CASE STUDY

Turin (IT) - Nagoya (JPN)

IURC - Asia & Australasia

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Thematic Network(s): Digital transition - smart city
Cross-cutting challenge(s): Digital transition, sustainable industry, jobs and skills
Topic keywords: Innovation, startup

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INTERNATIONAL URBAN AND REGIONAL COOPERATION

Developing a creative and smart city

Turin and Nagoya aim to be a vibrant hub for industrial and social innovation. Turin learnt of Nagoya's entrepreneurial education for children. In return Nagoya learnt how to develop demonstration projects using public spaces from Turin.

EXECUTIVE SUMMARY

The goal of the cooperation between Nagoya and Turin is to create a favourable and attractive place for the settlement of companies and start-ups interested in developing, testing, and demonstrating innovative tech solutions in the urban field, or developing projects with a high social impact.

The two cities designed and participated in two study visits. The first study visit held in November 2022 entailed the delegation of Nagoya's visit to Turin and the second study visit in March 2023 allowed the delegation of Turin to experience the ecosystem in Nagoya. The two cities have been able to influence each other after their return from the study visits with projects or programs that were developed utilizing what had been learnt from their partner. The methods used by Turin City's platform for experimentation for new ideas and creative solutions for public issues, the Torino City Lab, has served as a stimulus for Nagoya City to fine tune their own platform and create "Nagaya City Lab". Turin, on their part were inspired by Nagoya City's inspirational training program to grow innovators by entrepreneurial programs for primary and secondary school students, and are reflecting the learnings in their own entrepreneurial education programs.

MAIN CHALLENGE AND SOLUTION

The City of Turin

Turin is the capital of Piedmont and a business and cultural centre located in Northern Italy. Once known as the car capital of Italy, Turin's economy diversified as the global market share of the Italian automobile industry became proportionally smaller. The city is transforming from an industrial to a post-industrial structure with an emphasis for a knowledge based tertiary sector. In the process, the government has induced an increase in the number of students and tourists staying in the city and Turin has become a gathering place for culture, art and creative people. There is, however, also a need to bridge the gap with low-income groups, and the city started to aim for further innovation since the early 2010s. One approach Turin took was the development of makerspaces and FabLabs around the city for experimentation and creativity of citizen driven innovation. Another was the Torino Social impact, which is Turin's strategy to develop an ecosystem for entrepreneurial innovation with the involvement of multiple stakeholders, and was promoted by the chamber of commerce and the City Hall in 2012. In current day Turin, universities, research centers, incubators, and business accelerators are gathering to develop a scientific and technology-based economy.

Creating a social innovation ecosystem – The Torino City Lab

One of the initiatives of the Torino Social Impact, the Turin City Lab (TCL) initiative has enabled over 90 local companies to connect with each other, and also with international partners, to create a social innovation ecosystem mainly to solve social and environmental problems. The City Hall is one of the key actors, as it is offering public spaces for testing, giving companies access to municipal services and data, as well as public funding. TCL is a laboratory because it is an experimental space where participants can develop new methods of making, learning, and training.

In line with Turin City's commitment to achieve carbon neutrality by 2030, the topics addressed by the TCL are: green and smart mobility; green climate resilience and the circular economy; innovative urban services.

The TCL evaluates and decides whether to support proposals based on their:

1) Innovativeness
2) Technical feasibility
3) Economic and financially sustainability
4) Involvement and social impact
5) Environmental Stability

As of March 2023, there were 61 trials and 35 ongoing projects.

Incubator for 5G technology - CTE-NEXT (Turin House of Emerging Technologies)

A component of the TCL, CTE-NEXT is an incubator designed to accelerate start-ups and SMEs in 5G related technology development by conducting urban stress testing and monitoring of novel technologies at real test sites with the support of the universities of Turin, and other institutions. Funded by the Italian Ministry of Economic Development, CTE NEXT is focused on 5G and emerging technologies (AI, IoT, Blockchain etc.) The projects which were presented to the delegation of Nagoya City during the study visits, include testing of drones with 5G connectivity which analyze the durability of urban green infrastructure, and prevent any harm caused in times of extreme weather event.

Another project visited was an innovative platform of self-driving and assisted wheelchairs with a potential to improve the wellbeing of people with disabilities. Tests were carried out under the CTE-NEXT, to integrate 5G technology and allow some of the algorithms to be computed using a platform stored in the Cloud and not on the vehicle.

Figure 1: Nagoya officials visit to the labs no. 1

Figure 2: Nagoya officials visit to the labs no. 2

OGR Tech

The OGR (Officine Grandi Riparazioni) is a former industrial complex with floor space of over 20,000 square meters that has been refurbished as an incubation facility. The OGR Tech is now a symbol of brownfield investment and the innovation hub for technical research and business incubation on sustainable mobility and digital innovation in Turin. CTE-NEXT and 13 over innovation programs support entrepreneurs, by offering open innovation opportunities with large companies, and the academia, such as the Politecnico di Torino. Recently, OGR Tech is the location for international partnerships for start-up accelerator programs, and international events on various topics are held on the grounds.

Figure 3: Overview of OGR

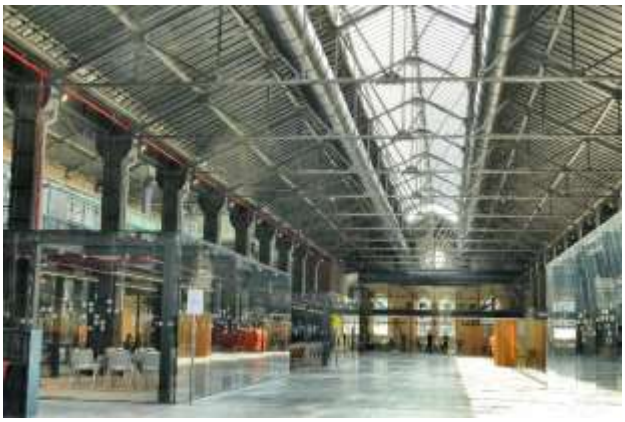

Figure 4: Internal view of OGR

Upon returning from the visit to Turin, Nagoya started a new project “NAGOYA CITY LAB” in 2023, which is a replication of the Turin urban testing model. The focus will be to create liveliness, bring more customers, and greening.

“Innovation is critical for Nagoya to remain a leader in the Japanese economy.” Toshio Sumi, Head of Start-up Support Office, Innovation Promotion Department, Economic Affairs Bureau, Nagoya City

Nagoya City

Japanese carmakers and their supply chains face major reform due to several challenges. These include the Connected, Autonomous, Shared, and Electrification (CASE) revolution, and new services, such as mobility as a service (MaaS). The challenge of achieving carbon neutrality by 2050 is another. Nagoya city, whose economy is highly influenced by such change, needs to retain new job opportunities for skilled engineers who would have supported the conventional automobile industry, by creating new industries. For this, Nagoya is making efforts to create an environment in which start-ups and their innovative ideas are welcome.

Nagoya’s policies to create a start-up ecosystem focus on offering:

- A wide range of training opportunities to increase the number of innovators, including entrepreneurship education
- Networking opportunities for co-creation and open innovation
- Opportunities for international exchange, and access to global markets
- Offering subsidies to entrepreneurs, start-ups and SMEs (Venture financing)

Some of Nagoya’s best practices are …

Entrepreneurship education

Nagoya City has been offering entrepreneurship education to primary and secondary school students since 2020. The workshop for primary school students allows them to acquire basic knowledge on the principles of economics through card games. Workshops targeting secondary school students offer digital skills training, which are essential assets to an industrial city as the digital transition continues. The children are exposed to the art of playful and meaningful coding with undergraduate students serving as their mentors. Both workshops are designed to foster entrepreneurial awareness and acquire skills essential to become an entrepreneur.

Figure 5: Primary school entrepreneurship education

Figure 6: Secondary school entrepreneurship education

Testing novel technology for challenges provided by Nagoya City Hall

Hatch Technology Nagoya promotes research and development of advanced technologies and their social implementation in the city, thereby attracting companies with advanced technologies to Nagoya City. Entrepreneurs and companies receive financial support and a testing ground to tackle social problems that Nagoya City Hall wishes to resolve. Since 2019, Hatch Technology Nagoya has succeeded in providing a test bed for 23 advanced technologies. Below is a picture of a social experiment on the use of drones for sweeping debris in rivers (figure xx). Figure xx shows an experiment on the use of augmented reality user instruction manuals at a plant allowing the worker to move ahead in his/her procedure in a paperless environment.

Figure 7: Drones for sweeping debris in rivers

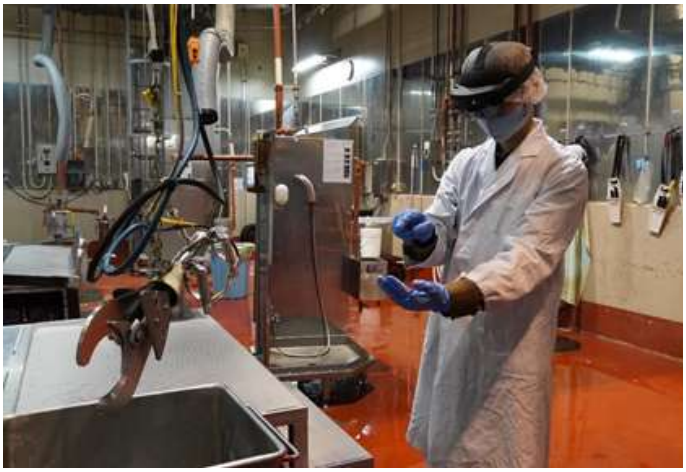

Figure 8: Augmented reality user instruction manuals

"Seeing Nagoya's education programs has allowed Turin to create educational activities for "Emerging Tech" and "Entrepreneurial Skills" within CTE NEXT"

Elena Deambrogio, Head of Innovation of CTE NEXT, City of Turin

RESULTS AND IMPACT

For Turin, the IURC program has allowed the city to plan activities which will facilitate globalization of the CTE-NEXT (Turin House of Emerging Technologies). Due to such success, Turin's regional government CEIP Piemonte and the chamber of commerce have both shown interests for Japan, and there is hope for an overall Global Strategic Partnership Activity Plan in the future. The areas could potentially be those in the 5G and emerging technologies which are of shared interest between Nagoya and Turin, such as robotics, smart mobility and climate neutrality.
Furthermore, seeing Nagoya's education programs has allowed Turin to create educational activities for "Emerging Tech" and "Entrepreneurial Skills" within Turin House of Emerging technologies. The courses will be held in the school year 2023-2024.

Nagoya City has been selected by the national government as a global hub city for the nation's start-up ecosystem, and is currently implementing a variety of initiatives to promote innovation. The city believes it is important to create an environment where start-ups can emerge and take on new challenges at a rapid pace in order to generate innovation. Nagoya City Hall intends to make Nagoya a city where start-ups are created.
With the success of Hatch Technology Nagoya, Nagoya City has decided to utilize a wider area of the city as the test site of novel technology by start-ups. Nagoya City Lab, started in 2023, and has applied the learnings from Torino City Lab into its design. With the involvement of the government, private sector, and citizens, Nagoya City Lab is now testing six innovative ideas in three wide locations and analysing their social impact. The ideas include, for example, a community coupon that encourages citizens to act with ecological awareness, and the use of autonomous boats for inland waterways.

KEY FIGURES.

1 joint online event
"Nagoya Torino with 5G technology" was held

2 educational activities
for "Emerging Tech" and "Entrepreneurial Skills in Turin have been inspired by Nagoya's education program

3 locations
have been selected for real test sites under the new Nagoya City Lab inspired by Torino City Lab

6 Ideas
for social innovation are currently being tested at the Nagoya City Lab.

LESSONS LEARNED

Turin City has succeeded in developing an ecosystem for entrepreneurial innovation by offering public spaces for testing, giving companies access to municipal services and data, as well as public funding.

Nagoya City's training for increasing the number of innovators has not only been targeting the workforce but also primary and secondary school students to embed an entrepreneurship mindset from an early age

Torino City Lab's network of multiple stakeholders which include universities, research centers, incubators, and business accelerators have been key to develop a scientific and technology-based economy.

Nagoya City's method of providing a number of social challenges administered by City Hall to test novel technology each year has allowed entrepreneurs to collect data and develop prototypes.

THE IURC PROGRAMME.

The International Urban and Regional Cooperation (IURC) programme enables cities in different global regions to link up and share solutions to common problems. It is part of a long-term strategy by the European Union to foster sustainable urban development in cooperation with the public and private. Through engaging in IURC, cities will have the chance to share and exchange knowledge with their international counterparts, building a greener, more prosperous future.

The IURC programme is an opportunity for local governments to learn from each other, set ambitious targets, forge lasting partnerships, test new experiences. Its activities will support the achievement of policy objectives as well as Its activities will support the achievement of policy objectives as well as major international agreements on urban development and climate change, such as the EU Urban Agenda, the UN Sustainable Development Goals, and the Paris Agreement.

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