



# Document A: Overview and evaluation of European policies for Digital entrepreneurship

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# 1. Executive summary

Few sectors have gained as much attention as the digital start-up sector. Signaling technological novelty, economic growth, job creation for the youth and an urban lifestyle, the digital sector has attracted enormous capital investments and given small companies billion-dollar valuations. Digital entrepreneurship has also emerged as a top priority when it comes to positioning and decision making for politicians and policymakers. In a global network where financial flows, but also talent, at least technically, can be transferred across borders rather quickly, it has become crucial for policymakers to ensure that the policies are calibrated in such way that they enable specific countries and places to form fertile land for growth and prosperity for digital start-ups. The million-dollar question is of course - *how* should these policies designed to serve this purpose?

This document, which aims to present an overview and evaluation of the European policies, shows a rather heterogeneous palette of policies on a national level. It is emphasised that in order to design a set of functioning policies for digital start-ups, the whole value chain of the digital sector must be taken into account. Policies favoring investments in digital infrastructure as well as policies aimed at enhancing digital skills and inclusive online usage will have indirect effects on digital entrepreneurship. Two specific models are presented in this study manifesting this holistic approach towards digital entrepreneurship policymaking. The first one is the 'digital hierarchy' manifesting the digital value chain. The second one is the 'digital entrepreneurship policy typology', which aims to give the readers a structure, and a framework for continued work.

The European Commission's *Digital Single Market* initiative does indeed apply such a holistic digital perspective. It has come quite far when it comes to implementing policies to serve the purpose of a digital-friendly society. Policies such as harmonisation of e-commerce frameworks, the end geo-blocking and the abolishment of roaming fees are good examples thereof. Yet, in terms of direct policies dedicated to digital startups, the achievements remain quite modest on a European level. The main challenge of the many and good-intended activities and projects that Start-up Europe proposes is to make them known to the start-up community. There are indeed attractive financial incentives, such as the Horizon 2020 grants from innovative SMEs, which have made a significant impact for many European start-ups, even though they tend to imply time-consuming application processes, which could lead to reluctance from busy start-ups.

On a national level, four countries (UK, France, Sweden and Italy) have been studied. Although there are some similar policies between, e.g., tax breaks for entrepreneurial R&D activity, they do differ in terms of policy maturity and orientation. The UK has by far the most attractive financial policies with the EIS and SEIS tax breaks. France has the most advanced institutional approach with its *French Tech* initiative and its giant incubators. Italy has taken important steps recently with *Italia Start-up Act*, which has already given some positive results. Sweden has surprisingly quite underdeveloped policies dedicated to start-ups, but the country benefits from a technology-driven history and culture following massive investments in broadband in the 90s; and advanced digital educational skills programme, and generous social policies. Those combined elements are attractive for digital start-ups.

In all analysed countries, there is a lack of vocational education programmes targeting at digital entrepreneurship. There are indeed national curriculums including programming for children in all countries, but according to findings in this analysis, there is still a dearth of affordable, vocational options in higher education, despite the high demand of software jobs in all countries. So far, the private sector and non-profit associations try to fill this gap.

In sum, the policies in the European countries differ substantially, and there are probably many gains to be made on a European level by bringing together policymakers working with digital start-ups and sharing the lessons learned.

For the Brazilian Ministry of Science and Technology, this document should serve as input for the preparatory work of drafting its own policies targeting digital entrepreneurship. Policies are of course bound to national context and must be integrated into existing policy frameworks. However, by being inspired, and by combining the policies integrated on a European level with the European-nation-specific ones, Brazil could calibrate its own set of digital entrepreneurship policies adapted to the Brazilian digital start-up context.

## 2. Purpose of the document

The purpose of this document (named 'Document A' in the Terms of References) is to give an overview and evaluation of the European policies aimed at technological entrepreneurship, with a focus on start-ups. The document addresses the following topics:

- a) the main challenges and results of initiatives aiming to foster digital entrepreneurship (such as regulatory measures that simplify requirements for startups and investors, mechanisms that increase market liquidity to fund startups, measures in favour of an error and risk-friendly environment, measures that modernise rules, procedures and definitions that hamper the expansion of investing in digital entrepreneurship).
- b) the main challenges and results of European programs to foster the Start-Up ecosystem, such as Start-Up Europe (and its unfolding activities).
- c) the strategy of the internationalisation of the start-ups; the manner whereby the government deals or addresses the issue of the education for the entrepreneurship (reforming school curricula, stimulating the vocational education in ICT among the youth).
- d) the strong points of selected country-based start-up programmes in Europe.

The document also serves as an introduction to digital entrepreneurship and the policies surrounding this emerging field in the economy.

## 3. Methodology and limitations

The document is based on a qualitative approach. The policies and analysis presented have been identified through the author's own experience after conducting research and work in the start-up sector. Online research has complemented it in databases, press, and via discussions and queries with European and national experts. A triangulation between these various data sources has contributed to the final analysis.

It should be noted that this is not a complete analysis of either European nor national policies for the countries included. The policies and regulations presented in the document are the ones that the author has assessed as the most relevant and typical for each country.

The document contains embedded hyperlinks. Hence, the document should preferably be read online to make the best use of the links provided.

### **About the author**

Robert Wentrup is a Senior Expert on the *Fostering Digital Entrepreneurship* project within the scope of the *EU-Brazil Sector Dialogues Support Facility* programme. He has a background as Trade Commissioner at the Swedish Embassy in France, and as Country Manager for Business Sweden - The Swedish Trade and Invest Council in France and Morocco. His PhD was about internationalisation for online firms and the geographical perspectives on the online economy. He has written several case studies on how Internet firms and start-ups internationalise. He is a research fellow and a guest lecturer at the Centre for International Business Studies in the Department of Business Administration, University of Gothenburg in Sweden. His research draws from the research disciplines of Internet geography, economic geography, international business, and development studies. He has worked several years as a consultant in Accenture's technology practice and is also a member of the board of the NGO, AAID - Association of Accountability and Internet Democracy.



## 4. Introduction: Digital entrepreneurship in Europe from a global perspective

This is an introductory chapter, which explains key vocabulary, and puts digital entrepreneurship in Europe into a global context in order for the reader to position it and to familiarise itself with the scope. First, a definition of the concept of digital entrepreneurship is made. Thereafter, digital entrepreneurship is framed into a digital society hierarchy. Finally, geographical aspects of digital entrepreneurship are outlined.

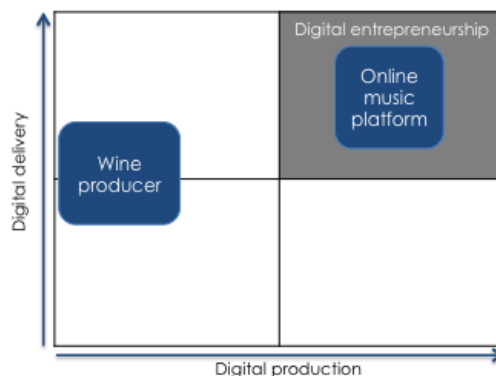
### Defining digital entrepreneurship

In business, and as a research field, 'digital entrepreneurship' is a rather new and unexploited concept. There are numerous examples of similar terminology, e.g., 'e-commerce entrepreneurship' 'digital entrepreneurship' 'cyber entrepreneurship', or even broader terms like 'start-ups' or 'technology entrepreneurship'. They all refer, more and less, to the same business activity, i.e., a digital service, or product being produced and delivered via digital technology, often via the World Wide Web.

One could view it as a matrix. On one axis '*Digital delivery & digital sales channels*' could be places, as complements to the traditional brick and mortar stores. On the other axis, we could have '*Digital production*' as the unit of measurement.

In such a matrix I would place pure digital ventures, from production to delivery in the upper right box (as illustrated in the figure below). Consequently, firms not being digital producers are placed on the left side of the matrix. For example, a traditional wine producer could sell half of its produce via digital sales channel, but the production itself still remains physical (as opposed to digital). Hence, such an example would only qualify as being partly digital. In contrast, an online music streaming service, e.g., *Soundcloud*, in which the whole value chain is in digital format, is a better example of pure digital entrepreneurship. However, it should be noted, that no ventures are completely digital. There are, at least to a certain degree, always elements of physical objects and human intervention, in both the production and delivery phase, even for the most digital types of firms.

The author understands digital entrepreneurship as ventures being closer to the latter category, which is marked in grey in the upper right corner in the illustration below. Yet, most policies and measures do not make this distinction and tend to bundle all that encompasses anything 'digital'. This does not have to be a problem, but policymakers should be aware of that 'digital entrepreneurship' is often be widely interpreted. Hence, when designing future policies, it is important to be specific whether such policies are targeted for companies with a clear digital profile, or whether it is more generally aimed at "start-ups".

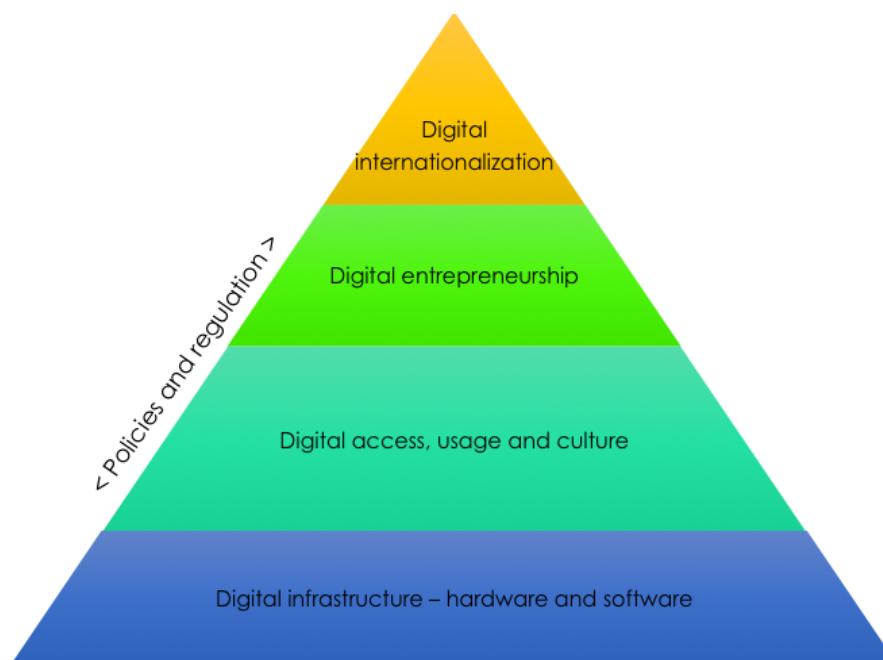


**Figure 1.** Illustration of how digital entrepreneurship could be viewed by arranging it into two main axes (digital delivery and digital production. Source: Author's model.

### Digital entrepreneurship in the digital hierarchy

In order to place digital entrepreneurship into context in the digital society, as well as in the digital value chain, a *digital hierarchy* model is suggested. The idea behind this model is to emphasize a holistic model of digital entrepreneurship. Digital entrepreneurship is built on a foundation of investments and societal engagement in digital technologies - from digital educational programmes to enhancement of digital skills. Further, there is need to build awareness in the society and to stimulate political commitment to digital policies. It is, therefore, important to have a broad perspective when discussing digital entrepreneurship, and not to view it as an isolated component. Engagements in digital entrepreneurship will have effects both upwards and downwards in the digital hierarchy.

There is discourse in the business press, which often claims that countries that have been lagging in economic development could leapfrog critical steps, not least in technological development, and thus succeed in flamboyant sectors like the digital one. It is partly true that, for example, there has been a mobile phone revolution in emerging countries in Asia, Africa, and Latin America, but one should be cautious with such discourse. Research shows that Internet penetration and digital entrepreneurship have a strong correlation (the causality has been trickier to prove). It is, therefore, more difficult to expect and build a solid ground for digital entrepreneurship unless the building blocks for digital entrepreneurship are not placed. The digital hierarchy below illustrates the building blocks for digital entrepreneurship and digital entrepreneurship internationalisation.



**Figure 2:** The digital hierarchy. Source: Author's model.

As the reader can see from the model, digital entrepreneurship is considered as being the third layer in the digital hierarchy. In order for countries and cities to facilitate and give incentives to digital entrepreneurship, it is important to acknowledge the links between the basic layers such as digital infrastructure, with investments in broadband and connectivity, hardware and software. Further, policies along the value hierarchy, e.g., competition policy affecting prices for connectivity; e-learning in school, and net neutrality, are additional policies to consider. The second layer “Digital access, usage, and culture” is also an important pre-condition to foster digital entrepreneurship. In this layer, I also include digital skills and vocational training.

One can also causally interpret this model. At some point, digital infrastructure needs to be coupled with policies on how to control and use the infrastructure. Digital usage and access will play a role in how many people will become digital entrepreneurs, and the number of digital entrepreneurs will affect how many of those who will eventually become international ventures. We can also imagine how the causality is not only moving upwards but also downwards. For example, increasing demands for data protection of citizens' personal data bring new digital infrastructure requirements to the table, both regarding software and hardware. An example is the [EU GDPR regulation](#), which will be effective in the EU during spring 2018. This policy will affect software, but it will also be an engine for digital entrepreneurial incentives.

In sum, the key message with the layers in the digital hierarchy is that they are all interconnected. Policymaking directed towards digital entrepreneurship must be designed with all layers in mind. Policies need to be in place on all layers in order to achieve a favorable digital environment for the society. The Nordic countries (Finland, Sweden, Denmark, Norway, Iceland) and the Baltics, for instance, have had a strong track record in rolling out broadband, and disseminating Internet access to its citizens. Unsurprisingly, they have also been successfully establishing digital ecosystems due to a mature culture of using digital technologies. Hence, they are performing well throughout the digital hierarchy. Further, research about innovation and business clusters often point to the fact that there needs to be a critical mass of institutions, capital, and talent in order to foster an innovative business climate and to prepare the terrain for digital entrepreneurship and innovation. This implies a holistic perspective where infrastructure, policy, and

entrepreneurship should be steered in the same direction to reinforce each other mutually. A recommendation for policymakers is, therefore, not to view digital entrepreneurship as a single unit, but instead to regard it in a broader context and to analyse how the surrounding layers could constitute fertile ground for it to grow stronger.

## **Economic geographic overview of digital entrepreneurship**

In this section, an introduction to geographical discrepancies is given. The relative strengths of the different digital entrepreneurship geographies in the world are portrayed. To date, there is still little statistics available about geographical perspectives of digital entrepreneurship.

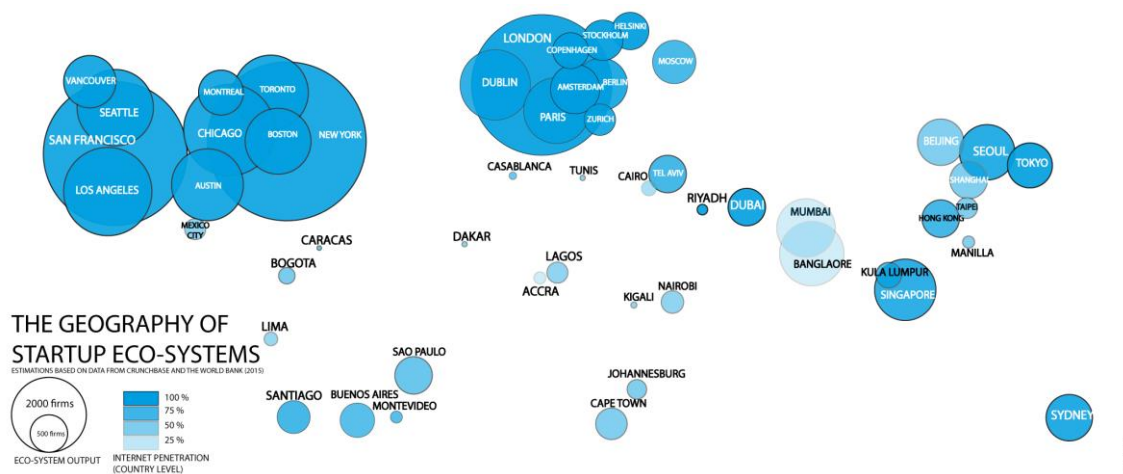
One issue is obviously to find an adequate and reliable measurement on what to include in such an analysis. We could use measurements such as '*number of people working in digital start-ups*' in specific locations, or '*accumulated turnover of digital start-ups*', '*funding of start-ups*' or '*financial valuation of digital start-ups*'. The latter is often used, although it could be a bit misleading (since valuation does not say much about business performance and sustainability).

The problem, however, is that there is still no unique and nationally crosscutting statistical code defining digital start-ups as a species. Even on a national level, digital start-ups are difficult to single out and categorize. They often fall into various categories such as "media companies", "software development", or even broader ones such as "retail".

One recommendation for policymakers is to work together with the national statistics institution, and if possible on a national level, try to create some kind of national database of digital startups to track and follow their evolution, both in terms of the number of employees and turnover, and if possible regarding international expansion. Over time such a dataset will be very useful to steer and evaluate digital entrepreneurship policies. As will be demonstrated in the Italian case, the Italian authorities have agreed upon a common definition of start-ups, which helps them qualify candidates for their various programmes but also in following their performance over time.

As a consequence of the lack of proper measurements, researchers still have to rely on less precise estimations. In the figure below, statistics have been retrieved from [CrunchBase](#), which is a database where many digital start-ups register in order to market themselves or to attract funding. The figure shows digital start-up eco-systems symbolised as blue circles. The size of the circle is the number of registered digital start-ups in the CrunchBase database and the color intensity represents the Internet penetration rate. Three main conclusions can be drawn from the illustration below (Figure 3). The first is the world domination regarding start-up ecosystems by the global North, and particularly by a few cities in the US, notably San Francisco and New York. The second conclusion is that the size of the ecosystems is clearly correlated with the Internet penetration rate, i.e., the small circles are also the ones with the bleakest blue colour intensity. As mentioned above it is difficult to establish causality between Internet penetration and digital entrepreneurship, but at least it is quite certain that they are correlated. The third conclusion, albeit less evident by only considering this image, is that geographical proximity matters in the digital sector. This is a bit paradoxical given that the whole idea behind the Internet and digital technologies is to facilitate and bridge distances. However, the image shows that large ecosystems are often concentrated in the geographical space. For example, the main US-based digital giants – *Google Amazon, Facebook, and Apple* (often referred to 'GAFA') are located within a very limited spatial area in Silicon Valley. This phenomenon is aligned with research about business clusters and the importance of proximity and is true also for the digital sector. Entrepreneurs seek locations where they can capitalize on the 'buzz' and be part of professional networks. An implication for policymakers is, therefore, to encourage the growth of such fruitful geographical areas to foster entrepreneurship and innovation. A challenge on a global scale is

to balance financial resources between these “super entrepreneurial places” and at the same time limit, the gap to other more lagging entrepreneurial spaces.



**Figure 3.** The geography of start-up eco-systems. Source: Author's illustration based on data from CrunchBase and The World Bank.

### *Geographical concentration to the Global North*

When discussing digital entrepreneurship, one could look at both the supply side, i.e., where digital applications are used, and on the demand side, i.e., in what locations they are produced. As explained by the digital hierarchy, it is important not to neglect the usage factor since it is often a driver for the production factor. Yet, for the purpose of this document, more emphasis is put on the production factor, i.e., digital entrepreneurship.

There is an abundance of research and reports measuring Internet with supply-side data, for instance, the number of domain names and Internet hosts, bandwidth, and so on. The world is approaching more than 3.5 billion Internet users worldwide out of a world population of approximately 7.5 billion. In 2018, more than half of the world population will have access to the Internet penetration. Between 75–80 percent of households have access in the developed countries, around 30 percent in developing countries, and 5 percent in less-developed countries.

There is still a substantial gap between developed and developing countries, and more than 90 percent of the people who are not yet using the Internet are from the developing world. In Africa, around 19 percent of the population was online in 2014, up from 10 percent in 2010, and from 1.68 percent in 2003. It is noteworthy that a much larger proportion of the population is online in the Global North than in the Global South, albeit there are nominally more people online in the Global South. China is the country with the largest number of Internet users (more than 700 million), followed by the US (270 million). Brazil has an estimated online community of nearly 140 million people. Africa has the lowest Internet penetration rate in the world, although the average annual growth of users has been particularly high in some countries. In Africa, only 10.7 percent of households are connected to the Internet, and almost half of the Internet-connected share of the population goes online through shared connections, for example through Internet cafés. The ‘digital divide’, a term for the inequality of ICT is often expressed as Internet penetration with sub-Saharan Africa as a reference point.

Thus far, we conclude that the spread of the Internet has not been equal between geographical regions and that the digital divide seems to persist. The world's largest producers of online

services come from the area around Mountain View in California in the US. In terms of users and turnover, some of the largest ones are *Google, Facebook, Twitter, LinkedIn, WhatsApp*, and *Yahoo!* Of the top 10 largest web communities, five originate from an area of a few square miles in Silicon Valley. This is significant for the digital entrepreneurship sector – it is physically concentrated to a compromised geographical area but is virtually vastly spread. Research has shown that that e-commerce is not bringing about the destruction of place. On the contrary, the importance of agglomeration and localities persists.





On a global level, digital services, e.g., online media, online banking, online commerce, online search, email, etc., are produced in many parts of the world, albeit mostly in city centres. We often find alternatives for Silicon Valley originals such as *Facebook* and *Twitter*, not at least in countries, which have a high degree of censorship like China and Russia. There are currently three Chinese firms among the 10 largest virtual communities in the world in terms of number. China's version for Facebook is called Renren (<http://.renren.com>), and Russia's version is VK (<http://vk.com/>). Both have more than 100 million users. In India, for example, there are many digital start-ups, such as *Snapdeal.com* and *Ola Cabs*. However, unlike the US online services, the digital start-ups from emerging markets often target the local market and its diaspora, whereas the US and other online services from the Global North tend to have a higher readiness and ambition for international reach. This problem, i.e., the lack of disruptive, or Schumpeterian entrepreneurship, limits the international potential for digital start-ups from the Global South and is evoked further in the section about internationalisation strategies. The fact that there are still quite a few examples of digital start-ups from the Global South reaching a large international audience, and the low level of Global South digital production, is a major challenge for the digital entrepreneurship industry.

### *The US domination*

As mentioned above, the US is the dominating country in the global North. When looking at the world's largest digital firms, it becomes clear to what degree the US is dominating the Internet sector. Out of the top 10 digital companies, half of them are American. The other five are actually Chinese (discussed below). Many factors can explain the US success story in the digital sector, but it can be seen as an evolutionary economic geographical development. One where Silicon Valley has gone from being the home to electronic components (Cisco) and computer manufacturers (Dell, Hewlett Packard, Apple) to having transformed gradually into the haven for pure software and Internet technology firms. The area is also home to some of the world's most competitive universities, e.g., Stanford. The US system has been successful in nurturing its technology industry with talents from academia. In general, the flow of talented individuals through the academia-industry-and public sector, the so-called triple helix is well known. Many of the leading entrepreneurs in the digital sector have studied at the prestigious American universities (Jeff Bezos, Amazon – University of Princeton, Mark Zuckerberg, Facebook – Harvard; Peter Thiel, PayPal - Stanford).

### *Emerging competition from Chinese online firms, but closed access to the Chinese market*

China is home to the world's largest Internet community and is, besides the US, also home to half of the world's largest Internet firms (see table from Wikipedia below). Studies have shown that the Chinese Internet sector is intertwined with the financial flows of the Global North via ownership and shareholding. *Tencent* has, for example, a large stake in the Swedish *Spotify*. *Alibaba*, *WeChat*, *Tencent* have emerged as increasingly important global players. China is the only real global South country, which is competing with global North firms on the global stage.

| Rank by Revenue ↕ | Company ↕   | Industry ↕    | Revenue (\$B) ↕         |
|-------------------|---|---------------|-------------------------|
| 1                 |  Amazon          | E-commerce    | \$135.99 <sup>[1]</sup> |
| 2                 |  Alphabet Inc.   | Search        | \$90.27                 |
| 3                 |  JD.com          | E-commerce    | \$37.5                  |
| 4                 |  Facebook        | Social        | \$27.64                 |
| 5                 |  Tencent         | Social        | \$21.90                 |
| 6                 |  Alibaba         | E-commerce    | \$15.69                 |
| 7                 |  Priceline Group | Travel        | \$10.74 <sup>[8]</sup>  |
| 8                 |  Baidu           | Search        | \$10.16 <sup>[11]</sup> |
| 9                 |  eBay            | E-commerce    | \$8.98                  |
| 10                |  Netflix         | Entertainment | \$8.83                  |
| 11                |  Expedia, Inc.   | Travel        | \$8.77                  |

**Table 1.** The world's largest Internet firms. (Source: [Wikipedia](#))

The Chinese Internet firms have managed to grow via a protectionist Chinese policy program where international online firms have had difficulty entering. One of the most known examples is [Google's failed attempt](#). As a result, China has developed its own versions of Silicon Valley originals. But so far, bar Alibaba, the Chinese Internet firms have had limited international success, although this will probably change as these firms become more and more integrated into the global value chains and the financial flows of Silicon Valley. What is disturbing though, is that the huge Chinese online market is still inaccessible for non-Chinese digital start-ups. In a few case studies I did with Swedish firms, they confirmed that the strict firewall policies and barriers for market entry (requirements for certificates, visas, etc.) make operations cumbersome and costly. Hence, one of the world's largest online markets is still to a large extent closed for international start-ups. This fact falsifies the discourse of 'one world online marketplace'. In reality, the world's online markets are heterogeneous in their characters and still dependent on offline politics and contexts

### Europe's role

As elucidated in the blue-circle illustration above, Europe is the runner-up regarding digital ecosystems after North America. The clear leader in terms of funding and market dynamics is the UK, or more specifically - London. The Table 2 from [dealroom.co](#) below illuminates how funding has been distributed between the top European markets from 2014-2017 (the table also includes Israel). The UK has more than double the amount of funding than the runner-up in Europe - Germany. In terms of exits (Table 3), the list looks similar, with the UK and Germany on top, but where the Netherlands is in the third place

| AMOUNT INVESTED | 2012    | 2013    | 2014    | 2015   | 2016   | 2017   |
|-----------------|---------|---------|---------|--------|--------|--------|
| United Kingdom  | € 1.4b  | € 1.3b  | € 2.6b  | € 4.5b | € 3.8b | € 7.5b |
| Israel          | € 629m  | € 1.1b  | € 1.6b  | € 1.9b | € 2.7b | € 2.9b |
| Germany         | € 623m  | € 726m  | € 2.0b  | € 3.2b | € 2.0b | € 2.9b |
| France          | € 545m  | € 770m  | € 1.1b  | € 1.6b | € 2.9b | € 2.5b |
| Switzerland     | € 192m  | € 291m  | € 483m  | € 629m | € 959m | € 1.7b |
| Sweden          | € 232m  | € 364m  | € 557m  | € 1.0b | € 1.2b | € 1.3b |
| Spain           | € 124m  | € 154m  | € 371m  | € 557m | € 643m | € 941m |
| Netherlands     | € 147m  | € 236m  | € 659m  | € 578m | € 919m | € 660m |
| Ireland         | € 86.1m | € 151m  | € 236m  | € 206m | € 619m | € 371m |
| Austria         | € 131m  | € 42.5m | € 25.4m | € 123m | € 127m | € 349m |
| Finland         | € 76.7m | € 245m  | € 133m  | € 240m | € 322m | € 325m |

**Table 2.** Amount of funding per country. Source: [Dealroom.co](http://Dealroom.co)

It is interesting to note that the UK in the last five years has allocated more than double the amount of funding than Germany and France. The gap is even larger when it comes to exits - the amount is triple compared to the runner-up, which is the Netherlands (due to the WhatsApp transaction to Facebook). Given that one deal can generate enormous amounts, this data is only indicative of how dynamic the ecosystem actually is. The figure below with the yellow circles illustrates another perspective by indicating how large the exits were in relation to population size during 2017. It becomes obvious that the Nordic countries perform well in this regard.

| AMOUNT INVESTED | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    |
|-----------------|---------|---------|---------|---------|---------|---------|
| United Kingdom  | € 3.5b  | € 20.7b | € 24.2b | € 25.7b | € 51.3b | € 34.6b |
| Israel          | € 204m  | € 616m  | € 1.8b  | € 4.9b  | € 8.0b  | € 17.7b |
| Germany         | € 1.4b  | € 2.9b  | € 13.0b | € 6.7b  | € 7.5b  | € 11.8b |
| Netherlands     | € 631m  | € 13.1m | € 1.0b  | € 1.5b  | € 48.5b | € 5.1b  |
| Sweden          | € 0.0   | € 63.7m | € 2.4b  | € 3.1b  | € 1.5b  | € 3.6b  |
| France          | € 613m  | € 986m  | € 16.6b | € 1.2b  | € 3.1b  | € 3.4b  |
| Belgium         | € 127m  | € 792m  | € 2.1b  | € 200m  | € 430m  | € 3.3b  |
| Spain           | € 88.0m | € 175m  | € 322m  | € 311m  | € 2.6b  | € 2.1b  |
| Denmark         | € 0.0   | € 0.0   | € 18.2m | € 427m  | € 1.6b  | € 1.5b  |
| Poland          | € 0.0   | € 0.0   | € 1.7m  | € 232m  | € 3.0b  | € 1.3b  |

**Table 3.** Amount of exits per country. Source: [Dealroom.co](http://Dealroom.co).





**Figure 4.** Digital start-up exits per capita in 2017.

The above tables demonstrate that the digital start-up sector in Europe, particularly the top five countries, have experienced a five-year period of strong growth and activity. But the data also draws attention to the uneven distribution between the European countries in terms of financial flows. Actually, it is more acceptable to talk about competition between *cities* as opposed to countries, where London, Berlin, Paris, Amsterdam, and Stockholm are competing to attract finance and talent. In Europe, these four cities have accumulated a very large proportion of all investments made.

When discussing exits, it should also be mentioned that European start-ups have been subject of many acquisitions to the major US Internet firms (5 to Facebook and 28 to Alphabet).

As visualised in Table 1 above, among the world leading online firms there is still not a single company from Europe on the top list. This is a concern in regard to international competition and industrial power balance in the Internet sector. Europe has many dynamic digital start-up hubs and interesting small Internet companies, but a challenge is to make these start-ups continue to grow in Europe and hence not be sold to major US firms. The case of the Swedish Spotify will be interesting to follow in this regard.

## Summary

In this chapter, some of the main challenges in the digital start-up sector have been outlined:

- There is still no common definition of digital start-ups or digital entrepreneurship although both concepts evoke clear ideas of what they represent. Yet, this leads to difficulties in measuring the progress and evolution of firms associated with digital start-ups. Digital start-ups can be categorised under different statistical codes.
  - An implication for policymakers is to discuss this issue with national statistics authorities in order to track these firms properly on a national level. The matrix of digital firms presented above could hopefully help readers to understand the concepts more easily.
- Digital entrepreneurship should not be viewed as an isolated component but through a holistic lens, which has been illustrated in the digital hierarchy in the chapter.

- An implication for policymakers is therefore to analyse the whole set of digital policies along the digital hierarchy, which could prepare the terrain for digital start-ups.
- The economic geography of digital start-ups is characterised by heterogeneousness both on a country level and city level. This has been explained by the US and Silicon Valley's domination in the sector. Even Europe has a strong unevenness in terms of funding allocation and exits where start-ups from the UK are outperforming the rest of Europe. Paradoxically, the Internet sector is still very place-dependent. This has also been highlighted in how China, with the world's largest Internet sector, still remains rather inaccessible as a market for most digital start-ups.
  - An implication for policymakers is to make sure that certain places within countries get sufficient funding and support to create a critical mass for sustaining hubs for digital entrepreneurship. Another implication is to strike the right balance between a policy framework that permits local start-ups to grow without being absorbed or outcompeted by international Internet giants and, at the same time, be an interesting marketplace for these international Internet companies as well as international investors.

## 5. Measures to foster digital entrepreneurship

### The role of institutions

This document discusses the policies and regulations associated with digital entrepreneurship, but it is important to accentuate that policies need to be accompanied by institutions to ensure their implementation, follow-up, and measurement. In Document B, some of the main institutions working with the digital entrepreneurship policies are outlined. Therefore, the reader should read these two documents jointly in order to obtain a full picture of national ecosystems and their respective policies.

As concluded in Document B, the European Commission (EC) is an institution with strong influence in setting the digital agenda and driving the implementation work in Europe via the [Digital Single Market](#). The policies promoted via the Digital Single Market have encompassed a broad set of issues ranging from strengthening digital skills and usage to protecting consumers and business throughout Europe. In regard to the digital hierarchy model, it has predominantly targeted the lower layers so far, but with initiatives such as *Start-up Europe*, the policy impact on digital entrepreneurship is starting to become visible.

If we look at direct policies in the EU positioned closer to the core of digital entrepreneurship, we mainly find subsidy- and grants policies for SMEs and start-ups. In addition to these, there are some policies designed to harmonise the e-commerce legal framework. There are no specific policies for antitrust cases in the digital sector, but the strong antitrust clauses in the EU have targeted the online giants Google and Facebook as highlighted in the next section.

Document B outlines that national institutions are crucial for developing local digital entrepreneurship ecosystems. Particularly so on a digital entrepreneurship level in the digital hierarchy. Document B also manifested the heterogeneousness and the variance in the institutional maturity across Europe, and how the focus on the institutions is a reflection of national culture. For example, it should be considered that the importance of business and technology culture is also crucial for the development of digital entrepreneurship, although more difficult to assess and change.

Obviously, institutions are important for designing, implementing, following-up and measuring the effects on digital entrepreneurship policies. Therefore, a policy implication is that the institutional work must go hand in hand with clear mandates of ownership and responsibility of implementing and following up the policies. It is particularly important with the assignment of the institutional roles, given that the digital entrepreneurship sectors cut across many business sectors.

### A typology of digital entrepreneurship-related policies

For the reader to categorise and to get a clear vision of the various policies related to digital entrepreneurship, this document contributes to a **digital entrepreneurship policy typology**.

There are relatively few scientific studies about policies related to digital entrepreneurship and its effect on economic growth. Given that this is a rather novel research and policy field, it will be difficult to measure the effects of recent policies after such a short-elapsd time. Yet, previous

research has shown that subsidies in R&D have had positive effects on SMEs. For example, one study addressed the question of the efficacy of R&D policy measures in support of high-tech startups and showed that subsidies awarded on a competitive basis lead to positive effects, while those assigned through an automatic procedure did not.<sup>1</sup> For policymakers, it is not only important to provide policies and subsidies as such, but also to make sure they are calibrated efficiently.

As highlighted below about the UK case, their investment schemes have had substantial effects on the whole economy, and in contributing to its pole position in the global digital ecosystem aside the US. Since the Enterprise Investment Scheme (EIS) was launched in 1993-94, over 24,500 individual companies have received investment through the scheme, and over 14.0 billion GBP of funds have been raised. Although it is difficult to isolate the investment scheme as a single dependent variable for UK's leading position as a start-up nation in Europe, it is quite safe to claim that it has certainly contributed to its economic growth and to the UK's attractiveness in the digital entrepreneurship sector. The UK investment scheme, which is actually tax breaks, is an example of a direct *policy*, which targets, not only, but primarily innovative and fast-growing sectors like the digital one.

As this document will show, national policies are a reflection of national and cultural contexts. The Swedish case offers another story of how indirect policies and a generous welfare system contributes to an interesting digital entrepreneurship scene. In addition, policies aimed at nurturing the start-up sector, do not only create direct impact, for companies, and set the preconditions for running businesses. They also serve as signaling mechanisms to the global community of investors who are looking to pick the right spot for their financial investments into the digital sector, particularly in times when traditional investments tend to yield low returns. We can, therefore, say that policies related to digital entrepreneurship have different target groups as well – the entrepreneurs themselves (existent ones or to-be entrepreneurs), and the investors. Both categories could be domestic as well as international.

In order to facilitate the discussion of digital entrepreneurship-related policies, this European, and country-specific analysis is based on a typology of such policies. The main types identified are listed below. They are presented in priority order with the digital hierarchy and digital entrepreneurship in hindsight:

- **Financial** – policies having a financial impact for either the investor or the entrepreneur, e.g., tax exemptions, grants, and direct subsidies.
- **Business promotion activities** - policies and initiatives to stimulate business activities for digital ventures and start-ups.
- **E-commerce** - policies that deal with the e-commerce framework.
- **Ease-of-business regulations** - policies that facilitate starting up business, e.g., administration regulations and costs, difficulty of firing and hiring.
- **Digital** – policies in places to stimulate the access and use of digital technologies and the Internet, e.g., roll-out policies of broadband, data protection, and vocational training.
- **Talent attraction** – policies serving to attract talents both domestically and internationally to start working in the digital entrepreneurship sector, e.g., visas.
- **Social & cultural** – this hardly qualifies as a digital entrepreneurship policy, but still it has been evoked in [reports](#) as a key factor for stimulating entrepreneurship in general, which is why it is included.

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<sup>1</sup> Massimo G. Colombo, Luca Grilli, Samuele Murtinu. (2011). R&D subsidies and the performance of high-tech start-ups, *Economics Letters*, vol. 112

An overview of this typology and examples thereof can be seen in the table below.

|   | Type   | Example highlighted in Document A                 |
|---|--|---|
| Digital entrepreneurship-specific       | <b>Financial</b>   |   |
|   | Tax exemption schemes  | EIS and SEIS, UK, Start-up Act Italy              |
|   | International establishment subsidy  | France "French Tech Ticket"                       |
|   | Start-up subsidies and R&D subsidies   | Sweden's Vinnova programs                         |
|   | Stock options  | UK's employment management options                |
|   | <b>Business promotion</b>  | France "La French Tech"                           |
|   | <b>E-commerce</b>  |   |
|   | Contractual harmonisation  | EU's Digital Single Market                        |
|   | Antitrust  | EU's case against Google                          |
|   | Regional subsidies to clusters   | Sweden's allocation of EU fund via Tillväxtverket |
|   | Geo-blocking   | EU's Digital Single Market                        |
|   | <b>Ease-of-business regulations</b>  |   |
| One stop shop for starting a business?  | E.g., French Tech Central  |   |
| Time to start up a new company          | E.g., 1-2 weeks in Sweden  |   |
| Cost of starting up new company         | Exception of most fees in Italy due to Start-up act                          |   |
| Procedures of starting up a new company | E.g. In Sweden possible to make a "simple registration of a limited company" |   |
| Difficulty of firing                    | E.g., New labour laws in France  |   |
| Difficulty of hiring                    | E.g., Italy - flexibility measures taken to lower employer costs             |   |
| Indirect impact                         | <b>Digital</b>   |   |
|   | Access and affordability   | EU's Digital Single Market                        |
|   | Data protection  | EU's GDPR   |
|   | E-governance   | EU's e-Government Action plan 2016-2020           |
|   | Vocational training  | Ecole 42 in France                                |
|   | <b>Talent attraction</b>   |   |
|   | Immigration  | Italy's Start-up visa                             |
|   | Housing  | Sweden's issue of housing in Stockholm            |
| <b>Social &amp; culture</b>             |  |   |
| Social and welfare incentives           | Sweden's welfare policies  |   |

**Table 4.** Typology of policies related to digital entrepreneurship.

## 6. EU - level: Digital entrepreneurship policies

### The EU strategy for promoting industrial digitalisation and digital entrepreneurship

The EU has an ambitious strategy for promoting digital development.

The European Commission launched the Digitising European Industry initiative (DEI) in April 2016. As part of the *Digital Single Market* strategy, the DEI initiative aims to reinforce the EU's competitiveness in digital technologies. The strategy is composed of the following five pillars:

1. **Coordination.** A European platform of national initiatives on the digitising industry has been institutionalised. In practise, this forms an EU [coordination forum](#) which brings together all Member States;
2. **Digital Innovation Hubs.** The EU aims to develop further and organise Digital Innovation Hubs, which are supposed to be one-stop-shops where companies, especially SMEs, start-ups, and mid-caps, can get help to improve their business, production processes, products and services using digital technology. One example of such a hub is the [EIT Digital](#) (from the [European Institute of Innovation and Technology](#)).
3. **Leadership** through partnerships and industrial platforms, development of [digital industrial platforms and large-scale piloting](#) and Public-Private Partnerships (PPPs)
4. **Regulatory framework.** The EU aims to develop the regulatory framework further to fit what is named the "the digital age", e.g., measures to update regulations in key fields for industry such as *cybersecurity* and the free flow of data.
5. **Skills.** Preparing Europeans for the digital future, e.g., European initiatives such as the [digital skill and jobs coalition](#) and the [digital opportunity scheme](#) can help to bridge the gap.

The above is EU's general strategy. Besides these pillars, there is an underlying strategy to digitalise *the whole* European industry (it often goes under names like "Industry 4.0") and to [coordinate these efforts](#) between the member countries. A big part of the work consists of upgrading traditional manufacturing sectors. Digital entrepreneurship is one part of this programme, and it is accentuated under the pillar of *Digital Innovation Hubs (DIH)*.

If we look closer at the strategy related to digital entrepreneurship, the DIH initiative is of particular interest. Within this initiative, the EU proposes several tenders where start-ups can engage and if successful, obtain financing. There are already several EU initiatives to shape the pan-European network of DIHs, which are contributing to boosting the competitiveness of existing industries, notably for SMEs and mid-caps and to create additional business opportunities. These are listed below:

- Innovation for Manufacturing SMEs ([I4MS](#)),
- Smart Anything Everywhere ([SAE](#)),
- Open Data Incubator Europe ([ODINE](#)),

- European Coordination Hub for Open Robotics Development ([ECHORD++](#)),
- Access Center for Photonics Innovation Solutions and Technology Support ([ACTPHAST](#)),
- Supercomputing Exercise for SMEs ([SESAME NET](#)),
- [EIT Digital](#) (from the [European Institute of Innovation and Technology](#))

Insofar as we look at the European digital strategy, one could conclude by saying that digital start-ups are covered as part of being central to the *Digital Single Market*, but also through the general European digital strategy, predominately through sector-specific initiatives. The DIH initiative is one type of such an initiative.

## Policies and regulations on a European level - the Digital Single Market

When analysing the regulatory framework of the European Digital Single market initiative, one can conclude that EU policies implemented so far have been transcending through the whole digital hierarchy model. In this section, they will be analysed according to the typology.

Non-applicable and non-covered policies are marked in grey. One reason why they are not outlined explicitly is that these types fall into the category of national policies. A second reason is due to their relative lower direct impact on digital entrepreneurship. Yet, they are visible in the table in order for coherence in relation to the digital hierarchy and the typology.

|  | Type  | Examples on a European level   |
|--|---|--|
| Digital entrepreneurship-specific      | <b>Financial</b>  |  |
|  | Tax exemption schemes   | N/A National tax regimes (not covered)   |
|  | International establishment subsidy   | N/A (not covered)  |
|  | Start-up subsidies and R&D subsidies  | Horizon2020 financing, COSME (via EASME), Digital Innovation Hub specific tenders                      |
|  | Stock options   | N/A National policies  |
|  | <b>Business promotion</b>   | Start-up Europe (Start-up Europe Awards, Start-up Europe Accelerator programs)                         |
|  | <b>E-commerce</b>   |  |
|  | Contractual harmonisation & unfair practises  | E-commerce directive   |
|  | Antitrust   | EU case against Google   |
|  | Regional subsidies to clusters  | Regional Development Fund, which focuses on 'digital agenda in its investments as a key priority area. |
| Geo-blocking                           | EU rule will enter into force 2018  |  |
| <b>Ease-of-business regulations</b>    |   |  |
| One stop shop for starting a business? | EU's practical guide for doing business in Europe and "The One Stop Shop" for start-ups |  |
| Time to start up a new company         | N/A - on country level only   |  |

|                               |  |  |
|-------------------------------|--|--|
| Indirect impact               | Cost of starting up a new company                | N/A - on country level only  |
|                               | Procedures for starting up a new company         | N/A - on country level only  |
|                               | Difficulty of firing                             | N/A - on country level only  |
|                               | Difficulty of hiring                             | N/A - on country level only  |
|                               | <b>Digital</b>                                   |  |
|                               | Access and affordability                         | Roaming initiative   |
|                               | Data protection                                  | General Data Protection Regulation (GDPR)  |
|                               | E-governance                                     | e-Government Action plan 2016-2020   |
|                               | Vocational training                              | Main European body is CEDEFOP. Web: <a href="http://www.cedefop.europa.eu/">http://www.cedefop.europa.eu/</a> Not a provider but facilitating through various initiatives, e.g., ECVET |
|                               | <b>Talent attraction</b>                         |  |
| Immigration                   | N/A Schengen and national policies (not covered) |  |
| Housing                       | N/A National policies (not covered)              |  |
| <b>Social &amp; culture</b>   |  |  |
| Social and welfare incentives | N/A National policies (not covered)              |  |

**Table 5.** Overview of policies related to digital entrepreneurship on a European level.

## Financial

Given that Europe follows national tax regimes there are no tax-exemption policies on a European level. The financial policies and initiatives identified are, therefore, in the form of direct or indirect financial support instruments such as grants, subsidies, tenders and business promotion activities.

The programs launched by the Digital Single Market initiatives such as *Start-up Europe*, *Start-up Europe Partnership* (see Document B) have mainly been in the form of *business promotion activities, and indirect subsidies*. These subsidies come in the form of competitions, funding, and co-financing, accelerator programs following applications and evaluation processes. *Start-up Europe* has summarised their initiatives on a dedicated [website](#) where start-ups can orient themselves. As can be viewed from the website this is a large palette of programs, and it takes quite a lot of time and effort to understand and sketch out how to apply and participate in these different offerings. Start-up Europe's main achievements are twofold according to them:

1. **Access to Horizon 2020 funding opportunities for start-up ecosystem builders:**

a) throughout the last two years, during the implementation of Start-up Europe Horizon 2020 funded projects, 715 start-ups have been supported. They managed to raise 200 Million EUR in capital from the market. 900 pitching sessions with investors, over 500 cross-border meetings and networking events, 350 matchmaking sessions between Start-ups, investors and corporates have also been organised to help start-ups grow.



b) A new batch of 7 Start-up Europe projects funded through Horizon 2020 will start in the first weeks of 2018. The EU estimates that 3400 start-ups will benefit from their activities on subjects such as: scaling up, raising growth capital, entering into new markets, launching internationally, going Public (IPO). It is expected that these start-ups will raise 850 Million EUR (the estimation is based on the extrapolation of the previous H2020 projects' results).

Support of cross-border stakeholder networks and grass root initiatives: Start-up Europe Week (5-9 March 2018), Start-up Europe Summit (13 June 2018, Sofia), Start-up Europe Awards final (June 2018), Start-up Europe Comes to Silicon Valley (September 2018) European Maker Week (October 2018), Start-up Europe comes to Universities, or Start-up Europe Comes to Africa.

In terms of mechanisms that increase market liquidity to fund start-ups on the European level, some competitive funding programs, referred to as SME instruments should be highlighted:

**EASME channels support for SMEs and start-ups:** The Executive Agency for Small and Medium-sized Enterprises (EASME) has been set-up by the European Commission to manage several EU programmes. Yet, it should be noted that this programme is not only for digital start-ups, but it is a cross-sector program for SMEs and start-ups. They provide a set of different programmes to stimulate the growth and development of start-ups:

**COSME** is the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (SMEs). It runs from 2014 to 2020 with a planned budget of 2.3 billion EUR. COSME aims to "facilitate access to finance, support internationalisation and access to markets, create an environment favorable to competitiveness, encouraging an entrepreneurial culture, and more favorable conditions for business creation and growth". Within this programme, they run different sub-programmes and finance various institutions, e.g., Your Europe Business, which is an EU portal designed to help SMEs do business across borders and take advantage of the European Single Market; Europe Enterprise Network (see Document B); matchmaking between SMEs and PhDs to mention a few.

For policymakers, particular attention should be drawn to the **SME instrument**. This is part of the Horizon 2020 program. An amount of almost 3 billion EUR split into 7500 projects by 2020 in highly innovative small and medium-sized businesses will be distributed. This sounds a lot, but the competition is fierce. Until 2020 around 4000 small companies will be selected for funding. The SME instrument consist of two phases:

- Phase 1: A concept & feasibility study, where funding of 50 000 EUR can be obtained;
- Phase 2: A project focused on Demonstration, market replication, R&D and product development. Concept to Market-Maturity The EU may contribute 70% of total project cost, between 0.5 and 2.5 million EUR.

For the companies qualified and granted, the above phases are then followed by non-financial assistance in the form of business coaching and business support, which are financially supported by the EU. In these capacity building initiatives, the start-up is the beneficiary, but the funding goes to the business coach, or the consultant providing the business support service.

COSME also provides other financial instruments channeled through the European Investment Bank (EIB). These include the Loan Guarantee Facility (LGF) and The Equity Facility for Growth (EFG). It is expected that up to 330,000 SMEs will receive loans backed by COSME guarantees and the LGF guarantee facility, with the total value of lending reaching up to EUR 21 billion. Additionally, it is expected that some 500 firms will receive equity financing through the programme, with overall investment reaching up to EUR 4 billion.

In addition to the SME instrument, there are more narrow programs for funding with the aim of promoting innovative projects and specific sectors:

**EIC Fast Track to Innovation:** Fast Track to innovation (FTI) is a fully-bottom-up measure in Horizon 2020 promoting close-to-the-market innovation activities which are open to all types of participants. FTI aims to reduce the time from idea to market and to increase the participation in Horizon 2020 of industry, SMEs, and first-time industry applicants. The EU-contribution is a maximum of 3 million EUR per proposal with time-to-grant (from the cut-off to the signature of the grant) of around 6 months. The FTI is a now central part of the *European Innovation Council* (EIC) pilot, targeting radically new, breakthrough products, services, processes or business models that open up new markets. Project candidates should consist of consortiums of three-five legal entities established in at least three different EU Member States or countries associated with Horizon 2020, and they should be aligned with the [EU's industrial policy goals](#).

For digital start-ups working in the environmental, energy and also maritime sector, there are specific funding programmes like **Horizon 2020 Societal Challenge Climate action, environment, resource efficiency & raw material**. In 2017, there was 367 million EUR available in funding in for environmental research and innovation under [this programme](#).

The competition is very hard on this kind of programmes, but as research has shown, it is an efficient way to distribute funds. The application process follows a rigorous and transparent evaluation procedure. Candidates are generally informed within 8 weeks after submission whether they are granted or rejected.

## Tenders

One policy instrument the EU is using to stimulate digital entrepreneurship is through tenders in the digital sector. These are [available online](#) and open to legal entities from all member states. Via the DIH initiative, the EU has launched a range of tenders, which are interesting for start-ups. For example, there is currently (January 2018) a [tender](#) funded by the EU, which addresses start-ups working in the healthcare sector. The eHealth HUB initiative is organising a "Lean Start-up Academy" and a "Solution Match," which could help European start-ups or SMEs working on digital health solutions to enter the market and find potential customers. Other examples are 1) Smart Anything Everywhere (SAE) and ICT Innovation for Manufacturing SMEs (I4MS), which offers several funding opportunities for small and medium-sized enterprises to implement and test digital innovations within the framework of the DIH.

## Business promotion-specific

As highlighted in Document B, there are several inter-connecting and business promotional initiatives launched by the Digital Single Market's sub-organisations. Some examples are highlighted here below:

**Start-up Europe Awards:** Launched as the *Eurovision contest* of start-ups. The competition follows a bottom-up approach, where participating nations send their winner to a European final. The Awards recognize the efforts of the European start-ups in five levels (local, county, regional, national and European) for ten categories: Creative, Energy, Fintech, Green, Health, ICT, Smart Cities, Social, Tourism, and Water. More than 20 local events and 14 national awards have been organised under Start-up Europe Awards' frame in 2016, with 91 start-ups winners and 84 that made it to the final. 21 media Partners of the whole Europe have helped to give visibility to this initiative. 9 members of the European Parliament have come together in the Start-up Europe Awards as ambassadors, supporting the local events with their presence and closely following the

progress of the startups. It is not clear whether the price is an honorary award only or whether it is prize money or funds.

**Start-up Europe's Start-up scale up accelerator programme:** Start-up Scaleup's tailored a 6-month accelerator has an IoT and international focus. The program is a mix of events and resources both online and at the hubs underpinned experienced mentors, IoT experts, developers, and facilities. Start-up Scaleup does not offer any financial contributions to selected start-ups. The added value of Start-up Scaleup is access to tools and people that can help in speeding up the process of bringing IoT innovation to the market and the clients. It comes in the form of access to prototyping facilities, assistance with licensing, access to mass manufacturers, and assistance with IoT focused fundraising, etc.

## E-commerce specific

### Contractual harmonisation

The overarching policies are concluded in the Digital Single Market e-commerce directive, the Electronic Commerce Directive (e-Commerce Directive 2000/31/EC) which was adopted in 2000. It aims to set up an Internal Market framework for electronic commerce and to provide legal certainty for business and consumers alike.

The Directive establishes harmonised rules on issues such as the transparency and information requirements for online service providers, commercial communications, electronic contracts and limitations of liability of intermediary service providers. It also enhances administrative cooperation between the Member States and the role of self-regulation. The main aim of the Directive is to define an appropriate e-commerce framework and to prevent unfair discrimination against consumers and businesses when they try to access content or buy goods and services online within the EU.

The main sectors concerned by the directive are online information services; online selling of products and services; online advertising, professional services; entertainment services and basic intermediary services. These services also include services provided free of charge to the recipient and funded, for example, by advertising or sponsorship. Following this initiative, there have already been some policies put in place (see below about geo-blocking), and there are still many on-going consultations, notably the one about online platforms. These consultations tackle a wide range of issues coupled to online platforms, such as how to handle illegal content, how to frame "sharing economy" services in a commercial and legal perspective. A full report can be read here.

An example of the harmonisation policy is that there must be a minimum of content on commercial websites (minimum: name and contact details of the seller; clear description of the product and/or the service, time of delivery, withdrawal information – 14 days return right, reclamation right of two years.).

### Unfair e-commerce practices

The Directive on Unfair Commercial Practices was adopted in 2005 in order to boost consumer confidence and to make it easier for businesses, especially SMEs to carry out cross-border trading.

The Directive enables national enforcers to curb a broad range of unfair business practices, such as providing untruthful information to consumers or using aggressive marketing techniques to influence their choices. Its legal framework is proving well suited to assessing the fairness of the new online practices that are developing in parallel with the evolution of advertising sales techniques.

### *Consumer rights and consumer information on online goods and services*

Indirectly linked to e-commerce is the policy measures taken on the consumer side. Further enforcement efforts have been made to guarantee a high level of consumer protection, in a national context but particularly at a cross-border level.

The European Commission adopted a communication on the application of Directive 2005/29/EC on Unfair Commercial Practices (COM(2013)138) in 14 March 2013. From the Directive, we can read that The Commission has plans to step up enforcement of the rules to increase citizens' trust when shopping in Europe's internal market: 1) strengthen the efficiency of the European consumer protection network and continue to promote coordinated enforcement actions ("sweeps"); 2) assist Member States in effectively applying the Directive with guidance and sharing best practices; 3) develop enforcement indicators to detect shortcomings and failures that require further investigative and/or corrective action; 4) establish regular thematic workshops between national enforcers and organise training for enforcers and the judiciary. The sweeps are systematic and simultaneous checks to identify websites that are not in line with consumer protection law. They aim to detect incomplete information on the trader or a lack of contact details; incorrect and misleading information about any hidden costs; insufficient information on product details or unclear information on the right of withdrawal and return or reimbursement. In 2012, a special sweep was made for digital content. The objective was to compile a study on the European market for digital content products focusing on games, music, e-books, and videos, which can be downloaded or streamed. [This study](#) was one of the key actions in order to push the e-commerce policy forward.

### *Antitrust cases in the online market (EU against Google and Facebook)*

The EU case against Google started on 15 April 2015, after Margrethe Vestager, European Commissioner for Competition, accused Google of using Android OS to promote its mobile services. A year later, on April 20, 2016, the European Commission announced the issue of the second Statement of Objections to Google and Alphabet Inc., the consortium Google is a part of which concerned Google Search engine being imposed, in the Commission's opinion, by the company to the manufacturers of mobile devices along with Google Chrome browser along with the direct prohibition for the manufacturers of mobile devices to pre-install other browsers. In June 2017, The [European Union](#) handed Google a 2.42 billion EUR fine for abusing its dominance of the search engine market in building its online shopping service, in a dramatic decision that has far-reaching implications for the company. The commission's decision, following a seven-year probe into Google's dominance in searches and smartphones, suggests the company may need to rethink the way it operates fundamentally. It is also now liable to face civil actions for damages by any person or business affected by its anti-competitive behaviour. Google immediately rejected the commission's findings and signaled its intention to appeal, in an indication of the grueling legal battle to come between the two sides.

The EU has also fined [Facebook](#) over disclosures in the WhatsApp deal for giving misleading statements during the company's acquisition of the Internet messaging service WhatsApp in 2014.

### *Regional subsidies to clusters*

The [European Regional Development Fund](#) aims to strengthen economic and social cohesion in the European Union by correcting imbalances between its regions. One of their key prioritised areas is the "digital" agenda. Regional clusters can apply for regional funding to the authority managing the relevant regional programme. National bodies then evaluate projects and decide whether to grant funding. For example, in Sweden, this body is Tillväxtverket (see Document B). All funded programs could be accessible on websites, and here we find quite a few who could relate to digital entrepreneurship, such as:

- E-health innovation granted to "[Blue Science Park](#)" (700 KEUR from 2018-2021)
- Innovation runway 2020 (1.1 MEUR from 2018-2021)
- Cleantech Värmland (490 KEUR from 2018-2022)

Similar examples can be found for all member countries.

### *End of geo-blocking*

European consumers have suffered from being redirected to national websites with different prices and conditions on the basis of their geographic location (geographical attachment of their IP-addresses). This has been particularly common in the sector of *Electrical Household appliances and electronics and computer hardware*. EU's figures mention that 60-80% of all these sites had geo-blocking functions in place before the regulation.

With the new anti-geo-blocking regulation in place, an Italian family can, for example, buy a trip directly to an amusement park in France without being redirected to an Italian website. The European Commission proposed in May 2016 as part of the Digital Single Market strategy new rules for ending discrimination on the basis of nationality or place of residence in e-commerce. The new rules will come into force by the end of 2018 and will ensure that consumers no longer face unjustified barriers such as being re-routed back to a country-specific website or asked to pay with a debit or credit card from a certain country. The directive concerns all products and services except some services which are already covered in the Service Directive: transport service; retail financial services; and audio-visual services.

### *Digital: Access and affordability*

Roaming charges ended in the European Union on 15 June 2017. Europeans travelling within EU countries pay domestic prices for roaming calls, SMS and data.

From the EU website (<https://ec.europa.eu/digital-single-market/en/roaming>)

*"Phone calls, SMS and going online with your mobile device from another EU country will be covered in the national bundle. The minutes of calls, SMS, and megabytes of data that a person consumes abroad (within the EU) will be charged the same as at home. People will not have bill shocks anymore.*

*If a person has unlimited calls and SMS, they will get unlimited calls and SMS when roaming in the EU. However, if a person has unlimited mobile data or very cheap mobile data at home, his operator may apply a safeguard (fair use) limit on data use while roaming. If so, the operator will have to inform the customer in advance about such a limit and alert them when they reach this limit.*

*The EU rules ensure that such a roaming data limit should cover the normal usage patterns of most travellers. If a person reaches the limit, they can continue to use data roaming for a very small fee: up to 7.7€/GB + VAT, which is 6.5 times less than before 15 June 2017 and 25 times less than before that".*

Although this is positive news for EU consumers, critics have mentioned possible negative effects. The new roaming policy may cause Europe's mobile operators to lose money on customers when they roam. Therefore, it is likely that operators will try and cover the loss through revenue from national traffic. Over time, Europe's mobile operators may try to raise prices to cover the revenue hole in roaming losses. Some also claim that operators have already begun to raise prices with more to follow before summer 2017 and that they try new ways to invoice consumers to compensate for the lack of roaming fees. Industry group ETNO had previously estimated that scrapping roaming charges would cost European telecoms groups roughly 7 billion EUR in lost

revenue by 2020. If the telecom operators' margins become too low, it could be a threat to the sustainability of the European telecom sector. For more information read [here](#).

### *Digital: Data protection - GDPR*

After four years of preparation and debate, the GDPR was approved by the EU Parliament on 14 April 2016. The set enforcement date is 25 May 2018. At this time, those organisations in non-compliance may face heavy fines. The EU General Data Protection Regulation (GDPR) replaces the Data Protection Directive 95/46/EC and was designed to harmonise data privacy laws across Europe, to protect and empower all EU citizens data privacy and to reshape the way organisations across the region approach data privacy. The key articles of the GDPR, as well as information on its business impact, can be found throughout this site.

Arguably the biggest change to the regulatory landscape of data privacy comes with the extended jurisdiction of the GDPR, as it applies to all companies processing the personal data of data subjects residing in the Union, regardless of the company's location. Previously, territorial applicability of the directive was ambiguous and referred to data process 'in context of an establishment'. This topic has arisen in a number of high profile court cases. GDPR makes its applicability very clear - it will apply to the processing of personal data by controllers and processors in the EU, regardless of whether the processing takes place in the EU or not. The GDPR will also apply to the processing of personal data of data subjects in the EU, by a controller or processor not established in the EU, where the activities relate to offering goods or services to EU citizens (irrespective of whether payment is required), and the monitoring of behaviour that takes place within the EU. Non-EU businesses processing the data of EU citizens will also have to appoint a representative in the EU. Under GDPR, organisations in breach of GDPR can be fined up to 4% of annual global turnover or €20 Million (whichever is greater). This is the maximum fine that can be imposed for the most serious infringements, e.g., not having sufficient customer consent to process data or violating the core of Privacy by Design concepts.

### *Digital: E-governance*

The European Union has decided upon an eGovernment Action Plan running from 2016 to 2020, which has three policy priorities:

- Modernising public administrations using Key Digital Enablers (for example, technical building blocks such as CEF DSIs like eID, eSignature, eDelivery, etc.),
- Enabling mobility of citizens and businesses by cross-border interoperability,
- Facilitating digital interaction between administrations and citizens/businesses for high-quality public services.

A full report can be read [here](#). Due to the limited scope of this document, these policies are not further analysed.

### *Digital: Vocational training*

CEDEFOP is EU institution for vocational training. It was founded in 1975 and based in Greece since 1995. This EU-institution supports development of European vocational education and training (VET) policies and contributes to their implementation. The agency is helping the European Commission, EU Member States, and the social partners to develop the right European VET policies. Its main mission is to implement the EU strategy for growth and employment, which is called Europe 2020: A European strategy for smart, sustainable and inclusive growth. The main issue is that around 75 million people, nearly a third of the working population, have low levels of or no qualification. Too many young people, around 15%, leave school without any qualifications.

CEDEFOP works to address this issue by supporting EU countries with information and policies regarding VET.

Although the EU does not provide any vocation training itself, it encourages EU countries with policy advice but also by organizing events and competitions (see <https://ec.europa.eu/digital-single-market/en/news/16-outstanding-projects-european-digital-skills-award-2016-final>) and benchmark reports (see <http://www.cedefop.europa.eu/en/publications-and-resources>).

Vocational training is further analysed on a country level in the next chapter of the document.





## 7. National level: Digital entrepreneurship policies

### United Kingdom

The UK is the most advanced country in Europe when it comes to financial policies for increasing market liquidity. Not only are the investment schemes presented below relevant, but the UK also offers a myriad of interesting company forms, such as *trusts*, favorable for investors and entrepreneurs. Moreover, it proposed several tax regimes with privileged set-up for foreigners. Altogether this contributes to make the UK an attractive market from a financial perspective, including foreign-born citizens. This document will not go in-depth on how these tax regimes are configured, but instead, it will focus on some financial policies relevant for the digital entrepreneurship sector. An overview of the discussed policies is given in the table below.

|                                       | Type   | Examples highlighted in Document A   |
|---------------------------------------|--|--|
| Digital entrepreneurship-specific     | <b>Financial</b>   |  |
|                                       | Tax exemption schemes  | EIS, SEIS, R&D relief  |
|                                       | International establishment subsidy  | Not identified   |
|                                       | Startup subsidies and R&D subsidies  | Startup Loans and Innovate UK funding  |
|                                       | Employee stock options   | EMI scheme   |
|                                       | <b>Business promotion activities</b>   | Tech City UK's work  |
|                                       | <b>E-commerce</b>  |  |
|                                       | Contractual harmonisation  | Not identified   |
|                                       | Antitrust  | Not covered  |
|                                       | Regional subsidies to clusters   | Not covered  |
|                                       | Geoblocking  | EU-level   |
|                                       | <b>Ease-of-business regulations</b>  |  |
|                                       | One stop shop for starting a business?   | "Business is great"<br><a href="http://www.greatbusiness.gov.uk/starting-a-new-business/">http://www.greatbusiness.gov.uk/starting-a-new-business/</a> |
|                                       | Time to start up a new company   | 4 days. Scores #14 in World Bank Doing Business Ranking. No specific adaptations made for startups   |
| Cost of starting up new company       | Very low, no capital needed.   |  |
| Procedures of starting up a new compo | Simple procedure   |  |
| Difficulty of firing                  | No specific changes in labour law related to startups. UK labour laws considered rather flexible |  |
| Difficulty of hiring                  | No specific changes in labour law related to startups. UK labour laws considered rather flexible |  |
| Indirect impact                       | <b>Digital</b>   |  |
|                                       | Access and affordability   | Broadband connection voucher scheme  |
|                                       | Data protection  | Not covered  |
|                                       | E-governance   | Not covered  |
|                                       | Vocational training  | Digital Business Academy (gov-funded) and Founders & Coders (non-profit association)   |
|                                       | <b>Talent attraction</b>   |  |
|                                       | Immigration  | Tech Visa Nation   |
|                                       | Housing  | Not covered  |
|                                       | <b>Social &amp; culture</b>  |  |
|                                       | Social and welfare incentives  | Not covered  |

**Table 6.** Overview of policies related to digital entrepreneurship in the UK.

### Financial: Enterprise Investment Scheme (EIS) - tax reductions

The UK government set up the Enterprise Investment Scheme in 1994. Today, it offers a number of tax breaks for investors who want to invest in shares in small, private companies.

The investor could obtain an income tax relief of up to 30 percent. For example, an investment of 10,000 GBP in a company that is eligible for EIS, 3,000 GBP can be reduced from the investors' income tax bill. Moreover, the investor will pay no capital gains tax on any profits made from an EIS investment. Hence, for an investment of 10,000 GBP, which five years later is sold for 20,000 GBP, will give the investor the full benefit of the 10,000 profit GBP.

Should the start-up investment lead to a loss in the investment, the investor can offset that loss against income tax. For example, let us say that the investor loses the entire 10,000 GBP investment. Because of income tax relief, the actual loss is only 7,000 GBP (10,000-3,000). Yet, the investor can choose to reduce the taxable income for the year in which he/she disposed of the shares by 7,000 GBP, resulting in a saving of 2,800 GBP (40 percent of 7,000) for a higher-rate taxpayer. Additionally, there's no inheritance tax to pay on shares bought through EIS.

There are some important restrictions for the EIS investments. To be eligible for EIS reliefs, the investor generally has to possess the shares for at least three years before selling them. It should be noted the investor has to pay tax on any dividends. There are certain restrictions as to what sectors of business are eligible for investments, for example, banks are excluded. Additionally, the investor cannot have a stock of more than 30% in the company. A maximum amount of 1 million GBP each year can go through EIS.

### *Financial: Tax exemption - Seed Enterprise Investment Scheme (SEIS) tax breaks*

The Seed Enterprise Investment Scheme is a more recent initiative than EIS. It was set up in 2012. It is similar to EIS but designed for investing in even smaller companies and providing even more generous tax breaks. Hence, even further adapted for the start-up sector. While the maximum workforce and gross assets allowable under EIS are 250 staff and 15 million GBP respectively, SEIS has lower limits of 50 staff and 200,000 GBP gross assets. Businesses must also be less than two years old (there are no age restrictions under EIS). In SEIS, the income tax relief is 50 percent, not 30 percent as for EIS. An investor will thus get 5,000 GBP off its tax bill for investing 10,000 GBP under SEIS. As with EIS, there is no capital gains tax to pay on profits, no inheritance tax, and the investor can claim loss relief in the same way as with EIS. There is an extra relief called *capital gains reinvestment relief*. This is useful for the investor if it has recently paid capital gains tax on other investments. The investor can reclaim up to 50 percent of the tax paid if it reinvests that money into SEIS. Initially, the tax reliefs available through SEIS are so generous that for the 2012/13 tax year, they added up to a potential 100.5 percent of the investment in a situation where that investment was a complete failure. This resulted in a situation where the investor could not lose provided it had paid enough tax to offset the SEIS investment.

However, for the 2013/14 and 2014/15 tax years, the downside protection has fallen to 86.5 percent – so an investor will get back 8,650 GBP from a 10,000 GBP investment that totally fails if it pays enough tax to use all the reliefs. The maximum one can invest through SEIS in any tax year is 100,000 GBP.

### *Financial: Stock and employee options: Enterprise Management Incentives*

This text has been adapted from the National Archives Website about Enterprise Management Incentives. For a full description see [here](#).

EMIs are tax-advantaged share options. They are designed to help small, higher risk companies recruit and retain employees who have the skills to help them grow and succeed. They are also a

way of rewarding employees for taking a risk by investing their time and skills to help small companies achieve their potential.

Tax-advantaged share options with a market value of up to 250,000 GBP from 16 June 2012 (120,000 GBP prior to 16 June 2012), may be granted to a qualifying employee of a qualifying company, subject to a total share value of 3 million GBP under EMI options to all employees. The shares must be in an independent trading company that has gross assets of no more than 30 million GBP. The grant of the option is tax-free, and there will normally be no tax or National Insurance contributions for the employee to pay when the option is exercised. There will normally be no National Insurance contributions charge for the employer.

The employer must notify Her Majesty's Revenue & Customs (HMRC) of an award of EMI options within 92 days of the grant of the option.

For companies to qualify, they must have maximum gross assets of no more than £30 million; for groups, this applies to the assets of the group as a whole. The company whose shares are the subject of the option must be independent, and the company or group must be trading. Companies carrying on certain trades will not qualify.

### *Financial: R&D tax relief*

The R&D relief aims to reduce the corporation tax bill of companies that qualify for the scheme. Tax relief on R&D expenditure is 225% of the R&D cost. E.g., If a company spends 100 GBP on R&D expenditure, its taxable profits are reduced by 225 GBP (the 100 GBP of actual cost plus 125% of the 100 GBP as a relief). Another scenario is if the company is making a loss then the tax relief can be exchanged for a credit (i.e., a check at the end of the year from HMRC). This credit, however, is limited. To calculate the limit, firstly calculate the surrenderable loss, which equals the lower of 1) The actual loss made by the company or; 2) 225% of the expenditure on R&D qualifying costs. The tax credit will be 11% of the surrenderable loss.

The criteria are:

- Company must be an SME (<500 employees, turnover < EUR100m and a balance sheet < EUR86m.
- Company must spend over 10,000 GBP a year of qualifying R&D expenditure.
- Upper limit of 7.5 MEUR of aid that can be received on a project.
- Can only claim if 'an R&D project seeks to achieve an advance in overall knowledge or capability in a field of science or technology through the resolution of scientific or technological uncertainty';
- To claim on staff costs, they must be employed under a contract of employment directly with the company;
- If using a subcontractor, can only claim relief on 65% of the cost of the contractor and only if they qualify.

### *Financial: Start-up subsidies and R&D subsidies*

The **StartupLoan** is a government-backed personal loan available to individuals looking to start or grow a business in the UK. In addition to finance, successful applicants receive 12-months of free mentoring and exclusive business offers to help them succeed. The loan is unsecured, so there's no need to put forward any assets or guarantors to support an application. All owners or partners

in a business can individually apply for up to 25,000 GBP each, with a maximum of 100,000 GBP available per business.

It is issued by the British Business Bank (a state-owned economic development bank established by the UK Government). See Document B for further information about the British Business Bank. Their main mission is to deliver the Government's Start Up Loans programme providing finance and support for businesses, which struggle to access other forms of finance.

Start Up Loans offer a fixed interest rate of 6% per annum and the ability to borrow between 500 GBP and 25,000 GBP and are repaid over a one to five-year loan term. Yet, [reports](#) show that default rates on the Start Up Loan programme have reached as high as 50%, as business owners fail to make payments on the personally secured loans. According to sources, 48,000 loans have been provided since the scheme was launched in 2012, with 20,300 or 42% going to people who were previously unemployed or economically inactive.

### **Innovate Funding Service**

The UK's Innovate Funding Service is a government agency working to increase productivity and growth by supporting businesses to realise the potential of new technologies, develop ideas and make them a commercial success. They have 300 staff and work across the UK, with a head office in Swindon. They claim that they since 2007 they have committed over 1.8 billion GBP to innovation, matched by a similar amount in partner and business funding and thus helped 8,000 organisations with projects estimated to add more than 16 billion GBP to the UK economy and create nearly 70,000 jobs. The financing is mainly distributed via competitions, which are available for applications online on this [site](#). As seen from browsing through the current competitions, many are attractive for digital start-ups.

Additionally, there the [London Co-Investment Fund](#), founded and managed by Funding London and Capital Enterprise and which includes 25 million GBP in funds from the Mayor of London's Growing Places fund. This money is earmarked for investment in seed rounds of between 250,000 GBP to 1 million GBP for successful applicants.

### **Business promotion activities**

The UK government is financing digital start-up business promotion activities through multiple initiatives. These institutions are further explained in Document B. In terms of activities they are concentrated on incubators, accelerator programs, participation in delegations, and pavilions abroad. Tech Nation (currently Tech City UK) is the dominant actor channelling the UK's promotion activities. Examples are: *Future Fifty* is for the 50 of the UK's fastest growing and most "disruptive" digital technology companies through a curated set of private partners, networking opportunities and direct links to the UK government; *Upscale* is a network of Series A UK digital technology companies scaling together with mentoring and support; *Fintech* is a tech sector in the UK which includes a Fintech Delivery Panel, a Fintech growth programme, and the Fintech; *Northern Stars* is a pitch competition that seeks to find the 10 most promising tech startups in the North of England; *Founders' Network* is a network for founders of early-stage tech businesses in the North of England featuring a series of master classes, meetups, and webinar; *Digital Business Academy* is a set of 56 free expert courses open for startups; and finally *Tech Immersion* is a programme that takes the participator through the world of startups and the UK digital economy.

In late November 2017, the UK government announced that it would set out a [21 million GBP investment](#) to create a new national network of regional tech hubs in areas across the country, including Belfast, Cardiff, Edinburgh, and Birmingham.

In general, business promotion activities abroad for UK start-ups are coordinated via the UK Department for International Trade (see Document B) but also TechUK, the trade association for the UK technology industry (financed via membership fees), who currently has 950 member companies.

## *Ease-of-business regulations*

### **One stop shop for starting a business**

The British government launched a one-stop-shop portal a few years ago called "GREAT," which puts information and services for new firms into one web portal. Information includes advice and regulations regarding financing, employment, advisory services (this is also outlined in Document B). GREAT is the government's single point of entry destination for UK trade, investment, tourism, and education. There is also a website beneath (similar to the Swedish [verksam.se](http://verksam.se)), which is called Companies House (<https://www.gov.uk/government/organisations/companies-house>) where companies can be registered. Hence, online registration of a new firm can be conducted online and at the cost of only GBP 12. To the best of the author's knowledge, a foreign company can also use the online service.

Just as in Sweden, it is also very common in the UK to buy shelf companies as opposed to registering new ones.

### **Time to start up a new company**

The UK is considered as having low thresholds and few procedures for starting up new companies. A limited private company can be started up very fast (less than 7 days for all procedures), and apart from the governmental service, there are many private providers available for assistance, e.g., [www.legalzoom.com](http://www.legalzoom.com), <https://www.coddan.co.uk>. World Bank's Doing Business Ranking, ranks UK number 7 in the world for speed when it comes to starting up a company.

### **Cost of starting up a new company**

Given that there is no capital investment needed to start up a company in the UK, the initial cost is quite low. Combined with the favourable EIS tax policy, the overall cost and tax schemes are one of the most financially attractive in the world.

Fees for filing incorporation documents are as follows: GBP 12 for a web filed incorporation and GBP 40 for paper filing (or GBP 100 for same-day service). The standard digital registration fee through a third-party agent is GBP 13 (or GBP 30 for same-day service). There is no requirement for a company to use a third-party agent. Third party agents may charge additional fees as well as the standard registration fee.

### **Procedures for starting up a new company**

There are rather few procedures, and they can all be handled online.

In case the company chooses to file for incorporation itself online, model articles of incorporation and company memorandum are generated automatically by the registration website [www.gov.uk/register-a-company-online](http://www.gov.uk/register-a-company-online). In addition to the above forms, all companies must provide the following information to the relevant Registrar of Companies (i.e., for England and Wales, Scotland, or Northern Ireland): statement of compliance with all requirements of the 2006 Companies Act; an application form IN01, which includes: , proposed company name; country of registration office (e.g., England and Wales (or Wales), Scotland or Northern Ireland); info whether the liability of the members is to be limited and, if so, whether by shares or guarantee;

info on whether the company is public or private. In the case of a company with a share capital, the application must also include a statement of the capital and initial shareholdings, including the name and address of the subscriber. A statement of the proposed officers, being the first director and company secretary must be submitted (unless in the case of a private company, where the appointment of a company secretary is optional); A statement of the intended registered office address.

VAT procedures can also be made online, which takes less than one day. Companies must also contact the authority HMRC to set up a contribution scheme for national insurance and pay-as-you-earn (PAYE) tax, which deducts tax from employee wages or salary. The last procedure is the Employers' Liability (Compulsory Insurance) Act of 1969 which requires all employers in the United Kingdom to maintain employers' liability insurance from an approved insurance company.

### **Difficulty of firing**

In a European context, UK's labour laws are considered flexible for companies. In this study, the author found no changes have been made to facilitate further for start-ups. Yet, the fear of dismissing staff in the UK is often associated with worries about being hauled before an *Employment Tribunal* and being accused of unfair dismissal. These are often unfounded. For example, employees with less than two years' service do not have unfair dismissal rights, apart from exceptions generally around equality and discrimination.

### **Difficulty of hiring**

No changes made to facilitate further for start-ups have been identified. Administration around hiring staff is fairly simple in comparison with, for example, France.

### **Digital: Access and affordability - Broadband connection voucher scheme**

The Connection Voucher Scheme ran from March 2014 to March 2016 as part of the *Super Connected Cities Programme*. During that time, it helped many thousands of businesses and third sector organisations reap the benefits of an improved broadband connection by subsidising the upfront capital costs of getting a connection to their premises. It placed the grant directly in the hands of the small business, avoiding centralised procurements and letting businesses choose the solution that worked best for them. In April 2015, due to its success, the scheme expanded to 50 cities and their surrounding areas, with 40 M GBP of challenge funding. See full report [here](#).

### **Digital: Vocational training**

The national curriculum in the UK includes programming for children as young as the age of five, but according to findings in this analysis, there is still a dearth of affordable, vocational options in higher education, despite the high demand of software jobs. No government specific vocational training strategy has been identified. The analysis of the author is that vocational training in regard to digital entrepreneurship is left open to the private sector, or non-profit associations to handle. Consequently, there seems to be a gap between the university computer science programmes and the expensive private coding academies that have sprung up in the past decade, although some associative alternatives have arisen in the last few years. For a full overview of the status of the UK's vocational training system, see the CEDEFOP report in the reference list.

A few examples of different vocational training alternatives related to digital entrepreneurship depending on funding model are listed below.

### **Government funded**

*Computer science programmes at UK universities.* All major universities in the UK (e.g., Oxford, Cambridge, St Andrews, Leeds, Imperial College London, Loughborough University, University of Birmingham, University of Leeds, etc.) offer computer science programmes. Yet, there are relative important fees for UK citizens as well. UK tuition fees are frequently a source of controversy, with prices having risen to eye-watering levels for home students (UK/EU) in recent years. Now, UK and EU students at English universities are required to pay up to GBP 9,250 per year.

*Digital Business Academy.* Since 2011, Tech City UK has grown into a national organisation that is fostering the growth of tech clusters across the country. Their mission is to build a pipeline of high-growth tech businesses by nurturing talent, publishing insightful research, and championing the UK tech sector nationally and internationally. Almost 20% of their graduates' report that they are starting digital companies after finishing at least one skill. Tech City UK has partnered with leading educational institutions and offers 56 expert courses, ranging from developing a digital product, to running social media campaigns, and finance. All courses are free of charge. The Digital Business Academy is funded by and run by the government-funded *Tech City UK*, which was launched by Cameron in 2010 to support the East London tech cluster known as London Tech City or Silicon Roundabout. Web page: <https://www.digitalbusinessacademyuk.com/>

*Education and Training Foundation (ETF)* is an association which is more generalist than ICT-oriented) ETF works with teachers, trainers, leaders and employers to help them deliver excellent further and vocational education and training (VET). The Department of Education funds them and proposes vocational courses in a wide range including leadership skills and digital skills.

### **Associative alternatives**

*Founders & Coders:* Founders & Coders is a UK-based non-profit organization that runs a tuition-free coding academy in London. They have trained more than 150 students on its full-time programme. Over the last two years, more than 90% of its graduates have gone on to work in software or other related fields. They generate income by charging recruitment fees when employers hire our graduates. They also provide technical expertise and training to non-profits, local businesses, and early-stage start-ups. Web: <https://foundersandcoders.com/>

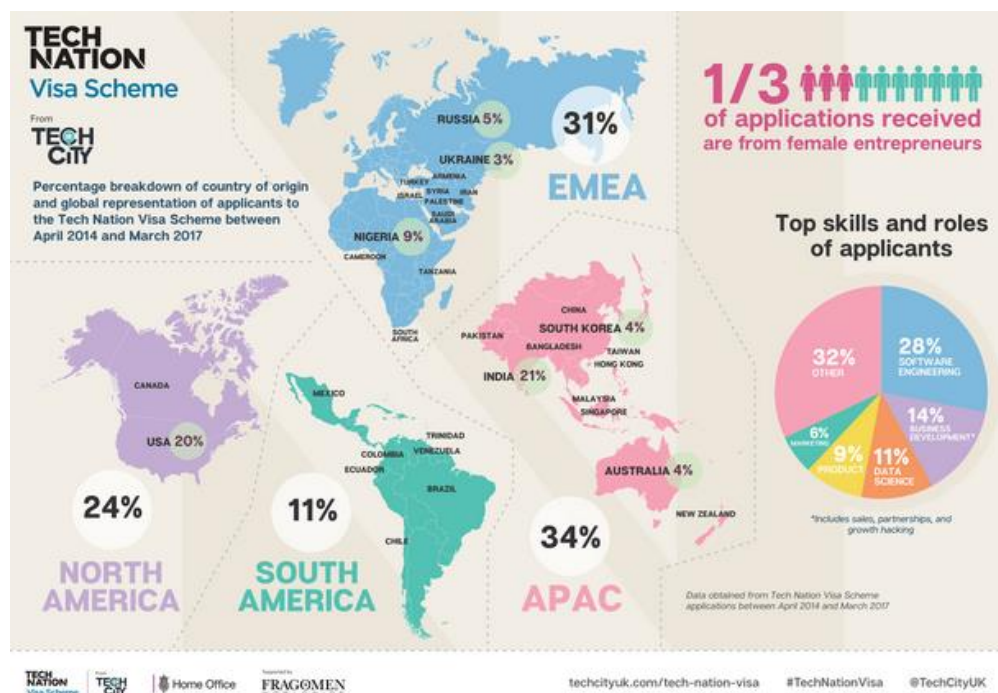
### **Private sector alternatives**

*Makers Academy:* Makers Academy has now been going for over three years and has graduated over 1000 students. It is an alternative to university and a vocational route into a job as a web developer, allowing people to switch careers and learn to code in 3 hyper-intensive months in London. Fees are expensive though, up to 8,000 GBP for a 12-week course. Web: <https://www.makersacademy.com/>

*General Assembly* General Assembly is a specialist in programming training but also digital marketing and data analysis. It began as a co-working space in 2011 and has since grown into a global education centre in ICT with campuses in 20 cities and over 35,000 graduates worldwide. Its mission is to provide award-winning, dynamic training to close the global technology skills gap. Web: <https://generalassemb.ly/about>

## Talent attraction: Immigration - Tech Visa Nation

This initiative will soon be entering its fifth year. The Tech Nation Visa scheme is part of Tech City UK's mission to ensure that the UK continues to maintain its position as a globally competitive digital economy. Tech City UK received nearly 400 applications during the 2016/17 financial year, which was just under five times more than the number of applications received during 2015/16. 260 visas were endorsed in 2016. In 2016, India accounted for 21% of all Tech Nation Visa applications, followed closely behind by the United States, with 20%. During 2014-2017, the geographical spread is quite even across continents, see image below.



The process is that Tech Nation UK gives an endorsement to the Home office for visa approval. Hence, the Tech Nation UK itself does not issue the visa. The process contains fewer steps than the usual application to a work visa. Applicants can submit an application for endorsement to the Home Office, which is reviewed by Tech City UK, and, if approved, apply to the Home Office for a visa. According to sources, Tech City UK might review the application from 18 to 25 working days maximum; but the Home Office is still running on 4 weeks to 8 weeks processing time.



## Sweden

When it comes to start-up output, e.g., unicorns, exits, levels of funding, Sweden scores high. Still though, the Swedish government has been criticised for not implementing sufficiently attractive policies for the start-up community. As highlighted in this section, the criticism is primarily around the lack of financial policies, and more precisely under-developed tax policies addressing the needs of a start-up.

As raised in several [articles](#) in the Swedish press, digital entrepreneurs are of the opinion that the current fiscal policies in Sweden are actually punishing entrepreneurship, and also hampering the potential for an inflow of international investments. A movement was launched a couple of years ago where the Swedish start-up community joined forces and published a "[start-up manifesto](#)" where the principle concerns are raised. One of the claims is about the tax rate entrepreneurs face when selling a firm (it does not only concern digital start-up firms). The owner could be taxed up 58% on the profit when selling a small company (*fåmansbolag* - a limited company where more than 50% of the shares are held by four or fewer persons) given that the profit is categorised as 'revenue on income' (not as revenue on capital). One (common) way to get around this tax policy is to put the profit aside for five years in another company. However, the start-up manifesto-authors argue that this is not only a disincentive for the entrepreneur itself but that it is also hindering new potential investments that could be made from this "sleeping capital". Another concern is the lack of a tax system that enables employee stock options. This criticism, though, was (partly) addressed by the Swedish government in 2017.

Despite the rather immature tax policies for Swedish start-ups, Sweden has an attractive system of other policies, including subsidies for start-ups. This combined with a rich regional subsidy program (through Tillväxtverket and Vinnova (see Document B)) and a generous social welfare system, makes Sweden an attractive place for start-ups. The regional diversification is weak though. In terms of funding and number of startups, Stockholm is completely outperforming other cities and regions in Sweden.

Some specific policies and initiatives in Sweden are highlighted below.

|                                   | Type   | Examples highlighted in Document A   |
|-----------------------------------|--|--|
| Digital entrepreneurship-specific | <b>Financial</b>   |  |
|                                   | Tax exemption schemes  | Tax reduction on first employee + R&D tax exemptions   |
|                                   | International establishment subsidy  | Not identified   |
|                                   | Start-up subsidies and R&D subsidies   | Subsidies via Vinnova  |
|                                   | Stock options  | New policies since 2017 for employee options   |
|                                   | <b>Business promotion activities</b>   | Go Global (national), EEN (regional) Sting (city level)  |
|                                   | <b>E-commerce</b>  |  |
|                                   | Contractual harmonisation  | Not covered  |
|                                   | Antitrust  | Not covered  |
|                                   | Regional subsidies to clusters   | Via Vinnova and Tillväxtverket   |
| Geo-blocking                      | Not covered  |  |
| Indirect impact                   | <b>Ease-of-business regulations</b>  |  |
|                                   | One stop shop for starting a business?   | Launch of "Verksam.se" in 2014-2015 - a joint web platform for several official authorities.                                 |
|                                   | Time to start up a new company   | 1-2 weeks - No adaptations made for start-ups  |
|                                   | Cost of starting up a new company  | Minimum capital of 50 000 SEK (approx. 5 KEUR) for a limited company. Possible, but rare to establish more lightweight form. |
|                                   | Procedures for starting up a new company   | Possible to make a "simple registration" with prefilled data - most common choices   |
|                                   | Difficulty of firing   | No adaptations made for start-ups  |
|                                   | Difficulty of hiring   | 10% tax reduction on social charges for employees working with R&D and lowered social charges for first employee in SME      |
|                                   | <b>Digital</b>   |  |
|                                   | Access and affordability   | State guarantee for broadband connection   |
|                                   | Data protection  | Not covered  |
| E-governance                      | Not covered (The digital national strategy)  |  |
| Vocational training               | Several alternatives on "entrepreneurship" and "programming" both in public and private sector |  |
| <b>Talent attraction</b>          |  |  |
| Immigration                       | Issue for start-ups in Stockholm, but no policy identified                                     |  |

Housing

Issue for start-ups in Stockholm, but no policy identified

## Social & culture

Social and welfare incentives    Sweden's welfare programme

**Table 7.** Overview of policies related to digital entrepreneurship in Sweden.

### *Financial: tax reductions on labour*

There are basically two interesting tax exemptions for Swedish start-ups although they are quite modest in terms of financial impact.

The first one is a tax 10% reduction on salaries related to R&D. This policy was initiated in 2014. For example, if a researcher has a salary of 50 000 SEK, the social charges are approximately 15 710 SEK (31.42 %). From the social charges a reduction of 10% can be withdrawn, i.e., 5 000 SEK, hence the social charges will be 10 710 SEK (21.42% of the salary). Some restrictions are worth mentioning: The R&D work has to be made for a commercial purpose. The tax policy is designed in order to stimulate the private sector's investments in R&D. Nevertheless, it should be mentioned that there is a maximum amount of 230 000 SEK (24 KEUR) for this tax exemption.

The second tax reduction on social charges on the first employee is a rather recent policy. It is a tax reduction for companies with no employees who decide to hire their first employee. The social charges are then reduced from 31.42% to 10.42%. The requirements are: the minimum length of employment should be 3 months, and the workload must be at least 20 hours per week; the tax reduction is applicable for salaries up to 25 000 SEK (2.500 EUR) if the salary is higher the reduction is based on the first 25 000 SEK. Given these restrictions, the maximum reduction is thus 63 630 SEK per company. Finally, there is a time-based restriction on this policy - it is temporary and valid from 2018-2021.

### *Financial: Start-up subsidies and R&D subsidies: subsidies via Vinnova*

Start-ups subsidies and grants on a national level are distributed through the Swedish innovation agency Vinnova. These subsidies can be accessed in the form of public competitions (published online) in which the start-ups submit rather extensive applications. The minimum requirements are a business plan, financial plan, project plan, delivery plan and compliance statements concerning environmental policy, gender policy. The start-up competition currently runs twice a year, and the successful start-ups will obtain grants up to an amount of 30 KEUR grant in a first step. The competition is for early start-ups, an example of criteria is that they should not yet be generating profits and should have a turnover of less than 200 KEUR yearly.

Vinnova also has programs for more mature start-ups in various sectors. Vinnova is also the managing authority for EU Horizon 2020 projects. One example is "Internet of things" or projects targeting companies working to reduce CO2 emissions. Currently, there are 45 different projects on the Vinnova website open for applications

All funding proposed by Vinnova is related to innovation and R&D. In general, the funding applications are driven in the spirit of triple helix, where both private and public actors are encouraged to join forces with universities or research institutes.

### *Financial: Stock options - Employee stock options*

Sweden will from the start of this year (2018) eliminate income taxes on stock options at smaller start-up companies. This tax policy means that companies will be exempt from payroll levies on the options, which will be taxed as capital when they are sold. Yet there are some important

restrictions on this tax policy: only for companies younger than 10 years; less than 50 employees; maxi 80 MSEK in turnover (8 MEUR); the options must not have a value exceeding 75 MSEK (7.5 MEUR). Certain sectors are excluded: banks and finance; landowners; real estate; legal and financial consulting; accounting and tax consulting.

### Business promotion activities

There is no lack of business promotion activities related to start-ups in Sweden. The overall impression, also when talking to key people in the start-up sector, is that it is very saturated in terms of events and business promotion activities. The main events are different kinds of pitch competitions and meetups. The most popular are STHLM Tech Fest (main sponsor is Stockholm IT Region), STING Day (main sponsor is the incubator Sting), Start-up Day (multiple universities behind the event, and Sweden Demo Day (sponsored by Vinnova, Tillväxtverket, Business Sweden, and IIS).

In terms of accelerator programs, the Sting program is the most recognised in Sweden (see Document B), but there are several alternatives: The Springfield Project, 500 Nordics, SSES Campus Amplify (NEW), KTH Innovation.

One recent (national) internationalisation program is also relevant: Going global (Business Sweden), and there are also regionally initiated programs like the Be global (Jönköping region).

### Regional subsidies to clusters

The government institution Tillväxtverket handles the distribution of both the national budget and the national EU budget of regional subsidies. The EU regional development funds are explained briefly in the section about EU policies, so these will not be further analysed here. Regarding the national regional subsidies, there are of four types: *Investment and promotion*; *Transport support*; *Support for commercial service* and *Project support*. For digital start-ups the first and the last are relevant. They are very broad in their scope and could cover financial support to clusters; to specific projects, purchase of consulting services and experts; purchase of technical infrastructure such as broadband. Sweden has 19 regions. and if we take the example of the region "Västra Götaland" (region of Göteborg, 2nd largest city in Sweden), the total regional subsidies had a value of 103 MSEK in 2016 (10 MEUR), of which 'Projects support' received half, and Investment and promotion received 15 MSEK.

### Ease-of-business regulations

#### One-stop-shop for starting a business

In 2014, four public institutions launched a web platform to gather all relevant information and online procedures for starting up and running businesses under the umbrella of "verksam.se." The four institutions are - Bolagsverket (National Commerce Registry), Tillväxtverket (Regional growth institution), Skatteverket (Tax authority) and Arbetsförmedlingen (Job and (Un)Employment agency). The web platform is a single point of entry for registering a new company, for handling tax declarations, VAT issues, employment issues, etc. The platform works very well in Sweden, for Swedes, given that all Swedes have a unique citizen number, which makes online access (via so-called "Bank-id") easy and secure. Yet, for international companies, the platform is not as accessible. The initiative of "verksam.se" has not been specifically targeted for digital entrepreneurship companies but has evidently been pushed by the increasing e-governance and digitisation of Swedish administration.

For internationalisation purposes, a dedicated website was launched by five institutions (Swedfund, Business Sweden, EKN, Almi and SEK) a few years ago under the umbrella

"internationaliseringsguiden" (the guide to internationalisation), but it does not seem to be regularly maintained (<http://www.internationaliseringsguiden.se/>).

### **Time to start up a new company**

Company registration can be made via "Verksamt.se" and is handled by Bolagsverket (National Commerce Registry Agency). The online procedure for domestic firms is rapid, maximum 2 weeks (currently at 5 days). Bolagsverket shows [current administration time online via their website](#).

### **Cost of starting up a new company**

The most common company type in Sweden is a limited company - (aktiebolag - AB). Minimum shareholder capital for an AB is 50 000 SEK (5000 EUR) plus registration fees of approximately 1 000 SEK (100 EUR). Yet, there is a simpler form called "Handelsbolag" (HB), which does not require any capital. The main disadvantage with Handelsbolag is that there is no separation between owners and the company. Hence, they are personally responsible for all debts, etc.

A common feature in Sweden is also to buy so-called "shelf companies", i.e., pre-registered companies. The main argument for buying a shelf company is the time gains.

### **Procedures for starting up a new company**

As indicated above the procedures for setting up an AB or HB is rather simple and can be done online. Entrepreneurs can choose between registering a "simple" or "advanced" form. The simple form is based on the configuration of bylaw ownership structure that is most common in Sweden. In the advanced form, there are more options to be filled out.

The only administrative complication for an AB could be to obtain bank approval, which requires an administrative check-up by the bank.

### **Difficulty of firing**

To the author's knowledge, there have been no reforms or adaptations for digital start-ups in terms of labour law. Sweden is considered having a rather rigorous labour law with strong protection of the employee and also a generous social security net for the employee in case of unemployment.

### **Difficulty of hiring**

Two minor tax reforms can be noted and are explained under "Financial: Tax reforms on labour," yet, they have not been particularly targeted for the digital entrepreneurship sector. In terms of procedures, no reforms have been identified. As already mentioned, a difficulty for Swedish firms has been to find competent staff. In a recent [report](#) (in Swedish) by *The Confederation of Swedish Enterprise*, it is stated that 60% of Swedish start-ups have difficulties in recruiting staff, and face challenges in attracting competence from abroad due to high tax rates and housing costs.

### **Digital - Access and affordability**

Sweden has one of the highest Internet penetration rates in the world, above 95%. 92% of users have a computer. This is the effect of an early start of broadband infrastructure already in the 1990s, which has continued since. Sweden's strength has been a broadband policy that favours broadband infrastructure also in peripheral areas. For, example, 90% of the population in the Northern part of Sweden is connected to broadband as shown on this [broadband map](#) over Sweden. Just recently, the Swedish government adopted a policy which will become effective as per 1 March 2018, which says that there will be a state guarantee that all citizens, as well as

companies, should have access to at least 10 Mb/s. The decision implies that no citizen, nor any company should pay more than 5 000 SEK (500 EUR) in order to acquire access. The state will thus finance infrastructure costs needed to ensure this quality of Internet access (unless it is larger than 400 000 SEK (40 KEUR)). This is aligned with Sweden's digitalisation strategy favouring inclusivity and to boost rural areas.

### *Talent attraction - Immigration and housing (no policy identified)*

As mentioned above, this has been raised by the start-up community. It has also been confirmed by the government as an issue for sustained growth. Traditionally, Sweden has a generous immigration policy and has been the country in Europe, which has received most immigrants per capita in the last few years (predominantly from Syria). Yet, since a little more than one year ago, the immigration policy has become more restricted, and there is no special VIP treatment for immigrants coming to Sweden for professional reasons. Given the massive immigration pressure due to the large number of asylum seekers on the Swedish immigration service (Migrationsverket), the effect has become that the processing rate has severely slowed down also for professional immigrants. An additional problem of this is that the immigrants tend to be localised in the cities, and many of them have come to Stockholm. Stockholm has for many years had a saturated housing market with booming prices and very little supply. This means that there is a limited amount of attractive housing possibilities for professional immigrants in the city sector, and the ones that are available are extremely costly. In sum, this has led to complaints from start-up companies like Spotify, whose founders have threatened to move abroad due to these issues.

### *Vocational training*

In this section, vocational training initiatives in Sweden on post-secondary education level (or Higher Education) in relation to digital entrepreneurship are highlighted.

ICT training and digitisation is part of the national agenda of education and integrated from primary school and has been so for many decades. In this document, this national agenda and strategy are not analysed in-depth, but the focus is on vocational training post-secondary education graduation (in Sweden from the age of 17 or 18).

The Swedish Government recently launched a digitisation strategy, which emphasizes the need for more focus on ICT in Higher Education without specifying exactly how this will be implemented. The main statement in the strategy is that there is a need to become better in matching the demand on the labour market with the current high education curriculum (i.e., lack of engineers and programmers).

For a full overview of the status of Sweden's general vocational training system, see the CEDEFOP report in the reference list

The current offer on the Swedish market in terms of vocational training in the fields of digital entrepreneurship are categorised below. There is an abundance of programmes, and due to the purpose of this document, only a few examples are mentioned:

#### **Universities**

All major universities in Sweden offer applied information technology training, which touches on vocational training. All programmes are free of charge and students are eligible for student loans. There are no university tuition fees for Swedish citizens.

- *Chalmers* has a strong focus on combining engineering and entrepreneurship in a range of programmes: <http://www.chalmers.se/en/education/programmes/masters-info/Pages/Entrepreneurship-and-Business-Design.aspx>
- *University of Gothenburg*, Applied Information Technology Training, various programmes, e.g., Digital Leadership, <https://ait.gu.se/english/education/?languageld=100001&disableRedirect=true&returnUrl=http%3A%2F%2Fait.gu.se%2Futbildning%2Fprogram%2Fsystemvetenskap%2F>
- *Linköping university*: <https://liu.se/en/education/program/f7ksy>
- *Folkuniversitetet* - not for profit association providing vocational training also within ICT and programming: [http://www.folkuniversitetet.se/soksida2/?q=programming&cityId=option\\_0&nearbyCities=nearbyCities&st=c](http://www.folkuniversitetet.se/soksida2/?q=programming&cityId=option_0&nearbyCities=nearbyCities&st=c)

### **Folk High School / City-anchored schools**

The vocational training of Folk High School levels are more technical and less "entrepreneurship"-oriented. Nearly all courses are free of charge for Swedish citizens. The students pay for material costs and literature themselves.

- *Malmö Folkhögskola* - Online entrepreneurship programme (15 weeks of training, free of charge, Web: <https://www.folkhogskola.nu/sok-skolor/Skane-lan/Malmo-folkhogskola/Kurser/2018vt/malmo-entreprenorsprogram---online/>
- *Göteborg city* has several programmes for ICT vocational training, e.g., <http://yrgo.se/utbildningar/teknik/java-enterprise-utvecklare/>
- *Studentum* provides 19 vocational training programmes in programming, game development: <https://www.studentum.se/utbildning/yrkesutbildning-data-it/a9-c91>, e.g., Indie game developer vocational training: <http://indiespelutvecklare.se/>

### **Private sector**

The financial model of the programmes is either fee-based as in the case of IHM or binding to a certain time of employment.

- *IHM*, a private company offering a range of full time and part time programmes, e.g., Business Management, Digital transformation, Digital marketing and sales analytics, Leadership etc.: <https://www.ihm.se/utbildningar>
- *Academy* offers vocational training in programming and employment in their consultancy firm for all who passes the test, e.g., java: <https://www.academy.se/program/java-sommar18>
- *Prompt* is an educational initiative in cooperation with several academic parties and leading industrial companies and organisations. Together the parties develop advanced level courses in web-based format, tailored to fit professional engineers and software developers who need to be able to combine work and studies. The courses combine conventional studies with distance, web-based learning and seminars on campus or at the participating companies. The long-term goal of Prompt is to guarantee the supply of advanced software competencies and innovativeness in industry

### **Social & culture - Social and welfare incentives**

Although criticised by the start-up community for its high tax rates, this could also be seen as one explanation to Sweden's entrepreneurial success in the start-up sector, in addition to the early

adaptation rates of broadband, high R&D spending per capita, etc. Sweden has one of the densest social safety nets in the world, with a large public sector and very low poverty. In general, the trust level towards the government and governmental institutions is high. Studies have shown that trust to institutions and social security favours entrepreneurship because to-be entrepreneurs dare to take the risk to run their own business without being afraid to fall through the safety net. The Swedish social welfare system is very generous, even by European standards. Social welfare policies could be regarded as indirect policies to foster entrepreneurial activities. For example, the state finances up to 18 months parental leave for every child born with a minimum allowance of around 1000 EUR per month (maximum level around 2000 EUR, and it is dependent on the salary level). The parental leave could be split freely between the mother and the father, but six months must be reserved for the father. Similarly, the unemployment allowance is rather generous (current unemployment rate is 6.8%). The state also pays a child care allowance of approximately 130 EUR per child per month.

These examples of social policies are difficult to assess in relation to digital entrepreneurship. Still, and aligned with the argumentation in this document, i.e., that digital entrepreneurship should be viewed through a broader lens, these policies are nevertheless mentioned since they are often brought up as success factors for Sweden's track record in the start-up sector.



## France

France has been successful in launching its national digital start-up campaign - *La French Tech* (described in Document B). In terms of funding allocated to the French start-up sector, this has also seen a strong growth, up from 1.3 billion USD in 2016, to 2 billion USD in 2016 to exceed 3 billion USD in 2017 according to [CB Insight and Les Echos](#). Dealroom.co has slightly lower numbers as seen in the previous chapter. As in UK and Sweden, there is geographical concentration to the capitals. Paris absorbed 82% of all transactions made in France in 2017.

In terms of institutional work and marketing campaign via *La French Tech*, France has made an impressive job. However, when scrutinising the policies, France has not proved very fast in implementing favourable measures and policies towards start-ups and digital entrepreneurship. Recently though, and it is possible that this can well have contributed to the investment inflow, some encouragements have come into force, for the so-called “Jeunes Entreprises Innovantes” (JEI) – the French name for start-ups – in particular for the local ones. Other interesting policies for attracting foreign investments and talent are the [French Tech Ticket](#) and the [French Tech Visa](#) described below.

|  | Type  | Examples highlighted in Document A                        |
|--|---|---|
| Digital entrepreneurship-specific        | <b>Financial</b>  |   |
|  | Tax exemption schemes   | Jeunes Entreprises Innovantes                             |
|  | International establishment subsidy   | French Ticket   |
|  | Start-up subsidies and R&D subsidies  | Research Tax Credit                                       |
|  | Stock options   | Stock option schemes                                      |
|  | <b>Business promotion activities</b>  | French Tech, Technnouv                                    |
|  | <b>E-commerce</b>   |   |
|  | Contractual harmonisation   | Not covered (EU level)                                    |
|  | Antitrust   | Not covered (France case against Google)                  |
|  | Regional subsidies to clusters  | Not covered - Pôle d'innovation - Ile de France (digital) |
|  | Geo-blocking  | Not covered - EU level                                    |
|  | <b>Ease-of-business regulations</b>   |   |
| One stop shop for starting a business?   | French Tech Central is a one-stop shop providing public services to French and foreign start-ups. It is located in Station F. Alternative online tools available are also: <a href="https://www.afecreation.fr/">https://www.afecreation.fr/</a> and <a href="https://www.guichet-entreprises.fr/fr/">https://www.guichet-entreprises.fr/fr/</a> 2 weeks. from the point that its documents are in place. World Bank ranking Doing Business is 25 |   |
| Time to start up a new company           | Registration fees are approximately 100 EUR including company books and publication of official notice  |   |
| Cost of starting up a new company        | 5-6 procedures. More complicated than in the UK.  |   |
| Procedures for starting up a new company | President Macron's new labour policy has made it easier and less costly to fire staff.  |   |
| Difficulty of firing                     |   |   |

|                 |                               |   |
|-----------------|-------------------------------|---|
| Indirect impact | Difficulty of hiring          | No specific changes made to ease the process of hiring        |
|                 | <b>Digital</b>                |   |
|                 | Access and affordability      | Not covered   |
|                 | Data protection               | La loi numerique  |
|                 | E-governance                  | Not covered   |
|                 | Vocational training           | Several options on both public, private and associative level |
|                 | <b>Talent attraction</b>      |   |
|                 | Immigration                   | Passport talent   |
|                 | Housing                       | Not covered   |
|                 | <b>Social &amp; culture</b>   |   |
|                 | Social and welfare incentives | Not covered   |

**Table 7.** Overview of policies related to digital entrepreneurship in France.

### Financial - Tax exemption schemes

JEI are totally exonerated from taxes during their first year of activities, and they benefit from a 50% exoneration for the following accounting exercise. Besides, upon approval of the local authorities, they can benefit during seven years of a total exoneration from the local economical contributions.

Moreover, some staff categories are exempt from a part of the employer's social contributions, providing that at least 50% of their work time is dedicated to R&D. This exoneration has a 7-year duration.

Much controversial, the **CICE** (Crédit d'Impôts pour la Compétitivité et l'Emploi – Tax Credit for Competitiveness and Employment) decided in 2013, to provide a significant tax credit (up to 7%) for a large category of companies, from one employee and above. This credit must be reinvested in R&D, training, new employment, energy transition, new markets prospection or innovation. This measure will be cancelled though in 2019.

**ZFU-TE:** in order to re-vitalise economically challenged areas, France grants a 100% tax exemption on benefits during five years for a large category of companies, locating themselves in these areas. At least 50% of the company's employees must live in the area.

**ZRR:** poor rural areas present some attractive encouragements for some companies: as long as they have their head office in one of this ZRR and employ less than 11 employees.

### International establishment subsidy - French Tech Ticket

The French Tech Ticket is a one-year program by the French government to digital entrepreneurs from abroad and helps them set up and develop their start-up in France.

It is a 12-month programme including financing (45,000 EUR per project with no loss of equity), offering office space, training, coaching, and assistance with administration and network support. Selected entrepreneurs and projects will work closely with French partner incubators providing among others, mentoring, fundraising strategy, expert advice, and pitch practice.

The programme is associated with multiple criteria that must be fulfilled, such as that the firm must be an early-stage-start-up or have a start-up idea/plan and plan to develop its business in France. Hence, it is unclear how digital start-ups, which keep their base in their home country and only

wants to internationalise, will be treated. Further, the team must be composed of 2 or 3 co-founders. It is unclear whether a larger team is accepted. They must also all be English-speakers, but no specification is made how this is evaluated. The team must not have more than one French citizen, and the team members must be ready to relocate to and stay there for a full year. They are also expected to have a valid visa when entering France. There is, however, a fast-track procedure for French Tech Ticket winners. Teams cannot take part in the program until all the visa paperwork has been submitted and approved for all the members. There are also multiple criteria for being present at the incubator, but it is unclear how this is evaluated. Finally, the last criterion is that the team or each team member, must open a bank account in France (!). See full details about the programme and the requirements [here](#).

### *Start-up subsidies and R&D subsidies - Research Tax Credit*

A large category of companies can benefit from a 30% tax credit (20% for Small and Medium Companies) called CIR – Crédit Impôt Recherche (Research Tax Credit), deductible from taxes on benefits, as long as they invest in developing prototypes, or pilot new installations. The CIR is framed by strict conditions, e.g., the investment must be realised inside the EU, but any company operating in the Industry, commerce, handy craft or agriculture can receive it.

Mostly informative, the website [www.aides-entreprises.fr](http://www.aides-entreprises.fr) gives an overview of existing subsidies, region-by-region and sector-by-sector.

### *Financial: Stock options*

Stock options were introduced into the French fiscal regime in the 1970s. As expected, it is a complex instrument in the French legislation, and it is associated with the section "Code du commerce (articles L225-177 à L225-186). See details on how it works [here](#) (in French).

Additional technical description of various financial policies can be found using this link (only in French): <https://www.economie.gouv.fr/accompagner-start-up>

### *Business promotion activities - La French Tech*

As described in Document B, La French Tech is the flagship in France's ecosystem when it comes to business promotion activities. Under the "French Tech" label its associated partners (Business France, BPIFrance, Cap Digital. etc.). French Tech has both a regional network of "metropoles" within France as well as an international hub network with a presence in Abidjan, Barcelona, Beijing, Berlin, Cape Town, Dubai, and Hong Kong. French Tech is also involved in tech events like **VivaTech** and a range of events in the French Tech metropoles like [Web2Day](#) in Nantes, WebConference in Lyon, [Futures](#) (Cap Digital is the principle organiser) the multiple missions abroad for French start-ups such as the participation at [CES](#).

For 12 years in a row, **TechInnov** shows gather new companies, investors, public actors, in order to promote innovation and new businesses. Organised by some Chambers of Commerce, TechInnov hosts 2,000 participants to different business meetings, conferences, and conventions.

In sum, there is an abundance of tech events for French start-ups, and the competition of attracting both sponsors and start-ups to these events is getting harder and harder.

### *Ease-of-business regulations*

#### **One-stop-shop for starting a business**

With the La French Tech initiative, the French start-up community has got a new one-stop shop for handling public services such as administrative issues, setting up companies, and handling tax.

The initiative is called French Tech Central and is located in the incubator Station F in the city centre of Paris (see Document B for further information about Station F).

In terms of setting up a new business, there are a few relevant websites:

- <https://www.afecreation.fr> - general information about procedures and formalities to be aware when you start a new company.
- <https://www.guichet-entreprises.fr> - online service for creating a company and making administrative procedures for starting up a company, filing for authorisations and employment administration. According to the website, 54975 files/projects were transmitted this website in 2017.
- <https://www.cfenet.cci.fr> - this is the Chambers of Commerce website, which also seems to provide online services for company creation and administrative matters.

The only criticism is that the numerous websites make it a bit difficult for the user to understand how they interrelate.

### **Time to start up a new company**

The author has found no specific changes made in policy or procedure in order to ease company registration for start-ups. According to my own experience and by double-checking with Doing Business in France (World Bank) it takes approximately 2 weeks from the point when all documents are in place. NB! The document requirements for the French market are very extensive, which also explains why World Bank ranks France number 25 in terms of easiness of starting a company. A French bank normally requires up to 20 documents (ID, proof of address for the owners, bank proof, multiple compliance documents, a copy of the bylaws, proof of address for the company, etc.).

### **Cost of starting up a new company**

The author has found no specific changes in terms of costs for start-ups. The registration fees are rather low. In total, it amounts to around 80-100 EUR including company books and stamp fees. The capital requirement is only 1 EUR (was substantially decreased a few years ago).

### **Procedures for starting up a new company**

No specific adaptations have been made for start-ups, although the information available about different company forms has been substantially improved. The procedures are roughly the following:

1. Limited number of procedures although they require preparation time
2. Check name for uniqueness with the Institut National de la Propriété Industrielle (INPI)
3. Open a capital bank account and deposit the initial capital
4. File a request for a company's registration with the Centre de Formalités des Entreprises (CFE)
5. Publish a notice of incorporation of the company
6. Buy company books and have them initialled by the clerk of the Commercial Court

### **Difficulty of firing**

President Emmanuel Macron has introduced several reforms on the French labour market to liberalise the relatively rigorous French labour law, although this has not been made especially for digital start-ups. The main changes are the following ([Politico](#), 2017):

- More emphasis on in-house labour talks as opposed to sector-level discussions
  - Workers and employers would be free to negotiate agreements within the confines of an individual firm, as opposed to during sector-wide talks comprising dozens of firms that often have little connection to one another. In the case of a downturn, a company would be able to strike a rapid, “simplified” deal with a union or works council to change wages or working hours to suit the new market conditions better.
- A firm's global economic health cannot be used to oppose plans to fire workers
  - In the past, a judge could block layoff plans or penalize the firm by pointing out that its global operations were profitable, and the dismissals were not justified. Under the new plans, judges could only refer to the firm's performance in France when deciding whether to approve a layoff plan
- A set scale for damages in the event of wrongful dismissal
  - In the event of wrongful dismissal, a firm would have to pay damages according to a set scale starting at three months' salary for every two years of employment. Before the amount was unpredictable as it was subject to an arbitration process.
- Red tape slashed for firms with more than 50 employees
  - Currently, when a company hires its 50th employee in France, it must comply with a long list of requirements, notably the nomination of workers' representatives and the setting up of a works council and a health and safety committee. Under Macron's reform plans, all three of these groups will be folded into a single structure, cutting down on costs.
- Changes to short-term job contracts, but not to long-term ones
  - The terms of France's most common short-term job contract (CDD) had been set by law, which determined its minimum length and how many times it could be renewed (a maximum of twice). The system is open to abuse, with firms routinely rehiring employees on short-term contracts after a hiatus to avoid the cost of giving the worker an ironclad, long-term contract (CDI). If the decrees are approved, duration and renewal terms will be set at the level of the professional sector, not by national law.

### **Difficulty of hiring**

No specific adaptations have been identified making the procedure of hiring more easily for digital start-ups. Yet, the labour reforms making it easier to dismiss staff could actually lower the threshold for firms to hire staff.

### *Digital - Access and affordability*

Launched in 2013, the Plan France Très Haut Débit (Very High Speed) aims at covering 100% of the country with broadband Internet in 2022. Until now, this plan, which gathers together national and local authorities, Internet providers and local citizens organisations, has allowed to reach 51% of the French territory (66% of households and in urban areas). Companies and public services are on the top priorities of the Plan, with privileged access to optical fibre. The plan represents a 20 billion investment over 10 years.

## Digital - Data protection - la loi numerique

The Law for a Digital Republic (La loi numerique), which came into force in October 2016, encourages research and work on innovation. It also aims at better transparency of public decisions, and a better sharing of information through the Internet. Another objective of the law is to reinforce the right to privacy on the Internet. Data Protection is indeed a sensitive subject in France. The CNIL (Conseil National Informatique et Libertés – National Council for Information and Freedom) monitors closely any intrusion into people's privacy.

## Digital - Vocational training

France recently launched a national strategy for a school system encouraging digitalisation under the umbrella of "Ecole numerique" (<http://ecolenumerique.education.gouv.fr/>) aimed mainly for the school system up to graduate level (baccalaureate). Just as in the UK, there does not seem to be a specific strategy or plan for vocational training, although there are some interesting alternatives available today. For a full overview of the status of France's general vocational training system see the CEDEFOP report in the reference list.

A general comment is that there are few options specifically for "digital entrepreneurship". Just as in the other countries, most available options are either vocational training for to-be programmers or general entrepreneurship-oriented in their design.

### Public/government /region/city-level funded

*Grenoble IAE*. "Digital Entrepreneurship" as master level university course (see <https://www.grenoble-iae.fr/m2-entrepreneuriat-numerique/>). This is a one-year programme with close collaboration with the digital innovation hub "Digital Grenoble. Fee for the programme is currently. 260 EUR.

*Université Cergy-Pontoise*. "Engineering and informatics of complex systems, Innovative technologies and Digital entrepreneurship" Two year programme. No fee indicated.

*CNAM (Conservatoire national des arts et métiers)*. This association offers more than 300 courses but over a wide range of professions, but quite a lot focus on programming, system architecture and other digital-related professions. CNAM has a presence of 150 centres spread around France. Web: <http://formation.cnam.fr>

*FUN Mooc*. (*mooc = massive open online course*) This is initiative from the Ministry of Higher Education and Research and started in 2013. It is a partner-based set up with 50 partners around France but three main partners. It currently proposes 55 online courses related to the digital sector. Web: <https://www.fun-mooc.fr/>

### Associative alternatives

*Ecole 42*. Ecole 42 is housed in a 4,000-square meter premises in northern Paris and enrolls nearly 1,000 students a year for its demanding three-year course. Just as Station F Xavier Niel, who started it in 2013, funds it. It is open for students from the age of 18-30, and the pedagogical method is based on peer-to-peer learning. It has support and close collaboration with many French and international companies. Critics claim that Ecole 42 is less a response to expensive coding schools and more an indictment of the French higher education system, which Niel feels has failed to provide sufficient opportunities for budding software developers. It also has an equivalent school in Silicon Valley. Web: <http://www.42.fr/>

*Simplon.co* Programming with social objectives, particularly targeting underprivileged people with free and intensive digital training to help them find a job in the digital sector, while adapting our activities to local job markets. Web: <https://simplon.co>

#### **Private**

*EdFab*. Cap Digital's initiative to offer short professional trainings and meet-ups. Web: <http://edfab.fr/>

*Serious Factory*: Offers online and offline trainings with gamification pedagogic approach, but mainly targeted for companies. Web <https://www.seriousfactory.com/>

#### *Talent attraction - Immigration - talent passport*

Foreigners who win French Tech Tickets or are employed to an R&D position by a JEI in France, can benefit from a passport Talent, a dedicated residency permit, which allows them to stay in the country up to four years. This residency permit is also granted to foreigners, aiming to invest in France. It facilitates the visa procedure for the holder's family.

## Italy

Italy introduced the Italian Start-up Act in 2016. The preparations for this regulatory framework project began already in 2012. The outcomes have been very positive. At the beginning of 2018, the Ministry of Economic Development tweeted that there are now 8391 companies registered as innovative start-ups, an increase of 1000 in the last six months. More than 45 00 people are employed by these start-ups, and they invoiced more than 760 MEUR in 2017. Although it is difficult to assess the actual economic viability of the Italian Start-up Act, the initiative has certainly triggered a positive effect on the Italian start-up ecosystem and has had positive signalling effects for the global investors and entrepreneurs. In this section, some key policy changes associated with the Italian Start-up Act will be presented. The institutions driving this policy work are listed in Document B and are thus not analysed in detail.

An overview of the policies highlighted in this document are presented in the table below:

|  | Type   | Examples highlighted in Document A                                    |
|--|--|---|
| Digital entrepreneurship-specific        | <b>Financial</b>   |   |
|  | Tax exemption schemes  | Multiple tax exemption initiatives, special regulations in labour law |
|  | International establishment subsidy  | Tax exemptions  |
|  | Start-up subsidies and R&D subsidies   | Not identified  |
|  | Stock options  |   |
|  | <b>Business promotion activities</b>   | Reduction of fees dedicated to internationalisation                   |
|  | <b>E-commerce</b>  |   |
|  | Contractual harmonisation  | Not covered   |
|  | Antitrust  | Not covered   |
|  | Regional subsidies to clusters   | Not covered   |
| Geo-blocking                             | Not covered  |   |
| <b>Ease-of-business regulations</b>      |  |   |
| One stop shop for starting a business?   | Yes, using a dedicated platform, simplified bylaws and digital signature   |   |
| Time to start up a new company           | 2 weeks from the point that the documents are in place. World Bank ranking Doing Business is 66.   |   |
| Cost of starting up a new company        | Exception for start-ups, free of charge  |   |
| Procedures for starting up a new company | Simplified procedure for start-ups   |   |
| Difficulty of firing                     | E.g., start-ups can hire personnel through fixed-term contracts of any duration, even very short, which can be renewed as many times as wished |   |
| Difficulty of hiring                     | Flexibility measures taken, e.g., In terms of compensation package to lower employer costs   |   |
| <b>Digital</b>                           |  |   |
| Access and affordability                 | Not covered  |   |



|                               |   |
|-------------------------------|---|
| Data protection               | Not covered                               |
| E-governance                  | Not covered                               |
| Vocational training           | E.g., Crescere in Digitale and CodeMaster |
| <b>Talent attraction</b>      |   |
| Immigration                   | Start-up visa and Investor Visa           |
| Housing                       | Not covered                               |
| <b>Social &amp; culture</b>   |   |
| Social and welfare incentives | Not covered                               |

**Table 9.** Overview of policies related to digital entrepreneurship in Italy

Italy's Start-up Act aims to create favourable conditions for the establishment and the development of innovative enterprises in order to contribute significantly to economic growth and employment, especially youth employment. An important part of the Act is also to attract foreign investments in innovative and knowledge-intensive sectors.

An important limitation is the categorisation of start-ups and innovative start-ups. Only companies falling into this category could benefit from the regulatory framework. Some of the criteria are: inception less than 5 years; headquarters in Italy or in another EU country, but with at least a production site branch in Italy (unclear what a "production site branch is"); turnover lower than 5 million EUR; unprofitable; produce, develop and commercialise innovative goods or services of high technological value; should not be a merger, split-up or selling-off of a company or branch.

In addition to these criteria, the company should fulfil at least one of the following criteria: at least 15% of the company's expenses can be attributed to R&D activities; at least 1/3 of the total workforce are PhD students, the holders of a PhD or researchers; alternatively, 2/3 of the total workforce must hold a Master's degree; or the enterprise is the holder, depositary or licensee of a registered patent (industrial property) or the owner of a program for original registered computers.

### *Financial: fee reduction - exoneration of stamp duty upon company registration*

Start-ups are exempt from the payment of stamp duty and fees incurred due to the obligation of registering to the company register, as well as the payment of the annual fee due to the Chambers of Commerce.

### *Financial: flexible structure of share capital*

For example, the creation of categories of shares with specific rights (for example, categories of shares that do not attribute the right to vote or that attribute such rights in non-proportional terms to the participation); the possibility of carrying out operations on one's shares; the possibility of issuing participative financial instruments; offer to the public of capital shares.

### *Financial: exemption from the regulations on companies reporting systematic losses*

For start-ups running losses in the first years of operations, they could be exempt from normal regulations. The Start-up Act explains that: "If the available capital is insufficient, such losses may have a direct impact on the company's share capital. Where losses result in the share capital being reduced by over 1/3, the shareholders' meeting must lower the capital proportionally to the losses recorded by the following financial year. A 12-month extension is applied to innovative

start-ups, during which the capital can be reduced proportionally to the losses. While ordinary companies must lower capital by the following financial year, start-ups can do this for up to two financial years after they suffered losses."

### *Financial: exemption from the duty to affix the compliance visa for compensation of VAT credit*

The ordinary form calling for the application of the compliance visa for compensation in F24 of VAT credits above 15,000 EUR, may constitute a disincentive to the use of horizontal compensation. With the exemption up to 50,000 EUR, innovative start-ups may receive relevant benefits in terms of liquidity during the delicate phase of investment in innovation.

### *Financial: stock options for employees*

Start-ups and incubators may offer them capital shares by way of additional remuneration. The revenues resulting from these financial instruments are tax deductible for both fiscal and contributory purposes.

### *Financial: Tax credit for the employment of highly qualified staff*

For employment of highly qualified staff in innovative start-ups and certified incubators tax credit can be issued. Such benefits consist of a tax credit of 35% of the company's total cost for permanent employment, even with an apprenticeship contract, during the first year of the new working relationship.

### *Business promotion - support to the process of internationalisation*

The Italian Trade Agency provides assistance in legal, corporate and fiscal activities, as well as real estate and credit matters. In addition, innovative start-ups can benefit from free-of-charge participation to selected international fairs and events, as well as to international initiatives aimed at favouring the matching with potential investors. A "Start-up service card" has been released by the Italian Trade Agency, granting 30% reductions on its assistance services.

### *Ease-of-business regulations*

#### **One-stop-shop for starting a business**

According to a Decree of the Ministry of Economic Development, start-ups and certified incubators can choose to draw up the deed of incorporation by means of a typified standard model and by using a digital signature. The procedure can be handled online and is free of charge. They are parsed in a uniform format (XML), which allows rigorous checks without hindering customization. (Web: <http://startup.infocamere.it/atst/guidaCostitutivo?1>)

#### **Time to start up a new company**

The author estimates the process takes 2-3 weeks from the point when all documents are in place. Just as in France, the document requirements are quite heavy for incorporation and bank approval. It is not clear from the documentation whether the documentation-burden should be less heavy for start-ups. World Bank "Doing Business" ranking estimates 6.5 full working days in total for incorporation, but this does not include lead times, which are common in Italy.

#### **Cost of starting up a new company**

Unlike other Italian companies, innovative start-ups (see definition in Document B) and certified incubators are exempt from the payment of stamp duty and fees incurred due to the obligation of entering the Business Register, as well as from the payment of the annual fee usually owed to

the Chambers of Commerce. The World Bank estimates the total cost for incorporation between 800-900 EUR: (Registration fee 200 EUR + stamp duty 156 EUR + company books and stamps 40 EUR + government tax 310 EU + activation of certified email (PEC) 50 EUR + social security registration 100 EUR + registration at chambers of commerce 100 EUR).

### **Procedures for starting up a new company**

The number of procedures has been reduced for start-ups and can be handled online for innovative start-ups according to the new decree (Start-up Act).

### **Difficulty of firing**

A reform has been tailored for start-ups. Start-ups should comply with the regulations on fixed-term contracts as defined in the "Jobs Act". Start-ups can hire a 'staffer' on a fixed-term contract for a maximum of 36 months. However, in derogation to the Jobs Act's provisions, start-ups can hire personnel through fixed-term contracts of any duration, even very short, which can be renewed as many times as required. After 36 months, the contract can be renewed only once, for 12 months maximum, leading to an overall employment duration of 48 months. By the end of this 4-year period, the fixed-term contract is automatically converted into an open-ended one. Moreover, in exception to general regulation, innovative start-ups with more than 5 employees are not required to maintain a statutory ratio between fixed-term and active open-ended contracts.

### **Difficulty of hiring**

There are some measures that have been implemented ensuring more flexibility for compensation for employees. Salaries of staff employed in innovative start-ups can have a variable component linked to the profitability of the company, the productivity of the employee or the team of employees, or to other objectives and parameters for output and performance as agreed upon by the parties, including through stock options and work-for-equity schemes (see below). Hence, the total cost for the employer can thus be reduced in comparison with normal full salary-based compensation.

## **Digital: Vocational training**

Vocational training centres have been set up in the regions where schools, universities, enterprises and research teams collaborate on the same theme. Higher technician diplomas can be awarded after 4 to 6 semesters of courses, according to the speciality studied in the higher technical institutes (ITS – *Istituti tecnici superiori*). Higher vocational training leading to a diploma (2 semesters), is offered by the regions in relation to local and regional requirements in the frame of the IFTS (*Istruzione Formazione tecnica superiore*) where there are several options of ICT-related courses. Universities propose vocational diplomas in the field of health, paramedical sciences and the arts, over a variable duration, and also profession-oriented master's degrees.

For a full overview of the status of Italy's general vocational training system, see the CEDEFOP report in the reference list. From CEDEFOP country [report](#):

*"Italy has set itself the strategic objective of strengthening VET, recognising the important role that it can play in supporting its enterprises and empowering its people. The recent policy package focuses on the youth guarantee scheme and measures to reduce red tape for enterprises and promote inter-firm cooperation. "*

Two examples are highlighted specifically related to the ICT and are listed below:

Crescere in Digitale is an Italian-based initiative implemented by the Ministry of Labour and Social Policies, in partnership with the Italian Chambers of Commerce and Google, financed by the National Operational Programme Youth Employment Initiative. The project offers training and traineeships for young people in order to support businesses in the digital economy. The programme offers 50-hours of free online training offered to all Italian young people not in education, employment, or training who are registered to the Youth Guarantee Programme, managed by the Managing Authority of the Ministry of Labour; an online test where graduates are selected for a traineeship; local job matching to match graduates with SMEs; and a 6 month paid traineeship for each of the selected young people.

*CodeMaster* is a private company offering coding classes for 12 weeks followed by a 6-month trainee position. Web: <https://innovationschool.talentgarden.org/corso/code-master/>

### *Talent attraction: Start-up Visa*

According to Italia Start-up Visa's own sources, more than 300 applications have been submitted, from 39 countries. 155 of them were received in 2017 alone. This has motivated Italian authorities also to include Investors into the programme.

As far as the required financial resources are concerned, applicants are requested to provide evidence of possession of at least 50,000 EUR for the development of their start-up process. Evidence of financial resource availability has to be provided as part of the application process submitted to a specific committee. Resources can include funding from different sources, such as venture capital funds, investor's own funding, crowd-funding provided by the Italian or other governments or non-governmental organisations.

Evidence of possessions of the required funds can be provided by a bank where the funds are held and are to be delivered with the issuing of one or more letters to a specific committee.

## 8. European and national programs and initiatives – achievements and challenges so far

### **A good foundation for further development - main achievements on a European level**

The main strength of the European initiatives to foster digital entrepreneurship has been the consideration of the whole digital hierarchy through the *Digital Single Market* into the policymaking. This has implied a solid foundation for further digital entrepreneurship incentives. The harmonisation of the legal framework around e-commerce, the abolishment of geo-blocking and roaming fees, will doubtless have positive effects for digital start-ups, particularly for the ones with international ambitions.

A secondary achievement is the generous COSME start-up grants and loans, and other financial instruments available for European start-ups. Up till 2020, around 4000 small companies will be selected for funding from the budget of 2.3 billion EUR.

*Start-up Europe* has done a particularly good job in the promotion of and linking between start-up ecosystems in different European regions, including those who are not yet leaders in the domain. This measure addresses the need to reduce geographic discrepancies in terms of financial and human resources as well as media attention. Start-up Europe's competitions and accelerator programs are also good initiatives, although they tend to have difficulties in attracting awareness and spreading competition with national, or city-level substitutes.

### **Overall assessment of measures to foster digital entrepreneurship on a European level**

The number of initiatives presented above signifies the ambitious agenda that the EU has taken in order to prepare a solid ground for a digital transformation of the European society, and for helping European digital start-ups to take an active role along the path. The flagship project *Start-up Europe* has many assets and is a useful one-stop shop for European and international start-ups to obtain an overview of regulations and funding opportunities, and to identify possible events.

In sum, when assessing the *Start-up Europe* initiative, I conclude that the European COSME project has had significant financial impact for the numerous participating start-ups. Yet, when looking at the Start-up Europe project, there seems to be too many on-going initiatives. Hence, it is difficult for outsiders and start-ups to get a condensed view of the actual role and mission of the Start-up Europe initiative. Furthermore, it is difficult to assess whether the Start-up Europe project has actually led to any changes in terms of policy and regulation, which has changed the playing field for start-ups. It seems that most initiatives initiated by the Digital Single Market have been focusing on facilitating for consumers. Looking forward, therefore, it would be desirable for the Start-up Europe project to take the lead also in harmonising the policy issues surrounding the European start-ups. The above summary is further unfolded below.

*Significant financial impact for the European start-ups thanks to the Horizon 2020 strategy and funding.*

So far over 750 start-ups have received funding of at least 50 000 EUR each in the Horizon 2020 programme. In the last round (Spring 2018), the EU will support 257 SMEs from 31 European countries, which aim to get their products and services faster to the market. The funding of 12.65 EUR million in total comes from Horizon 2020, the EU research and innovation programme.

For the beneficiaries, the funding can be a critical step for going to market and sustaining in the early, and most vulnerable, period of their life cycles. There is also a high probability that the beneficiaries will manage to raise additional funding in other EU and non-EU programmes after having received a first funding round, since the event of receiving grants enhances and signals credibility on the market. A possible critic to these financial programmes is that they tend to be policy-driven, aligned with European general policy objectives, as opposed to market-driven. A consequence thereof, is that they risk putting market forces out of play. An overhanging vulnerability is that the evaluation process of the potential for the start-up candidates is therefore not sufficient considering the economic viability of the start-ups, but instead, that it overemphasises the start-ups' alignment to the European policy goals. This, in turn, could give the beneficiaries a false sense of economic viability.

A secondary downside is that the programme (SME instrument) indirectly impedes the development of a European VC market for early-stage start-ups. One could question whether the EU institution is capable of evaluating the business potential of start-ups. An idea to mitigate these risks would be to outsource the screening and decision process to professional European VC firms. Another criticism that has been brought forward by some start-ups the author has talked to is that the process of applying and administrating the grants is rather bureaucratic and time-consuming.

Despite these critical points, the author makes the assessment that the SME financial instrument is a very good and important measure, which so far has had significant impact for vitalising the European start-up community.

*Good, but too many small and ad-hoc oriented initiatives.*

The principle activities of Start-up Europe are to centralize information, to organise events, pitch up sessions, incubator-network initiatives, etc. For an outsider, though, it is difficult to get a full overview of the information and activities, and to understand how to best engage in these.

There is no doubt that many of these activities are very good and useful and are also popular. Still though, there seems to be a lack of coherence in the logic of how these relate to each other. One reason for this could simply be due to an underestimation of the importance of communication for presenting the activities. For example, on the website (<http://startupeuropeclub.eu/>), when clicking on the icon "internationalisation" (see images below), one is directed to a web page presenting four initiatives which appear rather ad-hoc oriented, i.e., two visiting programmes to India, one to Africa and one to Silicon Valley. These could indeed be useful projects, but they do not really say much about internationalisation for firms. An idea would instead be to link to EU's internationalisation agency "Enterprise Europe Network," and let them manage and instruct start-ups more thoroughly about internationalisation.

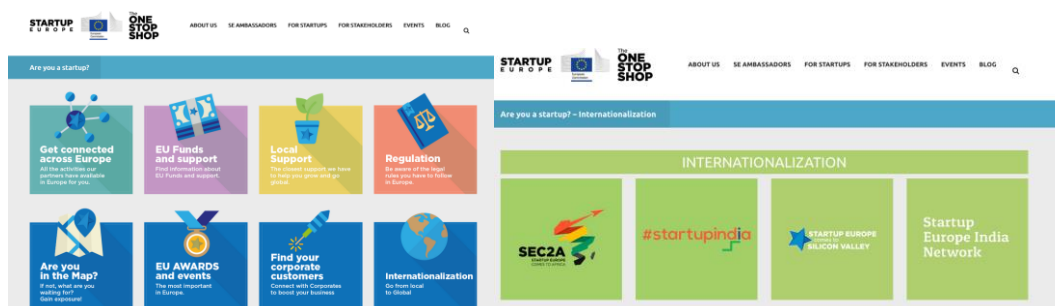


Figure. Example from Start-up Europe's web page.

When it comes to the various start-up events, it is also difficult to understand how to go about it in order to engage. For example, there are seven different "connectors" (each with a different focus) on the *Start-up Europe* web page, but for an outsider, it is difficult to position them and understand which one is relevant depending on the business and country.

One idea would be to organise this information into a geographical structure and to be more precise of which start-ups could benefit from what. More work with communication and presentation of detailed instructions on how to engage and participate would also be helpful. A suggested key priority for the Start-up Europe initiative would be to work more with the local integration of the various programs. A challenge with a programme like *Start-up Europe* is to stand out in the overload of buzz that permeates the start-up community. In order to achieve this, the local integration, and work with local incubators and VC firms is necessary.

The main assessment from the author is that the start-up events and surrounding eco-system must be more clearly presented and communicated and also coherent in how they interrelate. In its current state, it is difficult to get an overview of all the initiatives and how start-ups should go about participating. A possible idea, and a recommendation to policy makers, is to consolidate the activities, and to focus on only a few. By doing so, more communicational effort could be channelled into these instead of diluting the communicational efforts on multiple events.

*Still heterogeneousness in terms of procedures and legal frameworks.*

A good thing with the *Start-up Europe* portal is that it directs the user to relevant local authorities in all EU countries. However, it also becomes clear that there is a strong heterogeneousness in terms of procedures and legal frameworks, for example, to start companies, and in terms of financial prerequisites, e.g., tax policies and subsidies. This is also manifested in the rest of this report when assessing the country-specific measures that have been taken. I argue that the work of *Start-up Europe* has, so far, not led to much change in this regard. It is possible that this work is not in the scope for the Start-up Europe project, but it would be useful for start-ups to obtain a more holistic view of the different rules and regulations that apply in each country. This could also help in identifying gaps, and thus ease the lobbying work forward towards an increased regulatory homogeneousness across the EU countries. The GDPR legislation, the abolished roaming fees and the new regulation of portability of online services are all good steps forward, but the regulation for starting up and running up businesses must also follow the same path.

## **Challenge - the start-up scene is built on an urban level, difficult to manage from a supranational level**

The challenge with the European initiatives is that the digital start-up sector is very place-bound, in some cases down to the micro-level (specific addresses). The consequence is that regional awareness, among entrepreneurs, is limited. It is difficult to gather people and to reach out to institutions based in Brussels, and they are in turn dependent on national-level managing

authorities for implementing and communicating about the incentives. Generally, it is also much more complex to roll out policies and initiatives on a supranational level than on national, or local levels.

Furthermore, there is an overload of city-level start-up pitch competitions, and this is more difficult to organise on a European level. The default reflex of entrepreneurs is to turn to local or national policymakers, not supranational ones when asking for modifications in existing policy frameworks. As mentioned by one of the policymakers I talked to during the writing of this study *"the most interesting start-ups are too busy with finding capital, talking to customers, or developing. They do not have time for policy questions or applying for EU funding, and they are also very hard to get on board for business promotional activities, even if they can win some prize money"*. Effective outreach is the first essential step for implementing new policies, but the start-up sector is probably one of the most selective and hard-to-get audiences.

A second challenge is the geographical concentration of certain European cities, where there seems to be an abundance of capital, but too little talent. Important work will consist of creating mechanisms to re-distribute these resources in order to grow a larger number of digital start-up hubs throughout Europe. As mentioned above, the UK financial policies are by far most attractive ones in comparison with other countries. It is unclear whether we, in the aftermath of Brexit will see any changes in this pattern, and whether this could actually be a positive event for other European digital hub candidates.

## A vibrant start-up sector, but strong geographical discrepancies

In this section, I propose some analysis and comparison with the various national policies and their respective achievements and challenges. Drawing from the typology, I do not include "E-commerce", "Digital" or "Social & culture" since they have not been presented at a national level to the same extent.

As mentioned above, one of the main challenges on a European level is the geographical unevenness in terms of talent and financial inflow. The table below manifests this unevenness. It shows how far behind Italy is in comparison with the other studied countries. The Italia Start-up Act does not seem to have had any immediate financial implication. In the section below, I will shortly describe the national characteristics from the national policies that I have studied.

### FUNDING (BEUR) - dealroom.co

|                    | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|--------------------|------|------|------|------|------|-------|
| <b>UK</b>          | 1,3  | 2,6  | 4,5  | 3,8  | 7,5  | 19,7  |
| <b>Germany</b>     | 0,7  | 2    | 3,2  | 2    | 2,9  | 10,8  |
| <b>France</b>      | 0,7  | 1,1  | 1,6  | 2,9  | 2,5  | 8,8   |
| <b>Switzerland</b> | 0,3  | 0,5  | 0,6  | 1    | 1,7  | 4,1   |
| <b>Sweden</b>      | 0,4  | 0,5  | 1    | 1,2  | 1,3  | 4,4   |
| <b>Spain</b>       | 0,2  | 0,4  | 0,6  | 0,6  | 0,9  | 2,7   |
| <b>Netherlands</b> | 0,2  | 0,7  | 0,6  | 0,9  | 0,7  | 3,1   |
| <b>Italy</b>       | 0,07 | 0,1  | 0,1  | 0,2  | 0,1  | 0,57  |

**Table 10.** Accumulated funding during the last few years of top European countries. Source: Dealroom.co

### National characteristics in digital start-up policymaking

**UK** has by far the most attractive financial policies with EIS and SEIS and also other financial schemes, as well as the very popular StartupLoan. It is clear that the UK government has focused on financial incentives. This goes hand in hand with London's position as Europe's financial capital



and with its well-rooted culture and history as a broad and deep financial market. It is not surprising that the UK start-up sector is also the leading one in Europe when it comes to Fintech. Despite Brexit, it has also made efforts to attract foreign talent via dedicated visa programs. These elements combined with a relatively strong Internet penetration and technological readiness contributes to UK's leading position for digital start-ups in Europe.

**Sweden** has had a strong track record in terms of digital start-ups (see Document B). Therefore, it is a bit surprising that its policies are still rather underdeveloped in relation to digital start-ups. The Swedish government has made some modest attempts to update the stock option policy for employees as a reaction to a manifesto by the Swedish start-up community, and it has also appointed some staff responsible for the start-up sector at a ministerial level. However, the country benefits from a history technology-driven culture following massive investments in broadband; and advanced digital educational skills programme, and generous social policies. Those combined elements seem to be attractive for digital start-ups and counter-balance the relatively underdeveloped policy work.

**France** has the most developed institutional approach and marketing campaign with its *French Tech* initiative and its giant incubators (*Station F* and *Numa*). President Macron has positioned himself as a pro-start-up president and has pushed through policies on the labour market to make it easier for start-ups to "hire and fire". There are quite interesting tax schemes for R&D driven start-ups, and the country has also taken a lead position in attracting foreign talent and foreign start-ups via its French Tech Ticket programme. These incentives are slowly starting to pay off, and France made a record year in terms of digital start-up funding in 2017.

**Italy's** start-up sector is still very small and fragmented. In terms of funding and exits, the results have hitherto been very modest. In the light of this background, the Italia Start-up Act is a positive incentive. Still though, it is difficult to see how these policies could yield much market liquidity, and how much is pure marketing campaign. Marketing and signalling mechanisms are indeed important in this sector to attract investors, but it is also critical that there are substance and real financial effects behind the policies. In the set of policies, for example, it is mentioned that start-ups should be incorporated without paying stamp duties. However, this is a minor fee, and only symbolic. From the communication made by Italia Start-up Act, we can already see some positive results of many registered start-ups and also success in attracting foreign talent, but this must now be converted into funding and economic growth order for it to be considered a real success.

### *Financial policies, the most common instrument*

If we look at the policies analysed at a national level, we can find some patterns. The financial policies are the most common ones and rather easy to track and measure, in comparison with regional subsidies or SME grants. The UK is the star in this domain with the EIS and SEIS programs, which have run for quite some time already, and give very **attractive tax breaks** for investors. The other countries financial policies appear much more recent and more modest in terms of potential impact level.

All countries have some kind of **incentives for R&D activities**, which is a good thing, but as the Swedish example shows, it seems to be more important in terms of signalling effect than direct effect for the companies.

All countries also now propose some **employee stock option schemes**.

## Business promotion activities

There is an overload in business promotion incentives in all countries, **pitch competitions, fairs, investor meetings, start-up days**, etc. Government funding goes into these business promotion activities. In Sweden, Business Sweden sponsors a Swedish pavilion at *Web Summit (Lisbon)*, and *Slush (Helsinki)*, which are Europe's largest events, but also local events like Sweden Demo days. Business Sweden also proposes an **accelerator programs** Going Global, which is a kind of accelerator program for start-ups with focus on internationalisation. Similar examples can be found in all countries. The UK has the least developed government-led business promotion activities for start-ups. La French Tech is active in almost any start-up event in France via its huge network. Italy also gives subsidies to companies joining internationalisation missions. For a start-up, the challenge is not to find a business event but to make sure it is the right one since there is so much to choose from. For government agencies, the best strategy is probably to join forces with private companies who could guide and make sure that the funding (if available) is going to the right event.

## Talent attraction

The UK, Italy, and France are the best examples in opening up for international talent and investments.

The visa programs have given a positive inflow according to their own sources. Between 150-200 people (tech talents) per year have immigrated to each of these countries according to their figures. In terms of investments, the figures are more difficult to compare. For example, according to the UK government, the received 5.6 billion GBP in the first half of 2016. These figures should be read with caution (compare with the funding figures in the tables above).

The remaining challenge will be to keep talent once they have immigrated. Here, employee options schemes, but also general welfare systems and the possibility for spouses to find jobs are crucial. In Sweden, there has been a big debate due to Sweden's problems in attracting international talent. Partly due to the already hard pressure on the immigration system, no policies have yet been pushed through.

## 9. Internationalisation of digital start-ups

### The motives behind internationalisation

Internationalisation is normally defined as increasing engagement in international activities. Theoretically, it can be both outgoing (exports or market expansion) and incoming (e.g., imports or representation of foreign company on domestic market). In parallel with increasing global business and the evolution of global value chains, internationalisation has become more and more common. Some countries like Austria, Sweden, and China are extremely export-driven.

The motives for internationalisation vary. Internationalisation theory often refers to resource seeking (e.g., natural resources); market seeking (e.g., "we need to be in the fast-growing Chinese market"); strategic asset seeking ("we need to be close to leading R&D centres in our sector") or Efficiency seeking (e.g., "labour is cheaper in Asia"). In praxis, there are combinations of these different motives.

With the rise of information and communication technologies and falling costs of transportation and communication, the barriers and costs for internationalisation continue to decrease. Studies have pointed out that the Internet and digitisation can facilitate the accessibility to foreign markets. The rapid growth of the Internet has also given birth to a new species of firms, which we refer to as digital start-ups in this document. As explained in the introduction, digital start-ups are characterised by having both the production and delivery process through a digital medium. In research, the question has arisen whether digital start-ups internationalise in any different way as opposed to traditional firms. In this section, I will discuss whether there are such differences by elaborating on internationalisation strategies for digital start-ups.

### Key elements in an internationalisation strategy

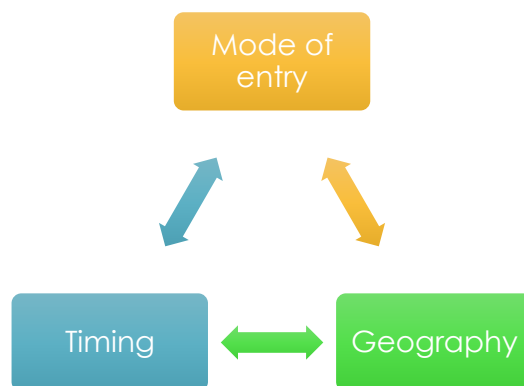
When designing an internationalisation strategy, one should first consider the main components that such a strategy should contain. Research of internationalisation talks about three main components, which in turn can be split up into sub-categories.

**Mode of entry** - this is how the company chooses to enter a specific market. For example, it can be via pure export, via an agent or distributor, or via a more controlled mode of own employees or own subsidiary.

**Geography** refers to the geographical market choice(s). It could be a near market strategy, or a far-distant market or something in-between. Some firms want to localise in cities, some firms seek locations close to natural resources or in specific climates (e.g., data centres).

**Timing**, or speed could refer to various elements. A first-time element is the time it takes for the firm to enter the first international market from its inception. A second-time element refers to the frequency or the length of the interval between foreign market entries. And a third-time element is the time it takes for the firm, from the point the decision is made, till the point the company is actually operating on the international market.

The double-edged arrows indicate that the components are intertwined. The choice of mode of entry will affect the time to market. A specific geographical context may imply the choice of mode of entry. For example, in some international markets, it is not possible to enter with an own subsidiary without local shareholders. An illustration of these components is presented below:



### **Mode of entry: Controlled modes mainly applied digital start-ups**

Mode of entry can range from controlled modes, e.g., ownership of international subsidiaries, to less controlled, or shared modes, e.g., exporting through intermediaries, contractual licensee, franchisee, or joint ventures. My findings from researching about digital start-ups are that the entry should be seen in the light of an online–offline balance and are not simply as a choice of either controlled or shared mode.

From an online perspective, the digital start-up's establishment on a new market is mostly executed via a controlled mode, e.g., via own employees or subsidiaries, and the establishment process is to a high degree controlled from the digital start-up's headquarters. The case studies that I have looked at evoke that this has to do with the complex and technically advanced nature the digital start-ups' services. One characteristic of digital start-ups is that they can control their foreign operations in the online space whilst assuring offline presence only in the headquarters. At least, the initial need for being offline-present is normally lower than for a traditional company, e.g., a manufacturing company, particularly in the early phase of the internationalisation process given that no offline supply chain is required. The challenge for the digital start-ups, and particularly business-to-consumer start-ups is to create an online buzz and reach a "viral" state on the local market, and rapidly build up a large online user database. In order to achieve this, offline resources are often needed.

If one studies mature online firms like Facebook, Twitter, and Google one finds that none of them apply shared modes of entry, e.g., a distributor, but instead have all entered new markets primarily in the online space by creating a user base via the online medium and then gradually building up their offline presence.

Overall, I argue that the digital start-up's relative onlineness (in production and delivery) in terms of online service and business model determines the need for offline resources, and also the timing when the offline resources should be engaged.

In the literature of mode of entry, the network approach to internationalisation is central to explaining how companies use business networks to internationalise. It suggests that by acquiring networks, companies can reduce the time to reach international markets. A limitation of the network theory, in the light of internationalisation for digital start-ups, is that it accentuates the

long and slow process of network building in order to create trust and commitment. This stands in contrast to the internationalisation for digital start-ups with a high degree of onlineness. For them, a market entry can be made swiftly in the online space without any pre-constructed offline networks at all, simply by using an online service on the Internet via online marketplaces. For digital start-ups, which are dependent on rapidly creating a large user base, viral marketing and co-development are important means of entering new markets. Yet, the offline networks are not necessarily important in the early stages for the digital start-ups, which is the case for a traditional firm, but as already highlighted, they become gradually important as the digital start-ups expand in the local market. Offline presence must, therefore, be considered early in the internationalisation planning.

### **Speed: the online – offline interval**

Speed is often regarded as a key element of firms' international strategies. A firm that internationalises too slowly might find itself outcompeted on new markets prior to entry, and in a presumably locked market position. Network effects and the high pace of technology innovation in the digital start-ups business foster a sense of urgency to internationalise fast. Speed must be configured in such a way that it balances the firm's internal resources vis-à-vis the arising business opportunities on international markets. A general assumption among managers is that rapid speed is something positive in the internationalisation process, and in the online business it is often true. Phrases like "we must reduce the time to market" or "first mover advantage" are quite common. Such a culture induces a constant sense of time pressure. Nevertheless, a too rapid internationalisation could potentially lead to overextension and unreflective decisions, which could have negative effects for the business. Again, finding the right balance is crucial.

Regardless of the effects of the speed, there is a lack of empirical evidence showing whether digital start-ups firms internationalise faster or slower than other firms. Does the culture of rapidness in the digital start-ups business have any effect on the actual pace of internationalisation? Some researchers have implied that manufacturing firms are rather slow in their internationalisation process, while services firms are quicker. The internationalisation process of born globals has been characterised as rapid, with firms becoming established and committed internationalists in as little as three years or less. Other researchers have found that e-commerce firms internationalise faster than traditional firms mainly due to the entrepreneurs' international experience. Finnish researchers found that digital-based born globals reached their first international market only 2.1 years after inception, and thus much faster than traditional firms. However, the companies I looked at in my PhD thesis had a longer time interval than 2.1 years for their first international entries. So, this could vary very much depending on the international viability of the business model and international ambition of the entrepreneurs.

The digital start-up industry has numerous examples of fast-speed internationalisation. For example, the Swedish firm Spotify was founded in 2006 and is today present in the online space in 66 markets, with 21 (offline) offices.<sup>2</sup> Facebook has established more than 40 international offices since 2004 and 1.7 billion active users worldwide. Such a remarkable international spread within such a compressed time frame is not seen in any other sector. Hence, although we do not know exactly how much faster digital start-ups can internationalise, there are sufficient examples to claim that once digital start-ups engage in the internationalisation process, the speed is generally faster than it is for traditional export firms. The few research papers that exist on this topic clearly point in this direction.

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<sup>2</sup> See: <https://www.spotify.com/se/select-your-country/>, Accessed 15 October 2016.

Researchers have made the distinction between two speed elements: 1) *time lag to first entry* - the time lag between the founding of the firm and its first international operation; and 2) *sequencing* - the speed of the firms' subsequent international growth.

Thus far, my main conclusion regarding online speed is that digital start-ups, once they reach the stage of internationalisation, and particularly if we look at the speed element of online presence, they tend to be faster than traditional firms. Regarding the speed to offline presence, this is more difficult to assess with the given data. The cases I looked at in my PhD thesis indicate that the speed to offline presence does not necessarily differ from traditional firms.

Unsurprisingly, if we look at the speed between different digital start-ups, I claim that digital start-ups with a high degree of onlineness in the character of the online service and the business model are, in general, faster to reach a geographical spread in the online domain. They also enjoy a longer online–offline interval than digital start-ups with a low degree of onlineness. However, this does not necessarily have any impact on the performance of the firms but should be put forward as a conclusion concerning the internationalisation speed perspective. Again, the online–offline dichotomy is helpful for explaining the different internationalisation elements for digital start-ups.

### **Geography: regionally bound versus 'online spatial overreach'**

In international business literature as well as in economic geography, distance can refer to either the distance from the home market to the international market or to a socio-cultural space, often called psychic distance. The latter refers to how close markets are in terms of (business) culture, history, religion, political views, and language. Some researchers argue that online internationalisation reduces psychic distance, but that firms that rely too much on the Internet are prone to fall into the "virtuality trap" as a negative outcome of not investing sufficiently in foreign market knowledge to become locally embedded. In order to reduce the liability of foreignness, it might be insufficient to rely on offline commitment.

I argue that there is a risk that digital start-ups rely too much on the online presence and do not balance it up with an offline presence. They risk ending up in a situation where they have no control or real contact with the international market. Online internationalisation appears to be an enabler for rapid virtual access to foreign markets, but potentially at the cost of too little local commitment, which could eventually backfire for the foreign firm. Relying too much on the online presence in an initial stage could lead to a lack of integrating important business networks, but too much offline presence could lead to high initial costs. Hence, my conclusion the digital start-up has to find a sound balance between online and offline presence.

In terms of choice of international markets, empirical findings have diverging hypotheses about the geographical paths of digital start-ups. On the one hand, the born-globals-influenced stream suggests that technology-intensive service firms have greater geographical mobility than labour-intensive service firms because of the possibility of separating back office and delivery. There have been claims that incremental behaviour does not seem to be of major concern for our Internet-related firms, meaning that they could choose their market more ad hoc. Other researchers hold a more neutral stance and found that Internet companies generally entered countries where the Internet market was growing fastest, regardless of the actual distance.

My findings suggest that digital start-ups tend to follow a regional expansion path. The Swedish digital start-ups that I studied internationalised regionally, more or less similar to other Swedish export firms. The only exception I found was [Truecaller](#), which has followed a more ad hoc-

oriented internationalisation path. Although the home market, Sweden, was the first and still is an important market, Truecaller's current largest market is India. This shows that geographical patterns for digital start-ups are not homogenous but again depend on the onlineness in the business model and the online service. Truecaller, which has a very high degree of onlineness, has developed a much wider geographical spread of its online service in the online realm (without offline presence).

Truecaller's case evokes a particular spatial pattern for digital start-ups with a high degree of onlineness. We call a situation where there is a geographically spread user base, which is matched with a low offline presence, "online spatial overreach." Such a situation could be a consequence of a too rapid internationalisation and where the digital start-ups do not have time to build up offline presence.

## **Outcomes of internationalisation**

Many positive outcomes could come out of internationalisation, profitability and other financial benefits being the most sought by enterprises. But studies have also shown that early internationalising firms are often more profitable and tend to have a longer lifespan than non-internationalising firms. Apart from the financial effects, which of course could also be negative if the internationalisation trajectory fails, we could include learning capabilities and acquisition of networks. An additional outcome that has been observed in recent research is that internationalisation could also lead to innovation capabilities. When firms internationalise, they become inspired and pick up ideas from new markets, which they later integrate into their business models and roll out on already existing markets. Market adaption has had positive effects on production development and can thus result in innovation and product development, which in turn strengthens the competitiveness of the firm.

## **Obstacles for internationalisation**

Some specific obstacles I have come across when studying digital start-ups are worth mentioning.

The first one is that the digital medium lowers entry barriers for market launch, and also international market launch. The upside of this is that it is quite easy and cheap to develop software and launch on a new market. The downside of it is that digital start-ups also run the risk of being "cloned" or outmanoeuvred. I studied one example of a Moroccan platform, which was a market leader but faced fierce competition and went out of business as soon as a European platform, providing similar services entered the market and invested massively in marketing campaigns, and also proposed attractive salaries to the Moroccan platform's employees.

A second obstacle is financial sustainability. Internationalisation is costly: local adaptations need to be made in the software, translations, and staff needs to be recruited which implies recruitment costs and legal costs for employment contracts. Office space often needs to be rented. Before entering a new international market, the firm should make sure it has sufficient funds to sustain several months without generating any revenue. It is also important that staff at the headquarters have a readiness to support the new international market, in terms of dedicating time to travel, and business development on the new market. A near market may, therefore, be a more efficient choice, even though the market is smaller than a large market that requires more investment in travel time and market adaptations. For example, the US market is the world's largest market, but it is also the most competitive. For European digital start-ups, it is an entry decision that should be considered with caution.

## Summary

This section has given an introduction to internationalisation for digital start-ups by proposing a model consisting of three main components (mode of entry, geography, and speed), which need to be considered when designing an internationalisation strategy. It has been concluded that whereas digital start-ups tend to be rather fast from inception to first international market, and also have quite high frequency in the acquisition rate of new international markets, still the business model and the onlineness of their production and delivery is determining for how they will internationalise and to what extent their internationalisation strategy will be viable. Therefore, careful planning and market assessment are needed when preparing for internationalisation. Local adaptations are necessary, and practical factors such as local legislation, language travel time is important to consider. Needless to state, there is no one-size-fits-all solution when it comes to internationalisation, and it should be designed and implemented based on the digital start-up's online and offline resources at home and foreign markets. Internationalisation is correlated with high growth and longer firm life cycles, and can have many positive effects, i.e., financial growth and absorption of learning and innovation capabilities.

As final remarks for this section, I want to stress that internationalising digital start-ups often follow a gradual development, and this is most often a good choice. Secondly, born global is an overestimated concept, few digital start-ups actually are global, and it is often a more strategic choice to opt for a regional expansion. Success on the home market is often a good start before going international. Finally, digital start-ups have the potential to scale fast internationally, but the offlineness catches up with the online. Therefore, a key element in designing an internationalisation strategy is to find and manage the online-offline balance throughout the internationalisation journey.



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<sup>3</sup> Contains a list of full URLs for the embedded links in the document. URLs that are written out in the document are not included in the Reference list.

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