Smart Cities Taiwan: Opportunities for Dutch companies

By: Netherlands Trade & Investment Office (NTIO) Taiwan
Summarized opportunities for Dutch businesses:

1. Taiwan national development plan for 2017-2020 aims to create an ecosystem for industrial innovation, with a focus on developing smart cities and stimulating entrepreneurship.

2. Dutch businesses and research institutes can propose their Smart City solutions to Taipei City through the online Taipei Smart City Platform.

3. Dutch cities have a strong international position in the field of Smart Cities and the Netherlands is well positioned due to past activities in Taiwan promoting the Dutch strengths in developing smart cities.

4. Taipei city has shown interested to join the Global Smart City Community Coalition (GSC3).

5. The annual Taipei Smart City Summit & Expo offers a great opportunity for a fact-finding mission.
Introduction
Taiwan has been at the heart of the international ICT supply chain for decades and the ICT industry is key to the economic development of Taiwan. Therefore it comes as no surprise that the Taiwanese governments is actively pushing Taiwan to be one of the frontrunners in the development of smart cities. Taiwan President Tsai Ing-wen has pledged that her government will make every effort to boost the development of smart cities in Taiwan. Supporting the government with its ambition to develop Smart Cities, the ICT industry is also investing in smart city developments. Chairman Tung Tzu-hsien of the Taipei Computer Association (TCA), which protects the interest of Taiwan’s big ICT industry, has equally large ambitions and expects Taiwan to become the international hub for smart city industrial developments.

In Taiwan Smart cities are defined as cities looking to solve social challenges with ICT solutions in cooperation with multiple stakeholders. The global movement of developing smart cities connects with Taiwan’s main industry and thus Taiwan wants to become a frontrunner in this development. This report will provide an overview of the ambition and development of Smart Cities in Taiwan with the goal to summarize:

1. The development of Smart Cities in Taiwan
   - National government policy
   - Current projects

2. Projects in Taiwanese Cities
   - Taipei
   - Taoyuan
   - Taichung

3. Opportunities for cooperation and business
   - Dutch – Taiwanese cooperation in developing Smart Cities
   - Important Taiwanese parties

The Development of Smart Cities in Taiwan
President Tsai included the development of Smart Cities in her economic plan of the

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2 http://www.taipeitimes.com/News/biz/archives/2017/02/22/2003665439 22-02-2017
3 The concept of “Smart Cities,” was originally coined by IBM in 2008 to describe the use of digital and ICT technologies to enhance the quality and performance of urban services.
5 plus 2 innovation industries, by emphasizing the development of the Asian Silicon Valley project and the upgrade of the Smart Machinery Industry. The focus point of this plan is the development of new hardware solutions and stimulating entrepreneurship to build smart cities.

The National Development Council (NDC), the national government bureau responsible for economic development policy, took the development of smart cities a step further early 2017 when they launched their four-year national development plan for 2017 – 2020. In this plan NDC put their plan of building the Digital Nation in the center with the following ambition:

- Construct an innovative digital foundation
- Train cross-discipline talent
- Build a service-oriented digital government
- Develop an equal, vibrant network society

Summarized the national development plan for 2017-2020 aims to create an ecosystem for industrial innovation which will stimulate the Taiwanese economy and create new high-level jobs. In order to execute this ambitious plan the government has allocated 100 billion Taiwanese dollar – about 3 billion Euro. Next to that NDC is working to set up a private equity fund in order to invite private partners to contribute financially to this transformation as it will provide them with interesting new business opportunities. The Taiwanese investment firm Fu Hwa Securities already launched a 625 million US$ global investment fund focusing on the development of the internet of things (IoT), in order to support the development of self-driving cars, big data, smart logistics, cloud computing and advanced manufacturing. From the big Taiwanese ICT firms Acer has been the first to announce that it will join the new public-private partnership financially in order to develop Taiwanese Smart Cities.

Finally, the government has launched on the 23rd of March 2017 the ‘Forward-looking Infrastructure Construction Project’, a big governmental initiative to boost the Taiwanese economy by investing 880 billion NTD, or 26.73 billion Euro over the next 8 years. Of the total planned investment 46 billion NTD, 1.4 billion Euro will

\[\text{Four-Year National Development Plan (2017-2020) presented by DG Connie Chang, NDC on 8 March 2017}\]

\[\text{http://readwrite.com/2016/05/21/taiwan-firm-launch-625m-global-iot-fund-il4/}\]


\[\text{http://www.taipeitimes.com/News/front/archives/2017/03/24/2003667363 24-03-2017}\]
be used to upgrade Taiwan’s digital infrastructure, in order to prepare the nationwide launch of 5G internet service in 2020⁸.

Current projects
Currently the Smart City efforts of the national government are most notable in Smart Transportation, Smart Energy and Smart Healthcare. For example a nationwide electronic toll system has been developed, electronic monitoring of parking spaces is common practice and the cities metro card, the Easy Card, a cash-reloadable smartcard can be used not only in all public transportation, but also in every convenience store, library and many other places.

On the cross section of smart energy and smart transportation, the Taiwanese government has also encouraged the development of smart energy grids by Gogoro, which launched a big marketing campaign in the summer of 2015 when they brought the Gogoro electronic scooter to the Taiwanese market. By now this system is rapidly being enrolled in other Taiwanese cities outside Taipei.

Finally in the healthcare sector the most remarkable implementation is the national health card, which every Taiwanese citizen has because of the mandatory health insurance. This health card includes a chip which has the complete medical history of the cardholder, enabling doctors to get insight into the complete medical history of every new patient in their hospital, improving their ability to make a correct medical diagnosis of the patient.

Projects in Taiwanese Cities
Taipei (2006) and Taichung (2013) have won the Intelligent Community Forum (ICF) award and most other Taiwanese cities including New Taipei city, Keelung, Taoyuan, Chiayi, Tainan, Taitung and Yilan have been included in international top 20 list of the ICF. These awards and honorable notices recognize Taiwanese cities as the vanguards in the global movement to develop smart cities⁹. The following 3 local projects are especially noteworthy and deserve more elaboration.

Taipei – Smart City Office:
Taipei has set-up a designated Smart City Office in March 2016, which is the first city-level program in Taiwan solely dedicated to developing smart city solutions. The main task of the Smart City Office is to stimulate the implementation of ICT solutions

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for social challenges of Taipei City, by engaging the private sector, citizens and coordination between various stakeholders. For example the Taipei smart city office is in charge of managing the ‘Airbox’ program, which aims to monitor the air quality around the city and other ICT solutions like ‘I-Voting’, a software program to engage citizens with public policy affairs. An important tool for the Taipei smart city office is its website, https://smartcity.taipei/about?locale=en, allowing citizens and businesses to submit their smart city proposals to the city government, a concept Taipei city officials first heard about when visiting Amsterdam.

**Taoyuan – Asian Silicon Valley project**

The Asian Silicon Valley project is part of Taiwanese President Tsai Ing-wen’s economic reforms aimed to give Taiwan’s economy a boost by stimulating innovation and entrepreneurship. NDC has developed the following 5 objectives:

1. Increase Taiwan’s IoT global market share from 3.8% in 2015 to 4.2% in 2020 & 5% in 2025
2. Grow 100 successful companies, either local startups enjoying successful exits or large corporations setting up R&D centers in Taiwan
3. Develop and establish 3 global systems integrators in Taiwan
4. Successfully attract investments from 2 world-class companies
5. Create 1 online learning platform for the IoT related sectors

The ambition is to complete this project in 2023 and the government has set aside an annual budget of 11.2 Billion NT$ (340 million Euro) to execute the development of; “internet infrastructure, mobile broadband services, e-commerce, smart applications, test beds, industry-university collaboration, digital talent and regulatory adjustment.”

To start the realization of this project, the Asia Silicon Valley Development Agency (ASVDA), was founded in December 2016 and is headed by Mr. Kung Ming-Hsin Deputy Minister of NDC. This agency located at the center of Taoyuan will be responsible for the execution of the Asian Silicon Valley project, one of their first actions will be to set up the Asian Innovative Talent Exchange Center, aimed at encouraging the development of start-ups.

**Taichung – Shuinan Smart City Project (industry 4.0)**

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11 [https://www.asvda.org/eng/index.aspx](https://www.asvda.org/eng/index.aspx)
Important industry clusters for the bicycle industry, precision machinery and photonics are all located in Taichung city area. At the former Taichung Airport site in Shui-Nan a Smart City Demonstration Zone will be build to stimulate industry 4.0. An Intelligent Operation Center (IOC) will be part of this zone in order to implement a city-wide traffic monitoring system that will provide traffic pattern data in order to provide new services like traffic control management, air quality management and a more effective emergency response system. Taichung City Government Economic Development Bureau has expressed the government will allocate 60 Billion Taiwan dollar, 1.8 Billion Euro, for this project.

Opportunities for cooperation and business
The Netherlands has been actively exploring cooperation opportunities for the development of Smart Cities with Taiwan. Especially the city of Eindhoven has been very active with visits to the Taipei Smart City exhibition in 2015 and 2016.

Dutch – Taiwanese cooperation in developing Smart Cities
Summarized the following activities have taken place to position the Netherlands as an ideal smart city partner for Taiwan:

- **January 2015**; Dutch Smart Healthcare delegation led by Eindhoven Mayor Mr. Rob van Gijzel. About 7 companies joined and Rob van Gijzel shared his vision of building the Smart Society.
- **October 2015**; Smart City fact-finding mission of III visits the Netherlands
- **March 2016**; Dutch Smart City delegation of 6 companies led by Eindhoven Mayor Mr. Rob van Gijzel
- **October 2016**; The Innovation Roadshow, a traveling exhibition offering 10 Dutch city solutions travels to the 7 main cities of Taiwan including: Taipei, Taoyuan, Hsinchu, Taichung, Tainan, Kaohsiung and Taitung.
- **October 2016**; Smart City trade delegation organized by III visits the Netherlands focusing on: Smart energy, transportation and security.
- **February 2017**; Dutch Smart City delegation of 8 companies led by Réne van Hell,
Director DIO at Ministry of Foreign Affairs. Taipei city is enthusiastic about the invitation to join the Global Smart City and Community Coalition (GSC3)

Important Taiwanese parties:

**Government:**
  - Department of Industrial Technology (DoIT) [http://www.moea.gov.tw/MNS/doit_e/home/Home.aspx](http://www.moea.gov.tw/MNS/doit_e/home/Home.aspx)
- **Local city governments:**
  - Taipei Smart City office - [https://smartcity.taipei/about](https://smartcity.taipei/about)
  - Taoyuan - [https://www.tycg.gov.tw/eng/](https://www.tycg.gov.tw/eng/)
  - Asia Silicon Valley Development Agency (ASVDA) [https://www.asvda.org/eng/index.aspx](https://www.asvda.org/eng/index.aspx)

**Non-governmental:**
- Industrial Technology Research Institute (ITRI) - [https://www.itri.org.tw/eng/](https://www.itri.org.tw/eng/)
- Institute for Information Industry (III) - [http://web.iii.org.tw/](http://web.iii.org.tw/)
- New Taipei City Computer Association (NTCA) [http://www.ntca.org.tw/WebMaster/?section=77](http://www.ntca.org.tw/WebMaster/?section=77)

**Private businesses:**
- Acer - [https://www.acer.com/ac/en/GB/content/byoc-home](https://www.acer.com/ac/en/GB/content/byoc-home)
- FarEasTone - [http://www.fetnet.net/cs/Satellite/eCorporate/ecoHome](http://www.fetnet.net/cs/Satellite/eCorporate/ecoHome)
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