower.

IV. Summary of the Development Strategies for Future Key Industries

II. Future Key Industries	Future Development Strategies
Smart Retail	<ol style="list-style-type: none"> 1. Improvement on infrastructure: The strategy is to strengthen the infrastructure of information flow, cash flow and logistics to meet the needs of industrial transformation. 2. Encouragement for Industrial innovation: The strategy is to encourage industries to participate in digital transformation while introducing innovative applications of emerging technologies. 3. Assistance in retailer transformation: The strategy is to accelerate the introduction of retail technologies by local retailers while increasing output value and optimizing consumers' experience.
Exhibition	<ol style="list-style-type: none"> 1. Integration of the ecosystem of supporting services: The strategy is to integrate peripheral supporting services surrounding the exhibition while optimizing the service ecosystem. 2. Deployment of IOT infrastructure: The strategy is to construct the IOT infrastructure for exhibition venues by linking information, communications and telecommunications industries. 3. Strengthening the ability of industry professionals: The strategy is to assist exhibition professionals to upgrade their necessary skills through provided counseling and training.
Tourism	<ol style="list-style-type: none"> 1. Promote collaboration with technical innovators: The strategy is to encourage technical innovators to offer innovative technical services with respect to common complaints in the tourism industry. 2. Precise grasp of recreational behaviors: The strategy is to construct smart sensor facilities while strengthening the grasp of the recreational behaviors of tourists at home and abroad. 3. Extension of connection in innovative cooperation: The strategy is to connect different tourism nodes while guiding tourists to engage in in-depth local recreational touring.



II. Future Key Industries

Future Development Strategies

Digital Content

1. Expansion of teamwork and applications: The strategy is to promote team integration while expanding content efficiency and organizing exchange and matchmaking activities.
2. Utilization of venues to promote cooperation: The strategy is to revitalize exhibition venues and experience halls while promoting cooperation between local teams.
3. Strengthening the infrastructure while promoting growth: The strategy is to set up accelerators or incubators to assist in counseling, while properly referring strategic partners of venture capital and offering preferential deductions for innovation and entrepreneurship.

Smart Health

1. Deepening the innovative energy in the industry: The strategy is to link academic and research resources to facilitate exchange over network while promoting innovation momentum in the industry.
2. Verification of feasibility of services in the realm: The strategy is to promote the verification of innovative applications and expedited services while shaping an all-age service model.
3. Linkage to International Markets: The strategy is to assist biotechnology enterprises in their sales overseas so that the enterprises can expand their global markets and increase their international influence.

Smart energy

1. Environment construction through public-private collaboration: The strategy is to establish the infrastructure required for the development of the smart energy industry.
2. Attraction to engage in market expansion: The strategy is to attract citizens to introduce energy improvement solutions while enlarging the market scale in order to attract more smart energy players to invest.
3. Resource linkage and industry innovation: The strategy is to provide the resources needed for the growth of the industry and assist relevant enterprises to establish a cooperative network.

II. Future Key Industries	Future Development Strategies
Circular design	<ol style="list-style-type: none"> 1. Digital transformation for resource efficiency: The strategy is to introduce smart technology to recycling bases, processing sites, and other units for them to utilize resource flow information. 2. Circular design for innovative thinking: The strategy is to provide counseling to relevant circular design enterprises assist their innovative transformation design from the source. 3. Construction of a network of resource collaboration: The strategy is to encourage the industry, government, academia, and research to engage in cross-industry or cross-domain exchanges and cooperation.
Common Policy Tools	<ol style="list-style-type: none"> 1. Construction of infrastructure such as IoT and improvement of innovative laws and regulations to optimize the foundation for promotion of the industry. 2. Planning of special empirical zones to accelerate the diffusion of innovative concepts through local service trials. 3. Creation of innovative services and promotion of a matching platform to develop a high-quality ecosystem for business services. 4. Open data base and exchange are to be expanded to release the value of commercial data, and enhance the efficiency of industrial operations. 5. Talent within new technology services is to be cultivated and the integration of cross-domain knowledge is to be strengthened to drive the momentum of industrial upgrading and transformation.





Conclusion

3

Chapter 3.

Conclusion

To realize the City's vision of a "Livable and Sustainable City", the Department of Economic Development of the Taipei City Government has begun to formulate new visions and development strategies for Taipei's future industries since 2019. Recently, with the ever-increasing struggles between the U.S. and China in the economic and technological fields, the global outbreak of the crown pneumonia pandemic (Covid-19), and Taiwan's official transition to the fifth-generation (5G) mobile communication technology for commercial applications, Taipei's future industrial development has been facing different challenges and opportunities as a result of relevant evolutions of international economic and trade, social environment, and technological development.

As we know, the economic and technological competition between the US and China has initiated the reorganization of the global industry supply chains. Many multinational enterprises and Taiwanese businesses have adopted the strategy of establishing their operations in a third location to reduce the risk of excessive concentration of investment in a single region. As the top city of Taiwan, Taipei City has boasted of its complete infrastructure and high-quality professional talent. At a time when foreign capital and Taiwanese businesses are increasingly investing in Taiwan, it is believed

that Taipei City has a chance to step up to the role of Taiwan's economic and trade gateway, constituting the top place for enterprises to establish their "innovative smart hub/headquarters". Furthermore, not only has the raging COVID-19 pandemic this year severely hit the economies of various countries, but it also subverted people's existing lifestyles and working models. Concepts emphasizing social distancing such as "zero touch" and "remote style" have dominated society. Those enterprises that can make good use of technology to realize a "zero-touch economy" are the biggest winners under the impact of the pandemic. Such trends also highlight the urgency of the industry's accelerated digital transformation.

In the post-pandemic era, in addition to learning to coexist with more uncertainties, the industry also needs to make good use of emerging technologies to build their competitive advantages and create development models with more resilience. At this time of drastic changes in the external environment, the proposals in the "Taipei Future Industrial Development in 2030 White paper (referred to as 'the White paper')" can be regarded as a demonstration of the Taipei City Government's active efforts in the future industrial development of Taipei City.



This White paper combines the collective efforts of experts in various fields of industry, government, academia, and research. With respect to the future industrial development of Taipei City, we are proposing three key directions—smart living, healthy living, and sustainable environment. Under these three key directions, seven key industries are proposed, namely: smart retail, exhibition industry, tourism industry, digital content, smart health, smart energy, and recycling design. Industrial development constitutes a critical key to shape a happy life for citizens, and it is hoped that a positive circulation between industrial development and a "livable and sustainable" city can be shaped. The aims are to promote the development of emerg-

ing industries, assist industries to create added value, and to create high-quality job opportunities and government tax revenues, so that ultimately the government is enabled to continue the optimization of the industrial development environment.

In the future, industry projects are to be planned based on this White paper. With the policy guidelines of "from inside out" and "from public sectors to private sectors", existing policy resources are to properly be made good use of, the future development of industry in Taipei City is to be pragmatically promoted, and Taipei City is to be shaped as a model city for the prosperous development of industry.



References

4



Chapter 4. References

I. Chinese Reference

1. Mckinsey Global Institute. Future jobs: automation, employment and productivity (2017)
2. Cross-domain Innovation Research Group, Industrial Economics and Knowledge Center (IEKC), Industrial Technology Research Institute (ITRI) (2019) 2018 Annual industrial investment service plan - A report on the key gaps in investment attraction by the biotechnology industry Industrial Economics and Knowledge Center (IEKC), Industrial Technology Research Institute (ITRI)
3. Industrial Technology Research Institute (ITRI)(2019) New indicators of science and technology - 2030 global trends to the grant future
4. Industrial Technology Research Institute (ITRI) Blog "Understanding energy", April 27, 2020, http://doenergytw.blogspot.com/2017/10/blog-post_50.html
5. Central News Agency (CNA) (2019) In 2018, the income of tourism foreign exchange amounted to 13.7 billion U.S. dollars, making the first increase after three years of decline. October 14, 2019, <https://www.cna.com.tw/news/firstnews/201908060329.aspx>
6. National Statistics, R.O.C. (Taiwan) (2019) 2016 Industrial and Service Industry Census ,<https://www.stat.gov.tw/ct.asp?mp=4&xltem=42890&ctNode=543>
7. National Statistics, R.O.C. (Taiwan) (2019) <https://www.stat.gov.tw/mp.asp?mp=4>
8. National Statistics, R.O.C. (Taiwan) (2019) Important statistical indicators of counties and cities <https://statdb.dgbas.gov.tw/pxweb/Dialog/statfile9.asp>
9. Ministry of the Interior Statistics Inquiry Network, April 27, 2020, <http://statis.moi.gov.tw/micst/stmain.jsp?sys=100>
10. Commonwealth Magazine (2018) Avalanche of the tourism? The truth that Taiwan must face October 15, 2019, <https://udn.com/news/story/6841/3212278>

11. Ministry of Culture Cultural statistics platform of counties and cities, April 27, 2020, <https://stat.moc.gov.tw/County/Search.aspx>
12. Tourism Bureau, Ministry of Transportation and Communications (2015) Action plan for a major tourist country (2015 - 2018). October 16, 2019, <https://admin.taiwan.net.tw/FileDownload/FileUpload/6e8cc1e0-e621-4882-b577-e5b4f850e9d0.pdf>
13. Executive Yuan (2016). Digital Country · Innovative Economic Development Plan (2017-2025).
14. Executive Yuan (2018). 2017 Closing Survey on the Awareness and Behaviors of Domestic Consumers August 15, 2019, <https://www.ey.gov.tw/File/DDB774F9285BA19A/b6bad20e-3d2f-468b-bd80-63b1fb93852a?A=C>
15. Executive Yuan (2018). Innovative promotion plan of the green energy technological industry September 2, 2019, <https://www.ey.gov.tw/Page/448DE008087A1971/8484fe7c-6e0c-4f4b-a79f-4e9b6076c2bc>
16. Executive Yuan (2019). Circular economy promotion plan, September 2, 2019, <https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/18ef26a4-5d05-4fb3-963e-6b228e713576>
17. National Development Council, Executive Yuan (2019) 2018 Survey on the digital opportunities about individuals and households <https://www.ndc.gov.tw/cp.aspx?n=55C8164714DFD9E9> ◦
18. National Development Council, Executive Yuan (2020) 2019 Survey on the digital opportunities about individuals and households, April 27, 2020, <https://www.ndc.gov.tw/cp.aspx?n=55C8164714DFD9E9> ◦
19. National Development Council, Executive Yuan (2019) 2018 Current status of the development of digital opportunities in counties and cities (Manual) August 20, 2019, <https://ws.ndc.gov.tw/Download.ashx?u=LzAwMS9hZG1pbmlzdHJhdG9yLzEwL2NrZmlsZS9lOTYzYjY5ZS1mOWEzLTQ2YTUtOTUxOS1mNjUzNjU1YTcwZTUucGRm&n=MTA35pW45L2N5qmF5pyD55m85bGV54%2b%2b5rOB57ij5biCKOaJi%2bWGiikucGRm&icon=.pdf>
20. Zhou Yong-Hui, Ouyang Xin-Yi, Chen Guan-Zhu (2018). Taiwan Tourism - 2020 Sustainable Development Strategy Taiwan Modern Tourism, Volume 1, Issue 1. Page 1-20

21. Lin Yue-Yun (2015) Advantages and challenges of holding association-type international conferences in Taiwan.
22. Lin Guo-Quan (2018). Learning from the international topics of circular economy – Review of the business opportunities of Taiwan’ s technological innovation from the global waste recycling market IEK Industrial Information Network
23. Bo Yun-Chang (2010). Development strategies of the convention and exhibition industry Master Forum
24. Hong Ying-Wei (2015) Travelling in the future – Smart Tourism Government information bulletin No. 335
25. Ministry of Science of Technology (MOST) (2016) Innovative promotion plan of the Biomedical industry The 3522nd meeting of the Executive Yuan November 11, 2016 Cited from <https://www.ey.gov.tw>
26. Tu Jian-Guo (2011). Review of urban marketing strategies from the holding of international exhibition activities Zooming in Taipei
27. Taiwan Green Productivity Foundation Green Productivity Newsletter, No. 40 August 29, 2019 ,https://www.tgpf.org.tw/upload/publish/publish_78/all.pdf
28. Ministry of Education Educational Statistics Inquiry Network, Website: <https://stats.moe.gov.tw/>
29. Sports Administration, Ministry of Education (2018) 2016 Survey on Sports Expenditures June 12, 2018, <https://www.sa.gov.tw/Resource/Other/f1502855632093.pdf>
30. Manpower Supply and Demand Information (2019) Survey and estimation of talents in key industries in the next 3 years: the biomedical industry September 9, 2019, <https://theme.ndc.gov.tw/manpower/cp.aspx?n=203168ABB7CA12E0>
31. Manpower Supply and Demand Information (2019) Survey and estimation of talents in key industries in the next 3 years: the health and welfare industry September 9,2019, <https://theme.ndc.gov.tw/manpower/cp.aspx?n=86128D540F802A78>
32. Guo Su-Hui (2019) Current status, trends and prospects of the elderly care market Computer and Communications July 5, 2019, <https://ictjournal.itri.org.tw/Content/Messagess/contents.aspx?MmmID=654304432070702333&MSID=1036010434225541542>

33. Chen Jun-Ru, Hou Jun-Yuan (2018). New indicators of science and technology - 2030 global trends to the grant future Industrial Economics and Knowledge Center (IEKC), Industrial Technology Research Institute (ITRI) ,http://ieknet.iek.org.tw/iekrpt/rpt_more.aspx?actiontype=rpt&indu_idno=1&domain=2&rpt_idno=644634981
34. Huang Nuan-Yun (2018) Creation of 50 billion dollars of economic benefits! The development of biotechnology industrial clusters in Nangang is on the way. startUP@Taipei,October10, 2018, <https://meet.bnext.com.tw/articles/view/43836>
35. Huang Nuan-Yun (2019) Promoting Taipei's business momentum and shaping a friendly city image. October 16, 2019, https://www.taipeiecon.taipei/article_cont.aspx?MmmID=1202&MSid=1035146714562761247
36. Industrial Development Bureau, Ministry of Economic Affairs (2018) 2018 White Paper on Biotechnology Industry July 2018
37. Industrial Development Bureau, Ministry of Economic Affairs (2019) The Promotion Office for the Digital Content Industry
38. Bureau of Foreign Trade, Ministry of Economic Affairs (MOEA) (2019) Plan to Strengthen the enhancement of the international competitiveness of Taiwan's exhibitions October 14, 2019, <https://www.trade.gov.tw/Pages/Detail.aspx?nodeid=1791&pid=595630>
39. Taipei City Government (2018). White Paper –Promotion of a Circular City August 2, 2019, <https://www-ws.gov.taipei/Download.ashx?u=LzAwMS9VcGxvYWQvMzAxL3JlbGZpbGUvMTAxNjlvNzg5NDE4MS82MWMzMzMmYy0wMDU4LTRmYzQtODYwYS0xMGZiZjc2YjAwNDlucGRm&n=Q2lyY3VsYXlglVGFpcGVpIFdoaXRlIFBhcGVyIERyYWZ0KFRyYWRpdGlvbmFslENoaW5lc2UpLnBkZg%3d%3d&icon=..pdf>
40. Media Affairs, Secretariat, Taipei City Government (2019). Attending 2019 Taipei Biotechnology Award Ceremony - Ko Wen-Je: The government is playing the role of a supporter to assist the establishment of and exchange over the biotechnology industry platform. News Release of Taipei City Government, July 26, 2019, https://www.gov.taipei/News_Content.aspx?n=F0DDAF49B89E9413&sms=72544237BBE4C5F6&s=1C3B593BF882849F
41. Department of Economic Development, Taipei City Government (2008). 2008 Annual survey on the biotechnology industry in Taipei City,<https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>



Preface



Future Industry
Development Strategies of
Taipei City



Conclusion



References

42. Department of Economic Development, Taipei City Government (2009). 2009 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
43. Department of Economic Development, Taipei City Government (2010). 2010 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
44. Department of Economic Development, Taipei City Government (2011). 2011 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
45. Department of Economic Development, Taipei City Government (2012). 2012 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
46. Department of Economic Development, Taipei City Government (2016). 2014 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
47. Department of Economic Development, Taipei City Government (2016). 2016 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
48. Department of Economic Development, Taipei City Government (2018). 2018 Annual survey on the biotechnology industry in Taipei City, <https://www.doed.gov.taipei/cp.aspx?n=FADB342318CCDC0D>
49. Department of Economic Development, Taipei City Government (2019). Briefing of the municipal advisory colloquia
50. Information Site of Taipei City Government (2019) Development Plan for Taipei City Exhibition Industry October 14, 2019, https://www.gov.taipei/plan/News_Content_MCP.aspx?n=8A79A318C16863D9&sms=C04230CB75259A56&s=ABEF2A66AE17CB3A
51. Taipei Statistics Database Inquiry System (2019) <https://statdb.dbas.gov.taipei/pxweb2007-tp/dialog/statfile9.asp>
52. startUP@Taipei (2019) Analysis of Dynamics of Taipei's industries and economy https://www.taipeiecon.taipei/article_list.aspx?MmmID=1205&CatID=120501

53. Taipei Smart City PMO (2017) Taipei Smart City Industrial Field Experimental Pilot Project Department of Information Technology, Taipei City Government, https://smartcity.taipei/events/place_planning
54. Taiwan Power Company Power Sales Information Platform of counties and cities, April 27, 2020, https://www.taipower.com.tw/tc/sell_amt_city/sell_amt_city1.aspx
55. Taiwan Power Company Power Sales Information Platform for the service industry, April 27, 2002, https://www.taipower.com.tw/tc/sell_amt_city/sell_amt_service1.aspx
56. Taiwan Power Company Power Sales Information Platform for Industries in counties and cities, April 27, 2020, https://www.taipower.com.tw/tc/sell_amt_city/sell_amt_indus.aspx
57. Liu De-Rong (2016) Blue Magpie Guarding Your Home - Taipei City Integrated Home Medical Care Services - Blue Magpie Project i Long-term care ° December 15, 2016, <https://www.ilong-termcare.com/Article/Detail/679> °
58. Ministry of Health and Welfare 10-Year Plan for Long-Term Care V.2.0 December, 2016, <https://www.mohw.gov.tw>
59. Health Promotion Administration, Ministry of Health and Welfare (MOHW) (2016) 2017 -2020 Plan for Management of the Project of Constructing Smart and Healthy Living Circles November 2016, <https://www.hpa.gov.tw>
60. Environmental Protection Agency Environmental Statistics Inquiry Network, Website: <https://stat.epa.gov.tw/>
61. World Population Prospects (UN report) (2019)
62. Udn Online newspaper (2018) Applications for sponsorship of 2019 Taipei City Exhibitions are open in November. October 14, 2019, <https://udn.com/news/story/7241/3442637>
63. HSIEH, CHIH-CHIANG (2018) The Energy Efficiency Market in Digital Transformation - Development Trends and Prospects of the Energy Conservation Industry IEK Industrial Information Network
64. Meet Taiwan (2017) 2020 Research on the trend of international conferences and Taiwan's strategies Meet Taiwan (2017) <https://www.meettaiwan.com/mtfiles/mt/doc/201702/1487216606563-0.pdf>



65. Meet Taiwan (2017) Research project "Development Policies of Taiwan's Exhibition Industry" – Review of the demand for exhibition facilities from the policy.
 66. Tourism Bureau, Ministry of Transportation and Communications (2019) 2018 Survey on the consumption and tendency of the incoming tourists to Taiwan
 67. Sports Administration, Ministry of Education (2018) 2017 Survey on the Sports Expenditure by Domestic Nationals
-

II. English Reference

1. The 25 most high-tech cities in the world, see website: <https://www.businessinsider.com/the-most-high-tech-cities-in-the-world-2017-8>
2. Digi Capital. <https://www.digi-capital.com/>
3. Ericsson. Mobility Report. (2019. June)
4. European Commission. New Horizons: Future Scenarios for Research and Innovation Policies in Europe. (2017)
5. European Strategy and Policy Analysis System. Global Trends to 2030: Challenges and Choices for Europe. (2019. April)
6. European Strategy and Policy Analysis System. Global Trends to 2030: Can the EU Meet the Challenges Ahead? (2019)
7. Grand View Research. Smart Retail Market. (2019)
8. IHS Markit <https://ihsmarkit.com/index.html>
9. Lpsos. 10 Mega Trends that are (Re)Shaping Our World. (2019)
10. MGI. Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation. (2017)
11. PwC ◦ Global Entertainment & Media Outlook 2019–2023 ◦ Website: <https://www.pwc.com/gx/en/industries/tmt/media/outlook.html>.(2019)

12. Quacquarelli Symonds(2019) ◦ TOP UNIVERSITIES platform at website: <https://www.topuniversities.com/university-rankings/university-subject-rankings/2019/art-design#sorting=rank+region=++country=+faculty=+stars=false+search=>
13. Startup Genome. Global Startup Ecosystem Report. (2019)
14. technavio. Global Digital Content Market 2019-2023. (2019)
15. United Nations, Department of Economic and Social Affairs, Population Division (2019) ◦ World Population Prospects 2019 ◦



Issued by Chung-Chieh Lin, Commissioner of the Department Of Economic Development, Taipei City Government

Published by Department Of Economic Development, Taipei City Government

Address No. 1, CityHall Rd., Xinyi Dist., Taipei City 11008, Taiwan (R.O.C).

Phone (02)2720-8899

Planned by Industrial Technology Research Institute; Environment and Development Foundation

Assisted by Department of Information Technology, Taipei City Government ; Department of Transportation, Taipei City Government ; Department of Information and Tourism, Taipei City Government ; Department of Cultural Affairs, Taipei City Government ; Department of Health, Taipei City Government ; Department of Social Welfare, Taipei City Government ; Department of Environmental Protection, Taipei City Government ; Taipei City Office of Commerce ; Taipei City Market Administration Office ; Taipei EXPO Foundation

Published in October 2020

The copyright of this material belongs to Taipei City Government. Permission or Written authorization must be obtained prior to using part of the content or the content in its entirety.

www.doed.gov.taipei



臺北市政府產業發展局
Department of Economic Development
Taipei City Government

This report is printed with eco-friendly soy ink and FSC-certified eco-friendly paper.
The Department of Economic Development, Taipei City Government cares for the earth with you
to reduce the impact on the environment.



廣告