

Box 14.2: The Kazakh tech incubators embracing the Fourth Industrial Revolution

In 2015, the government established the Autonomous Cluster Fund. This fund manages the Alatau Park of Innovative Technologies and the Tech Garden Innovative Cluster, both of which are incubating promising start-ups. In all, the Autonomous Cluster Fund groups 233 organizations, including 23 universities, 24 research institutes, a development institute, 48 firms and a joint investment fund.

Alatau Park of Innovative Technologies

Situated 30 km east of Almaty, the park was set up in 2005 by the Institute of Nuclear Physics, which dates from the Soviet era. It is using venture capital to increase the share of Kazakh content in high technologies in the following areas:

- smart industry and new materials;
- smart environment;
- new sources of energy and clean technologies;
- financial technologies (fintech);
- e-commerce; and
- new media.

The park has manufacturing complexes and houses research facilities for institutions such as the Kazakh-British Technical University and International University of Information Technologies.

It operates as a Special Economic Zone. Local and foreign investors are entitled to preferential tax rates and are exempt from property, land, corporate income and social taxes.

Venture capital is made available by the Global Venture Alliance, which is based in San Francisco, USA.

The international accelerator programme, Start-up Kazakhstan, is open to participants from the Commonwealth of Independent States and Europe. The Damu Entrepreneurship Development Fund of the National Agency for Technological Development and the national Science Fund (2006) also provide financial support for new projects. In addition, the government has approved competitive innovation grants.

Tech Garden

The Tech Garden Innovative Cluster also operates as a Special Economic Zone, with the same fiscal advantages. It serves as a test site for the digitalization of industry, through pilot projects, model factories and laboratories.

It runs an international accelerator programme for start-ups in central Almaty called icoStartup.kz, supported by the Ministry for Investment and Development, with three main tracks:

- **Industry 4.0:** industrial Internet of Things, robotics and autonomous systems, energy efficiency and conservation, additive manufacturing (3D printing) and smart logistics;
- **Smart cities:** building information modelling, next generation network and data transfer, smart transportation and infrastructure and social technologies; and
- **Fintech:** blockchain, e-commerce and digital technologies.

Start-ups at icoStartup.kz have access to research labs shared by multinational corporations such as IBM (USA) and the British technology companies IntelliSense and Metalysis. In partnership with IntelliSense, a laboratory for Industry 4.0 helps to prepare Kazakh companies for digitization of up to 75% of working processes in the mining sector. With Metalysis, Tech Garden is setting up an R&D centre to explore avenues for producing 3D powders and alloys from Kazakhstan's raw materials, as well as pilot projects for the production of metal powder. Since there is not yet any clear leader in this field, this area could become an export niche for Kazakhstan in a few years.

One aim is to provide start-ups with access to markets in the Eurasian Economic Union and elsewhere. Tech Garden offices have opened in Silicon Valley (USA) and the Russian Federation's technoparks in Skolkovo and Novosibirsk. Innovative start-ups get an opportunity to participate in mentoring programmes in Almaty and Silicon Valley.

The Tech Garden invests up to US\$ 100 000 in each start-up. It is planned to finance nearly 500 innovative start-ups and incubate at least 50 high-tech and export-oriented companies by 2020. Funding is provided through a joint venture with the Global Venture Alliance (GVA Alatau Fund).

Source: Shayakhmetova (2017); Interfax (2017); https://techgarden.kz/ru/startupkz_en