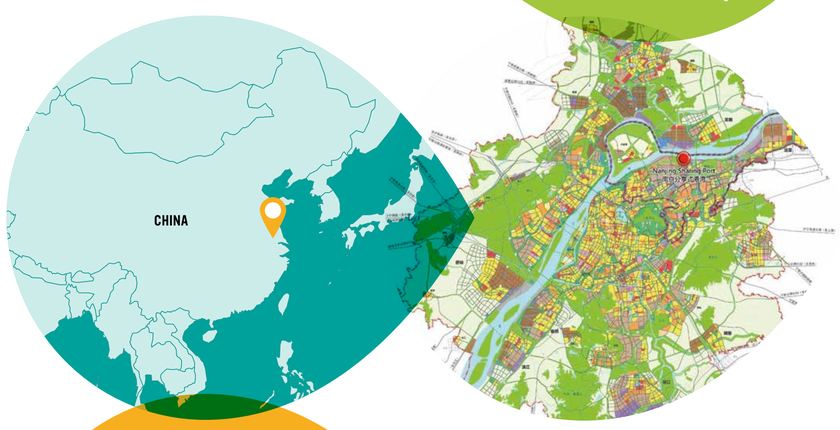
THE SHARING PORT OF NANJING

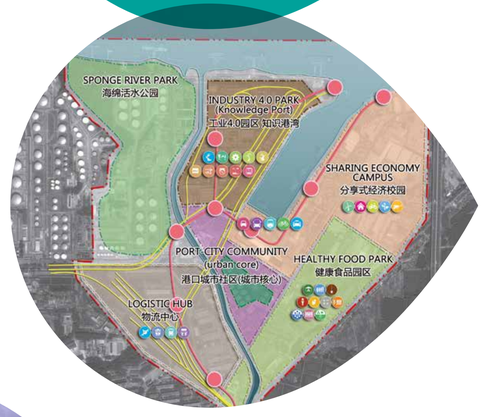
EXPLORING SHARING AND DIGITAL ECONOMIES POTENTIALS IN THE CONTEXT OF PORT-CITY REGENERATION

NANJING, CHINA

Transformation and digitization of the industrial sector is giving new perspectives to the port-city relationship



While the industry tends to become more digital and connected, port areas become more human-friendly



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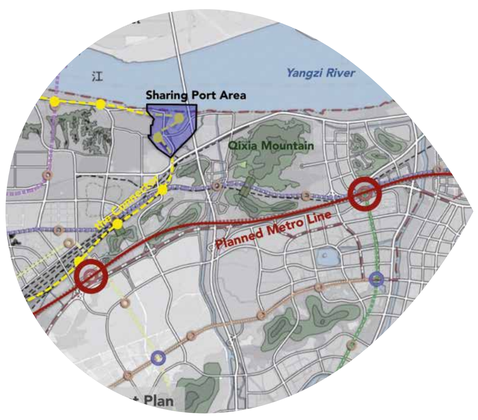

As centers for disruption and innovation, cities provide excellent platforms to rethink the way we live together and collectively shape our environments. Contemporary port cities are often both major transport and logistic hubs and creative places, frequently searching for innovative urban solutions. But more than just moving goods, could ports become places where ideas are created and transported around the world?

The sharing port is an effort to harness this potential through the sharing and circular economies. In doing so, the aim is to create a healthy urban environment with a strong port-city interface. It is defined as a social and economic cluster that promotes the exchange of knowledge and ideas, with a built form emphasis on reconnecting the city and waterfront, while supporting green and shared mobility.

THE SHARING PORT PRINCIPLES

The objective is to rethink the notion of "port" in the urban environment in relation with the sharing economy. Connections between sharing ports projects are made locally through shared transport modes, as well as ICT, and globally via digital avenues. The shareable infrastructure is intended to foster a community that shares a commitment to sustainability, equity, innovation and entrepreneurship. The sharing port-city initiative is guided by eight principles:

1. A Platform for Education and Knowledge
2. A Cluster for the Sharing Economy
3. A Community Oriented to the Circular Economy
4. A Green and Shared Mobility
5. A Multimodal Hub for Everyone
6. A Resilient Waterfront
7. A Healthy and Smart Community
8. Measure What Matters

THE NANJING SHARING PORT PROJECT IN CHINA

The rapid industrialization and urbanization of Chinese cities has recently been followed by an economic slowdown in the industrial sector, as well as higher unemployment in the industrial sector, housing costs and air pollution. As the country urbanizes, the use and cost of space faces increasing pressure. Traffic congestion, air pollution, increasing housing costs and waste production characterize some of the current challenges of Chinese urban societies, and inspire more and more citizens to develop collective and innovative solutions. In China, the current multiplication of sharing economy oriented solutions relying on mobile applications and social networks is quickly transforming the relations between individuals and communities in urban societies in terms of mobility, communication, food consumption and social life. An unprecedented urban and industrial transition is taking place in regard of new opportunities of social and economic innovation. Home to the largest inner port of the world with 190 million tons of cargo in 2012, the City of Nanjing (8,2 million inh.), capital of Jiangsu Province located along the Yangzi River, is also home to an innovative initiative of a port-area redevelopment dedicated to the digital industry, the circular economy and the sharing economy.

CONTEXT OF THE PROJECT

Qixia District (80 km2 and 400.000 inh.) is currently planning its urban redevelopment through the requalification of its industrial waterfronts, the relocation of several petro-chemical industrial sites and the improvement of the Yangzi riverbanks resiliency.

The Sharing Port Initiative takes place in the context of a progressive industrial transition for the Port area of Nanjing and its integration in the urban development of the city. It is the fruit of cooperation between Nanjing University, the Municipality, Citilinks and the Metropolitan Collective.

Surrounded by the Qixia Scenic Mountain Area, a (current) petro-chemical site, a railway yard and the Yangzi riverfront, the site of the Sharing Port covers a mixed-used area of 1.9 sq.km including docks, warehouses, railways, villages, forestry, agriculture and aquaculture.
The project is the expression of the industrial and urban transition of China, as it combines the creation of a sharing community with the circular economy and digital industry along a restored waterfront.

The 5 priorities of the project are to about creating:

- A Sharing Community that integrates sharing economy solutions in public spaces and streets, housing, co-working offices and warehouses, food production and consumption, commuting and local mobility.
- A Digital Industry Area oriented to the Internet of Things and the connectivity of cyber physical systems. Connected and smart warehouses are built along a railway and combine decentralized production and logistic infrastructure.
- A Circular and Self-sufficient Community, sharing and producing value with energy, food, waste and water. Communities and industries are connected and inform each other about what they produce and consume and how they can make benefit of their collective management of local resources.
- A Logistic Hub, connecting decentralized/online production and multimodal transport infrastructure (rail/road/water.)
- A Resilient Waterfront restored and designed to prevent floods and to reintegrate local ecosystems along the Yangzi River.

THE SHARING PORT'S PLAN INCLUDES 6 PHASES OF DEVELOPMENT:

1. The Industry 4.0 Park
A cluster of 16 smart factories working through decentralized decision process, cyber physical systems and 3D printing, this "e-Park" is made of printed warehouses along the waterfront. The first step of construction is to implement parallel railways that will be used by 3D printers to build the infrastructure. Later, the rails are re-used for logistic and urban mobility purpose, and connect the warehouses with the other areas of the site.

2. The Sharing Economy Campus
A Sharing Community of 9000 people takes place along the Gangchi Pond as a campus where the community includes universities incubators, young entrepreneurs, researchers and residents. The community shares transport modes, food production and waste, co-working offices and kitchen gardens. The campus is connected to the rest of the sharing port and the city of Nanjing with a multimodal marina along the Pond and a "connector" including the transport of commuters and goods.

3. The Healthy Food Park
Urban and healthy vegetables are produced in a limited area of 10 hectares where community gardens and greenhouses with hydroponic culture come together in order to encourage food self-sufficiency in the perimeter of the sharing port.

4. The Logistic Hub
A renovated yard connects by rail the transport of goods made in the smart factories, the Yangzi river docks, the Food Park and the railway system the Port of Nanjing and beyond.

5. The Sponge River Park
A new riverfront wetland is located at the edge of the site in order to prevent floods and improve the resiliency of the Yangzi riverfront. The re-introduction of species in the wetlands aims to regenerate a natural ecosystem in the area.

6. The Port-City Community
As a new human activity and clean industrial functions are appearing in the area, the "Nanjing Sharing Port" will see an urban core incrementally developed and linking social, economic and ecological functions of the area.

CONCLUSION: WHAT CAN WE LEARN?

The current transformation and digitization of the industrial (and manufacturing) sector is giving new perspectives to the relationship between the city and its industrial bases, such as port areas.
We can learn from the Nanjing Port project that, when the digitization of the industry meets the benefits of the sharing - urban - economy and the restoration of heavy industrial waterfront through the circular economy, a Port-City interface becomes able to build a physical, economic and social between the two entities. They are not distinctive anymore.
While the industry tends to become more digital and connected, port areas become more human-friendly and give space for more environmental care. The riverfront sponge park of Nanjing reintroduces the local flora and fauna and responds to critical flood issues in urban China.

China's industrial transformation in the next 20 years will teach us the impact of digitization of cities and industries, at the scale of Chinese cities and ports, with a perspective of "connected and resilient" urban redevelopment along the waterfronts.

MORE INFORMATION AND CONTACT:

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