

Chapter 1

Why support start-ups, and how?

There is growing interest worldwide in actions to promote the creation and expansion of start-ups. Until a few years ago, start-ups were associated almost exclusively with Silicon Valley, but today they are much broader in scope and can be found outside the United States. Start-ups provide innovative solutions, create new markets and reinvigorate the business community. The emergence of start-ups depends not only on entrepreneurial spirit, but also on an environment (services, infrastructure, financing and regulatory framework) that is conducive to their emergence and expansion. National and local governments, in conjunction with the private sector, actively promote start-ups and seek to create incentives for their development. This chapter summarises definitions of start-ups and presents the rationale behind state intervention in this area and the matrix of instruments used to promote start-ups. The chapter concludes by identifying the lessons learned from other countries in designing and managing pro-startup policies.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Introduction

Start-ups are very popular right now, and not just in Silicon Valley. France, Chile, India, Italy, Mexico and Poland all have new programmes to foster start-ups in order to sustain competitiveness, promote innovation and tap into the opportunities offered by the new global digital economy.

There is a broad consensus that new, innovative enterprises play a vital role in determining how dynamic a country's innovation will be. Through start-ups, new products and services based on scientific discoveries and new applications of existing knowledge can be released, creating new markets and furnishing novel solutions to emerging problems. They also bolster competition for innovation and encourage the development of a dynamic business environment. The start-up and growth of these businesses depends on several factors: a solid scientific base, a business-friendly environment, and a financial sector willing to make medium-term investments in high-risk projects, among others.

Why, though, should governments support the founding of start-ups, and how can they do so? Many countries have shown that national and local governments, in partnership with the private sector, can play a major role in building the right environment for innovative entrepreneurship. This chapter reviews the definition of start-ups and discusses what elements are currently lacking for start-ups to emerge and grow and how these elements determine public policy action areas. It also presents a matrix of instruments based on the experience of OECD countries and emerging countries in promoting start-ups. The instruments in the matrix are classified by business development stage (seed, start-up, growth and expansion) and action area (financing, services, market activation, business culture and regulatory framework). The chapter concludes with a brief summary of the lessons learned from pro-startup programmes in various countries.

What are start-ups?

What is a start-up? This might seem an easy question to answer today, since start-ups have become a global phenomenon and everybody, whether an expert or not, has at least an idea of what they are. Generally speaking, start-ups are associated with new, disruptive, dynamic businesses, often arising from innovative ideas that require financial capital more than physical infrastructure for their development. The narrative of start-ups developed following the rise of Silicon Valley and new technology-based firms that make intensive use of information and communication technologies (ICTs). These enterprises emerged as spin-offs from ICT giants and technological universities. Silicon Valley remains the heartland of the world's disruptive start-ups. As of 2016, nine of the 20 highest market value start-ups are located in California, including Uber, Airbnb and Pinterest (Fortune, 2016).

Today, however, start-ups exist far beyond the confines of Silicon Valley. The phenomenon is expanding and adapting to the places where these new innovative businesses are being founded. Thanks to the spread of ICTs, globalisation and the growing aspirations of societies in emerging and developing countries, as well as public policies that now seek to create the right conditions for innovation, start-ups are emerging not only in Europe, but also in Africa, Asia and Latin America, where an emerging group of start-uppers are operating, creating innovative solutions and changing local mindsets (OECD, 2013a, 2013b; Bayrasli, 2015).

Over the last decade, start-ups have attracted growing attention from the media, market analysts, innovation experts and policy makers (IDB, 2009; Kantis and Federico, 2012; OECD, 2013a; UNECE, 2012; Kantis et al., 2015; Fortune, 2016). However, there is no single definition of what a start-up is. Public policy makers, researchers, market analysts and start-uppers all have different definitions. The most common criteria refer to ideas, networks, market opportunities, disruption to business models, and communities.

Despite the many definitions, two criteria stand out: one based on market performance, and one based on the nature of the business, including its innovativeness and disruptiveness. Public policy actions tend to be guided by hybrid definitions that refer both to the nature of the business and to its performance potential (Table 1.1).

According to the performance-based approach, start-ups are newly established firms with a high potential impact, strong growth, or a market value above a certain level. The OECD, for instance, defines high-growth enterprises as those that have an average annualised growth in employees or turnover greater than 20% over a three-year period and ten or more employees at the beginning of the observation period. It defines gazelles as the subset of the above that are less than five years old (OECD, 2015a; Figure 1.1). In Silicon Valley, start-ups are categorised according to their market value: “unicorns” are start-ups worth at least USD 1 billion, “centaurs” are those worth between USD 100 million and USD 1 billion, and “little ponies” are those worth between USD 10 million and USD 100 million.

The approach based on the nature of the business uses basic criteria related to the firm’s age, nature and technology or innovation intensity. Under this approach, start-ups are new enterprises (usually less than five years old) that: i) were created based on business ideas related to the industrial application of scientific, technological and business innovations; ii) provide novel solutions to emerging problems; or iii) create new demand by developing new forms of business.

The definitions that best reveal the essence of start-ups are those created by the start-uppers themselves. Warby Parker co-CEO Neil Blumenthal defined a start-up as “a company working to solve a problem where the solution is not obvious and success is not guaranteed” (Business Insider, 2014). However, when start-ups could benefit from public- or private-sector support, the criteria used to define them, monitor their performance and assess their impact must be more tangible. Countries that have designed and implemented pro-startup policies have generally adopted hybrid definitions that use performance indicators as well as indicators regarding the business’s nature and type. This document uses the term “start-up” to refer to innovation-intensive or high-impact new enterprises for which support mechanisms are being implemented in Latin American countries, based on each country’s own definitions.

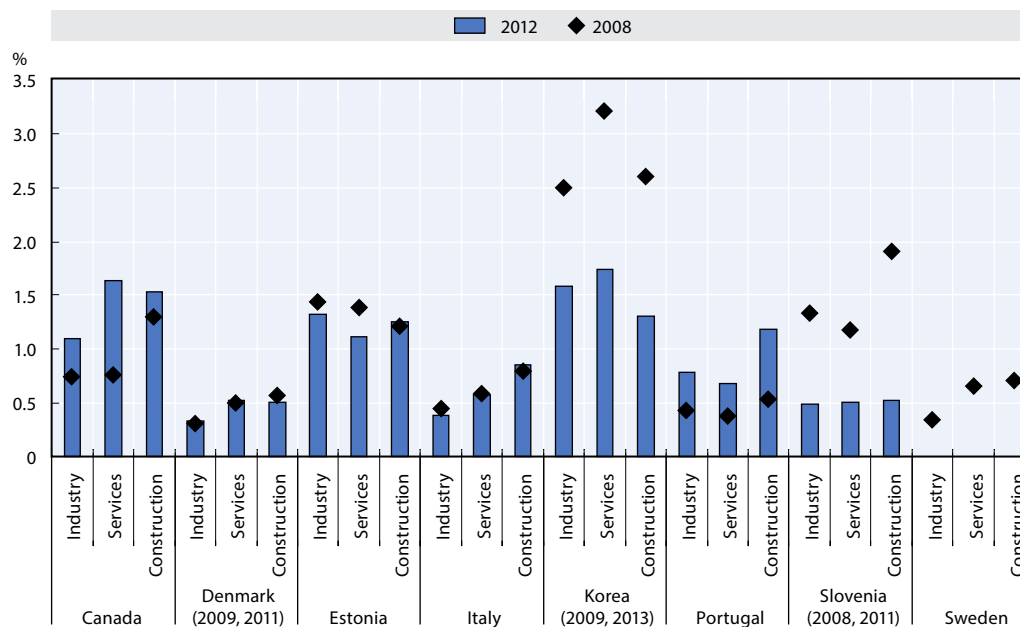
Table 1.1. Some definitions of start-ups

Performance-based definitions		Source
High-growth enterprises	Enterprises that have increased their number of employees (or turnover) by more than 20% a year over a three-year period and had ten or more employees at the beginning of the observation period.	OECD (2015a)
Gazelles	High-growth enterprises less than five years old.	OECD (2015a)
High-impact entrepreneurs	Individuals that launch and lead companies with above-average impact in terms of job creation, wealth creation and the development of entrepreneurial role models.	Endeavor-GEM (2011)
Definitions based on the nature of the business or innovation intensity		Source
Start-ups	Enterprises that are less than three years old that use technologies or innovation-intensive business practices or that have a significant growth potential in terms of turnover or jobs.	European Startup Monitor (2015)
	Enterprises that have been operating for less than two years.	Calvino et al., (2016)
	A company working to solve a problem where the solution is not obvious and success is not guaranteed.	Neil Blumenthal, co-executive director of Warby Parker; Business Insider (2014)
	A human institution designed to deliver a new product or service under conditions of extreme uncertainty.	Ries (2010)
Mixed definitions		
Start-ups	Innovative or technological firms targeting the global market with the potential to grow 20% during the first three years and achieve turnover in excess of USD 1 million.	Start-up Chile (2016)
	Companies not more than five years old, with turnover of less than INR 250 million (Indian rupees, about USD 3.7 million) in the last five years, that are working towards innovation, development and the commercialisation of new products, processes or services driven by technology or intellectual property.	Ministry of Commerce and Industry of India (2016)
	Entrepreneurial venture designed to search for a repeatable and scalable business model. Usually highly innovative and typically based on ideas, technologies or business models that did not exist before.	European Digital Forum (2016)

Source: Update and expansion of OECD (2013), *Start-up Latin America: Promoting Innovation in the Region*, <http://dx.doi.org/10.1787/9789264202306-en>.

Figure 1.1. Gazelles by main sector, selected OECD countries, 2008-15

(number of gazelles, measured by turnover growth [+20%], as a percentage of all enterprises with at least ten employees)



Source: OECD (2015), *Entrepreneurship at a Glance 2015*, http://dx.doi.org/10.1787/entrepreneur_aag-2015-en.

Why support start-ups?

Founding and growing innovative start-ups helps sustain innovation in the economy and vitalise the productivity and resilience of the economic system (OECD, 2010, 2011a, 2011b; Stangler, 2010; Endeavor-GEM, 2011; InnoGrips, 2011; UNCTAD, 2012). There is a strong correlation between advanced economies, a solid base of innovative entrepreneurs, greater leverage of the scientific and technological base, and productivity growth (OECD, 2005). New start-ups bring many benefits:

- Start-ups help to change the structure of the economy by introducing new, knowledge-intensive products and services and supporting innovation. They can help to redefine business models, as is happening with transport services and in the hotel and catering industry, and they can create synergies with the open-innovation strategies of large companies. In emerging countries, start-ups can transform societies by providing flexible solutions to the country's specific social development problems and challenges.
- Start-ups are dynamic, modern, open and innovative and are run by younger people, who inject these values into the business community. The launch of innovative start-ups generates positive externalities in the economic system by spreading a culture of experimentation and learning, which changes mindsets and increases acceptance of business risk by entrepreneurs and investors alike.
- Some countries benefit from the intangible value of start-up clusters, which improve the image of the cities or regions where they are located. Examples include Medellín in Colombia, Bangalore in India and Detroit in the United States.
- Start-ups can also create jobs, although very few start-ups become industry giants. They usually create good-quality jobs and help to activate demand for advanced skills in science, technology and business management.

Start-ups do not, however, emerge spontaneously; certain basic conditions must be met. Often, the private sector itself must assume the cost of creating these companies and the experimentation that takes place, because creating and expanding start-ups is very risky, with a high failure rate, but also potentially high returns. The willingness of entrepreneurs and investors is therefore essential for such enterprises to emerge and flourish. There are, however, areas in which public investment is justified.

Successful start-up ecosystems do not develop automatically. Public policies, in conjunction with private initiatives, can play a key role in fostering their emergence. Start-ups face specific challenges, not faced by traditional companies, during their founding, their growth and their expansion. These challenges are linked to the high risk and uncertainty of their business operations, particularly during the early stages of development. Specifically, there are six major barriers to the founding and growth of start-ups:

- An embryonic or basic science, technology, and innovation system in which very few science and technology institutes are training human resources with specific knowledge in areas that might generate ideas that could become businesses (e.g. engineering, electronics and medicine, as well as social sciences such as design and urban design), and in which connections and linkages between disciplines are scant.
- Little tradition for business and innovation. Some societies are more hostile to business risk than others. In such societies, there is a general distrust towards business and its positive impact for entrepreneurs and for the region or country as a whole.
- The funding gap between the entrepreneur's initial resources, including any received from public agencies or corporate funding to research and develop an idea with commercial potential, and the financial and infrastructure investment needed to turn that idea into an industrial prototype. A financial system able to dialogue with innovative entrepreneurs in their various stages of development is key to supporting the growth of these enterprises.
- Information asymmetry between the entrepreneur-innovator, investors and customers. The innovator knows what is technically feasible; the investor knows how to introduce and leverage new products in the marketplace and track consumer demand. For an invention to become an innovation, it requires a business plan that resolves issues related to the functionality, quality and feasibility of production and distribution. Often, innovators lack the business skills (management, negotiation, finance, marketing, etc.) needed to launch an enterprise. Start-uppers, meanwhile, do not possess information on distribution channels, positioning strategies and protection of intellectual property in their target market. A dynamic business environment with strong confidence among entrepreneurs, investors and consumers is a decisive factor in the process of starting a business and facilitates the flow of information. The quality and density of the innovation system and the institutions governing formal and informal transactions affect the dynamics and success of start-ups.
- A gap between start-uppers and their target market and a shortage of demand to activate and sustain production and the business model.
- Legal and administrative barriers that make it difficult to start, grow and wind up businesses; specific regulations and standards in several industries that make it difficult for start-ups to grow and scale up; and a lack of pro-innovation tax incentives.

The gaps in these six areas cannot be closed through market actions alone, and the experience of various countries shows that state intervention (through different forms and channels) is crucial to create the necessary conditions for start-ups to flourish and grow (OECD, 2013a). Furthermore, pro-startup policies require smaller budgets than other production and innovation development policies and can have a greater impact in a shorter space of time. As such, they are an important addition to countries' transformation strategies, which take much longer to bear fruit. With Start-Up Chile, for instance, as of May 2016, the businesses that were among the first seven generations of beneficiaries were valued at five times the amount invested by the government in the programme, according to data from Chile's Production Development Corporation, CORFO.

How to support start-ups?

Start-ups operate in dense, creative ecosystems with science and technology skills, investors, and physical and digital infrastructure. Several stakeholders act concurrently to create a suitable system for start-ups to emerge and expand.

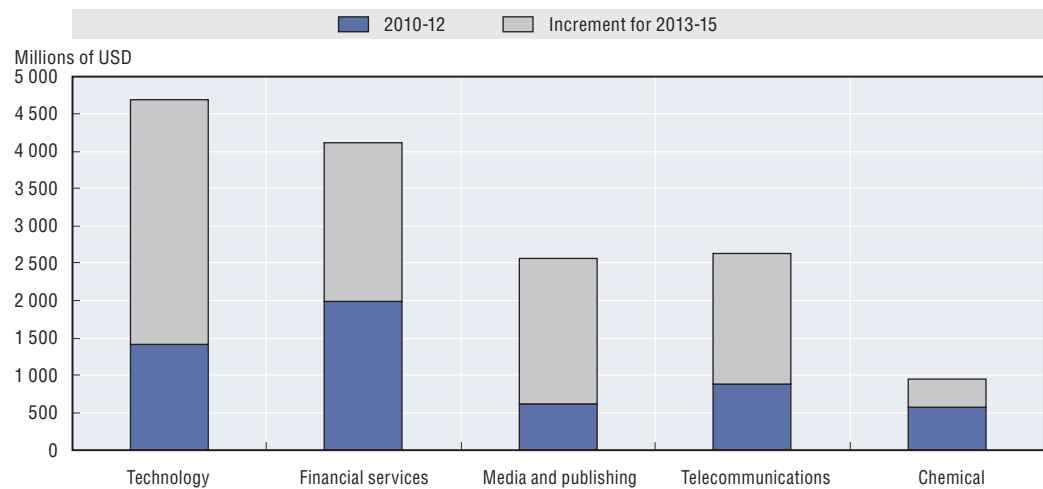
The role of the private sector is growing, not only in terms of financing and investment, but also in terms of the provision of infrastructure for innovative start-ups. Large companies, especially those in the ICT and technology-intensive industries, are stepping up their investment in founding start-ups by adopting open-innovation strategies to increase opportunities to innovate by drawing on the talent of young people and learning more about consumer preferences. Today, large companies support start-ups through a wide range of measures. Those based on corporate venture capital are increasingly accompanied by the provision of seed capital and incubation services as part of open-innovation strategies. One such example is that of Telefónica's Wayra initiative in Peru, which seeks to tap into the country's innovative talent. Now operating worldwide, Wayra provides infrastructure, digital access, mentoring and seed capital to young people selected through an applications procedure.

Corporate venture capital for investment in innovative start-ups with high growth potential has been playing an increasingly important role in the open-innovation strategies of large companies (Gompers and Lerner, 1998; MacMillan et al., 2008). Corporate venture capital differs from the traditional kind in that it seeks not only a return on investment, but more importantly new solutions and innovations that will benefit the company (Dushnitsky and Lenox, 2005 and 2006; MacMillan et al., 2008; Weber and Weber, 2007). It therefore seems that corporate venture capital investments tend to bolster the investing company's innovativeness, increase its market value and improve its financial performance (Wadhwa and Kotha, 2006; Dushnitsky and Lenox, 2006; Allen and Hevert, 2007; Wadhwa et al., 2016). Innovative start-ups, meanwhile, benefit from the investing company's financial support and its commercial experience and network of contacts.

Since its introduction in the 1960s, corporate venture capital has grown rapidly, reaching 9% of the US venture-capital industry in 2015 and showing annual growth of 28%. In recent years, corporate venture capital strategies have expanded to other regions of the world. In the People's Republic of China, for instance, it represented 5% of total venture capital in 2015 (Boston Consulting Group, 2016). Furthermore, large companies are broadening their set of support tools, providing services such as incubation, acceleration and innovation laboratories. In 2010, only 1% of large companies had corporate venture capital shares, but by 2016 this figure had risen to 44%. An estimated 750 large firms have units dedicated to corporate venture capital, including Intel, Microsoft, General Electric and Google (Boston Consulting Group, 2012; Chesbrough, 2002; Dushnitsky and Lenox, 2005). Corporate venture capital funds invest mainly in the technology-intensive industries, including pharmaceutical, biotechnology, telecommunications and semi-conductors (MacMillan et al., 2008) (see Figure 1.2).

Figure 1.2. Large firms involved in corporate venture capital by sector, 2010-12 and 2013-15

(investments by the 30 leading corporate venture capital companies in each industry)

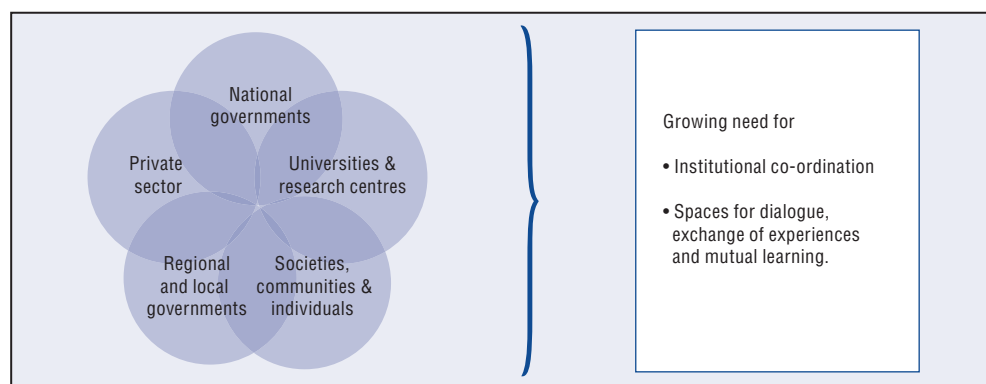


Source: Authors' work based on Boston Consulting Group (2016), *Corporate Venturing Shifts Gears*.

In addition to receiving support from large companies, start-ups also receive it from communities and networks through experience-sharing platforms and not-for-profit linkages, as well as from the people who participate in crowdfunding and support the creation of innovative start-ups based on their growth potential, their innovation intensity and their capacity to solve problems that are specific to certain places or that respond to certain challenges.

Traditional supporters of start-ups – i.e. national governments, universities, research centres, and more recently, regional and local government – also operate in this context (Figure 1.3) under different schemes, often with different objectives and incentives. Governments, for instance, seek to maximise the impact on intergenerational welfare. Communities, meanwhile, often seek solutions to specific short- and medium-term problems. Finally, private-sector investors often look for potential returns in the medium term. The fact that the various parties involved each have different priorities makes co-ordination and dialogue among them all the more important.

Figure 1.3. Main stakeholders involved in the promotion of start-ups



Source: Authors' work.

Box 1.1. Large companies actively promoting start-ups: Some examples

Johnson & Johnson Development Corporation

Since its inception in 1973, this venture-capital fund created by Johnson & Johnson has become a major investment fund in the health sector. It is run by various experts and leading figures in the field of health and technology, who identify strategic investment opportunities for the company. The fund invests in companies involved in technology and life sciences in the area of health care, helping to create and grow spin-offs and innovative start-ups.

Telefónica's Wayra

Telefónica created the Wayra business accelerator to support young entrepreneurs in founding start-ups in the ICT sector. Today, Wayra operates in Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela), the United Kingdom, Ireland, Germany and the Czech Republic. The company provides access to technology, finance (in exchange for a 10% stake in the business), technical experience and a place to develop ideas and products. Currently it supports new entrepreneurs working in various fields, including e-health, cloud computing, social innovation and e-commerce.

Google for Entrepreneurs

Google for Entrepreneurs was launched in 2011 and has built Google Campus support spaces in several cities, including London, Madrid, Seoul, Warsaw, Tel Aviv and São Paulo. These campuses give start-ups access to Google's experience and mentoring. They also have a worldwide line of financial support aimed at coworking spaces, incubators and networking events. Google for Entrepreneurs promotes initiatives like Start Up Weekend, Techstars high-impact incubators, and Startup Grind contests.

BBVA Innovation Center

The BBVA bank supports start-ups in the financial technology, or fintech sector, including with big data, insurance, financial inclusion and online payments and transfers. The bank's Open Talent initiative rewards the best ideas in these fields, with the three regional winners (Europe, Latin America, and the United States and the rest of the world) each receiving EUR 30 000. There is also an accompaniment programme that provides mentoring and training to selected start-ups.

Source: OECD (2013a), *Start-up Latin America: Promoting Innovation in the Region*, <http://dx.doi.org/10.1787/9789264202306-en>; Johnson & Johnson (2016); Telefónica (2016); Google (2016); BBVA (2016).

Start-ups do not work in a vacuum. They need an environment that provides opportunities for technical education and that creates skills in specific areas (software programming, biotechnology, nanotechnology, materials, design, architecture, etc.), as well as frontline digital infrastructure and institutions that help to bring potential start-uppers in contact with investors and mentors. It is also necessary to have simple, flexible legal frameworks that meet the needs of businesses during all their growth stages, minimises uncertainty in transactions and makes the procedures for starting, running and winding up a business as straightforward as possible. Also, there needs to be a system in place to support the development of science and technology and improve the business environment to fuel a steady flow of good-quality knowledge, technologies and linkages that can potentially lead to innovations with a high market impact. Such a system requires talent, infrastructure and private-sector financing and investment in R&D and innovation, as well as favourable regulatory conditions. A stable institutional and regulatory framework to guarantee contract enforcement and regulate bankruptcy procedures is vital to ensure the survival of new businesses.

Public policies support start-ups both directly and indirectly. Indirect measures are essential because they shape the socio-economic environment in which start-uppers operate. They include policies related to science, technology and innovation, education, production development, and physical and digital infrastructure. Since the 1990s, several countries, including Chile, Finland, France, Israel, Italy and Mexico, have stepped up direct action to support start-ups by identifying the potentialities unlocked by the spread of ICTs. They have done so for two reasons: to try to emulate Silicon Valley's success (even though that success cannot be replicated), and to jumpstart stagnant growth and reinvigorate the business community.

Like start-ups themselves, direct actions to support them do not operate in a vacuum. They require indirect action to create the right conditions and environment for start-up ecosystems. Nevertheless, when they are designed and implemented properly, direct pro-startup policies play a vital role in driving the start-up of innovative businesses and creating spaces for experimentation and innovation. Without these policies, such spaces would remain silent. There is no single, optimal formula for promoting start-ups. Each ecosystem develops its own focus based on the country's features, development vision, and science, technology and production system. Direct policies to support start-ups (the focus of this report) reduce the main barriers to founding and growing start-ups. Such policies benefit start-ups, but also intermediary institutions, universities and stakeholders in the financial system (Table 1.2).

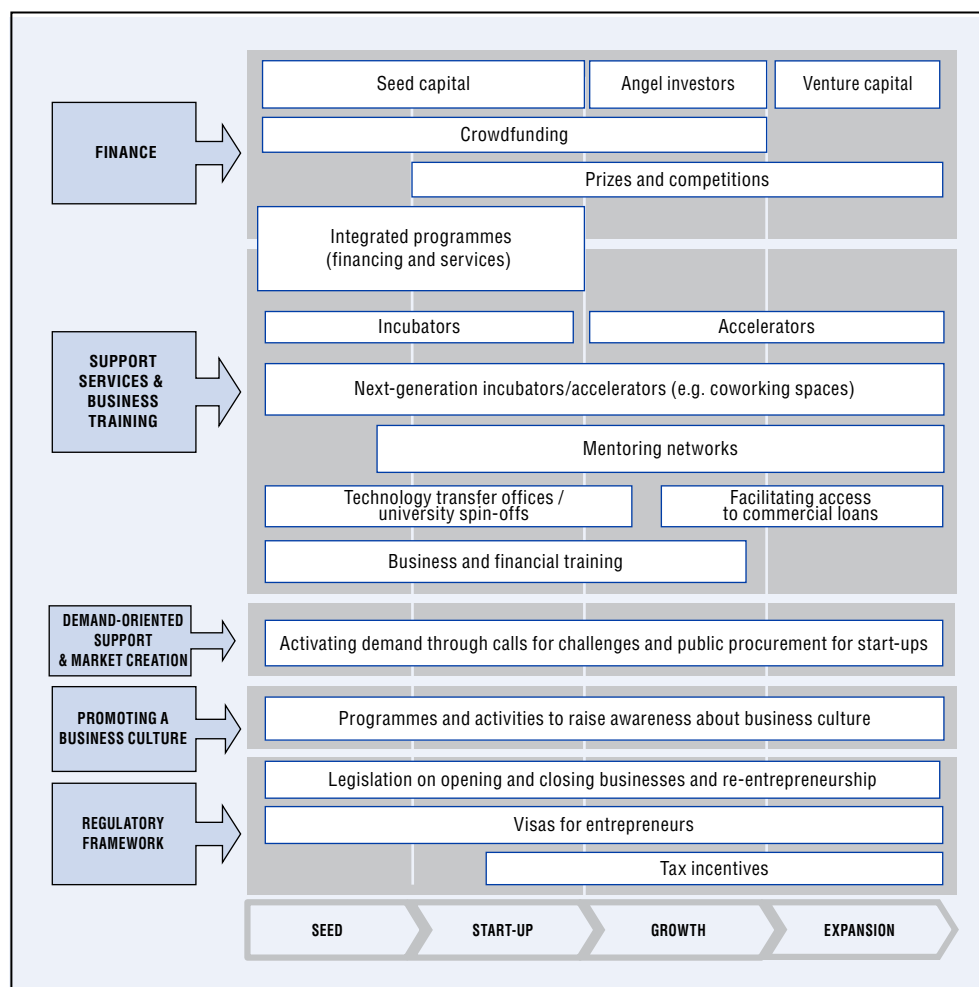
Table 1.2. Gaps that shape direct policies to promote start-ups

Funding gap	Programmes to improve access to seed capital and borrowing for start-ups, as well as incentives for the financial sector to work with start-ups, such as the promotion of venture capital, angel investors, etc.
Information asymmetry	Services for start-uppers through platforms, mentoring networks and collaborative spaces, and to support intermediary institutions such as incubators and accelerators.
Absence of demand	New public procurement programmes for start-ups and initiatives that challenge start-ups to provide innovative solutions.
Little tradition for business and innovation	Actions to raise awareness about start-ups (including prizes and events).
Legal and administrative barriers	Legal and administrative reforms to suit the needs of start-ups, such as easier procedures for starting and winding up a business.

Source: Authors' work.

Each country has a different blend of policies, depending on its institutional and regional structure and how developed its science and production is (OECD, 2013a; Primi, 2013). Institutional governance includes bodies responsible for innovation policy, production development and competitiveness and the public and private institutions that focus on supporting innovative start-ups, such as incubators, technology parks, angel-investor networks, incubators and accelerators, and more recently, development banks and start-up programmes set up by large companies. Based on the experiences of the OECD and Latin American countries that have most actively supported innovative entrepreneurship, a taxonomy can be drawn up in which the various instruments are classified according to the businesses' stage of development (seed, start-up, growth and expansion) (see Figure 1.4). When start-ups are founded, they are more than just young businesses; by their very essence, they are much more closely connected to their founder and his or her idea than a conventional business. As start-ups develop, they begin to take shape as companies and their needs change in terms of finance, services and regulations. The instruments vary according to the gap they serve to close, be it funding, information, demand, culture or the regulatory framework (Figure 1.4). A recent trend has been to combine financing services in new programmes that offer integrated support to simplify pro-startup schemes and respond better to the needs of start-ups.

Figure 1.4. Policy mix to support start-ups



Source: OECD (2013a), *Start-up Latin America: Promoting Innovation in the Region*, updated and expanded.

The following sections describe the main features of the instruments for each area of action.

Closing the funding gap

Access to finance is a key factor in a company's creation, survival and expansion. It is even more critical for start-ups, given the greater risks and uncertainty that are inherent in the innovation process, and given that it is difficult for banks and investors to forecast how successful an innovation might become. Most financing comes from three sources: i) debt; ii) grants and government support; and iii) capital contributions (see Box 1.2). More recently, another form of financing has emerged, called crowdfunding. Different combinations of financing are used, depending on the company's stage of development (seed, start-up, growth and expansion). In the early stages, personal resources, family and friends, and bank debt (via loans and credit lines or cards) are the main sources of capital, sometimes supplemented by soft loans and subsidies. According to Branscomb and Auerswald (2002), the main sources of funding to early-stage technology

development in the United States are funds from large corporations to promote spin-offs and to outsource R&D (32% of cases); federal and state government programmes (30%); angel investors (28%); venture capital (8%) and universities (3%). In the expansion stage, depending on the size and scope of the start-up, entrepreneurs will seek other sources of capital, such as angel investors and venture capital, which act as bridges before successful companies can enter the capital markets.

Public policy plays an important role in ensuring there are resources and financial options in the form of seed capital and in the form of incentives for the development of the industry through angel investors and venture capital (Table 1.3). In Finland, for instance, Veraventure Ltd., a subsidiary of the state-owned agency Finnvera, invests in regional venture-capital funds and manages the angel-investor network InvestorExtra. The Scottish Co-Investment Fund provides contributions of up to 50% to private equity funds that have invested in new businesses. Many countries, including France, Israel and Portugal, offer tax incentives for venture capital. Others, such as Australia, also promote foreign investment in local funds. In recent years, crowdfunding schemes have become important sources of financing for start-ups. In some countries, the public sector supports the creation of crowdfunding platforms. One such example is the “Accelerating the Crowdfunding Ecosystem” project developed by Mexico in partnership with the Multilateral Investment Fund, with a focus on social entrepreneurship.

Table 1.3. Examples of programmes for financing start-ups in OECD countries

	Financing instruments	Key features	Policy examples
Direct financing	Grants and subsidies	Used as seed and early-stage funding for innovative start-ups in most countries, filling the financing gap between innovators and investors. Funds are used for feasibility studies, prototypes and proofs of concept. Awards are generally granted on a competitive basis.	Single Business Service (Australia); EXIST (Germany); Repayable Grants for Start-Ups (New Zealand); START (Russia); Small Business Research Initiative (United Kingdom); Small Business Innovation Research (United States).
	Venture capital	Public venture capital provides strategic funds designed to accelerate entrepreneurial activities at the early stages. Private venture capital focuses on companies scaling up at later, less risky stages.	Clean Energy Finance Corporation (Australia); Seed Fund Vera (Finland); Investment Grant for Business Angels (Germany); FSI France Investissement 2020 (France); Seed & Venture Capital Scheme (Ireland); Innovation Bridge and ALMI Invest (Sweden).
	Loans / loan guarantees	Loans are one of the most common forms of access to finance for start-ups. Governments offer reduced interest rates or make loans repayable only if the project succeeds. Governments can also act as guarantors for commercial loans to start-ups when they lack collateral or a track record.	Credit Guarantee Scheme for SMEs (Hungary); Vækstfonden (Denmark); Loans Service for R&I (European Union); Loan Fund for Start-ups (Poland); Enterprise Finance Guarantee (United Kingdom); the TTGV soft-loan programme (Turkey).
Third-party financing	Crowdfunding	Collective fund-raising tools enabled by advances in ICTs and social networks. These fast-growing platforms engage communities with innovation and start-ups. Challenges include the lack of regulation, cyber fraud and the need for scientific integrity.	More than 700 platforms exist around the world, including Kickstarter, CrowdCube, RocketHub, IndiGoGo; JOBS Act (United States); University of Utah's Technology Commercialization Office (TCO).

Source: Selected examples from OECD (2014b), *Science, Technology and Industry Outlook 2014*, http://dx.doi.org/10.1787/sti_outlook-2014-en.

Box 1.2. Forms of financing for start-ups

Debt financing

In addition to the initial capital provided by the founder, bank debt is one of the main sources of finance, both in the early stages of technology-based businesses and in their expansion stage. In the United States, bank debt represents 15% to 30% of the start-up capital of high-growth, knowledge-intensive firms (Wadhwa et al., 2009; Robb and Robinson, 2008; Robb and Robinson, 2014).

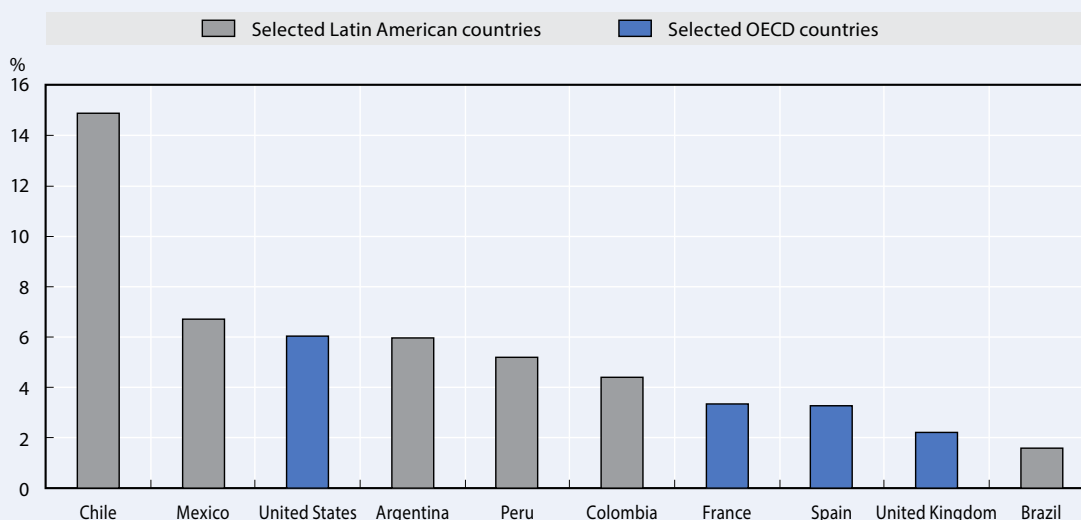
Grants

National and regional government agencies offer direct financing in the form of subsidies. Sometimes they require the beneficiaries to put up an equal amount in a matching-funds programme. Government support covers feasibility studies, proofs of concept, business-plan development, and procedures to start a business. This government contribution is essential in the seed and start-up stages, and accounts for about 30% of capital for new technology-based firms. This initial financing of innovative entrepreneurship is in addition to the funding available from other government programmes that promote collaborative R&D as well as the transfer and commercialisation of technologies from universities and research centres.

Capital contributions

Most of the resources used in founding and launching these companies comes from the personal assets of the “three Fs”: friends, family and fools. These personal contributions generally cover 40% to 70% of the total investment and are acquired through personal networking, often for relatively small amounts. Note that due to their informal, familial nature, these capital contributions are particularly hard to measure.

Figure 1.5. Percentage of the population aged 18-64 that contributed personal funds to an enterprise founded by another individual over the three years up to 2014



Source: GEM (2015), *Global Entrepreneurship: 2015/16 Global Report*.

Angel investors

Angel investors are typically entrepreneurs or businesspeople who, besides capital, bring their experience and their contact networks to the business (hence the term “smart money”) at an early stage of its development. These investors operate on the middle ground between the informal capital provided by founders, friends and family on the one hand, and formal, venture capital on the other. They generally invest between USD 25 000 and USD 500 000 per company. Angel investors have greater flexibility in terms of maturity horizons and expected return on investment. They are less risk-averse in early stages and in innovative start-ups. Broadly speaking, they contribute capital to young enterprises that are not yet ready to attract venture-capital investment.

Box 1.2. Forms of financing for start-ups (cont.)

They play a key role by advising entrepreneurs and helping them to improve the quality of their investment proposals (design, business model, presentation). Recently, angel investors have begun to form groups and networks to allow them to share the risks and make larger investments. Most of these groups and networks are in the United States and the European Union, where they have tripled in number since the 2000s (OECD, 2011a; GEM, 2010).

Venture-capital funds

Venture capital refers to specialised or “professional” formal investment funds that provide capital for high-growth innovative enterprises in intermediate or expansion stages, before they enter the capital markets. In some advanced economies, such as the United Kingdom, the United States and Israel, a variety of organisations are devoted to these funds: independent organisations, bodies affiliated with financial institutions, government organisations, and angel-investor networks (Teubal and Luukkonen, 2006). Venture-capital funds make investments of around USD 3 million to USD 5 million per company (though these figures vary considerably from country to country and over time). From 1998 to 2005, for instance, the per-investment average fluctuated between USD 6 million and USD 13 million in the United States, between USD 1 million and USD 1.5 million in Europe, and between USD 2 million and USD 6 million in Israel (Ben Ari and Vonortas, 2007). In the United States, venture capital and angel investors tend to account for 20% to 50% of the start-up capital of new, high-growth, knowledge-based enterprises (Wadhwa et al., 2009). Venture capital is a subset of private equity, as is growth capital, which focuses on financing medium-sized and large firms before they begin public trading (or accepting government funds).

Venture capital is a major source of funding in the intermediate stages of the development of young, knowledge-intensive enterprises. This type of capital contribution has been vital in industries such as ICTs, biotechnology and life sciences. More recently, green venture-capital funds have been created to finance the emerging green-technology industry. Venture capital provides more than just financing: it supports the management and growth of innovative enterprises, playing an active role in their boards of directors, advising them on recruitment, and facilitating networking. However, since investment must be diversified to reduce risk, a critical mass is needed (Branscomb and Auerswald, 2002; Ben Ari and Vonortas, 2007; OECD, 2011b). According to estimates, on average, 65% of a venture-capital fund’s investment generates only 3.8% of returns, whereas 4% of the investment generates more than 60% of returns (OECD, 2011b). To be effective, the venture-capital industry therefore needs the right environment, a minimum threshold of early-stage innovative entrepreneurship, a solid scientific and technological base, and a relatively mature innovation system.

Crowdfunding

Crowdfunding uses the Internet as a platform to obtain many small capital contributions, but raising capital is not the only benefit, as crowdfunding can also be used to assess market demand and for communication and marketing. Crowdfunding requires a stable Internet connection, regulations to ensure secure online bank payments, and regulations to prevent fraud and ensure the protection of personal data (OECD, 2015b). Some countries have begun setting up a system to ensure that crowdfunding runs smoothly. Mexico, for instance, created AFICO (Asociación de Plataformas de Fondeo Colectivo), an association for crowdfunding platforms that works alongside the National Banking and Securities Commission (CNBV). Crowdfunding provides relatively cheap access to seed capital. Funders are rewarded for their contribution. The rewards range from special offers on the goods or services to acknowledgement for their contribution to the project. This financing model, however, needs to offer rewards that are attractive enough to investors. Equity crowdfunding, by contrast, lets funders recoup their initial investments or share in the future profits of the enterprises being founded. Given their preliminary nature and potential to mobilise resources while minimising investment risk, this type of finance is becoming an important part of the funding model adopted by innovative start-ups.

Source: OECD (2013a), *Startup Latin America: Promoting Innovation in the Region*, <http://dx.doi.org/10.1787/9789264202306-en>; and OECD (2014), *OECD Science, Technology and Industry Outlook 2014*, http://dx.doi.org/10.1787/sti_outlook-2014-en.

Facilitating linkages and providing services

Various studies highlight that entrepreneurs' prior experience is a significant indicator of their success in future start-ups (Endeavor-GEM, 2011; IDB, 2009; Wadhwa et al., 2009). Entrepreneurship is a learning process involving trial and error. Through start-up, expansion and re-entrepreneurship, entrepreneurs build their skills, know-how and experience and thus improve their performance. Business skills are acquired through cumulative learning processes and require hands-on experience (learning by doing), but there are support mechanisms to help with learning and skills acquisition. In many countries, central and local governments provide various services to help firms in the seed and growth stages, including specialist consultancy services to close the gap between innovative ideas and the transformation of those ideas into a business. Such services include access to networking and the promotion of intermediary institutions operated by start-uppers. For instance, incubators, accelerators and university technology transfer offices provide support to students and researchers starting a business. Technology transfer offices provide integrated services to potential entrepreneurs and support the commercial exploitation of research findings. They provide technical consultancy and management services and facilitate access to seed capital.

Under the traditional incubator model, physical spaces are made available for a set period of time, usually between two and five years, during which the enterprises have access to infrastructure and services such as intellectual-property management, the commercialisation of technologies, and sometimes financing. Recently, however, there has been a shift towards more flexible systems involving collaborative workspaces and mentoring networks formed by people with specific knowledge in the various areas of activity of start-ups. Although it is still far too early to assess the impact of mentors on the performance of start-ups, some pioneering studies have found them to have a positive impact in New York (Endeavor Insight, 2015) and Chile (Gonzalez-Uribe and Leatherbee, 2015). Experience in the management of incubators has shown that they need to include results-based management incentives such as the market value or turnover of start-ups or the patents they have obtained. If results-based factors are not included, intermediary institutions may be rewarded more for the quantity of start-ups they support than for the quality. Accelerators, meanwhile, support start-ups that have a high growth potential as they internationalise and scale up their business model. They also facilitate access to venture capital for expansion and provide contacts and technical support.

Even if several large companies are actively promoting start-ups, potential linkages between established firms and start-ups may be missed. Public policy can encourage such linkages to be established through platforms. The European Union's Startup Europe Partnership, for instance, connects innovative start-ups with large corporations to help them scale up their businesses. The platform holds competitions to select the most promising start-ups and assists with business dealings between companies, strategic investments, and where appropriate, acquisitions. Each year it produces a ranking of Europe's "25 Corporate Startup Stars", which contains the 25 start-ups that collaborate most actively with large enterprises.

Creating markets

A recent trend in some countries is to use the innovative potential of start-ups to identify solutions to emerging problems. These include open calls for challenges focused on new enterprises, usually run by public-private partnerships. Examples include municipality and city initiatives such as Barcelona's "cities for consumers" project and similar projects by Helsinki and others. In 2014, Barcelona City Council launched the BCN|Open Challenge programme. The programme put forward six challenges related to various matters of interest to the city, including public transport, social inclusion and preserving cultural property. This led to the birth of 12 new businesses that were

awarded public procurement contracts. Implementing these kinds of programmes often requires legislative reforms to allow start-ups to take part in the selection procedures for challenges that require innovative, flexible solutions to specific problems. In India, for instance, as part of the Make in India and Startup India campaign, since 2015 at least 20% of public procurement must be from micro and small enterprises. Within this framework, public procurement regulations have been reformed based on the experience of previous public procurements, sales and billing to enable new businesses to tender for contracts.

It is not easy to ensure that start-ups submit tenders, and there is no guarantee that they will do so, since they often face legal barriers, or are too small for the scale of the contracts. However, if experiments to open up markets to start-ups continue, start-ups will benefit from guaranteed access to a market, and countries will benefit from the discovery of innovative, effective solutions to problems associated with the management and delivery of products and services.

Transforming mindsets

Transforming mindsets is a long-term process that cannot be achieved solely through government programmes. In emerging and developing countries, however, promoting an entrepreneurial culture is a major part of public policy actions to create a better environment for innovation and for starting a business. Public policy actions can boost the ecosystem and transform cultures and mindsets, shaping the preferences of young people and future generations in particular. Examples include policies to promote the image of a country or city as a place for entrepreneurship, as recently introduced in Chile and Medellín, initiatives to work with the press and with radio and television broadcasters to raise public awareness, as in Panama and Argentina, and measures that demonstrate strong political leadership in promoting entrepreneurs, such as Mexico's decision to create a national entrepreneurship institute (INADEM). All countries are faced with the challenge of promoting a shift towards an innovative business culture nationwide and generating awareness among public and private entities, but each country responds to that challenge using its own model. Some countries respond to the challenges through public-private partnerships. In France, meanwhile, central and local government work on many initiatives in partnership with universities, while Colombia and South Africa – the first African host of the Global Entrepreneurship Network's Global Entrepreneurship Congress (GEC) – have citizenship programmes to position themselves in global networks.

Reforming legal frameworks

Various national, regional and local regulatory and administrative measures influence business start-up costs and barriers, affect start-up growth and determine the conditions for winding up and re-entrepreneurship. Business-friendly reforms include simplifying and harmonising administrative procedures, providing provisional initial permits, creating softer tax regimes specifically for start-ups, reducing the requirements to shut down a firm or declare bankruptcy (non-fraudulent) and streamlining the process of doing so, and providing financial support for the orderly closure of bankrupt firms to reduce the financial cost and the time needed. Another way of encouraging the growth of innovative enterprises is through legislation governing the listing of innovative start-ups on the stock market and mergers and acquisitions, for instance by reducing the cost of submitting the necessary information. Measures regulating the transfer and exploitation of the knowledge and technology generated by research projects also play an important role in encouraging innovative entrepreneurship. Such measures include intellectual-property management schemes, regulations setting the conditions for disseminating the results of publicly funded R&D projects and agreements on sharing

out the profits generated when the results of R&D projects are exploited commercially. Defining these kinds of rules is important so that more private-sector resources are channelled towards creating technology-based enterprises.

Most countries have legal barriers to the development of start-ups and simplifying procedures is a common challenge. Some countries have made the regulatory framework simpler by introducing one-stop shops for start-ups or allowing them to register on line. Indonesia, for instance, introduced the One Stop Shop in 2006, a programme that incorporates the agencies one must go through to obtain a business licence and register the business. This initiative reduced the time needed to complete the formalities from 20-30 days to just ten days. Korea introduced the Start-Biz Online system in 2010, a one-stop shop to allow new businesses to register and pay taxes by entering their details only once on a web site. Chile in 2015 and Mexico in 2016 introduced laws so that a business can be started in a single day over the Internet.

In addition to legal frameworks that are friendly towards starting, expanding and winding up businesses, today's pro-startup legislation also includes special measures for the issuing of visas to investors, entrepreneurs and skilled workers, allowing countries to increase their global networks by attracting foreign talent. France, for instance, seeks to attract international business talent through the so-called "Talent Passport", which offers a simplified procedure for entrepreneurs and their families to obtain renewable four-year visas. Beneficiaries must operate in one of the seven areas identified as essential for the French economy. Startup Canada issues residency permits to entrepreneurs who have received an investment of at least USD 200 000 from a venture-capital fund or USD 75 000 from angel investors. Other countries, including Austria, Australia, Germany and Italy, grant visas to start-uppers who develop innovations that have a positive impact on their economies.

Lessons learned: Promote start-ups, but avoid start-up fever

Entrepreneurs and successful start-ups drive innovation by bringing new products, services, processes and technologies onto the market or improving those that already exist. Innovative start-ups improve productivity, increase innovation and create good-quality jobs, making them a major source of long-term growth in today's economies. Start-ups spread knowledge and use ideas commercially. They often grasp opportunities discarded by large firms, bridging the gap between research centres and knowledge markets.

However, they face major barriers during the seed and growth stages, so institutions, incentives and regulatory frameworks are needed to enable people to found and grow these businesses. Today, promoting start-ups is a task shared by various stakeholders (private, public and social), making it essential to ensure co-ordination and identify synergies among the various actions. Public policies can play an important role in providing incentives, such as seed capital to found and expand start-ups, and encouraging the private sector to invest in developing finance mechanisms to help start-ups expand, such as angel-investor networks and venture capital. Public policies can also create the right conditions for start-ups to grow by providing direct incentives for entrepreneurial capacity-building, services and infrastructure and by creating helpful regulatory frameworks. They can also create new forms of public-private partnership to forge synergies with new market trends such as corporate venture capital and new open-innovation models.

With the world's economy slowing, globalisation being redefined and the digital economy spreading, it comes as no surprise that other places want to emulate Silicon

Valley's success and find ways to create the same impact, so pro-startup programmes have proliferated in almost the entire world in recent years. Startup America, StartUp Britain, Start-Up Chile, Start-Up Russia, StartUp Perú and Startup Poland are just some examples. Meanwhile, collaborative workspaces and incubators are sprouting up in various African countries (The Economist, 2014a; UNCTAD, 2015; World Bank, 2016; Disrupt Africa, 2016). In the United States, cities and regions outside Silicon Valley have invested in building dynamic ecosystems for start-ups. They have created many support spaces and programmes, including seed-capital funds, accelerators, incubators, contests for entrepreneurs, venture-capital funds, entrepreneurship marathons and capacity-building programmes. These experiments are positive, especially for emerging countries such as those in Latin America analysed in this report, because they have reinvigorated stagnant production systems and given new opportunities to entrepreneurs and young people. It is important, however, not to fall into the trap referred to by Stangler (2016) as “startup fever”, i.e. too much emphasis on building ecosystems without understanding their true impact on the success of start-ups.

There is no one correct formula for promoting start-ups and there is no recipe for an optimum start-up policy. Nevertheless, several lessons can be drawn from the experiences of countries that are implementing public programmes for start-ups. If countries adapt those lessons to their specific circumstances, they can draft and implement better policies (Box 1.3):

- **Analyse the environment and forge alliances.** Countries should identify existing stakeholders that have action programmes for the various stages of development of start-ups, learn from their experiences, forge alliances and direct their support towards closing existing gaps and creating incentives for the private sector to play a leading role.
- **Recognise and assess the specificities of each context.** Many lessons can be drawn from the experiences of others in promoting start-ups. Like in all areas of public policy, these lessons are vital to make swifter progress in learning how to manage policy. However, in addition to looking outside, countries also need to carefully analyse their own system and the specificities of their ecosystem to find niches and value-added and avoid what has been called a “start-up monoculture” (Ortmans, 2015; Stangler, 2016). Instruments that are successful in one region might not be appropriate for another, where the context for start-uppers may be different. Entrepreneurship is a process that involves experimenting, so standardising support instruments can be counterproductive. It is therefore vital to understand the situation of the start-ups in question when designing instruments to support them.
- **Plan for the short, medium and long term.** The history of start-ups contains many stories of failure and failed attempts. Seldom do start-ups become successful and scale up. When they do succeed, however, they do so very quickly, and the system needs to be ready to meet the needs of these emerging enterprises. As launching a start-up becomes easier, more accessible and cheaper, the complexities increase in the acceleration stages (The Economist, 2014b). It is important to consider what needs start-ups may have in the future if they are successful in order to get the necessary mechanisms up and running in terms of financing and regulation. For example, if a country wants to support biotech start-ups, it must analyse legislation on clinical trials and other factors that might not be ready for companies to operate using global standards. The European Union, for instance, has a strategy for creating a barrier-free, single digital market allowing purchases and sales throughout Europe thanks to the benefits of digitisation.

- **Monitor the implementation of programmes, gather evidence and use it to fine-tune policies.** Monitoring and measuring impact are important to design well-informed policies. Generating data on the situation of start-ups, start-up performance and the impact of public policy remains a challenge in most countries, partly because start-ups are a new phenomenon, and partly because a wide range of definitions are used across the various support programmes. Several countries are experimenting with ways to close these information gaps. For example, in 2016 the European Commission introduced the European Startup Monitor to monitor the progress of start-ups, draw up a profile of their founders and identify challenges and opportunities for policies. The first edition in 2016 recorded more than 2 300 start-ups in 28 member states and includes information on the sectors, financing methods and employee numbers of start-ups and on the profile of start-uppers, including their age, gender and training. In Poland, Startup Poland issued the “Polish Startups Report 2015”, which provides the first mapping of digital start-ups in the country and includes related information on the nature of start-ups, including business models, capital structure, turnover, employees and innovation (Startup Poland, 2015). Italia Startup conducted a study in 2015 on the profile of Italian entrepreneurs, which revealed that successful start-uppers have extensive prior experience and are aged over 40 (Italy Startup, 2015).
- **Include performance conditions in instruments and create exit mechanisms.** Incentives work best when there are clear performance conditions. For instance, start-ups obtaining a second line of financing in order to grow may have to establish their company in the country, or the amount of public financing assigned to incubators may be proportional to some kind of performance indicator for the start-ups themselves, rather than to the number of start-ups. At the same time, measures to support the venture-capital industry are much more effective when exit timeframes and conditions for the support are clearly established beforehand, as happens in Israel (OECD, 2013a).

Box 1.3. Promoting start-ups in the United States: Five lessons learned

Recent studies by the Kauffman Foundation identified the following five lessons learned from the management of pro-startup programmes in the United States:

1. There is little evidence that incubators lead to successful start-ups (Fletsch, 2015). Public support can have a greater impact if it focuses on collaborative spaces that encourage beneficial practices for start-ups, such as knowledge sharing and networking.
2. Start-uppers benefit from networking events that allow them to meet other start-uppers, as well as mentors and investors. The Startup Weekend hosted by Google Entrepreneurs, for instance, meets in several cities, bringing together start-uppers, potential investors, partners and sponsors. Start-uppers also benefit from mentoring networks such as Pipeline in the Midwest of the United States, which provides mentoring to high-impact start-ups throughout the different stages of their business cycle.
3. Creating public venture-capital funds presents major challenges, since public agencies often lack the expertise to assess whether investments will be profitable or not.
4. Strict regulations and administrative burdens are barriers to the founding of innovative start-ups. In the United States, for instance, an occupational licence is required to perform certain professional activities, mainly those requiring skilled labour. This type of administrative barrier requiring outlays may hinder the introduction of innovative products or new organisational setups. Furthermore, simplifying the system for paying taxes encourages businesses to register formally.
5. To facilitate the learning process in public policies to support start-ups, it is necessary to generate data that will measure the impact of policies and identify the conditions for and indicators of successful start-ups.

Note: Set up in the mid-1960s, the Ewing Marion Kauffman Foundation supports start-up hubs in US metropolitan areas and conducts research on entrepreneurs, start-ups and ecosystems in the United States.

Source: Authors' work based on Stangler, D. and J. Wiens (2015), *The Dos and Don'ts of Local Entrepreneurship Promotion*.

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