

Taiwan Startup Ecosystem Survey Summary



Foreword

Start-ups, investors, government policy departments, incubators, the market, and other companies are the primary stakeholders whose interaction forms Taiwan's startup ecosystem. And it is the various challenges that start-ups must overcome in the initial startup period, such as funding, talent recruitment, management ability, and international funding, and from there, scaling up, which will be the main topics for exploration and discussion in this survey.

Looking to shed more light on the development of start-ups and their foremost management challenges, PricewaterhouseCoopers (PwC) Taiwan and the Taiwan Institute of Economic Research (TIER) jointly conducted the 2020 Taiwan Startup Ecosystem Survey, now in its third year. While addressing startup fundraising, corporate startup engagement (CSE), and female entrepreneurship, among other topics, the spotlight of this year's survey is on the many challenges start-ups encounter during the fundraising preparation phase as well as the state of Taiwanese start-ups as they engage in CSE. Our survey found that nearly 60% of Taiwanese start-ups had experience in CSE, and that the primary collaboration type was in development of products and services (49%). Such numbers tell us to expect that start-ups will play a crucial role in digital transformation and product innovation for Taiwan's manufacturing and financial industries. Also, in a special report planned and executed by TIER, the industrial development characteristics and government funding policies of the six major metropolitan areas of Taiwan are examined along with their impact on entrepreneurial activities and the opportunities they have brought to start-ups.

Methodology

The **2020 Taiwan Startup Ecosystem Survey** is based on an online survey and in-depth interviews, which were conducted between 1 April and 31 July 2020.

Online survey conducted between 1 April and 30 May 2020.

The survey population was sourced from start-ups that had received support from institutions including the National Innovation and Entrepreneurship Association, the Taiwan National Association of Small and Medium Enterprises, Taiwan Start-Up Hub, the Chinese Business Incubation Association (CBIA), the Sun Yat-Sen Management Education Foundation, Taiwan Tech Arena, as well as other start-ups contacted by PwC Taiwan.

A total of 678 valid completed surveys were collected, of which 495 respondents had already formally registered as companies in Taiwan or other territories.

In-depth interviews conducted between 1 May and 31 July 2020.

A total of 21 interviews were also conducted by PwC Taiwan with various start-up entities, start-up incubators and accelerators, venture capital, big enterprises, and senior partners of PwC Taiwan.



2020 Taiwan Startup Ecosystem Survey Summary

Key Findings

- "Al/Big Data" ranked first this year for keywords in the entrepreneurial field
- "Consumer products" ranked first for keywords among female entrepreneurs
- 58% of start-ups already have experience in CSE
- The top target foreign market: North America
- 36% of start-ups believe that the biggest challenge to CSE comes from communication mechanisms



Entrepreneur profile



This Year's Keywords

Our survey found that males and females differed entrepreneurially: each tended to choose a different subject matter, practiced different business operations, and had different development needs.

Male entrepreneurs tended to gravitate towards emerging technologies like Al/Big Data or IoT, while for female entrepreneurs the focus was on consumer products and e-commerce. Educational tech was yet another main trend for female entrepreneurs.

In AgriTech and new food products, our sample analysis shows that most were engaged in innovative marketing of local agricultural products and food/beverage services.



Male/Female Comparison

Team and scale

One core founding member Fewer than 5 employees



Funding needs

	Male	Female
Externally funded	36%	46%
Not in need of other funds	18%	37%

International connection

	— Male	Female
Not yet in int. market	53%	53%
No need to enter int. market	18%	28%

CSE

Has not engaged in CSE

Male	Female
34%	50%

Motivation/purpose To accomplish a life goal Identified an industry trend or market demand

Keywords

Al/Big Data	
IoT	
Consumer products	

	Male	Female
2	7%	30%
30	%	27%
	Male	Female
	Male	Female

Employee gender makeup

		_	Male	Female	
Proportion of employees of	89%				81%
the same gender as founder					

Startup Profile Registered company 1-5 person startup team **Revenue source is mainly domestic** Sample size: 678 Sample size: 495 Sample size: 678 76% 73% 73% Core competency of team Sample size: 678 **Product R&D** 2 **Business & sales** 3 Marketing/brand management 1 20% 16% 16% Startup operating model 48% 43% 9% B₂C B2B B2G

Startup revenue status

55%

This year's survey of startup revenue was consistent with those of the previous two years. However, looking closer at the causes behind profitability, it may be seen that the main reason for start-ups not yet being profitable is mainly due to high R&D costs in the early stages, while startups that had become profitable mainly owed their status to correctly assessing and acting on market demand. This suggests that better understanding market demand and exercising control over R&D costs before scaling up will be helpful to start-ups in driving revenue and profit.



Startup not profitable or profits not meeting expectations



Reason for profitability



Target overseas markets



In the past two years, China has become a major target overseas market for Taiwanese start-ups. However, for various reasons, not least the COVID-19 pandemic and US-China trade tensions, China ranked 4th this year, and North America rose to the top target overseas market. How the ongoing pandemic is influencing and may further influence Taiwanese start-ups is a topic for serious consideration.



Internationalization

1. The 2019 survey found that among challenges facing Taiwanese start-ups as they undergo international expansion, lack of local resources was the largest obstacle (39%), followed by lack of internal resources (37%).

Evaluation & Landing

Local Market Experience

- 2. The 2020 survey shows that the three most needed resources for start-ups looking to expand internationally are:
 - Help in matching with local businesses or marketing channels (29%)
 - Matching with professional service agencies that are familiar with local laws, certifications and standards, guidelines and regulations (20%)
 - A mentor who can provide opinions on how to adjust products/services specifically for target markets (15%)



Fundraising

Of start-ups at the fundraising stage, this year's survey found that 32% of Taiwanese start-ups have need of fundraising and have entered into the fundraising stage; 41% of start-ups are in preparation for fundraising.

Of start-ups that had found investors, most had angel investors (27%), while start-ups with foreign/domestic venture capital, funding from the National Development Fund, and corporate investment only accounted for 19% altogether.

Further surveying the main problems facing start-ups in the fundraising stage, it was found that the three biggest challenges were: negotiations/ consultations over the terms of funding, company valuation, and revenue status.



Corporate-startup engagement (CSE)

Over 50% of Taiwanese start-ups have already engaged in CSE, their main counterparts being regular SMEs (42%), followed by start-ups (26%) and listed companies (at just 20%).

The foremost challenge to start-ups engaging in CSE was dealing with differences in their commercial models. This year's survey interviewed both start-ups and larger companies. It found that commercial model differences—such as target markets, development of applications, marketing methods, client experience, and other aspects, did indeed impact CSE between small-scale, flexible start-ups and structurally complex mid-to-large scale companies. These issues, however, could be solved by establishing an effective communication mechanism between the startup and its counterpart.

Of the large-scale companies interviewed this year, several had already set up an internal department solely for dealing with CSE, and these also expressed that they had fairly open communications with their partner start-ups, as opposed to approaching the cooperation as merely a supplier. **Q: Since inception, have you engaged in CSE?** Sample size: 495



Q: What is the biggest challenge you face in CSE?



Policy update

Innovation and entrepreneurship have been targets of promotion for the Taiwanese government over recent years. The National Development Council (NDC), Ministry of Economic Affairs (MOEA), Ministry of Finance (MOF), Financial Supervisory Commission (FSC), the Ministry of Science and Technology (MOST) and other governmental departments have cooperated with the private sector in helping start-ups through support in funding, talent recruitment, regulations, and marketing. Such assistance has generated a thoroughly optimized environment in which start-ups can develop.



In terms of considerate assistance for start-ups, start-ups are helped in adapting to regulations and fundraising:

- The Executive Yuan has budgeted 60 billion NTD in preferential loans for young entrepreneurs (to be handled by the MOEA, the Ministry of Culture [MOC], and the Council of Agriculture [COA]). The MOEA provides preferential benefits to start-ups and micro start-ups for financing cases under NT\$1 million, such as full-interest subsidies for the first five years of loans and financing guarantees of up to 100% of the Credit Guarantee Fund.
- 2. Offering support to start-ups weathering the COVID-19 pandemic, the National Development Fund used "**preferred stock**" to relieve start-ups and has provided start-ups with 6 to 12 months of working capital.
- 3. Draft amendments to the **"Income Basic Tax Act"** will allow the Ministry of Finance to restore individual income derived from unlisted stock trading to basic income of individuals; it has also formulated exclusion clauses for start-ups. The draft is expected to come into force on New Year's Day.
- 4. For the creation of a national brand, Startup Island TAIWAN has been taken as the jumping-off point from which Taiwan's start-ups can expand globally; start-ups are given support to venture out onto the international stage; and both Taiwan's willingness and ability to contribute to global innovation and entrepreneurship have been conveyed to the world.

Major policy plans for the coming year:

- Create an international startup hub in southern Taiwan; establish Tainan's Shalun Smart Green Energy Science City; link the energies of industry, academia, and research institutions with surrounding industrial parks and the Southern Taiwan Science Park; encourage the residency of domestic and foreign smart green energy technology professionals and start-ups; aim to become the foremost smart city in the world for green energy development.
- 2. With the aim of guiding start-ups into the capital market for fundraising, the FSC has established the Taiwan Innovation Board and Strategic New Board, targeting companies with key core technologies and innovative models for listing on the market. These two boards provide start-ups with an additional channel through which to enter the capital market. And since it has a secondary market transaction function, it is conducive to start-ups when engaging in negotiation for fundraising amounts.
- 3. The National Development Council plans to roll out its Strategies to Upgrade Taiwan's Startup Ecosystem under Asia-Silicon Valley Development Plan 2.0, with From Start-up to Scale-up as its core concept. Its four major strategies for driving the growth of startups include: "bringing capital to start-ups to accelerate their growth," "increasing talent supply and adjusting laws and regulations," "diversifying demonstration sites to drive a positive cycle," and "enhancing linkages to resources to quicken market development."





Introduction of Taiwan Entrepreneurial Environment in Six Municipalities

Inventory of Entrepreneurial Policy Resources in the Six Municipalities

In order to describe the startup ecosystems in the six major municipalities of Taiwan, we have used the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) to observe how the residents of the six major municipalities felt about their local entrepreneurial environments. This included aspects such as perceived opportunities, perceived capabilities, early-stage entrepreneurial activity, established business, entrepreneurial intentions. On the other hand, this observation was followed by a presentation of the distribution of industry clusters across the six municipalities, sources of funding from government policy, entrepreneurial services, status of industry clusters, and trends in entrepreneurship. It also uses interviews concerning policies and outlooks of the departments of economic development and youth development offices of the six municipalities and interprets them from a diverse set of perspectives, with the aim of presenting the developmental particularities of Taiwan's regional startup ecosystems.

Municipality	Startup Space	Entrepreneurial Exchange		Consulting & Counseling	Social Companies	Incentives & Subsidies	Financing	Experimental Fields	Investment Matchmaking	Subsidies for Participation in Foreign Competitions/ Expos	Foreign Residency	International Exchange	Foreign Market Expansion
Taipei City	*	*	*	*	*	*	*	*	*	*	*	*	*
New Taipei City	*	*	*	*	*	*	*	*	*	*	*		*
Taoyuan City	*	*	*	*	*	*	*	*	*	*			
Taichung City	*	*	*	*	*	*	*	*	*			*	*
Tainan City	*	*	*	*			*	*		*			
Kaohsiung City	*	*	*	*		*	*	*	*	*		*	*

Characteristics of the Local Startup Ecosystems in the Six Municipalities

Taiwan Overall

Perceived Opportunities	26.7 %
Perceived Capabilities	28.2%
Early-stage Entrepreneurial	9.5%
Activity	
Established Business	13.9%
Entrepreneurial Intentions	24.1 %

About the indicator definitions

Perceived Opportunities: Proportion of respondents who believe that there are opportunities for starting a business in their municipality in the next six months

Perceived Capabilities: Proportion of respondents who believe that they have the required knowledge, skills, and experience to start a business.

Early-stage Entrepreneurial Activity: proportion who are either starting or running a business started within the past 3.5 years.

Established Business: Proportion who have an established business over 3 years old.

New Taipei City

Perceived Opportunities	27.5%
Perceived Capabilities	30.6%
Early-stage	14.9%
Entrepreneurial Activity	
Established Business	11%
Entrepreneurial Intentions	31.2%

Taoyuan City

Perceived Opportunities	24%
Perceived Capabilities	27.4%
Early-stage	7.7%
Entrepreneurial Activity	
Established Business	15.9%
Entrepreneurial Intentions	28.4%

Tainan City

Perceived Opportunities	24.2%
Perceived Capabilities	25.3%
Early-stage	6.7%
Entrepreneurial Activity	
Established Business	14.6%
Entrepreneurial Intentions	21.9%



Data source: GEM 2018 Adult Population

Survey (APS)

Taipei City

Perceived Opportunities	29.6%
Perceived Capabilities	29.2%
Early-stage	13.2%
Entrepreneurial Activity	
Established Business	12.8%
Entrepreneurial Intentions	28.4%

Perceived Opportunities	27%
Perceived Capabilities	30.8%
Early-stage	9.9%
Entrepreneurial Activity	
Established Business	21.3%
Entrepreneurial Intentions	25.9%

Kaohsiung City

Perceived Opportunities	23.5%
Perceived Capabilities	25.4%
Early-stage	6.8%
Entrepreneurial Activity	
Established Business	10.6%
Entrepreneurial Intentions	24.2%

Industry Clusters and Entrepreneurial Trends in the Six Municipalities



Data source: Compiled by TIER Research Division III

Data collected by TIER in 2019 show that each of the six major municipalities of Taiwan has its own unique industrial composition, and has formed its own industry cluster, due to its geological location and economic policy.

New Taipei City

Industry Cluster Fields: Machine tools, electronics and communications, plastic products

2 Major Entrep. Trends: science and tech services, manufacturing

Entrep. Keywords: Digital Platform, Culture/Creative, e-Commerce

Taichung City

Industry Cluster Fields: Precision machinery

2 Major Entrep. Trends: science and tech services, manufacturing

Entrep. Keywords: Social Innovation, Culture/Creative, e-Commerce

Kaohsiung City

Industry Cluster Fields: Metals, petrochemical, medical devices, aerospace, optoelectronics

2 Major Entrep. Trends: science and tech services, manufacturing

Entrep. Keywords: Agricultural Innovation, Culture/ Creative, e-Commerce

Taipei City

Whether in terms of policy, economy, talent, industry resources, or extent of internationalization, Taipei City has a plethora of resources. To make efficient use of such resources, the Department of Economic Development of the Taipei City Government has made use of detailed resource planning and policy guidance to facilitate the growth of startups. In face of a wave of start-ups being established all around the world, the city's Department of Economic Development formulated a clear set of objectives, its aim being to make Taipei into "East Asia's best city for start-ups."

Policy objectives

- 1. Proactively matching start-ups with funding fit for the needs of each stage.
- 2. Operate diversely themed coworking spaces with private entities in a spirit of open collaboration.
- Continue to exchange with internationally eminent entrepreneurial cities and convince foreign startup teams into take residency in Taipei, thus establishing a new international outlook for the city's startup ecosystem.

Startup services

34 accelerators 11 startup bases 22 associations/ communities 23 incubators 32 co-working spaces

Industry clusters

Da Wan Industrial Zone

- Warehousing & logistics and production industrial park
- Hypermarkets, large furniture chain stores, shipping warehouses, electronic technology assemblages

Beitou Technology ParkBiomedical alliance

• Introducing emerging industries such as biotech, medicine. ICT

Neihu Phase-5 Replanning Zone

- Multipurpose mixed commercial/ factory area
- Planned for vertical separation needs of Neihu Science Park and Nangang Economic & Trade Park

Neihu Technology Park

- Urban knowledge industrial park
- Company operating headquarters, R&D centers, high added-value tech (manufacturing, info, IC, biotech…)

Nankang Software Park
Est. to develop as 'software center' of Asia

 3 major knowledge industries: biotech, IC design, digital content

Industry brief

Key industries: Biotechnology and medicine, electronics and communications, digital content No. of companies: ≈ 180,000 (25% of all Taiwan) No. of factories: ≈ 996 (1% of all Taiwan) R&D expenditure: ≈ 12.2 billion NTD Investment tax credits from R&D expenditure: ≈ 1.6 billion

New Taipei City

New Taipei City, with its diversely developed industry, is the most important frontier of Taipei City's development. With the coming of the pandemic, opportunities have sprung up out of new economic consumer models, while new opportunities have appeared for starting new businesses. The "no-touch economy," for example, or the"lowcontact economy," constitute one major policy direction actively pursued by the New Taipei City Government Economic Development Bureau. Among which, e-commerce, remote medicine, smart surveillance, and others fields can make advantageous connections within New Taipei City's already diverse industrial environment, while also giving each startup team the space to fully exert themselves in the creation of their start-ups and the ability to tap into the plentiful local industrial resources and communications technologies. Start-ups can, as a result, create products or services with new value.

Policy objectives

- 1. Use of resource platforms to guide economic innovation, helping to connect start-ups with companies in need of innovation.
- 2. Linking industry with government policy resources, helping startups develop virtual-physical integration solutions for smart cities

Startup services

15 accelerators4 co-working spaces

7 startup bases 16 incubators 5 associations/communities

Industry clusters



Industry brief

Key industries: Machine tools, electronics and communications, plastic products, food products No. of companies: ≈ 135,000 (19% of all Taiwan) No. of factories: ≈ 18,344 (21% of all Taiwan) R&D expenditure: ≈ 18.2 billion NTD Investment tax credits from R&D expenditure: ≈ 2.2 billion NTD

Taoyuan City

In Taoyuan City, the government agencies responsible for entrepreneurship policies include the Department of Economic Development (DED) and Department of Youth Affairs (DYA). The DED has drafted various plans and programs in recent years which are meant to drive the growth of the startup industry. Such items include Taoyuan Aerotropolis, Asia Silicon Valley Development Agency (ASVDA), and the Hutoushan Innovation Hub. The DYA has mainly focused on the operation of three startup bases, the holding of entrepreneurial competitions, and the fostering of social companies; its aims are to reinforce the integration of resources for the startup ecosystem, while also raising the competence of young entrepreneurs and facilitating the development of start-ups.

Policy objectives

- 1. The Hutoushan Innovation Hub focuses on the development of the Internet of Vehicles and cybersecurity tech; it also provides testing certification measures to encourage cybersecurity tech teams to take up residency.
- 2. Draw on major local industries to help start-ups make connections with soft/hardware suppliers, thus driving the startup ecosystem.
- 3. Strengthen guidance mechanisms for young entrepreneurs, and kindle the spirit and skills of entrepreneurship in young people through education.

Startup services

9 incubators

4 co-working spaces

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6 startup bases

Industry clusters



MOEA Industrial Parks:

Taovuan Youth Industrial Park, Guishan Industrial Park, Pingihen Industrial Park, Dayuan Industrial Park, Guanyin Industrial Park, Jhongli Industrial Park, Linkou Industrial Park III

Taoyuan City Govt. Industrial Parks:

Taovuan Environmental Science and Technology Park, Taitan Binhai Special Industrial Park, Taoyuan Technology Industrial Park, Taoyuan Technology Industrial Park Phase II. Shalun Industrial Park

Industry brief

Key industries: Shipping, IoT No. of companies: ≈ 62,000 (9% of all Taiwan) No. of factories: \approx 10,967 (12% of all Taiwan) R&D expenditure: ≈ 16.5 billion NTD Investment tax credits from R&D expenditure $: \approx 2.3$ billion NTD

Taoyuan Aerotropolis

• Shipping services for Taoyuan Int. Airport and international connections: draws development of peripheral industry: forms a diverse urban area centered on the airport

Hutoushan Innovation Hub

- Cybersecurity IoT and smart driving R&D base; only smart driving test field in N. Taiwan
- Hub for Taoyuan's startup and local ind. R&D, innovative coop., and research/education

Private Industrial Parks:

Evergreen Group Davuan Industrial Park. Tung Ho Steel Industrial Park, Longtan Industrial Park, Taoyuan Xinwu Dayang Industrial Park, Pacific Electric Wire & Cable Co., Ltd. Yangmei Factory, Super Micro Computer Technology Park, Walsin Lihwa Industrial Park, Shanlong Dayuan Logistics Industry Park

Taichung City

With its long-standing precision machinery and manufacturing industries and its many universities and private organizations investing resources to drive innovation and entrepreneurship, Taichung City possesses a distinctive startup ecosystem. Its entrepreneurial policies are divided among several departments, including the Economic Development Bureau, the Labor Affairs Bureau, Social Affairs Bureau, and Cultural Affairs Bureau. The Economic Development Bureau specifically provides guidance for start-ups in their third to fifth years since inception, and helps start-ups link up with local corporate resources. In 2017, the Economic Development Bureau set up its Taichung City Dreamers and Local Industry Innovation R&D Promotion Plan to help start-ups apply for incubation and small business innovation research and development (SBIR) programs, among other services.

Policy objectives

- 1. Consolidate resources for young entrepreneurs, and drive cooperation between start-ups and local industry.
- 2. The Taichung City Government established the Central Taiwan Industry 4.0 Cooperative Strategic Alliance between Industries, Government, Academics and Research Centers, which gathers 28 universities, industry associations, and research units located in central Taiwan; the alliance provides a comprehensive supply of resources for start-ups.

Startup services

4 accelerators 6 startup bases 5 co-working spaces

8 associations/

communities

15 incubators

Industry clusters

Taichung City Precision Machinery Innovation Technology Parks: Taichung Industrial Park, Daija Youth Industrial Park, Taichung Harbor Related Industrial Park, Dali Industrial Park, Xinying Industrial Park

Taichung City Govt. Industrial Parks: Taiping Industrial Park, Tanzi Juxing Industrial

Park, Dali Xia Tian Industrial Park

Taichung City **Precision Machinery** Innovation **Technology Park**

• Machinery

• Assist locally competitive industries to improve fitness and thus create a foundation for a sustainable machinerv industry

Central Taiwan Science Park (Taichung park, Houli park) Optoelectronics, precision machinery, semiconductors

Annual rev: ≈ 797.2 billion NTD

Feng-zhou High-tech **Industrial Park**

- Key production base for SMEs in Taichung area
- Metal processing, electronic components. machinerv/ equip. and manufacturing
- Promote development work for Shengang Fengzhou High-tech Industrial Park Phase II, with possible annual rev: ≈ 16.4 billion NTD

Industry brief

Key industries: Precision machinery No. of companies: ≈ 103,000 (15% of all Taiwan) No. of factories: \approx 18,696 (21% of all Taiwan) R&D expenditure: ≈ 6 billion NTD Investment tax credits from R&D expenditure: ≈ 500 million NTD

Tainan City

As for Tainan City, its Economic Development Bureau stimulates development of the city's startup ecosystem by improving the fitness of startup teams. Looking to attract new guality startup teams with potential to succeed, the Economic Development Bureau has increased opportunities for successful entrepreneurship by providing guidance and services. Currently, it encourages internationally renowned companies to take up residency in the city's startup bases; this is supplemented by provision of resources, such as venue space for technology displays. These startup teams are then tasked with cooperating on innovation topics or problems proposed by international companies. New startup teams are fostered in this process of cooperation.

Policy objectives

- 1. WinWin Innovation and Incubation Base actively attracts international companies and startup teams to take up residency, which drives international exchange.
- 2. Promotes transformation of startup bases and, by tapping into the resources of clusters like the Shalun Smart Green Energy Science City and Southern Taiwan Science Park, it gives start-ups several advantages for growth.

Startup services

1 accelerator 6 startup bases 9 co-working spaces 3 associations/communities

11 incubators

Industry clusters



Energy Science City

as solar photovoltaics.

buildings, smart electric

windpower, energy

conservation, green

Taiwan CAR Lab—first

autonomous vehicle

experimental field in the

grids

Green tech industries such

Tainan Technology **Industrial Park** Electronics and

- communications. precision machinery, aerospace, chemistry, medicine
- Green industry park that combines production, living, and ecosystem

Industry brief

Key industries: Green tech, precision machinery No. of companies: ≈ 39,000 (5% of all Taiwan) No. of factories: \approx 9,013 (10% of all Taiwan) R&D expenditure: ≈ 2.8 billion NTD Investment tax credits from R&D expenditure: ≈ 300 million NTD

MOEA Industrial Parks:

An Ping Industrial Park, Tainan Technology Industrial Park. Yongkang Industrial Park, Guantian Industrial Park, Sinving Industrial Park

Tainan City Govt. Industrial Parks:

Liuving Technology Industrial Park, Yongkang Technology Industrial Park, Sinji Industrial Park, Tree Valley Industrial Park

Southern Taiwan Science Park (Tainan park)

• Solar power, IC, precision machinery, biotech, and green energy

Kaohsiung City

Kaohsiung City is the heavy-industry capital of Taiwan. Over many decades, its key industries-such as steel, petrochemical, metal processing, and shipbuilding-have developed into a firm industrial foundation for the city. For technology start-ups, Kaohsiung's industrial foundation provides advantages in verification fields and cooperating in development of applications. The city's Economic Development Bureau actively helps start-ups find opportunities for cooperation, which promotes the transformation and upgrading of the local industries. Take, for example, the KOSMOS Somatosensory Technology Park, which introduced AR/VR equipment that the petrochemical industry used to conduct safety exercises. Meanwhile, the city's Youth Bureau aims to create a friendly entrepreneurial environment and cross-disciplinary exchange opportunities, especially targeting youth entrepreneurs and entrepreneur education. Each bureau has used its own methods and approach in building Kaohsiung's startup ecosystem.

Policy objectives

- 1. Promote cooperation between traditional industry and start-ups to drive transformation and upgrading.
- 2. Consolidate resources to build a friendly entrepreneurial environment, and thus help start-ups grow in their early stages.

Startup services

3 accelerators 7 co-working spaces 8 startup bases

3 associations/communities

15 incubators

Industry clusters



• Consolidates R&D resources across medical facilities, schools, and R&D agencies

Renwu Park

- Kaohsiung's aerospace industry cluster
- Expected to draw 21.3 billion NTD in investment
- Created 6,000 job opportunities

industry, key logistical support for medical devices Nanzih Export **Processing Zone** • Strategic global base for semiconductor packaging

Benihou Industrial Park

industry

- and testing • Zone is home to Advanced Semiconductor Engineering,
- WUS Printed Circuit. Orient Semiconductor Electronics, and Yageo

Industry brief

Key industries: Metals, petrochemical, medical devices, aerospace, optoelectronics No. of companies: $\approx 80,000 (11\% \text{ of all Taiwan})$ No. of factories: \approx 7,541 (8% of all Taiwan) R&D expenditure: ≈ 4.5 billion NTD Investment tax credits from R&D expenditure: ≈ 600 million NTD



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