Chapter 5

Promoting start-ups in Mexico

This chapter presents an overview of policies to support start-ups in Mexico. Between 2012 and 2016, Mexico has stepped up its support for start-ups. The country has bolstered institutions to promote start-ups and increased early-stage financing, thus addressing one of the main challenges identified in the first review of policies to promote start-ups (OECD, 2013a). It has also invested in promoting an entrepreneurial culture and creating an image of Mexico as a place for enterprises with a global impact. In supporting start-ups, Mexico is seeing the world as a potential market for exports by its start-ups and as a source for allies and partners for innovative projects.

Introduction

In recent decades, Mexico has taken steps to boost its entrepreneurial ecosystem. Mexico started to reform the legal framework to create an environment that was more friendly towards starting innovative enterprises. For instance, one of the reforms - the 2002 Innovation Act (Ley de Innovación), which came into force in 2009 - gave public research centres greater autonomy in managing intellectual property (OECD, 2013a, 2013b). In 2012, access to seed, venture and angel-investor capital was one of the main barriers to the creation of new technology start-ups in the country (OECD, 2013a, 2013b). In recent years, Mexico has supported start-ups, and the situation has changed significantly since the first studies (OECD, 2013a; OECD, 2013b) were conducted. Not only has the perception changed, with the country having generated and mobilised an entrepreneurial culture, but new instruments have been introduced to strengthen institutions and raise the level of experimentation.

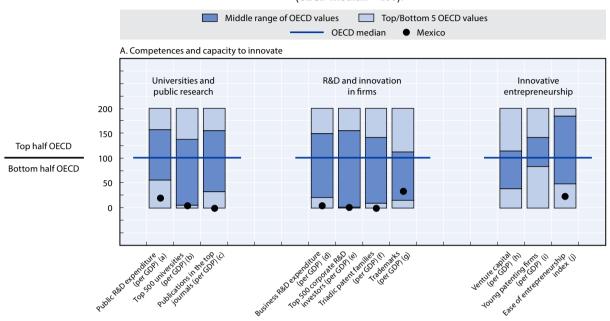
This chapter presents an overview of policies to support start-ups in Mexico, focusing on changes that have taken place between 2012 and 2016 and identifying challenges for the future.

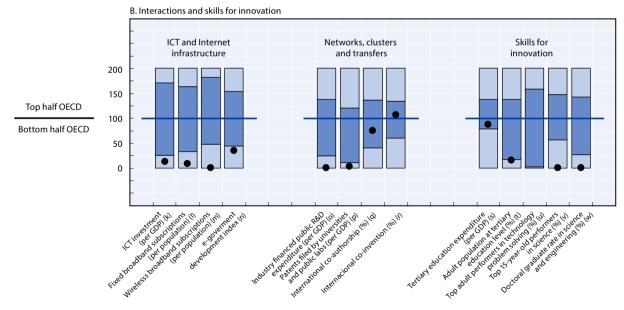
Start-ups in Mexico: The current situation

Despite the progress, Mexico's performance in science and innovation remains below the OECD average (OECD, 2014; Figure 5.1). Nevertheless, although Mexico's innovation system is still not as dynamic as that of the top OECD countries, start-ups are now a reality in the country, even though they are still in their infancy. Although there is a lack of data showing exactly how many start-ups exist, the perceptions of stakeholders in the ecosystem and a number of national information sources suggest that start-ups have begun to emerge in Mexico: data from the Mexican Private Capital Association (AMEXCAP) in 2016 show that Mexico has one centaur (that is, a start-up worth between USD 100 million and USD 1 billion) and 26 little ponies (start-ups worth between USD 10 million and USD 100 billion) (Figure 5.2). According to estimates by the Production Development Corporation (CORFO) in 2015, Chilean start-ups include one unicorn (i.e. a start-up worth at least USD 1 billion), four centaurs (worth between USD 100 million and USD 36 billion) and 36 little ponies (worth between USD 10 and 100 million). These start-ups operate in a range of sectors, including fintech, e-commerce and health (Box 5.1).

Figure 5.1. Comparison of science and innovation performance in Mexico and the OECD, 2014

(normalised performance index relative to median OECD values) (OECD median = 100).





Note: The indicators are adjusted to the size of the country (GDP or population size). The values for Mexico are compared with the median value for OECD countries, i.e. the middle-ranked country of all the OECD countries for which data is available. For more details on the methodology used, see the STI country profiles in OECD

Source: OECD (2014) Science, Technology and Industry Outlook 2014, http://dx.doi.org/10.1787/sti_outlook-2014-en, based on OECD (2014), Main Science and Technology Indicators (MSTI) Database, June, www.oecd.org/sti/msti.htm.

Centaurs (1) Ooyala Little ponies (27) Mi Moni Kio Networks Kubo Financiero Cornershop /er de Verdad Kueski Assured Labor F Technologies Yellow Paper Winhits Prestadero CornerShop Medica Santa Carmen Wizeline Miroculus Voxfeed Miora **FINAE** Gaia Design nterfactura Anima Estudios SinDelantal Logyt Screen cast

Figure 5.2. Start-ups in Mexico, by value, 2016

Note: The term "centaurs" refers to start-ups valued at between USD 100 million and USD 1 billion; "little ponies" refers to those valued at between USD 10 million and USD 100 million.

Source: Authors' work based on information provided by INADEM and AMEXCAP, updated in July 2016.

Box 5.1. Start-ups in Mexico: Some examples

There are several success stories of innovative start-ups in Mexico that are developing competitive and cutting-edge technologies and helping to transform the country's economy. Below are three examples:

Semka Biomedical Technology:

Semka develops innovative biomedical technology to treat tumour cells, enabling tailored treatment for cancer. The company was supported by the "Support for High Impact Enterprises" programme run by the National Institute of Entrepreneurship (INADEM) and has won several start-up competitions.

Enersureste:

Enersureste specialises in solar thermal energy products and technology applications and is revolutionising the use of renewable energies in Mexico. CONACYT's "Incentives for Innovation" programme supported the company in 2010. In November 2014, Enersureste won the World Summit on Entrepreneurship competition held in Marrakesh. The company has filed more than 10 patent applications.

Ticoy:

Ticoy is an agribusiness firm that processes high-quality food. Launched in 2006, the company has received support from the National Entrepreneur Fund (Fondo Nacional del Emprendedor). Ticoy grew quickly, increasing the size of its workforce from 15 to 150 employees in the space of two years. It is helping to create a high-quality niche in Mexico's traditional food sector.

Source: Authors' work based on company websites and information from INADEM.

Mexico is accelerating the promotion of start-ups

Mexico began to introduce measures to promote the founding of new innovative enterprises in the 2000s. The current Special Science and Technology Programme (PECiTI) was launched in 2000 by the National Council of Science and Technology (CONACYT). The programme introduced measures like the Technological Innovation Fund (FIT) to support innovative entrepreneurship directly and indirectly. Between 2003 and 2009, the AVANCE programme run by CONACYT and by the Enterprise Capital Fund (NAFIN) provided support for exploiting and transferring technology, starting tech firms and accessing seed and venture capital. The seed-capital fund was subsequently abolished, leaving a gap in the financing chain that was recently closed. In the area of private capital, the CONACYT-NAFIN Entrepreneurs' Fund, launched in 2004, was the country's first seed-capital fund. In 2006, the Mexican Capital Investment Corporation (CMIC) was formed, and a year later, it partnered with the Ministry of Economy and CAF - Development Bank of Latin America to launch Mexico Ventures I, a venture-capital fund of funds (AMEXCAP et al., 2015). Mexico was faced with three main challenges to enable start-ups to take off: it needed to ensure the continuity of support mechanisms, improve the co-ordination of programmes and institutions, and close the funding gap, especially in the early stages of business development (OECD, 2013a, 2013b; Ornelas Díaz et al., 2014).

Between 2012 and 2016, Mexico prioritised support for new innovative enterprises through the national competitiveness, innovation and growth strategy. It also strengthened the institutions that promote those start-ups. In 2013, Mexico launched the National Institute of Entrepreneurship (INADEM) as a deconcentrated administrative body of the Ministry of Economy. The purpose of INADEM is to implement and co-ordinate national policies in support of entrepreneurs and micro, small and medium-sized enterprises (MSMEs). Its main priorities are to promote the innovation, competitiveness and national and international visibility of businesses and to connect financing and private investment with production. In 2014, Mexico merged the Entrepreneurs' Fund with the SME Fund to speed up the implementation of entrepreneurship policy. The new body is called the National Entrepreneurs' Fund (Fondo Nacional del Emprendedor). In addition to INADEM, which has become the main channel for promoting entrepreneurs, the development bank Nacional Financiera (NAFINSA) plays a key role in fostering private investment in start-ups. Through venture-capital programmes, NAFINSA invests in four investment funds and supports crowdfunding initiatives.

Mexico's strategy involves promoting start-ups with a global impact. The country sees its potential partners as Latin America, the United States and Europe. Regional and international co-operation is a new priority in Mexican policy for start-ups, and this strategy has good potential. The first step was to create the Mexico-United States Entrepreneurship and Innovation Council (MUSEIC) in May 2013. MUSEIC's goal is to strengthen the binational environment of entrepreneurship and innovation (Box 5.2). Mexico also co-operates with France in promoting start-ups. In 2015, the Mexico-France Council on Entrepreneurship and Innovation (COMFEI) was formed as a result of an institutional agreement between INADEM and Business France. COMFEI has three committees: the Entrepreneurship Committee, which promotes an entrepreneurial culture, the sharing of best practices, and co-operation on high-impact acceleration and incubation; the Innovation Committee, whose aim is to set up the Franco-Mexican Centre for Innovation and Research; and the Strategic Sectors Committee, which focuses on activating productive linkages and linkages between businesses in France and Mexico in sectors such as energy, transport, new technologies, biotechnology, the creative industries, information technologies and innovative tourism.

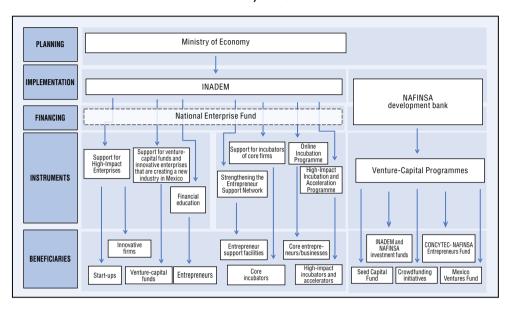


Figure 5.3. The main institutions and instruments to promote start-ups in Mexico, 2016

Source: Authors' work based on official data from INADEM and NAFINSA.

Box 5.2. International co-operation in cross-border areas: the iCluster project by MUSEIC

In 2013, the National Institute of Entrepreneurship (INADEM) and the US Department of State created the Mexico-United States Entrepreneurship and Innovation Council (MUSEIC) to increase co-operation between the two countries in supporting innovative entrepreneurship. MUSEIC promotes binational collaboration through joint actions to support innovative entrepreneurship. It has seven sub-committees dealing with topics of interest to both countries, namely innovation clusters, technology commercialisation, women entrepreneurs, infrastructure for MSMEs, the Latino diaspora, access to capital, and energy and sustainability. The committee on the Latino diaspora launched a pitch competition, called La Idea, in 2015 to form linkages between Latin American entrepreneurs and US-based Hispanic entrepreneurs. In the field of technology commercialisation, MUSEIC operates the Intelligent Manufacturing Initiative and the I-Corps Initiative, which promote exchanges between entrepreneurs, scientists, private-sector entities and governments to drive technology commercialisation in key sectors in the United States and Mexico. MUSEIC also promotes the development of entrepreneurial ecosystems in cross-border regions. Since 2014, for instance, the iCluster project has been supporting start-ups linked to the intelligent specialisation strategies of the territories lying on the border between Mexico and the United States. It encourages the clusters and businesses on either side of the border to share best practices and to draw up joint regional strategies on intelligent specialisation and on linkages between clusters and businesses. The US Economic Development Administration shared its cluster mapping strategy with MUSEIC to align strategies for mapping border-region clusters, thus making it easier to monitor the success and impact of the initiatives. The Mexican cluster map was completed in 2015. Because the methodology was established in co-ordination with the US cluster map, the data shaped economic development strategies in the border regions in both countries. iCluster INADEM is co-financed by the US Department of State and the agencies linked to the project. Seven pilot projects are underway involving 3 600 start-ups in the crossborder regions between Mexico and the United States (the CaliBaja Mega-Region, the Nuevo León-Coahuila-Texas industrial corridor and the Monterrey-Saltillo corridor). Since mid-2016, the Mexican cluster map has been accessible worldwide on a free website.

Box 5.2. International co-operation in cross-border areas: the iCluster project by MUSEIC (cont.)
Table 5.1 Member institutions of MUSEIC

WINTED OTATEO						
UNITED STATES	MEXICO					
Department of State	National Institute of Entrepreneurship (INADEM)					
Department of Commerce	Ministry of Foreign Affairs					
Overseas Private Investment Corporation	National Science and Technology Council (CONACYT), including the Centre for Research and Advanced Studies (CINVESTAV)					
Small Business Administration (SBA)	Angel Ventures Mexico					
USAID	Crowdfunder México					
Kauffman Foundation	Endeavor					
National Business Incubators Association	Green Momentum					
Omidyar	IGNIA					
University of Texas at San Antonio	Impulsa México					
UC Berkeley	Latin Idea					
United States-Mexico Foundation for Science (FUMEC)	Mexican Technology Platform					
WE Connect International	Startup México					

Start-up policies also operate at the state (sub-national) level in Mexico. The most active states are the Federal District, Nuevo León, the State of Mexico, Jalisco and Guanajuato. State programmes, however, tend to have a small budget and rely on additional federal resources, which sometimes support start-ups that address specific local needs. One such programme is the State of Mexico Institute of Science and Technology, which offers a support package for innovative entrepreneurs. Another is the Nuevo León Innovation System, a state public-private programme involving the private Monterrey Institute of Technology and Higher Education (ITESM) and the public Autonomous University of Nuevo León. This programme focuses on promoting innovative activities and supporting technology-based start-ups.

Mexico is broadening and modernising its policy mix for start-ups

Between 2012 and 2016, Mexico has modernised and broadened its range of instruments to support start-ups. INADEM has become the benchmark institution for supporting start-ups in the country. The policy mix mobilises actions aimed at:

- closing the funding gap
- · facilitating linkages and providing services
- · creating markets
- · transforming mindsets
- reforming legal frameworks.

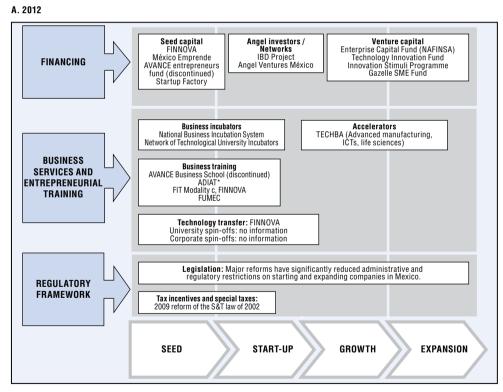
Source: Authors' work based on official information from INADEM.

In 2012, Mexico had incentives for venture capital, including through the Fondo de Capital Emprendedor (Venture Capital Fund). However, start-ups faced major gaps in early-stage finance as only two funds offered seed capital (the Sectoral Innovation Fund (FINNOVA) and the México Emprende programme) since two major funding lines for seed capital had been abolished (OECD, 2013a). In terms of support services to entrepreneurs, Mexico had the Network of Technological University Incubators (around 200 incubators) and the National Business Incubation System (around 500). The Science and Technology Act (Ley de Ciencia y Tecnología), which came into force in 2009, helped to create a more appropriate legal framework for start-ups (OECD, 2013a).

Mexico has improved in three main areas since 2012 (Figures 5.4.a and 5.4.b):

- The early-stage funding gap is now smaller. INADEM has developed instruments to support the financing of start-ups, focusing in particular on supporting venturecapital funds for start-ups in the seed stage. The venture capital industry has taken off, and is now the second most active in all of Latin America according to data released by the Latin American Private Equity & Venture Capital Association (LAVCA) in 2016.
- INADEM is introducing next-generation services to support start-ups. The institute is creating lines to support high-impact accelerators and incubators and providing support for entrepreneurial training, with new features such as financial training workshops. INADEM is also facilitating access to business services through the Network of Business Mentors (Red de Empresarios Mentores).
- INADEM is stepping up support to strengthen the start-up culture. It is introducing instruments to change people's mindsets and spread an entrepreneurial culture throughout Mexico. It organises various events like the Entrepreneurs' Week (Semana del Emprendedor), and it is strengthening the information points for entrepreneurs in different states and modernising them.

Figure 5.4. Policy mix to support start-ups in Mexico, 2012 and 2016



Source: OECD (2013), Start-up Latin America: Promoting Innovation in the Region, http://dx.doi.org/10.1787/9789264202306-en.

B. 2016 New category not in the policy mix in OECD (2013) New instrument not in the policy mix in OECD (2013) Instrument not present in the country in 2016 Seed capital Venture capital
Venture Partners*
Mexico Ventures I (fund of funds)
(CMIC)
Mexico II Fund (CMIC)
Impact Investment Funds
(INADEM) Angel investors / Networks Angel Ventures México Support for high-impact enterprises (INADEM) Early-stage venture capital Support for INADEM venture-capital funds Co-investment Fund (NAFIN/Secr. Econ) Entrepreneurs Fund (NAFIN/CONACYT) Expansion seed capital Support for high-impact enterprises (INADEM) FINANCING Crowdfunding: platform for INADEM social enterprises; IBD-MIF-INADEM Project; Angel Investors Programme and crowdfunding Awards: e.g. The Pitch Integrated & open-innovation programmes: Wayra Mexico Accelerators: Directorate General of Business Development (INADEM) Business incubators 4 Directorate General of Next-generation incubators/accelerators
SUM (Start-up México); MassChallenge*; Techstars, Venture Institute*; TECHBA* **SERVICES** Business Development programmes (INADEM) Network of Technological University Incubators FOR ENTREPRENEURS Sharing economy and business shar Business training
Directorate General of Business Development programmes (INADEM)
Financial inclusion workshops Technology transfers / University spin-offs: Social entrepreneurship at universities: ORT, UMA, Anáhuac, ITESM DEMAND-ORIENTED SUPPORT & Market Creation Programme that identifies potential demand:: INADEM Challenges PROMOTION OF Programmes and activities to raise awareness about business culture: Directorate General of Business Development (INADEM), National Entrepreneur Week (INADEM), INCMty Entrepreneurship Festival (ITESM), National Entrepreneur Award AN INNOVATIVE USINESS CULTURE Legislation: Express Companies Act (2016) REGULATORY FRAMEWORK Tax incentives and special taxes: Development of MSME Competitiveness Act (2002) START-UP GROWTH EXPANSION

Figure 5.4. Policy mix to support start-ups in Mexico, 2012 and 2016 (cont.)

Note: Items marked with an asterisk (*) are private initiatives. The diagram shows information available on some programmes as of May 2016.

Source: OECD (2013), updated and expanded in May 2016 using official sources from Mexico.

Mexico has instruments that address start-ups in a specific stage of development. Some tools provide direct support to start-uppers, some to intermediary support institutions such as incubators, and some to institutions providing financial support or investment (Table 5.1). As Mexico has strengthened the matrix of instruments to support start-ups, it has also refined how it defines them and how it determines which are eligible for each support instrument. Mexico's definition of a start-up is that of an enterprise with a high impact, based on the nature of the business. It then draws a distinction among businesses that have been operating for different lengths of time (less than or more than two years) and among businesses at a different stage of development (Figure 5.5).

Table 5.2. Examples of policy instruments to support start-ups in Mexico, 2016

INSTRUMENTS	GOALS AND FOCUS	BENEFICIARIES	TYPE OF SUPPORT		AMOUNT	INTRODUCED IN			
FINANCING for ENTREPRENEURS									
Support for High Impact Enterprises	(1) Developing or acquiring technologies or software for business operations; (2) Issuing product, process, service or human capital certification; (3) Providing financial, administrative and commercial consultancy services; (4) Acquiring machinery	Start-ups	_ Co-financing	70% of the total cost for each category	Up to MXN 3 million in total	2013			
		Scale-ups		60% of the total cost for each category	Up to MXN 4 million in total	2016			
		SUPPORT for the ECO	SYSTEM and SERVIC	ES					
Strengthening the Entrepreneur Support Network (RAE)	Opening and equipping RAE points	State governments, agencies, federal institutions, uppersecondary schools and higher education institutions	Co-financing	50% of the total cost	- Up to MXN 100 000	2013			
	Approving and standardising existing points			80% of the total cost		2013			
	Conducting diagnoses for entrepreneurs			70% of the total cost	Up to MXN 250 000	2013			
High Impact Incubation and Acceleration Programme	Identifying, starting and growing high-impact firms	High-impact incubators	Co-financing	50% of the total cost	Up to MXN 350 000 per business	2013			
	Providing training or consultancy services to strengthen high-impact incubated firms and/or accelerated firms	High-impact incubators/accelerators		50% of the total cost	Up to MXN 350 000 per business	2014			
	Internationalising businesses through acceleration	High-impact accelerators		60% of the total cost	Up to MXN 800 000 per business	2014			
		SUPPORT for P	RIVATE CAPITAL						
Support for Venture Capital Funds and High Impact Firms at the Industrial and/ or Commercial Scale-Up Stage	Supporting venture- capital funds	Fund managers	Co-investment in investment vehicles	40% of the investment vehicle's total capital	Up to MXN 50 million	2013			
	Supporting high-impact firms that are scaling up	Businesses showing that they have the potential to scale up a Mexican innovation that will create a new industry in the country	Co-investment in the investment round	49% of the investment vehicle's total capital	Up to MXN 50 million	2013			
Ministry of Economy-NAFIN Seed Capital Co- investment Fund (FCCS)	Scheme A: supporting venture-capital funds	Investment funds	Co-investment	50% of the investment vehicle's total capital	Up to MXN 45 million	2012			
	Scheme B: directly supporting businesses	Businesses	Co-investment	50% of the total resources required	From MXN 100 000 to MXN 10 million				

 $\textit{Source:} \ \textbf{Authors'} \ \textbf{work} \ \textbf{based} \ \textbf{on information} \ \textbf{provided} \ \textbf{by INADEM, updated} \ \textbf{in 2016}.$

HIGH-IMPACT ENTERPRISES BUSINESS FEATURES: 1. Innovative enterprises – not necessarily high-tech – looking to change their environment. 2. Innovation-intensive, scalable business model intended to make a profit and provide social, environmental or cultural benefits. START-UPS **SCALE-UPS** Age: < 2 years Age: > 2 years **ACCELERATION** Age: > 2 years Not in incubation **COMMERCIAL OR INDUSTRIAL SCALE-UP** 1. Successful completion of research and pilot tests, supported by financial data (turnover). 2. Innovation geared towards global problems in which Mexico can become a leader, with international scale-up achieved. 3. An entrepreneur, business person or CEO with proven experience, in the sector.

Figure 5.5. Start-up definitions in Mexico, 2016

Source: Authors' work based on information provided by INADEM, updated in May 2016.

INADEM's total budget for start-ups in 2016 was MXN 1.96 billion (Mexican pesos, around USD 106 million), which was split between four support lines (Figure 5.6):

- · Venture capital
- · High-impact enterprises
- · Support services and training
- Promotion of an entrepreneurial culture.

Support for venture-capital funds was INADEM's largest budget item for entrepreneurship in 2016, accounting for about 40%. INADEM assigned 15% of its budget to promoting an entrepreneurial culture, and 25% to supporting services to entrepreneurs and training, including the Entrepreneur Support Network (Red de Apoyo al Emprendedor), basic and high-impact incubation and accelerators. Although it is still very early to assess the impact of these programmes, INADEM data for the line to support high-impact enterprises shows that companies have increased their total factor productivity by 16% on average since they began to receive support from the programme.

40 Support for 35 venture-capital funds 30 **Entrepreneur Support Network** 25 Seed-capital 20 High-impact incubation and acceleration co-investment fund 15 Online incubation 10 5 Core incubators Financial resources ი Venture capital High-impact enterprises Support & training services **Business culture**

Figure 5.6. **INADEM budget assigned to lines to support start-ups, 2016** (percentage of INADEM's total budget for entrepreneurship)

Source: Authors' work based on INADEM data, updated in May 2016.

The following sections look at the main changes in the five action areas of support for start-ups: financing, services, support to boost demand, entrepreneurial culture and regulatory framework.

Mexico is closing the early-stage funding gap

A 2012 assessment of Mexico's set of instruments found that the country needed to improve its financing chain (OECD, 2013a, 2013b). Over the following three years, Mexico rose to this challenge by rolling out new instruments to support early-stage start-ups. INADEM's Support for High Impact Enterprises line has two support schemes: one for high-impact enterprises and one for enterprises with a social or environmental impact. Each scheme supports businesses based on their development stage, distinguishing between early-stage enterprises or start-ups on the one hand, and enterprises that are scaling up on the other. Under each scheme, INADEM offers co-financing for up to 80% of the project cost, up to a maximum of MXN 3 million for projects in the startup stage and MXN 5 million for projects in the scale-up stage. Firms can spend the money on information and communication technologies (ICTs), consultancy services or certification. There is also a regional scheme for this instrument, in which Mexican states can present projects directly to INADEM. The states provide 10% of the financing and the federal government the remaining 90%. Since 2013, the High Impact Enterprises Programme has supported an increasing number of high-impact projects, i.e. projects with a high growth and innovation potential (Figure 5.7). A survey that Abt Consultores conducted as part of the Economic Policy Programme for Mexico (PROPEM) run by the United States Agency for International Development (USAID) found that 84% of start-ups supported by the programme showed high-impact performance with intensive use of innovation (product and process) and strong growth (sales and employment).

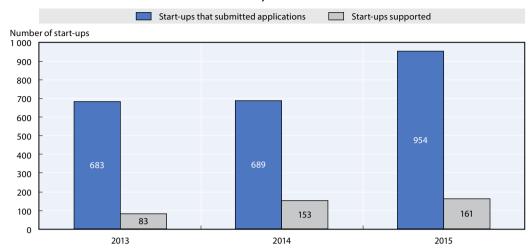


Figure 5.7. High Impact Enterprises Programme, applications and beneficiaries, Mexico, 2013-15

Source: Authors' work based on information provided by INADEM, updated in May 2016.

Mexico is aiming to boost crowdfunding initiatives through support from the Multilateral Investment Fund (MIF), which has launched an angel-investor and crowdfunding pilot programme (MIF, 2014). The programme is a crowdfunding platform specialising in start-ups with a social impact, and it aims to finance up to 20 projects in its initial phase. When the programme launched there were four participating projects, two of which have achieved the amount of capital they sought to raise.

The venture-capital industry is taking off in Mexico. With USD 196 million of capital raised and 17 closure funds in 2015, Mexico is positioned as the second most active market for venture capital in Latin America, behind Brazil, which has traditionally been the region's market leader. Of the 11 most active funds in Latin America in 2015 by number of deals, four were Mexican, namely Angel Ventures (eight deals), ALL Venture Partners (seven deals), Alta Ventures (seven deals) and Dila Capital (seven deals). Venture-capital funds invest not only in technology firms but also in health and energy enterprises (LAVCA, 2016). Between 2012 and 2015, new venture-capital funds were created through the following:

- Seed Capital Co-investment Fund (FCCS), created by NAFIN and the Ministry of Economy in 2012.
- Venture Capital Ecosystem Development programme, created by INADEM in 2013.
 In July 2016, the programme launched 35 investment funds, which have invested in 76 high-impact firms.
- Fondo México 2 (USD 500 million), launched by the Mexican Capital Investment Corporation (CMIC) in 2013.

INADEM supports access to finance and the creation of venture-capital funds. The programme "Support for Venture Capital Funds and High Impact Firms at the Industrial and/or Commercial Scale-Up Stage" has two financing schemes. The first supports the creation of venture-capital funds by providing joint investment for up to 40% of the investment vehicle's total capital (up to a maximum of MXN 50 million). The second directly supports businesses with the potential to scale up an innovation that will create a new industry in the country by providing joint investment for up to 49% of the total capital required (up to a maximum of MXN 50 million) and up to 70% of the cost of strengthening the corporate structure in preparation for innovation (up to a maximum

of MXN 5 million). In 2013, there were just 15 funds in the country, but by 2015 INADEM had provided joint investment for 50 funds (Figure 5.8). As of July 2016, INADEM has contributed MXN 1.52 billion (USD 82 million) to private equity funds, while the private sector has contributed MXN 2.42 billion (around USD 131 million), bringing the total investment to MXN 3.94 billion (around USD 213 million). The funds have directly invested in around 460 high-impact companies. In 2014, the main sectors to receive venture capital investments were e-commerce (20.49%), ICTs (13.54%) and financial services (11.81%) (AMEXCAP et al., 2015). NAFINSA injects capital in several venture-capital funds, including the Ministry of Economy-NAFIN Seed Capital Co-investment Fund, the CONACYT-NAFIN Entrepreneurs' Fund for technology companies, and the Mexico Ventures fund.

Cumulative capital ── Number of funds Cumulative capital, millions of USD Number of funds 1 200 50 1 000 40 800 30 600 20 400 10 200 n 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2014 2015

Figure 5.8. Venture capital in Mexico: Number of funds and cumulative capital (in millions of USD), 2000-15

Source: AMEXCAP et al. (2015), Estudio sobre la industria de capital emprendedor en México.

Entrepreneur awards are gaining prestige and helping to promote an entrepreneurial culture in the country. INADEM created *The Pitch* in 2015, a contest in which high-impact incubators and venture-capital funds can nominate high-impact entrepreneurs who are in the early stages of business development. The competition provides mentoring services to the entrepreneurs and gives them the opportunity to present their projects to investors. The National Entrepreneur Award, meanwhile, aims to acknowledge and publicise innovative ideas and institutions related to entrepreneurship in the country. For start-ups, the award includes categories for innovative ideas, women entrepreneurs, high-impact enterprises, institutions in the ecosystem and education establishments that boost the entrepreneurial culture.

Mexico is looking to introduce next-generation services for start-ups

Mexico is committed to introducing next-generation instruments to support start-ups. Mentoring networks are becoming widespread as flexible tools to support start-ups, and are considered more effective and cheaper to manage than traditional incubators. In 2014, the Entrepreneur Support Network included a new Network of Mentor and Collaborator Entrepreneurs in its strategy. Business people, academics and officials who are part of the network provide professional support and guidance to entrepreneurs on a voluntary basis. INADEM also provides financial training services to start-ups and MSMEs to better prepare them for receiving financing. Meanwhile, INADEM continues to support incubators and accelerators that provide services to entrepreneurs. The institute

assesses the incubators and accelerators based on the number of entrepreneurs they support and on improvements to how they are run. High-impact incubators have doubled in number between 2014 and 2016 (Figure 5.9). Furthermore, some of these incubators and accelerators, including Startup México, are increasingly focusing on innovation-based start-ups with high growth potential (Box 5.3).

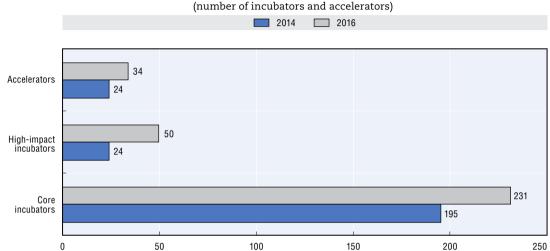


Figure 5.9. Support services to entrepreneurs in Mexico, 2014-16

Source: Authors' work based on AMEXCAP et al. (2015), Estudio sobre la industria de capital emprendedor en México; and Red de Incubadoras INADEM (2016).

The Entrepreneur Support Network co-ordinates with state governments in Mexico to provide support to start-ups. The Strengthening the Entrepreneur Support Network competition organised by INADEM's Directorate General of Business Development supports the development of the business service centres (puntos de atención empresarial) in the various Mexican states. These service centres provide information geared towards entrepreneurs and give them the opportunity to develop new contacts and forge business ties. INADEM has a MXN 214 million budget for 2016 (around USD 11.6 million) to strengthen the Entrepreneur Support Network and other entrepreneur support facilities in the regions, such as the Advisers Network (Red de Asesores) and the Women Moving Mexico centres (Mujeres Moviendo México). Public support also includes contributions for opening new business service centres and updating and improving the activities and the management of existing centres.

Box 5.3. High-impact accelerators and incubators in Mexico

Startup México (SUM) is an incubator that acts as a platform providing integral support to new, high-impact companies. SUM provides early-stage financing and services to entrepreneurs through co-working spaces and direct mentoring services. SUM operates through calls for applications and has facilities in Mexico City, Mérida and Bajío. Between its inception in 2013 and 2016, SUM has received around 5 000 applications and supported 130 start-ups. Of those start-ups, 113 (86%) are still running, 72 have begun to market their products and 27 are in the process of raising capital.

Another example of support for high-impact firms is the international MassChallenge initiative, which in 2016 will launch a platform in Mexico that will serve as its headquarters for operations throughout Latin America. MassChallenge has a network of accelerators for high-impact startups based on the principles of mentoring, business training, collaboration and networking.

Source: Official Mexican data updated in 2016.

INADEM is challenging start-ups to propose innovative solutions to emerging demands

None of Mexico's public procurement programmes envisages bids from start-ups. In 2013, however, INADEM launched the Challenges programme (Retos INADEM:), which activates demand for start-ups through public-private partnerships. The first calls for proposals were for solutions to problems encountered by public bodies, but then several private-sector institutions joined the programme. As of 2015, the programme had launched 15 challenges to problems encountered by 13 public and private institutions, attracting 378 proposals from 1 000 entrepreneurs based in 14 Mexican states. The INADEM Challenges have mainly been in six sectors: the social sector, environment, health, ecology, financial inclusion and improvements to public services.

Institutions are investing in promoting an entrepreneurial culture in the country

In addition to instruments to support start-ups through financing and services, there are also instruments that focus on promoting a business culture in the country. In 2014, INADEM decided to adopt the term "capital emprendedor" to refer to venturecapital, and abandon the traditional Spanish term "capital de riesgo", which was deemed to have negative connotations of high risk, since it literally means "risk capital". INADEM also promotes a culture of entrepreneurship by organising events, prizes and discussion forums, creating a network of business service centres and supporting incubation and acceleration schemes. For instance, INADEM's call for applications for "Organising, running and participating in business and entrepreneurship events that support and strengthen the productivity of a strategic sector" targets state governments and higher education institutions that organise conferences, conventions, seminars, business meetings and exhibitions. INADEM also supports educational institutions, state governments, municipal councils and specialist civil associations that promote entrepreneurial learning using INADEM-approved methodologies. These methodologies include entrepreneurial-talent spotting, learning exchanges, business simulators for entrepreneurs and the Mx Lean Startups entrepreneurial methodology. In addition to the government, some Mexican universities, including the ITESM, play an important role in promoting an entrepreneurial culture in the country (Box 5.4).

Box 5.4. Promoting new mindsets: The ITESM's experience

The Monterrey Institute of Technology and Higher Education (ITESM) is one of Mexico's leading private universities in terms of linkages between science and technology and the production sector. It has a portfolio of over 200 patents, more than any other higher education institution in Mexico. The ITESM is known for facilitating the movement of academic and research staff between the university and industry.

In 2013, the ITESM opened the Eugenio Garza Lagüera Institute of Entrepreneurship to activate its community of students, faculty, researchers, alumni and business families and provide them with training in entrepreneurship. The institute co-ordinates existing activities and programmes to support entrepreneurship on ITESM campuses nationwide. As of 2016, the institute's network has 33 business incubators (25 high-tech, 8 low-tech), 17 accelerators in 12 states, and state technology parks. The institute provides business training through the Entrepreneur Programme, consultancy services and mentoring for entrepreneurial families. Through its Capital Funds scheme, the institute also provides financial support in the form of seed capital to ITESM network members participating in incubation and acceleration.

Box 5.4. Promoting new mindsets: The ITESM's experience (cont.)

One of the Eugenio Garza Lagüera Institute's primary goals is to change the business mindset and the perception of failure in business. The institute firmly believes that knowing how to reposition oneself in response to failure is part of the learning process, so its programmes include this skill, which is vital to the success of start-ups. In 2014, it worked with the Institute of Failure (Instituto del Fracaso) on an investigation into the causes of business failure in Mexico. The Institute of Failure encourages entrepreneurs to share knowledge and to learn lessons from failed business projects. It wants them to understand that business failure is part and parcel of the creative process. In a joint research project, the Eugenio Garza Laguera Institute and the Institute of Failure conducted qualitative analysis on a focus group of 24 people whose businesses had failed, and quantitative analysis through a survey of 409 unsuccessful entrepreneurs. According to the research, the top five causes of failed businesses in Mexico are low turnover, insufficient goal indicators, insufficient performance indicators, the failure to conduct analysis, and poor planning.

Source: Official Mexican data in 2016 and Instituto del Fracaso (2014), El Libro del Fracaso.

Mexico is continuing to simplify its regulatory framework, but tax incentives remain a weak point

Mexico is continuing to reform the regulatory framework for starting and winding up businesses. In February 2016, it introduced reforms to the Ley General de Sociedades Mercantiles, or General Corporations Act, to create a new type of business, the sociedad por acciones simplificadas (SAS), or simplified joint-stock company. It also passed the Express Companies Act (Ley de Empresas en un Día), which simplified procedures for starting a business. Thanks to the latter, Mexicans can form a company and register it on the government's digital platform free of charge in a single day. New digital technologies, especially e-signatures, made this reform possible.

Mexico is yet to reintroduce the tax incentives for innovation that would place the country on an equal footing with many OECD countries, where in addition to direct incentives for innovation and for starting a business, there are also tax incentives for innovation (OECD, 2015). It also needs to reform the regulatory framework for MSMEs, which are currently regulated by the 2002 MSME Competitiveness Development Act (Ley del Desarrollo de la Competitividad de la Micro, Pequeña y Mediana Empresa). This 2002 legislation should benefit from synergies with the 2015 Sustainable Productivity and Competitiveness Gains Act (Ley para Impulsar el Incremento Sostenido de la Productividad y la Competitividad de la Economía Nacional).

Conclusions and challenges for the future

Despite the persistent innovation gap with more advanced countries, in recent years Mexico has stepped up support for start-ups and has boosted the entrepreneurial ecosystem. It has increased early-stage financing, thus achieving one of the main challenges identified in OECD (2013a). Mexico is also investing in forging international partnerships so that it can learn and share new practices and increase the visibility of its start-ups. The country is also seeking to promote an entrepreneurial culture and to portray Mexico as a place to run innovative, high-impact, technology-based businesses. Mexico's main challenges in supporting start-ups include:

- · Improving the evaluation and monitoring capabilities of the various programmes and identifying good practices for assessing public procurement proposals. Mexico needs to develop an effective mechanism for creating a network of independent evaluators to determine which projects deserve public support and to find mechanisms that will mobilise joint private investment in early-stage businesses.
- · Streamlining and boosting public support. Start-ups are highly dynamic, so support programmes need to keep up with the market situation by paying out quickly and making swift decisions.
- Consolidating and scaling up the support provided to investment funds for startups. So far, Mexico has been making relatively small contributions to rather small investment funds.
- · Identifying mechanisms to boost angel investment, which still hardly registers on the radar in Mexico.
- Updating intellectual property protection and regulatory frameworks and standards so that start-ups in different sectors and industries can operate beyond Mexico's borders, both regionally and internationally.

Mexico must look to strengthen and simplify support programmes and instruments for start-ups and to improve co-ordination among national, state and private stakeholders and programmes. Mexico is promoting start-ups through new policies, so it needs to accompany this experimentation with mechanisms to monitor and assess the impact of policies so that it can identify good practices, reform programmes and incentives, and, where appropriate, show that an instrument needs to be scrapped. Progress in supporting start-ups, however, will not depend exclusively on better start-up policies. Changes will also be necessary in areas like industry, innovation, digitisation and ICTs, and private-sector attitudes to investment and risk aversion will need to change.

The start-up ecosystem needs to become denser, private investors must become willing to back start-ups, and the country must be willing to strengthen its overall science and technology capabilities. Only then will Mexican start-ups flourish, grow and achieve their potential. Only then will they raise the country's productivity, competitiveness and innovative capacity. Start-ups do not work in a vacuum and successful enterprises operate in the global market using global standards, or at least aspire to do so. Efforts are therefore needed to ensure that the production system and the science and technology system match the potential of innovative Mexican entrepreneurs. It is also important to find ways to enhance synergies between start-ups and production development in Mexico. Certain sectors, such as the automotive industry, are crucial for the country and are undergoing major changes in terms of their overall business model and demand as a result of new manufacturing techniques, the growing electronic content of vehicles, and the spread of alternatively powered cars. These changes could open up opportunities for Mexican start-ups if the country draws up a suitable strategy. To seize these opportunities, Mexico will need to find synergies with the open-innovation strategies of large companies and connect science and technology developments with start-ups. Greater co-ordination and dialogue across Latin America will also be essential.

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