BARCLAYS

Scale-up UK:

Growing Businesses, Growing our Economy

A report from the business schools at the University of Cambridge and the University of Oxford, convened by Barclays

UNIVERSITY OF CAMBRIDGE
Judge Business School

SAID BUSINESS SCHOOL
UNIVERSITY OF OXFORD

Cambridge Judge Business School

In order to foster growth, skill sets,and sustained growth:

C1. Start-ups must have a will to grow and commit to ambitious growth

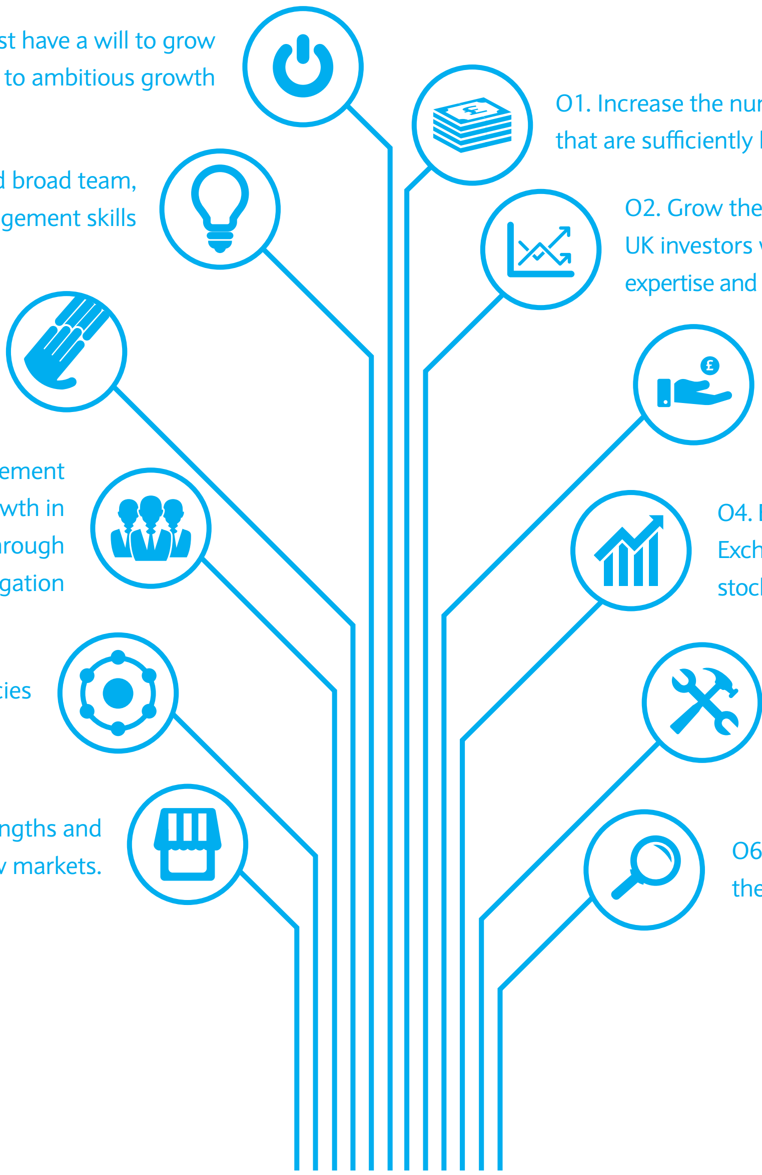
C2. Build a strong and broad team, through top management skills

C3. Establish partnerships who will collaborate and help to share in their success

C4. Develop effective management systems that allow growth in employees and profitability through standardisation and delegation

C5. Identify core competencies

C6. Articulate competitive strengths and areas to spread into new markets.



Oxford Saïd Business School

In order to foster finance support for start-ups:

O1. Increase the number of UK venture capital funds that are sufficiently large to finance scale-ups.

O2. Grow the number of experienced UK investors with in-depth sector expertise and strong international networks.

O3. Develop a UK venture debt market to complement equity funding.

O4. Establish the London Stock Exchange as the leading pan-European stock market for scale-ups.

O5. Develop new approaches for creating liquidity in private company shares.

O6. Collect systematic data about the financing of scale-ups.

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Foreword by Barclays Group CEO, Jes Staley

The United Kingdom is a great place to start and grow a business. But challenges still exist that can hamper growth, and which must be addressed for the sake of long term economic and social progress.

At Barclays, we are focused on helping businesses achieve their ambitions. We know first-hand many of the issues that entrepreneurs face on a day to day basis. We also know how important they are to our economy, and that by helping them achieve their ambitions, we can in turn drive innovation, jobs and wealth creation and strengthen our economy to the benefit of society.

I am therefore delighted that Barclays have been able to work with some of the world's foremost experts in entrepreneurship on this important piece of work. This report presents practical and deliverable recommendations for a range of stakeholders to consider and respond to, including Barclays, the UK Government, and the wider business and academic communities.

I would like to add my particularly gratitude for the efforts of Stelios Kavadias, Thomas Hellmann, and their colleagues for producing such a thorough, clear and valuable report.

This report is just one step towards helping more businesses achieve their growth ambitions, but it is an important step and one that we look forward to working with partners to build on.

Jes Staley
Group Chief Executive, Barclays

> I am delighted that Barclays have been able to work with some of the world's foremost experts in entrepreneurship on this important piece of work

Foreword by Sherry Coutu, Chair, The Scale-up Institute

When I wrote the Scale-Up Report in 2014, I wanted the private, public and education sectors to join together to lean in to support more effectively our scale-up companies and help them soar to even greater heights.

The work Barclays has now facilitated with Cambridge Judge Business School and Saïd Business School shines a further light on the needs of our UK Scale-Ups and is a welcome addition to our thinking: reinforcing what is necessary for us all to focus on when seeking to help these high growth businesses.

When I completed the Scale-Up Report I could only hope it would find supporters who would wish to carry the ideas in it forward. A year and a half down the road I am tremendously encouraged by the actions and commitment from our financiers, large corporates, business schools, associations, entrepreneurs, media and regional public sector bodies, to individually and collectively work on creating a better support environment for our scaling businesses.

I've seen a desire across the UK to better understand these businesses. I've watched new international trade programmes emerge and visa schemes develop; new 'scale-up' training courses and indeed Schools, such as that in Cambridge, be established; impetus given to existing high impact programmes such as ELITE run by the London Stock Exchange, and the Goldman Sachs 10,000 Small Businesses UK programme, and many sectors embrace a Scale-Up agenda in their day to day work. It has also been good to observe the public sector develop an enhanced focus on how they can support these high growth businesses, whether it be through Innovate UK's refreshed 5 point plan, or the LEP network honing their focus on the needs of scale-up businesses.

However, whilst I am encouraged, we are only at the beginning of the journey and I am in no doubt that much more remains to be done. A huge prize is at stake. As the initial analysis conducted by Deloitte and Nesta shows - if we help to create in the UK just 1 per cent more scale-ups, 150,000 net new jobs could be in place by 2034 and an additional £225bn towards UK GDP could be spread equally throughout the country.

This new report comes at a timely juncture - it strengthens and corroborates the findings that scale-up companies have specific and different requirements for capital management, skills and organisational processes than start-up companies.

We all have a role to play in addressing the challenges that scale-ups face from attracting new employees with the right skills; to getting the right finance at the right time; to building internal leadership capacity and processes that support scale.

The report gives practical insights and suggestions of what is needed and drills further into the current financing landscape and what more can be done to enhance finance options in the UK for our scaling businesses. The needs on talent and skills are ever greater and we must continue to work with our schools, universities and local authorities to ensure students are attaining the right education for the jobs of tomorrow. It is also very critical that larger companies seek to help these growth businesses secure contracts both at home and abroad - such support is vital to a business seeking to scale.

Together, there is much we can do to help our Scale-Up companies. Just over a year on from the publication of the Scale-Up Report, with the impetus of the private sector, we have co-created the Scale-Up Institute which will work across the UK with our private and public sector partners to help close the scale-up gap. We have terrific, ambitious and committed business leaders in the UK and, as this work of Barclays, Saïd and Cambridge Judge reinforces, working together we can help these business leaders achieve even greater scale.

Introduction from Cambridge Judge and Oxford Saïd Business Schools: The Scale-up Challenge

Entrepreneurship is a vital part of a healthy economy – creating new products and businesses, generating employment, increasing national income, establishing new markets, and generating new wealth.

Motivation

Over the last two decades the UK has made great advances in developing a vibrant entrepreneurial sector. Start-up rates have increased dramatically, early stage capital is more plentiful, and the London-Oxford-Cambridge triangle is a globally recognised hub for entrepreneurial activity. Yet, the UK start-up revolution has largely occurred on the 'input' side: more start-ups and more early-stage investments. There is a growing concern about the 'output' side: Where are the big success stories? Where is the economic impact in terms of employment and economic growth?

The UK's entrepreneurial ecosystem cannot survive without entrepreneurial success, otherwise the rewards of being an entrepreneur and the returns on investing in start-ups remain insufficient. Over the last decade the UK has experienced the first crucial act – a start-up revolution. The second act will need to be a scale-up revolution.

The Scale-up challenge

What is the scale-up challenge in the UK? In the past three years, the UK has experienced significant growth in the number of active businesses. Since 2012, an estimated 600,000 new UK company registrations were reported, resulting in 3.3m active businesses in 2015.[1] However, although there has been an increase in entrepreneurial activity in the UK, there is a concern with the growth performance of these new companies. The 2014 Coutu scale-up report on UK economic growth argues that there are too few high-growth companies in the UK.[2] Estimated to be 10,170 in number, a growth in UK scale-up companies is described by Deloitte to have the potential to provide tens of thousands of new jobs and contribute billions to the UK economy.[3]

Entrepreneurship, start-ups, and Small and Medium Enterprises (SMEs) play a key role in the UK economy. In order to position this sector for success, attention has shifted from how to start new companies and run SMEs, to how to grow them over time. This renewed focus on growth springs largely from the realization that scale-up companies (scale-ups) play a particularly important economic role. These fast growing companies account for a large share of employment expansion.

Effective private sector initiatives and public policy programmes require a clear understanding of the mechanisms that drive company growth. The crucial question is: How are scale-ups produced and sustained over time?

Objectives

Drawing on a long pedigree in addressing the topic of company growth, Barclays launched the "Scale-up UK" initiative in 2015, with the intention of contributing new insights and policy recommendations for the scale-up challenge of the UK economy. In this context, Barclays engaged with two leading UK business schools at the Universities of Cambridge and Oxford in order to produce a report that helps tackle this challenge. The objective was to analyse two specific issues for scaling up companies - the management challenge and the finance challenge - and to propose a set of actions that overcome the hurdles identified. The report uses a research- and data-driven approach, and the output is a set of recommendations, describing actions that can be taken to improve the UK scale-up environment and help aspiring scale-ups in their quest for growth. This report is aimed at two audiences. First, entrepreneurs, managers, and founders of SMEs and start-ups seeking knowledge around the drivers of growth. And second, all stakeholders of the entrepreneurial economy, including the entrepreneurial sector, the investment community, academia, the UK government, and associated interested parties. Emphasis on the potential for cooperation amongst these stakeholders, particularly between private market institutions and public policy initiatives is highlighted.

Definitions

What is a scale-up company? The term scale-up only recently emerged in the business vocabulary, although the concept of high-growth firms is much older. The term scale-up is intended to be similar to the term start-up, to establish the connection between the process of first starting and then scaling a company. It also invokes a logic of growing something that has already been proven to be viable, which distinguishes it from a start-up that is still establishing its viability.

The 2014 Coutu Report defines a scale-up as a company with an average annualised growth in employees or turnover that is greater than 20 percent per annum over a three year period, with a minimum of 10 employees at the beginning of the observation period. Other definitions tend to be very similar, differing in terms of the minimum number of employees and additional criteria such as a maximum age (e.g., companies must be no more than 5-year-old). The business literature also frequently uses the term 'gazelles' to describe a similar phenomenon.

Scale-up can occur in relatively young companies that transition from start-up to scale-up status. It can also occur in more established SMEs that, after sometimes prolonged periods of slow growth, transition to a high growth phase. It is difficult to draw a precise line between the start-up/SME and the scale-up stage. In general, the start-up stage of a company involves product/service definition, business model development, and market validation. Scale-up occurs when a company takes a proven concept and delivers it to a wider audience, often through market penetration and geographic expansion. In the case of a company transitioning from SME to scale-up, the business concept may have been established for a longer time, but the scale-up phase occurs when the company dramatically expands the scale of its business operations.

Research approach

This report has two main chapters. In the first chapter, a team of researchers at Cambridge Judge Business School (University of Cambridge) examine the managerial challenges of scale-up. In the second chapter, a team of researchers at the Saïd Business School (University of Oxford) examined the financial challenges. Recognising the deep linkages between the two challenges, the two teams coordinated their research to provide an integrated perspective on the UK scale-up challenge.

To study scale-ups there are two complementary perspectives. One is to study scale-ups themselves, to understand their financial and managerial practices and contrast them to companies that are not growing. This perspective adopts a "company" point of view and tries to understand what the company-level growth drivers are. The second perspective is to look at the environment surrounding the population of SMEs and start-ups and to critically assess whether the state of this environment is conducive to growth. This perspective is concerned with understanding how the environment and stakeholders (e.g., investors, regulators, policy makers, and education sector) can harness or increase the frequency of successful scale-ups.

The Cambridge chapter on managerial practices focuses on the first perspective, studying the emergence of scale-ups and the drivers and dynamics of this process. The current debate of the scale-up challenge has not clearly characterised the managerial challenge, so this chapter focuses on building common ground. This effort is based on the hope that a proper understanding of the nature of the challenge will lead to improved policies as a consequence. Accordingly, the recommendations provide generic guidance on management-led growth. They also point out opportunities for further efforts to tackle the complementary environmental perspective (for example, are the management programs currently delivered in the UK appropriate for growth, and how could they be improved?).

The Oxford chapter on financing focuses on the second perspective, namely the funding challenge of scale-ups from the investing community's point of view. It assesses whether the current financing environment is appropriate for companies that are scaling and if not, how to improve it in order to better finance them. Since start-up financial choices are highly dependent on the funding offer (more than management), adopting this systemic point of view is needed to understand and address the challenge of financing scale-ups. Accordingly, this chapter identifies specific challenges in the UK environment and provides focused recommendations to solve each.

The report is grounded in a large body of relevant academic research and draw on a wide variety of data sources. The recommendations of the report were informed by numerous interactions with academics, industry leaders and policy makers. They have also been critically probed at expert roundtables in Oxford (Saïd Business School, May 2015), Brussels (Bruegel Institute, September 2015) and Cambridge (Cambridge Judge Business School, January 2016).

Professor Thomas Hellmann and **Professor Stelios Kavadias**.

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Executive Summary

Cambridge Judge Business School Project Team (left to right)
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UNIVERSITY OF CAMBRIDGE
Judge Business School

Chapter one: Solving the scale-up problem: The crucial role of management

Most SMEs experience zero or little growth. Although "gazelles", the companies that grow turnover by 20% for three consecutive years, are much talked about they are in fact a rare species: they are responsible for most of SME growth but they amount to only 2% to 4% of SMEs. While there is a widespread desire to increase the number of gazelles, high growth is extraordinarily difficult to predict as firms that have grown in the past are not necessarily the ones growing in the future.

> Previous studies have shown that effective management is a key factor in generating sales growth – this report identifies key issues that prevent companies from scaling up.

To illustrate the challenges facing start-ups the report looks at a company in the hospitality and restaurant sector

In 2015, Barclays launched the "Scale-up UK: Growing Businesses, Growing our Economy" initiative with the purpose of contributing new insights on the question of growth to the public agenda. Previous studies have shown that effective management is a key factor in generating sales growth – this report identifies key issues that prevent companies from scaling up, and presents recommendations to help managers overcome those obstacles to enable sustainable growth.

Barclays engaged Cambridge Judge Business School to address the "Management Challenge" aspect of the scale-up problem. To illustrate the challenges facing start-ups the report looks at a company in the hospitality and restaurant sector which participated in the CEO Growth Challenge programme at Cambridge Judge Business School.

After presenting our recommendations in detail, we look at how one successful venture – airline booking company Skyscanner – overcame challenges to growth through some of the management techniques we outline.

In so doing, we hope to leave the reader with a realistic and real-world picture of the difficulties in leaping from start-up to gazelle, and how effective management can help surmount them.

Our research has led us to propose six recommendations to help ventures grow. These focus on three elements of the scale-up challenge: Generic Drivers of Growth; Take-off; and Acceleration. All three are vital to creating and sustaining companies that become gazelles.

Incorporated into the study are two simple frameworks to capture the essence of high growth and the impact of management on it

- **Generic drivers of growth:** Having a commitment to ambitious growth, a top management team with the proper skills, and partners who collaborate with the firm to help share in its success
- **Take-off:** Implementing management systems that allow growth in employees and profitability through standardisation and delegation
- **Acceleration:** Developing flexible competences and strategy to allow the company to spread its wings into new markets and new areas that allow sustained growth

Incorporated into the study are two simple frameworks to capture the essence of SME growth and the impact of management on it – which often correspond to the Take-off, and Acceleration phases of SME growth.

- A "staircase framework" (for the Take-off phase): a series of management practices (such as accounting HR and sales) that enable an SME to grow beyond the level that a small founding team can handle
- A "growth paths matrix" (for the Acceleration phase):

  A structure through which firms learn new tricks, such as innovation and expansion to new markets, in order to enable growth

Our recommendations and the key issues they respond to are:

Generic drivers of Growth

- **Issue:** Many early-stage ventures may lack the will and ambition to grow

  Recommendation 1: Managers need to make a personal effort (or set up a management team) to really want growth

- **Issue:** Founders have a given expertise, but growth requires an expanded skillset

  Recommendation 2: Managers need to build a team with broad and complementary skills, supported by investors

- **Issue:** Early-stage ventures don't have the resources to build their own infrastructures

  Recommendation 3: Managers need to strike partnerships and other collaborations to help in key functions

Take-Off: starting your business

- **Issue:** The "on-the-fly" flexibility that enables ventures to launch are often the enemy of growth. Managing the operations by hands-on involvement of founders will eventually limit growth

  Recommendation 4: Managers need to ensure standardised and repeatable processes, with proper delegation

Acceleration: sustained growth

- **Issue:** Many start-ups have evolved by doing certain things without articulating their core competence

  Recommendation 5: Managers need to identify and emphasise a company's core competencies in order to invest in focused growth

- **Issue:** Many SMEs fail to look at themselves through the eyes of their customers

  Recommendation 6: Managers need to identify their firm's competitive strength in the eyes of customers, and use these strengths to drive growth

Executive Summary

Oxford Saïd Project Team (from left to right)
Denis, Carolyn, Thomas and Christian

Chapter two: Financing UK Scale-ups: Challenges and Recommendations

Thomas Hellmann, Professor of Entrepreneurship and Innovation, Team Leader; Denis Frydrych, MSc, BA, Policy Research Associate; Carolyn Hicks, MBA, PEng, MASc, Researcher; Christian Rauch, Ph.D., Barclays Fellow in Entrepreneurial Finance

The objective of this report is to assess the current state of the UK environment for financing scale-up companies ('scale-ups'), and to identify key recommendations for policy makers, industry leaders and the investment community. While the UK has experienced strong growth in start-up activity in recent years, it still faces significant challenges in financing the development of scale-ups. This report identifies areas for improvement and provides practical recommendations for directions of change. These recommendations focus on the development of a strong entrepreneurial ecosystem that is able to cultivate early-stage start-ups into high-growth scale-ups.

The UK has witnessed a 'start-up revolution' in recent years, where strong ecosystems developed to facilitate the initial stages of start-up formation. However, the growth performance of start-ups remains disappointing. While there are multiple dynamics at work, financing is widely believed to be one of the important factors. This report provides evidence that UK investors predominantly focus on early-stage investments and that there remains a funding gap for later-stage investments for scale-ups.

The data shows that there is room for improvement in the funding ecosystem for UK scale-ups. However, the UK already has a sufficiently attractive scale-up environment to attract foreign investors and foreign acquirers, mostly from the US. Moreover, compared to the rest of Europe, the UK environment looks strong, suggesting that the UK is well-positioned to lead the development of funding solutions for scale-ups across Europe. Overall there is an opportunity to turn the UK from a net importer of scale-up financing to a net exporter.

The underlying methodologies in this report are grounded in academic research and data analysis. This report utilises data from a large variety of governmental, economic, and managerial data sources. Additional insights about current market practices were obtained in discussions with the investment community, industry leaders, and policy makers. This report identifies six areas of action to address UK scale-up financing challenges: large funds, smart money, venture debt, stock markets, private liquidity, and data collection.

The short-form summary of the key recommendations is as follows:

1. Increase the number of UK venture capital funds that are sufficiently large to finance scale-ups.
2. Grow the number of experienced UK investors with in-depth sector expertise and strong international networks.
3. Develop a UK venture debt market to complement equity funding.
4. Establish the London Stock Exchange as the leading pan-European stock market for scale-ups.
5. Develop new approaches for creating liquidity in private company shares.
6. Collect systematic data about the financing of scale-ups.

The core arguments for those recommendations are summarised below, each followed with concrete suggestions for further action.

Challenge 1: Large funds

Scale-up investors need appropriate financial resources to manage a portfolio of late-stage investments. This report identifies a problem with the size distribution of UK venture capital funds. Based on investment data, the report shows how scale-ups in the US have access to funding from larger funds that are able to provide larger investment rounds, thus allowing companies to grow faster. Smaller UK funds focus their investment activities predominantly in early-stage funding rounds, and are often unable to provide follow-on investment at later stages.

Recommendation 1:

Increase the number of UK venture capital funds that are sufficiently large to finance scale-ups.

Key Actions:

- The UK needs more venture capital funds that focus on funding scale-ups. This requires fund sizes to be over £200m. More experienced venture firms should aim to raise over £350m.
- Venture capital funds should invest over an extended investment time horizon and continue supporting companies across multiple funding rounds.
- UK venture capital funds should look for investment opportunities within specific sectors, investing both within and outside of the UK, and establishing themselves as pan-European or global leaders.
- Large funds should not be raised without the presence of experienced teams. The actions of Recommendation 1 must go hand in hand with those of Recommendation 2.

Challenge 2: Smart money

The challenge of venture funding for scale-up is not limited to size alone. Venture capital requires deep expertise and broad networks in order to achieve ongoing success. Growing an ecosystem of 'smart money' requires a long-term perspective in which venture capital funds can develop their expertise and networks over time. This growth can be accelerated by linking up with experienced international players. There are benefits to inviting to the UK venture capital talent from other countries, particularly the US. Institutional investors who invest in venture capital funds also need expertise in selecting 'smart' venture teams.

Recommendation 2:

Grow the number of experienced UK investors with in-depth sector expertise and strong international networks.

Key Actions:

- UK venture funds should build on existing strength and increase their talent base by linking up with experienced global investors, drawing in particular on US expertise.
- UK venture funds should establish themselves as the European leaders of scale-up financing, turning the UK from a net importer to a net exporter of scale-up finance.
- The UK Government should work with institutional investors to renew interest in venture capital, and to build up greater expertise for making allocations to scale-up funds.
- UK policy makers and the British Business Bank should actively engage with the European fund-of-funds initiative proposed under the Capital Markets Union framework.

Challenge 3: Venture debt

While equity is the predominant method of financing entrepreneurial companies, venture debt is an innovative method of providing funds to scale-ups. Venture debt is invested alongside venture capital to companies with negative cash flows. It does not fit with standard banking practices of lending to small and medium size enterprises. In the US it is offered by a few specialized banks, as well as specialised venture debt funds. It remains in its infancy in the UK.

Recommendation 3:

Develop a UK venture debt market to complement equity funding.

Key Actions:

- UK banks and specialised funds should develop a larger venture debt offering.
- The UK Government should resolve any regulatory uncertainty surrounding the lending of venture debt.
- Scale-ups and their investors should simplify their capital structures to more easily accessible venture debt.
- Data on venture debt deals should be gathered more systematically.

> The UK needs more venture capital funds that focus on funding scale-ups. This requires fund sizes to be over £200m. More experienced venture firms should aim to raise over £350m.

Challenge 4: Stock markets

Stock markets are not only a natural funding source for scale-ups, they also play a crucial role in providing liquidity to investors. However, IPOs constitute only a small portion of exits for venture-backed companies in the UK. Companies that are going public in the UK are also increasingly older. Stock markets only provide effective liquidity if there is a critical mass of buyers and sellers trading in those stocks.

Liquidity requires market depth, which means sufficient interest from institutional investors, alongside appropriate analyst coverage. Building such specialised market expertise only on the basis of UK high-growth companies remains difficult, due to the relatively small size of the segment. Linking up with other leading European stock markets might considerably increase the depth of the market. The recently announced merger of the London Stock Exchange with the Deutsche Börse provides a unique opportunity for this.

Recommendation 4:

Establish the London Stock Exchange as the leading pan-European stock market for scale-ups.

Key Actions:

- The LSE should continue and enhance its efforts to cater to the needs of scale-ups, most notably by rethinking the design of the High Growth Segment.
- The LSE and the Deutsche Börse should work alongside other leading European stock markets to create a liquid market for scale-up stock.
- Government, industry leaders, and the investment community should work on invigorating the interests of UK institutional investors in investing in public listings of scale-ups.
- Government, industry leaders, and the investment community should work on novel solutions for improving the level of analyst coverage of scale-ups.

Challenge 5: Private liquidity

Venture investors can obtain liquidity from listing their companies on stock markets, or from selling the company in a trade sale. However, a third possibility is the (partial or complete) sale of shares to other private investors. So-called 'secondary' transactions are increasingly commonplace for private equity investors in the buyout segment. However, for venture investments the secondary markets remain highly fragmented. The economic benefits of secondary transactions are potentially large, especially for earlier-stage investors, founders, and employees. A key problem for secondary share transactions is insider trading.

Counteracting this requires transparent company disclosures, and extensive buyer due diligence. The recent rises of new financial technologies, and the development of electronic crowdfunding platforms, provide new opportunities for the creation of a more efficient secondary marketplace. There is also an opportunity to rethink the restrictions and investment policies of venture capital funds, which sometimes preclude funds from becoming buyers of secondary shares.

> The recent rises of new financial technologies, and the development of electronic crowdfunding platforms, provide new opportunities for the creation of a more efficient secondary marketplace.

Recommendation 5:

Develop new approaches for creating liquidity in private company shares.

Key Actions:

- The UK Government and the investment community should find new and more efficient ways of trading secondary private company shares.
- Later-stage venture capital investors should be open to using some of their funds for providing liquidity to founders, employees, and early investors.
- New electronic platforms should work with the industry to design a new marketplace that attracts a critical mass of buyers and sellers in secondary shares.
- The UK Government should revisit the regulation and taxation of secondary share transactions, to enable an active market in private liquidity.

Challenge 6: Monitoring Scale-up Progress

In order to monitor progress on the scale-up funding environment there is a need to continually track performance. Current data collection efforts remain incomplete and disjointed. The report explains the areas where data collection on key metrics could be improved.

Recommendation 6:

Collect systematic data about the financing of scale-ups.

Key Actions:

- The broader community of scale-up stakeholders should contribute to creating a more credible and comprehensive dataset that includes both investment and exit data.
- Investment metrics should focus on funding, valuations, investor experience, and syndicate networks.
- Exit metrics should focus on measures of investment horizons, exit valuations, and investor returns.
- Government and industry professionals should coordinate with the Scale-Up Institute to establish best practices and more unified approaches.

Chapter one, Cambridge Judge Business School: Solving the Scale-up problem

1. Framing the challenge of Scaling Up

To understand how to overcome scale-up challenges first we need to identify the factors which cause these obstacles to emerge. Focusing on the management question creates a perspective which can easily be used to implement direct actions that changes the attitude of SMEs towards growth. Framing the issue of growth as a management problem immediately gives agency to the organisation to make changes and be proactive in developing a growth plan.

The issue of why so few start-ups achieve impressive growth is one that has been extensively explored. In preparing this report we undertook a review of literature but also spoke to many entrepreneurs at various stages of their entrepreneurial journeys. These included those taking part in the CEO Growth Challenge programme at Cambridge Judge Business School. We also reviewed recent survey data for the population of SMEs in the UK. This process led to the identification of unique features of SMEs as well as major managerial factors related to their growth. This review also highlighted the limitation of the typical programs that try to tackle the management challenge of SMEs and Start-ups.

Finally, we identified unique features of SMEs which relate to their growth. In order to develop a targeted approach to SME growth it is this set of features which can be used to describe the particular challenge to SMEs. Those described are ones which both enhance and inhibit SMEs, introducing strengths and weaknesses in relation to their potential for growth.

Five unique features of SMEs	
Lack of resources	By definition, an SME lacks the resources that a larger firm has. SMEs have to learn to manage around this constraint.
Lack of managerial systems	Inevitably, and because they can "get away with it", at their inception SMEs lack the sophisticated managerial systems often found in larger organisations. At first, SMEs can operate well enough without such management systems because the founder can coordinate and manage by personal involvement. This turns into a weakness when growth increases the number of elements that require managing.
Frugality and flexibility	Big elephants can dance, but not as quickly and gracefully as mice. Simply because they have a smaller size and less inertia, SMEs are able to change direction quicker and at lower cost. However, flexibility becomes an advantage only if the SME does not get paralysed in the face of threats and uncertainty. This can occur when resources are weak and survival is at stake.
Customer focus	Decision makers in SMEs are closer to customers than decision makers in larger firms. Simply by virtue of being a smaller organisation, the amount of direct interactions between founders and customers is more frequent. This is an advantage when founders can translate the customer closeness into valuable offerings in the marketplace.
Centrality of the founder	Evidence shows that the founder is key not only for the early years of an SME but also later in its lifecycle. The persistence of traits imprinted by the founder on the firm is strong and can last for several decades. This condition is a weakness when the founder overstretches and loses control as the firm grows. In addition, it is arguably more difficult to attract professional talent to senior management positions in founder-centric firms; chances are that these professional managers might prefer established firms rather than replace a founder or a team with a managerially active founder. This condition is an advantage when the founder adds value to the company through deep technical knowledge, effective style and leadership.

Increased managerial effectiveness has been consistently related to higher growth, particularly for SMEs and Start-ups. Recent research shows that increasing the effectiveness of management practices by one standard deviation generates a 3-7% increase in yearly sales growth; moreover, this figure increases the smaller the firm.

The specific growth factors that we identified in our review include structural, mindset and skill orientations among both the entrepreneur and the top team which then bleed into the approach taken by the business as it sustains and grows itself.

These six managerial growth factors are "generic" growth factors, relevant across the different growth stages of SMEs.

Six major factors related to firm growth	
Will to grow	A crucially important factor, albeit an obvious one. A large proportion of SMEs express limited desire to grow in the future. This may be for a variety of reasons that often revolve around issues relating to managing work-life balance or a desire to keep firms small so a founder can manage alone or with only a few employees. In addition, family ownership of firms further reduces the "will to grow" in small firms and makes them more conservative, often with a greater focus on current profits than growth potential.
Emphasis on the customer	Because of their scale, SMEs are in a privileged position to engage with customers and integrate that experience into their value propositions. This should work to the advantage of SMEs that want to grow rapidly.
Prior experience and top management team (TMT)	If the TMT has prior experience in the industry or with ventures, growth is more likely. Industry experience makes the TMT better prepared for the crucial details of industry dynamics, and previous venture experience enables them to learn faster from mistakes and successes. However, industry experience needs to be complemented by a broad and diverse skillset in order to maximise growth.
Alliances, Partnerships and Collaboration	A defining feature of SMEs is their lack of resources. The firms that grow successfully need to engage with their business ecosystem (customers, suppliers, etc.) in order to both leverage external resources and grow more internal resources. Many of these engagements take the form of formal alliances between the entrepreneurial firms and established companies.
Delegation and formalisation	Many small SMEs are managed and controlled by their founders, but such centralisation imposes a limit on size known as the "bottleneck of one mind". To grow beyond this limit, a formalisation of roles, organisation and processes is necessary – and such formalisation is often a prerequisite to successful delegation that allows growth without sacrificing decision speed and quality.
Innovation	Innovating in new products, new services and new technologies can spur growth. However, it's important to recognise that only a small percentage of innovators enjoy spectacular growth and such rewards tend to be concentrated in high-tech sectors.

In addition to the evidence of the positive impact of management on growth, research also shows that a successful adoption of management practices is tricky and rare as it requires expensive and lengthy change programmes. SMEs and Start-ups have to be able to "absorb" these practices successfully; this is not readily done if programmes are short and not sustained over time.

Furthermore, evidence from the UK (as well as other developed economies) tends to show that the type of interventions (or programmes) that are typically carried in SMEs are "lightweight", lacking the depth and length to provoke a lasting change in the treated companies (for example, sporadic mentoring).

> Recent research shows that increasing the effectiveness of management practices by one standard deviation generates a 3-7% increase in yearly sales growth.

2. Two simple frameworks for understanding SME Growth

The managerial challenge of scaling up companies requires us to understand and describe the problem adequately. Conceptualising the abstract challenge and developing genuine tools to understand and describe the problem will develop a route to creating real solutions. This descriptive effort is an important prerequisite for effective policy that complements the identification of specific growth factors of the previous section.

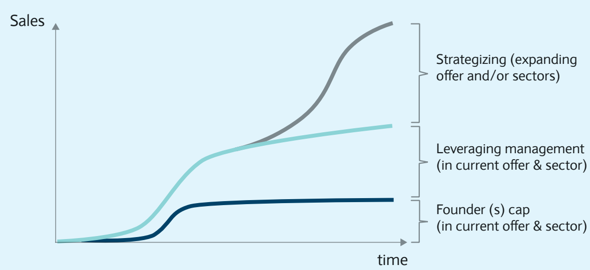
In building a set of frameworks we immediately create a canvas onto which entrepreneurs can project their own ambitions and plans for growth; these can also provide a common framework for people looking to assess and understand the potential growth of an SME.

We propose two simple frameworks to capture the essence of SME growth and the impact of management on it. These two frameworks correspond to two key phases of SME growth – Take-off and Acceleration.

- **The "staircase framework":** Provides a way to think about an SME that is growing its starting offer, going from an idea to an actual service or product being sold at the marketplace. This is the Taking-Off stage of SMEs and start-ups. Here, management practices – a set of systems, or bundles (e.g., accounting, HR, sales, logistics) – enable the SME to grow beyond the complexity that the Founder or Top Management Team (TMT) can handle by personal involvement. If no management practices are present, complexity limits expansion. The green and blue lines in Figure 1 represent how management can impact this first stage of SME growth.

- **The "growth paths matrix":** tackles the growth phase that we label as Acceleration. This phase happens after the starting offer can no longer continue to expand in the current target market or sector. This may happen through a myriad of factors, and of course, varies across firms and sectors. Here, management needs to be complemented by innovation and strategy, requiring that the Founder or the TMT explores "new tricks" in order to grow. The grey line in Figure 1 represents this phase. Four generic growth paths emerge in this phase: 1) innovating your current offer to expand its reach within the current sector, 2) expanding (or widening your offer) within your sector, 3) leveraging your skills or competences in a new sector, 4) a combination of paths 2 and 3.

Figure 1 General Analytical Framework



The First Growth Stage: The "Staircase" Model

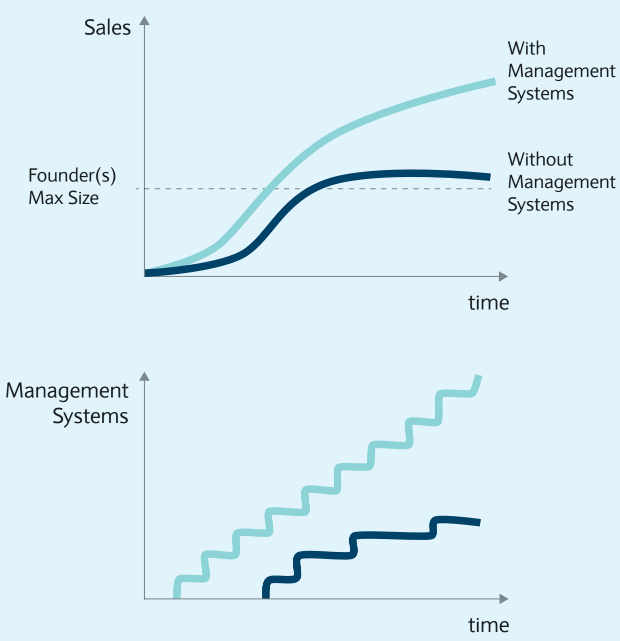
This framework covers the early growth stages of a start-up. We define the early stage as the growth that happens with the initial offering in the firm's initial sector of activity – a set of products and services that form the core offering to customers. This offer includes product expansion or product proliferations that are common in many sectors. These product proliferations add incremental features or make small changes (e.g., in packaging or size) to a product base, but essentially it remains unchanged as a category.

The staircase model is depicted in Figure 2. The upper graph states that with the implementation of management practices, more growth is achievable than without. The bottom graph represents the two corresponding growth trajectories as a function of the adoption of management practices over time.

The framework provides two key insights. First, without management practices the size of the SME is capped by what the founder(s) can manage by themselves using a hands-on approach. If management practices are not put in place, growth is impaired by firefighting or by a more severe "founder crisis" (represented in Figure 2 by the dotted yellow line).

The second key idea illustrated by this framework is that management practices come in "bundles" or "systems" (e.g., "HR systems", "Logistics systems", "Accounting systems", etc.). This is represented in Figure 2 by the "staircase" shape of the lines at the bottom graph. For example, HR evaluation systems include the elements of written performance objectives, written performance evaluation forms, links between performance and compensation, and individual incentive programmes. When a bundle is adopted, a new step in the staircase is climbed.

Figure 2 The "Staircase Model"



The light blue line is associated with the growth of a firm that frequently adopts management system bundles, while the dark blue line is associated with the growth of a firm that adopts only four management systems at a varying pace.

Since these bundles and systems are not completely independent – they interact with each other at many levels (e.g., IT systems with accounting) – they have to be properly selected, sequenced and absorbed in order to help the organisation grow. Moreover, the selection and sequencing of the systems (the "stair steps") are contingent on the environment and the TMT.

The usefulness of different management systems varies across different sectors. For example, in mining of commodity minerals, the "equipment maintenance" system is likely to be more important than the "marketing system." Similarly, different founders might hold different expertise or abilities with different types of managerial systems. A founder with a background in finance and accounting will have an easier time adopting the "accounting and financial planning systems".

The Second Growth Stage: The "Growth Paths Matrix"

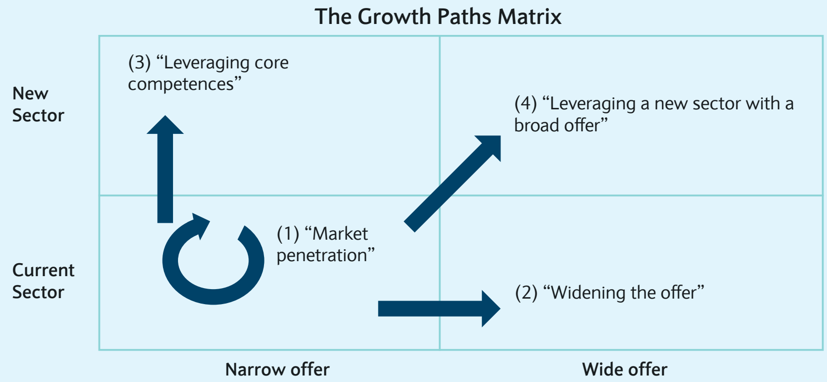
The adoption of standardised management systems addresses existing inefficiencies in terms of operations, coordination, marketing etc. within the current products and sectors. Therefore, the growth potential from this adoption runs up against a natural limitation: the management systems can capture readily available value, but they cannot generate new value.

New value generation requires the development of a broader approach to growth. High growth cannot simply be the outcome of a process that brings together piecemeal solutions (like typical management systems), but requires a coordinated set of actions with a clear strategic objective.

Both past research and our extensive work with SMEs in the CEO Growth Challenge programme at Cambridge Judge Business School identify two decision dimensions that underpin a company's growth approach: first, whether the company seeks growth through the same offering (set of products, services and solutions), or whether it expands the offering; second, whether the company seeks growth within the same industrial/market sector, or whether it ventures into a new one. The sector can be operationalized as the 4 digit standard industry classification (SIC) code.

We can immediately associate the former dimension with the supply side and the latter with the demand side. The two dimensions indicate possible "growth paths" that may take a company from the current sector and offering to multiple sectors with a diverse set of offerings (see Figure 3).

Figure 3. The "Growth Paths Matrix"



Example case: A venture's challenge in the second growth stage, "Culinary Ltd."

What do these four growth paths in our matrix mean in terms of managerial actions, upsides and risks? How can they be overcome so a company becomes one of those rare gazelles? To examine and illustrate this, we use an example of a company that has gone through the CEO Growth Challenge programme at Cambridge Judge Business School: an SME that operates in the hospitality and restaurant sector that we will call "Culinary Ltd.".

Culinary operates three restaurants that are quite similar: they feature a wide menu, have an English pub-like ambience, and offer community-like customer service. They all operate within one county, differing only by location. In other words, the current strategy of Culinary is to exploit a particular sector: that county's residents and visitors, through a specific type of offering, the type of restaurant described above. So what are Culinary Ltd.'s possible avenues to growth, and what are the obstacles to each of them?

Market penetration

Culinary could open more similar restaurants within the county, but it is rare that companies can grow very large through such a market penetration strategy focusing on its current (and possibly original) offering. Although standardised management systems can help, successful and sustained market penetration requires the availability of a competitively differentiating characteristic that makes the playing field not level – such as a first mover advantage or intellectual property protection, rare in the restaurant and hospitality sector. A market penetration approach can also become a behavioural "straightjacket" for the TMT: in their attempt to grow the current market, they over-focus on current capabilities and customers, and lose their ability to undertake other paths.

So while Culinary can adopt state-of-the-art supply chain practices that enable standardisation and may consider opening another similar type of a restaurant (a pub-like offering) in another location within the same county, this approach may only work for a short while. That's because the number of people wanting a pub experience in that county is limited, and the uniqueness of Culinary's offering is challenging; they may be attacked by a larger chain that can produce a better experience or delivery at lower cost.

Widening the offer

This growth path involves the exploitation of the same market or sector through a broader portfolio of offerings. Such adaptations go beyond simple product proliferation by being able to address and solve new customers' needs and problems, or alternatively, to address current needs with new and novel offers. So Culinary may open a new restaurant alongside the existing ones but with a clearly different value proposition; perhaps a more focused menu of healthy and organic cuisine, or a menu of locally brewed beers without any wine offering. However, such broadening of offers is often easier said than done. It requires a deep understanding of customers' needs (deeper than asking customers "what they want"). In addition, the new offer might also cannibalise the current offer, and require more commitment and patience from senior management.

This growth path is harder than market penetration, but on the upside, it creates new value potential because it attracts new customers (in the same sector), therefore, the company can go further before reaching its limit.

Leveraging core competences

This path experiments with a new market sector, so Culinary could leverage its core competences through a growth strategy into the personal and/or corporate catering sector. The core competences would not drastically change (the core operations remain the cooking of a wide variety of dishes, possibly even the same variety as in the restaurant offering). Yet, new skills are added (project-like logistics and organisation of events), and moreover, the customer interactions drastically change, for example, transactional/contractual engagements and on-the-day service needs. This growth path would stretch Culinary senior management's comfort zone as to the identity of their company; sometimes, this may require the drastic step of starting another sister company to do this.

Leveraging a new sector with a broad offer

This last growth path is simply the combination of the previous two, so its complexity and the combined number of conditions that need to be met for success make it a much tougher approach to undertake. This path is undertaken very rarely – we have encountered only few companies that attempted it. For Culinary this path may consist of opening a new standardised restaurant formula (say, a "vegan grill family pub") and rolling it out across all of England, some restaurants owned and some franchised. The risks in terms of investments, new skills, and market acceptance are evident, and few SMEs dare to take this step.

These different growth paths require different skills – in Table 1 below we characterise these differences in broad terms. The focus of Path 1 is in exploiting the current offer in the current sector as fully as possible. This requires a strong focus on managing strategy execution and operations successfully.

In contrast, going beyond the current offer and the current sector requires more than just management and execution; it requires exploring "new tricks". This exploration is difficult and requires a renewed focus on leadership and strategic thinking.

Table 1. Executing old tricks v/s Strategizing for renewed growth

	"The old/common tricks" (Path 1)	"New tricks" (Path 2, 3 and 4)
Logic for value:	Exploitation of current offer	Exploration of new offers and markets/sectors
Focus on:	Management	Leadership
Challenge:	Execution and operations	Strategy
Environment: (best in)	Stable environment	Dynamic environment

However, developing this new skill is difficult. First, strategic thinking doesn't come naturally. What many companies think is a proper strategic plan is often just an expression of goals and desires. Strategic thinking requires a clear understanding and definition of how the new offer is going to be marketed and served and the coordinated sets of actions that will fulfil the new strategic objectives. Second, this has to be done without losing sight and control of the current business: exploring new offers and sectors might distract from core and current offerings. Of course, if the new offers and sectors are good enough, the current sector might be partially sacrificed. However, companies often have to juggle both challenges together and struggle to address the (sometimes contradictory) logics of their differing demands. When things do not go well, they quickly revert to exploiting what they know, sacrificing the valuable opportunity to explore new horizons.

3. Recommendations for managing Scale Up

Despite the many and real challenges faced by the likes of Culinary Ltd. some SMEs do in fact become fast-growing and sustainable – gazelles and beyond. The challenge factors outlined above and the features of SMEs that can be leveraged or minimised are solvable and manageable when tackled with foresight and proactivity.

Our research and practical experience with successful companies finds that effective management has identified the issues standing in the way of growth and taken steps to conquer or at least neutralise those obstacles. The frameworks proposed create a lens for understanding how to integrate ambition with action and potential with reality.

Following are six recommendations based on the insights gained. These are framed within the three instances in the scale-up challenge – the Generic drivers of growth and the two stages of growth: Take-Off and Acceleration.

- **Generic Drivers of Growth:** Having a commitment to ambitious growth, a top management team with the proper skills, and partners who collaborate with the firm to help share in its success.

- **Take-off: starting your company:** Implementing management systems that allow growth in employees and profitability through standardisation and delegation.

- **Acceleration and sustained growth:** Developing flexible competences and strategy to allow the company to spread its wings into new markets and new areas that hold allow sustained growth.

In this way we hope to present an actionable and valid set of tools which provide a route for SMEs and those who work with them to develop a sustainable growth plan to lead to Scale Up.

Generic Drivers of Growth

Issue 1: Ambition. Without the fuel of ambition, growth won't happen, no matter how promising the underlying technology or the competitive position. Growth does not just happen; it must be won, against external indifference or competitive counteraction. Growth is the result of an active effort, made easier but not inevitable by competitive strength.

Given the obvious appeal of growth, why would not everyone want to focus on this effort? The answer is that it takes the founder to want growth – most people shy away from the risk, potentially seeding a risk-averse culture or have other priorities.

One CEO commented, "We could grow beyond the region, we have a good position, but you know, I have two sons who I love to accompany to their football games, and see them for dinner. If we pursue strong growth, I can see the long-term payoff, but I don't want to give up my family." Wanting it, and either making the personal effort or finding a way to set up the management team so that it can be pursued collectively in some way, is a prerequisite.

Recommendation 1: Commitment to grow

- **Action 1:** To grow, management must make a commitment to ambitious growth targets, and then develop plans and actions to find ways to achieve them
- **Action 2:** Stakeholders, and especially investors, should test this commitment by regularly discussing the growth ambition, and targets flowing from it, with the Top Management Team (TMT). The government can encourage entrepreneurial ambition (which is rare!) by publicly acknowledging the contribution that CEOs of successful SMEs make to the economy and jobs. This could be made a requirement for SEIS or EIS funding and/or statutory reporting.

Issue 2: Founder/team. Start-up founders are successful based on their expertise and their vision, which they pursue with perseverance and ambition. However, scaling-up requires a slightly expanded skillset: the building and maintenance of an organisation.

What underlies such a skillset is the capability to channel the emerging complexity. It is a well-known phenomenon that companies die as they grow, because the founder can no longer control (and sometimes understand) the growing complexity of the business. Therefore, the founder should enlarge his or her knowledge and capacity by assembling a management team of people with complementary skills (including management and organisational skills) in order to build an organisation capable of growing.

For example, there is a recent trend that SMEs hire people with MBA degrees (a qualification that used to have the reputation of characterising "big company types") because they can add general management skills to the TMT of the SME. For example, sales and marketing, external relations, processes, purchasing, cost control, and people development and leadership. Other stakeholders with similar skills to an MBA, such as accountants, bankers or experienced executives, could provide 'mentor' type non-exec directors to these growth businesses.

Recommendation 2: Build broad management skillset

- **Action 1:** SMEs and Start-ups must expand the founding team (and sometimes replace members) to build a TMT with broad, complementary skills commensurate with the complexity of the growing organisation
- **Action 2:** Investors and lenders should hold the founder (and CEO) accountable for building a broad TMT. This should be a regular discussion item at board meetings

Issue 3: Partners. SMEs frequently do not have the resources to build their own infrastructure, needing to obtain many services from the outside:

For example, they may:

- Purchase technologies in the form of machines and processes;
- Rely on external sales channels (such as wholesalers and retailers or foreign representatives);
- Fulfil personnel and legal requirements through professional service firms;
- Run their logistics via external service providers,

The SME needs to identify what the activities are that it masters (related to its core competences) and that are essential for the uniqueness (competitiveness) of its offering. They should only invest in providing these activities internally.

Beyond these activities, SMEs should build a network of partners, with whom they can provide all the other activities. Such partners include service providers, sales channel partners, suppliers, and can also include customers (who may, for example, be willing to help with market information). The partners for the various activities are of strategic importance and need to be actively managed as a resource – it is not sufficient to have contractual suppliers that are handled independently in various departments (such an unmanaged approach will lead to under-provision, or to a proliferation of unnecessary and unreliable arms-length suppliers).

Recommendation 3: Build collaborations

- **Action 1:** SME management needs to build and organise a strategic function that manages critical partners in important activities. This function can, but does not have to, sit in purchasing. The function must be able to identify strategic activities and point out partners that help perform and innovate in these activities
- **Action 2:** Investors and lenders should force the TMT to present (for example annually) an overview of strategic partners and a list of suppliers. This should be discussed in the context of strategic priorities

Take-Off: starting your business

Issue 4: Management Systems. Start-ups are famous for their flexibility; they can make up anything "on the fly." But the flexibility found in small businesses can become the enemy of growth. A growing SME needs to develop standardised and robust ways of doing things, such as identifying a customer lead, closing a sale, shipping, hiring people, promoting people, and developing the next generation of products.

Standardisation requires formal processes, which are supported by standardised management systems. All routine systems can be "purchased" today both in terms of description as well as in terms of IT support. While some founder teams loath the "bureaucracy" that comes with standardisation, evidence clearly shows that without them, growth is not achieved.

Recommendation 4: Establish standardised processes

- **Action 1:** SME management must identify a priority in which key processes need standardisation, and invest in purchasing support systems including IT and train personnel accordingly. As the company grows, the number of standardised processes will need to grow, through continued investment. More processes will also require more emphasis on coordination
- **Action 2:** Once these management systems are put in place, management must delegate in order to enable a size beyond what the founder or the senior management can manage by personal involvement. Investors and lenders should help the SME senior management team to become knowledgeable about process platforms (for example, through participation in courses), and the investors should hold the TMT accountable for building robust management systems that can scale. For example, investors can hold an annual review in which a process roadmap is discussed and its execution monitored
- **Action 3:** At the policy level the UK should focus its effort in developing and promoting programs that increase the management efficiency of SMEs and start-ups. These programs should avoid "lightweight" interventions. Instead, they should provide in depth extensive training to SMEs in order to provide a meaningful and lasting impact on growth. If necessary, coverage should be sacrificed to favour higher depth and length of interventions

Acceleration: sustained growth

Issue 5: Core competence. Successful start-ups sometimes know what their core knowledge is about. However, many SMEs have simply evolved by doing certain things and have never asked what the core knowledge, or skill, is that underlies the value they provide. If the core competence is not understood, a company may invest in the wrong things (peripheral, or too difficult).

Understanding the core competence underlies the capability of articulating a strategy. For example, for many SMEs, technology is not a core competence (technology is externally sourced in the form of machines or processes); rather, a detailed understanding of customers and how they use the product is a core competence. Knowing the core competence then enables the company to invest into application engineering (making small adjustments to the product that are in tune with helping the customer become more productive) rather than in basic technology (which is often too risky and too expensive).

Recommendation 5: Identify core competence

- **Action 1:** SME management must identify and articulate the core competence(s) of the company – the unique knowledge that underlies its capability to compete. If the company has evolved without being clear on its core competence, this should be done as a project ("what do we need to know, without being able to source it externally, that enables us to deliver our product or service?") Knowing the core competence enables the firm to develop a strategy

Issue 6: Strategy. Many SME management teams think about what they offer the market, and how well their customers like it. A typical strength of SMEs is that they are "close" to their customers: the SME asks the customers what they like and what they do not like, and the SME is responsive in solving the problems or shortcomings that the customers point out.

However, our interactions with SMEs consistently show a latent deficiency: few SMEs step back and look at their companies "through the eyes of their customers". They build a (slightly) distorted self-perception based on their own definition of the quality of their interactions with the customer.

For example, one SME that performed web hosting for its customers assumed that it was responsive to its customers because it had a streamlined administrative process. However, when the TMT inquired more deeply, they found out that the customers, while happy with the speed of response, were not satisfied by the quality of the problem solving. This revealed a competitive weakness which the SME had underestimated. Another SME, which offered a food ingredient to retailers, was convinced that it had the best "engineering" quality (purity of grains), and overlooked that customers, and retailers, were looking for convenient packaging and a variety of grain types to suit varying usage needs.

Strategy refers to a positioning in the market that provides differentiated and higher value to the customer. This value may stem from engineering quality (emphasised in the thinking of many tech start-ups), but also flexibility and problem solving, all the way to emotional benefits (such as the customer feeling it is taken seriously and cared for).

On the other hand, the offering must avoid simply adding incompatible products (in terms of production and delivery) and thus avoid cost escalation due to complexity. Many SMEs add products, as their customers demand, without a proper analysis of whether these additions will create synergies in the market (such as a common brand) or cannibalisation, and whether the added products will escalate complexity and costs (rather than providing economies of scale, e.g. a technical platform).

Therefore, undirected growth through added products becomes a cost trap for SMEs that undermines them rather than strengthens them.

Recommendation 6: Articulate competitive strength

- **Action 1:** SME management needs to develop a clear articulation of its competitive strength in the eyes of the customers, and how this strength is related to internal processes and knowledge. This needs to drive an identification of the relevant growth path in a way that allows scaling without leading into a complexity trap
- **Action 2:** Investors and lenders should discuss strategy regularly with the TMT. Education is available for SME TMT's to become knowledgeable and comfortable with the creative process of strategy articulation, and strategy should also be a regular discussion item at board meetings. It is one of the key responsibilities of a board to question and examine an SME's strategy. Customer viewpoints should be brought into strategy discussions on a regular basis

Table 2: Summary of recommendations

	Actions for... SMEs trying to grow	Actions for... those supporting SME growth (including policy makers)
Generic Drivers of Growth		
Commitment	Commit to ambitious growth goals and milestones and share the vision	Investors can check for the presence of commitment to growth through regular discussions of ambition and targets.
Founder/Team	Develop and empower a professional top management team that is complementary in skills: commercial, technical, strategy, execution (processes).	Investors are already looking at the quality of the TMT as the resource that is being invested in. Investors should add leadership development as a condition for scalability.
Partners	Develop extra-firm support and collaboration, e.g., professional board, alliances, suppliers and financiers.	Promote interaction among entrepreneurs and their stakeholders. Track and showcase successful alliances.
Take-Off		
Management systems	Scale-up requires standardisation and repeatability. Develop an understanding of the portfolio of required management practices and develop/apply them selectively throughout the growth process. Couple the process of implementing management practices with increased delegation.	Raise awareness and make education available on management systems, so entrepreneurs and managers of small firms understand them and can go to adoption. Investors and lenders should make standardisation (at least in a minimal form) a criterion in positive investment decisions Develop and prioritise training programs or interventions that privilege in-depth application of practices rather than simply exposure to them.
Acceleration		
Core competence	Develop flexible and valuable core competences from the outset (e.g., brand, technology, customer knowledge). Apply them to carefully identified and underserved suitable market(s).	SMEs often do not think in terms of core competency, they think in terms of what is being delivered to the customer. A clear articulation of the core competency (if necessary, with the help of coaching) can be a condition for investment/lending.
Strategy	Strategy defines the offer, seen through the eyes of customers, and of the organisation. Avoid reactive and complex product proliferation; instead, seek opportunities to leverage either the current market or the unique competencies.	Stakeholders should offer the possibility (and encouragement) for SME TMTs to look at themselves through external eyes, and to strategise scalable offerings, and demand such thinking for investment /lending decisions.

Example Case: The Challenge for a Growth Venture: "Skyscanner"

UNIVERSITY OF CAMBRIDGE
Judge Business School

The success over the past 15 years of online air travel company Skyscanner shows how one start-up was able to navigate the various obstacles to growth through incisive and effective management.

This company started in 2001 when CEO and co-founder Gareth Williams was struggling to compare airline tickets online for his ski getaways in the French Alps in between his contracts as a programmer. The process of searching multiple websites for the best offer was difficult and tedious. Gareth envisioned a solution: a single website that could collect, collate and compare prices for every commercial flight in the world.

After a pub brainstorming session with friends and co-founders Barry Smith and Bonamy Grimes, Skyscanner was born. They started the venture as a secondary job, but after the site picked up traffic, they quit their jobs in 2003 and formally launched Skyscanner, establishing an office in Edinburgh. By 2015, Skyscanner was a global travel search site with 770 employees in 10 offices across the world, and revenues of £112 million from 11.2 billion bookings by 50 million unique monthly visitors.

Skyscanner exemplifies our models of SME growth: it both expanded its offer and entered new sectors. Its first growth spurt came from geographical expansion, adapting the same basic offering across Europe between 2005 and 2010, including new offices in Barcelona and London. (This corresponds to path 1 or the "market penetration" path in our growth matrix.) The second growth spurt came from expanding its offer (path 2 of our matrix) to cars and hotels, partly through acquisition of companies such as Spanish hotel comparison website Fogg. Finally, Skyscanner expanded into new sectors/markets (path 3 of our matrix) including China and other parts of the Asia-Pacific region, which required establishing a local engineering team in China to develop a product for Chinese travellers.

So how did Skyscanner address some of the issues we have identified? [1]

Ambition and will to grow

Founder Gareth Williams indicated: "I do think a desire to persist and to win is absolutely essential, because 99% of your day is testing your persistence, not your quality of thinking." This will to grow will continue to matter in the future: "Despite our progress, we still see ourselves as being in the early stages of our development as a company, as well as an industry. There is so much more we want to achieve, and we've some exciting plans for the year ahead."

Prior experience and top management team (TMT)

At Skyscanner, the three cofounders were programmers who were deeply immersed in the IT industry. Reflecting on these issues, Gareth Williams indicates that "for an Internet economy company, I believe you have to have at least one person on the founding team that is technical in background."

Delegation

Skyscanner actively attempts to "enable people". Says Mark Logan, Chief Operating Officer: "The problem comes with illusions of control; people think 'if I control everything, we'll get better results'. But if you focus on enablement rather than control, you get a lot more energy in a business. We firmly believe in encouraging people to own their job. It's about trust. I want the business to be run by the people on the front line, not from some far off ivory tower. If you get people into the right frame of mind, they'll take care of the rest."

1. All the quotes and interviews used here can be found at their website: www.skyscanner.net/media. Some of the quotes of the Founder and CEO Gareth Williams are also taken from the following interview: http://www.huffingtonpost.co.uk/heather-irish/skyscanner-ceo_b_6948710.html.

Management Systems

Reflecting back on past mistakes, Gareth Williams mused in 2011: "I didn't sufficiently recognise the importance of management and leadership. I underestimated the difficulties of getting a team of people all working in the same direction… I could have done more to… provide an environment that encouraged management."

Frank Skivington, the Chief Commercial Officer, remembers that the adoption of commercial practices, geared to make revenue happen, was difficult at that time: "When I started around 2008, Skyscanner was going through some natural growing pains. At that stage there was a big disconnect between the technical side of the business and the commercial side. For example, we wanted to add some display advertising to the site, a 'simple' way to start generating revenue, and I was given a 40 page internal document on how we were going to build our own ad server (which would have taken months if not years) rather than getting one off the shelf like every other web business."

These quotes illustrate a common mistake in growing companies. Execution takes over, sometimes complicating things, and often losing sight of the importance of establishing managerial practices that support collaboration towards a common goal.

Strategy

Gareth Williams: "I also underestimated the amount of communication required to create a shared vision. Time can barely be wasted in the communication of vision and strategy. Instead of leading by demonstration, I could have done more to lead by inspiration." This quote highlights the need to develop a strategy and vision, and get the organization to follow it.

Conclusions

Making the leap from promising start-up to fast-growing company is not an easy task which is why so few ventures are able to make that challenging transition. Yet the success of a company like Skyscanner demonstrates that it can be done if management effectively follows some simple steps to enable a venture to progress from Generic Drivers of Growth to Take-off to Acceleration.

This report sets out six core recommendations for management of SMEs that may help navigate the many obstacles to start-ups becoming world-beating gazelles: a will to grow, building a strong and broad team, establishing partnerships, developing effective management systems, identifying core competencies, and articulating competitive strengths.

We don't pretend that following these six recommendations alone will create huge success and rapid growth, but we do believe that just a half-dozen key management guidelines can help many companies become more successful – and hopefully make gazelles a less rare species in the world of business.

Appendix 1 – Cambridge Judge SME CEO Growth Challenge: Illustrative Cases

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In this section we show how the growth path framework corresponds to the context of two cohorts of the SME CEO Growth Challenge programme delivered by Cambridge Judge Business School.

The SME CEO Growth Challenge programme was established in 2015 by Cambridge Judge Business School as an effort to engage with SME companies in different locations and enable them to assess, craft and establish growth strategies. The programme comprises a series of high contact modules, where Cambridge Judge Business School faculty (i) introduce frameworks that help the participating CEOs to think about their growth strategies, their customers, their operations and their leadership skills, and (ii) support them in using the frameworks to develop their actual growth plans.

Two cohorts of companies have participated, one in Cambridge and one in Cochin in the state of Kerala in India (with 9 companies in the UK and 7 in India). Table 3 indicates their industrial sector and their recent or projected growth path (also displayed in Figure 4). Due to confidentiality issues, the companies involved in the program are anonymised.

Table 2: Summary of recommendations

Number	Economic Activity	Growth Path
UK		
1	Restaurant	Path 1 and Path 3 (Historical growth by expanding geographically. Currently contemplating entry to hospitality sector)
2	Construction	Path 1 (Continue to exploit a highly specialised and defendable current market)
3	Restaurant	Path 2 and Path 3 (Growth by adding a new type of restaurants and currently exploring the catering sector)
4	Information Technology	Path 1 (Internet services with a large potential market to exploit by refining the current offer)
5	Services	Path 2 (Looking to systematise current consulting services in order to make them scalable)
6	Wholesale	Path 3 (Leveraging current purchasing and logistic capabilities in new sectors)
7	Information Technology	Path 1 (Internet services with a large potential market to exploit by refining the current offer)
8	Retail	Path 2 (Expanding into B2B by developing an internet sales platform)
9	Manufacturing	Path 2 (Expanding offer by developing a social media service complementing current products)

Number	Economic Activity	Growth Path
INDIA		
10	Retail	Path 2 (Expand product offer with complementary services such as micro-financing and customised advice)
11	Manufacturing	Path 3 (historical market collapsed, forcing to look for a search and enter a new sector)
12	Manufacturing	Path 2 (plan to engage directly with their end product core users and expand the offer)
13	Manufacturing	Path 1 (drop one of two current markets to focus on the one with better growth and profit prospects)
14	Manufacturing	Path 2 (expand from B2C channel to B2B channel)
15	Manufacturing	Path 1 (identification of an underused capability that will improve the current offer to their current customers)
16	Manufacturing	Path 2 (Leveraging their quality of reputation with new products catered to high-end segment)

The previous table demonstrates that the growth path matrix offers a useful lens that classifies the growth efforts from SMEs independent of the location. It also confirms that the relative frequency of paths seems to reflect their difficulty: path #2 is more trodden than path #3.

Figure 4. Cambridge Judge Business School cases located in the Growth Paths Matrix

Appendix 2 – Literature Review

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Procedure

The search of academic articles was ad-hoc and unstructured. The research team searched Google Scholar and Web Of Science using several suggestive keywords to obtain some significant initial hits in the search ("gazelles", "firm growth", "SME growth", "Entrepreneurship", etc.). Then, following the backward and forward citations of these initial hits, a database of relevant articles was slowly built. In this process new keywords were found and used, and important authors were identified and followed.

Given the unstructured nature of the bibliographic search, a criterion for inclusion of a paper into the database was developed. A paper was considered relevant and included if: i) the paper addressed growth of small and entrepreneurial firms, ii) the paper provided insight into the managerial process of firms, iii) the paper provided insight into policy design issues related to management. This ruled out many papers that addressed firm growth, but whose focus wasn't on management. For example, many papers discuss the importance of geographical clustering of SMEs and the corresponding cluster-wide policy.

In total, a database of 132 papers was created. The abstracts of all of these papers were read. Then, a sub-sample of 45 papers was selected and was read in greater detail. This sampling was executed in a way that allowed the research team to cover the greatest amount of topics in the literature. For example, if three papers talked about a specific issue, only the most representative was selected and read. In addition, particular relevance was given to papers that executed reviews of the literature or statistical meta-analysis. The list of articles can be found below.

This sampling was executed in a way that allowed the research team to cover the greatest amount of topics in the literature.

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Chapter 2: Financing UK Scale-Ups: Challenges and Recommendations

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Introduction

The UK scale-up challenge

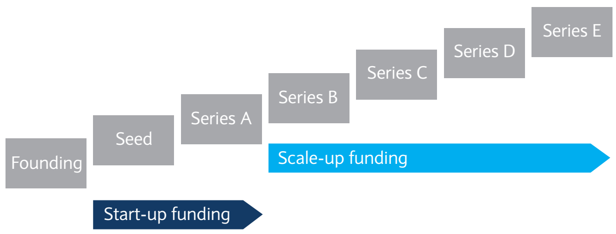
This report examines the financing of scale-ups in the UK. The objective is to understand the current challenges, and to propose some concrete solutions. The report is aimed at a broad set of industry players and public policy makers that can all play a role in the development of a stronger UK scale-up ecosystem.

The UK has already experienced a start-up revolution over the last two decades. It has a vibrant entrepreneurial ecosystem, probably the strongest in the Europe, and is catching up with the US. [i,ii,iii] However, the UK is currently facing the challenge of the next logical step, the scale-up revolution. This involves the growth of start-ups into large successful companies, i.e., the process of converting a promising start into a successful finish.

There are multiple underlying causes for the UK scale-up challenge. An ecosystem consists of various institutions that complement each other to build a coherent environment. An emerging ecosystem has several bottlenecks that need to be addressed before the system can fully function. This report focuses on the finance perspective, but recognises that the quality of management is a central consideration for investment, and emphasises the importance of investors possessing not only financial but also business expertise.

As discussed in the joint introduction, scale-ups can be defined in a variety of ways, the most common definition being a company with an average annualised growth in employees or turnover that is greater than 20% over a three year period.[iv] Broadly speaking, there are two types of scale-ups: start-ups that are proceeding to the growth stage, and SMEs that after a period of slow growth are embarking on a high growth trajectory. Many of the issues faced by these two types of companies are very similar.
This report focuses mainly on the first type, where the scale-up challenge is most palpable. The data analysis focuses on a comparison of start-up versus scale-up financing. This report associates scale-up funding with later-stage funding rounds, defined as Series B or later, and start-ups with earlier-stage funding rounds, defined as Series A or earlier (Figure 1).

Figure 1: From Start-Up to Scale-Up



Requirements for financing scale-ups

This report addresses the role of financing for scale-ups. What types of investors and investment structures are required? What are the characteristics that scale-up investors should have? And what financial institutions and markets are needed to support scale-up investments?

Recent research by Duruflé, Hellmann, and Wilson (2016) provides a framework of the 'funding crossroads', which illustrates the main paths of funding scale-ups.[v] As start-ups journey towards their goals, they reach key decision points that resemble the options at a crossroad: (i) turn left for an IPO ("This is not the end of the scale-up journey, but it takes you onto a different road"); (ii) drive straight ahead for refinancing ("You need to refuel before you continue down the same road"); (iii) turn right for an acquisition ("Please make room for a new driver"). Funding scale-ups thus requires companies to make some fundamental choices. Should the start-up remain an independent enterprise or become part of another corporation? Should the start-up remain private or become publicly listed? Each funding option has far-reaching implications for the strategy and management of scale-ups.

A large body of academic work explains how equity financing provides the flexibility that growing companies need.[vi] For scale-ups, equity financing needs to come from investors with the right specialisation to support them. This role has been traditionally filled by venture capital firms investing at the later stages. In recent years, other types of investors have also entered the scale-up equity market, including hedge funds, cross-over funds, growth funds, private equity funds, institutional investors, family offices, and corporate investors.[vii,viii] Furthermore, this report argues that debt can play a complementary role to equity, so that

scale-ups can also be supported by banks and venture debt funds. Finally, the role of stock markets for scale-up financing is an important part of this ecosystem.
The nature and ideal characteristics of the different financing routes are discussed in further detail in this report. The four key characteristics that companies need from scale-up investors are as follows:

(1) Deep pockets
(2) Smart money
(3) International networks
(4) Patience

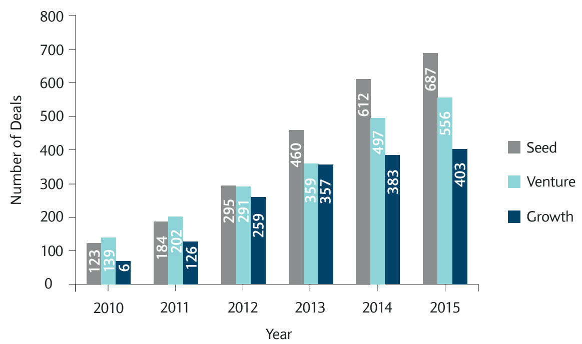
Deep pockets concern the ability of investors to fund large rounds, and to sustain their investments over multiple rounds. Smart money concerns the ability to discern good investment opportunities at the investment stage, and to add value to the companies after the investment has been made. International networks are required to give companies better access to key resources, allowing them to enter new markets, recruit talent, and form strategic partnerships.[ix] Finally, patience is needed to shoulder the long investment horizons, and cope with the ever-changing challenges of scaling a company.

What conditions do scale-up investors require for investing? They clearly need high-quality start-ups to invest in, and a reasonable regulatory and tax regime. Raising venture funds also requires access to capital sources from institutional investors that themselves need to be sufficiently knowledgeable, patient, and risk-tolerant to invest in the asset category. The importance of long-term investments is also highlighted in the Productivity Action Plan, recently published by the Investment Association.[x] Scale-up investors also need a path to liquidity, which can come from acquisitions, public listing, or private liquidity from the secondary sale of shares to other private buyers.

The state of scale-up financing in the UK

Equity investments made in entrepreneurial UK companies occur across different stages. Figure 2 presents data collected by Beauhurst, which is a leading provider of data on the UK's fast-growth companies, their deals and their investors. The Beauhurst data distinguishes three investment stages: seed, venture, and growth.[xi] There is a clear upward trend in the number of investments in entrepreneurial companies in the UK over the period 2010 to 2015. Investment rounds in the growth segment are growing slightly less compared to the number of seed- and venture-stage fundraising deals. As a proportion, the number of growth stage investment deals has decreased over the last few years, declining from 30.7% in 2012 to 24.5% in 2015.

Figure 2: Number of Deals by Start-Up Stage[xii]



The widening of interest in seed funding over growth-stage investment can be explained by both demand- and supply-side factors. On the demand side, a reason for the decrease in growth-stage investments could be a lack of attractive investment opportunities in the UK market. However, the recent advances of US investors in the UK market, documented below, cast some doubt on this explanation. On the supply side, there might be a shortage of growth-stage investors with the requisite expertise, given that most UK funds are specialised in the early-stage market. This is explored further below.

It is worth noting that the UK entrepreneurial ecosystem receives significant support from the UK Government.[xiii] Most notable is the Enterprise Investment Scheme (EIS) which launched in 1994.[xiv] The EIS is a unique scheme that offers numerous attractive tax incentives for seed- and early-stage investors. Investments into EIS eligible start-ups give investors income tax reliefs of up to 30% of their investment and also includes attractive features such as loss relief and capital gains exemptions. Other notable programmes include the Enterprise Capital Fund programme of the British Business Bank that provides funding to early-stage venture capital funds.[xv] These Government programmes have had a significant impact on the UK start-up environment, and may be part of the reason why there is a higher proportion of early-stage than later-stage investment activity.

Most current Government programmes are unable to address the needs of scale-ups because their mandates require them to focus on younger and smaller companies. One exception is the VC Catalyst Fund of the British Business Bank. This fund fills the final funding gap on venture capital (VC) funds that have raised the majority of funds but that would otherwise fail their 'first close'. Under this programme, the VC Catalyst Fund enables investors to avoid delaying investment in UK businesses and facilitates larger fund sizes and larger investments into growth companies.[xvi] A second initiative supporting growth is the Business Growth Fund, which is a privately funded investment firm that was established to focus on supporting growth-oriented UK companies. With £2.5b of capital, the Business Growth Fund provides investments for privately held or AIM-listed companies, and implements a long-term funding horizon up to 10 years.[xvii]

How successful are UK scale-ups? For a long time, many believed that the UK was unable to turn start-ups into large successful companies. This has been proven wrong by the recent advent of so-called unicorns. Unicorns are defined as privately-held growth companies that reach a valuation of over $1b. They represent exceptional cases of extreme success at the scale-up stage. While one should not think of them as representative scale-ups, they play an important inspirational role, and provide valuable lessons about what is possible. There is considerable confusion about exactly which companies are considered unicorns, because of a variety of definitional and data issues. Table 1 combines data from Crunchbase[xviii] and CB Insights[xix] to identify the current leading unicorns in the UK. It provides a brief overview of the way that these unicorns have been funded. Later parts of this report will take a closer look at one of the unicorns, Skyscanner.

Table 1: Overview of UK-based Unicorns[xxi]

Company	Valuation (Date)	Total Reported Equity Funding*	Description
FARFETCH	$1.0b (Mar 2015)	$195m	Online retail for high-end fashion boutiques
Funding Circle	$1.05b (Apr 2015)	$273m	Peer-to-peer or non-bank lending
SHAZAM	$1.03b (Feb 2015)	$125m	App for music, TV shows and ads
skyscanner	$1.79b (Jan 2016)	$197m	Provides online travel search comparisons
TransferWise	$0.96b (Jan 2015)	$90m	Money transfer service

* Data incomplete: Missing data on at least one funding round for each company.

Country comparisons of scale-up financing

To better comprehend the state of scale-up financing in the UK it is useful to compare financing activities for early-stage and later-stage deals in the US and the rest of Europe. The data is for the period 2010-2014 and comes from the National Venture Capital Associations (NVCA) for the US, and Invest Europe (formerly known as European Private Equity and Venture Capital Association - EVCA) for Europe (including UK). The data compares early- and late-stage financing, looking at the number of companies funded and the average investment size. In the diagrams below the horizontal axis represents the number of companies. Data on the US has been made comparable to the UK by adjusting it according to the relative size of national GDP. The vertical axis represents the (unadjusted) average investment sizes. The total area therefore represents the overall size of the two markets, adjusted for GDP.[xxi]

Figure 3 compares the UK with the US and finds that the US has more and larger investments, both at the early- and late-stage. This suggests that overall there is a financing gap, and an opportunity to strengthen the UK economy via investment in scale-ups. When considering the stage of investment, the UK lags behind the GDP-adjusted US. Early stage investments see 7.2 UK companies backed by VC firms for every 10 US companies. This gap widens to less than half the number of UK companies receiving later stage VC investment as compared to the US GDP-adjusted figures.

Figure 3: Average Invested per Company vs. Total Number of Companies UK/US

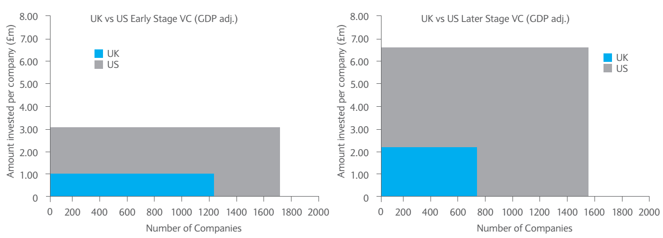
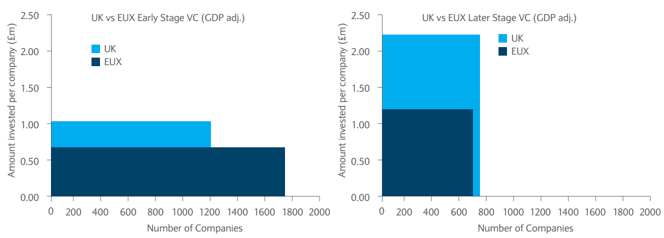


Figure 4 compares on a GDP adjusted basis the UK against the rest of Europe. Throughout this report the abbreviation EUX is used to denote Europe excluding the UK. In the early-stage market the UK has fewer companies, but these companies are better funded. The average amount invested for early-stage companies is 49% higher in the UK than it is in the rest of Europe. In the late-stage market, the UK has slightly more companies funded, and the average investment size is almost twice as large, resulting in the UK later-stage market being 187% larger than in the rest of Europe. This evidence suggests that compared to the rest of Europe, the UK has a stronger ecosystem for scale-up. Of particular note is that even though UK venture capital funds funded fewer start-ups than the rest of Europe, it has more venture capital funded scale-ups.

Figure 4: Average Invested per Company vs. Total Number of Companies UK/EUX

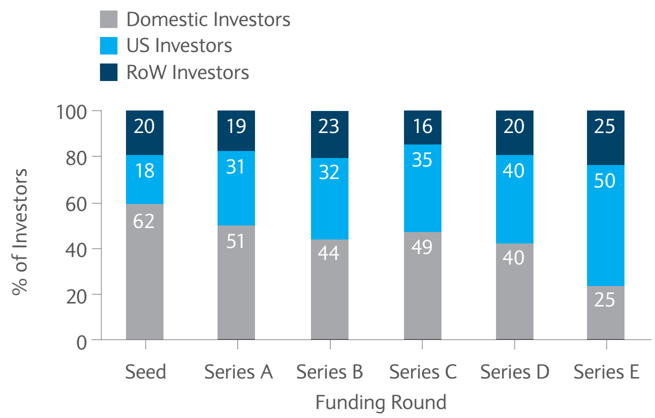


A simple count of global unicorns in March 2016 reveals that 61% of all unicorns are in the US, 20% in Asia, and 10% in Europe, with the UK representing 3 of the 10 percent. This helps to put things into perspective. Compared to the US, the UK is evidently behind in terms of large scale-up successes, but compared to the rest of Europe, the UK is showing a relative strength.

The role of foreign investors

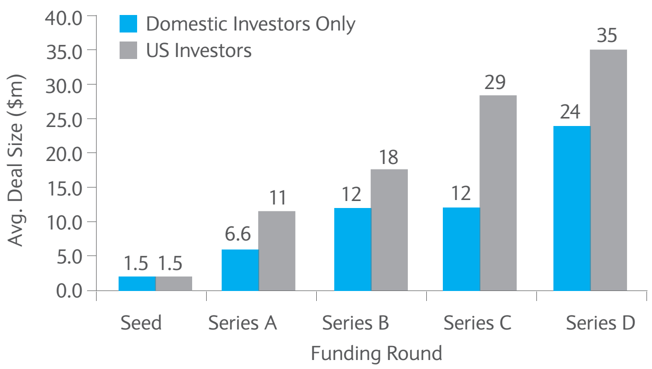
Entrepreneurial companies in the UK are funded by a mix of domestic and foreign investors. To analyse this, the report examines data on venture capital investments obtained from Preqin, for the period 2010-2015. Figure 5 provides a breakdown of the fraction of domestic versus foreign investors across different investment stages. Early rounds are dominated by domestic funds, with over 50% of all Seed and Series A rounds provided by domestic funds. In later rounds the ratio for domestic investments decreases considerably, reaching a low of 25% in Series E rounds of UK deals. The largest source of foreign funding comes from the US, followed by Canada and France. US-based VC funds represent 40% of all Series D round investors and 50% of all Series E round investors.

Figure 5: Foreign vs. Domestic Investors in UK VC Deals



International investors are not only more prevalent at later stage funding rounds, they are also associated with larger deal sizes. Figure 6 compares the amount of funding received by companies that obtain funding from foreign investors to those with domestic-only investors. The data shows that the presence of a foreign investor is associated with larger rounds, and that the differences are more dramatic for later than for earlier rounds. At the seed stage there is virtually no difference in size, but for Series D, rounds are 50% larger and for Series C, 135% larger.

Figure 6: Deal Size of UK VC Deals by Investor Type[xxii]



It is important to acknowledge the positive role played by foreign investors in the UK economy.[xxiii] Figure 5 shows that the UK has entrepreneurial companies that are attracting the interest of foreign investors, especially at the scale-up stage. Figure 6 shows that this increases the financial resources available to these companies. The question is not about the desirability of having foreign investors, the benefits of open financial markets are large and evident. The question is whether and how the UK can develop a domestic funding ecosystem that enables UK investors to reach international competitive standards, thereby ensuring that all UK scale-ups have access to competitive funding sources. The argument can be made that there is an opportunity to develop a stronger financing ecosystem for scale-up that could turn the UK from a net importer of scale-up finance to a net exporter, especially in terms of becoming the leading financier of scale-ups across Europe.

To further illustrate the different roles that foreign investors can play for UK start-ups and scale-ups, two case studies of companies that received funding from US investors at different stages and with different consequences are reported below (Table 2 and 3). The data for these two case studies comes from Beauhurst and public sources. Unlike other data providers, the Beauhurst data provides information not only on venture capital backed companies, but also on a broader set of entrepreneurial companies that receive equity funding from angel investors, accelerators or crowdfunding platforms. The company obtains the information by working with professionals across a broad range of industries including corporate finance, accountancy, higher education and government, as well as from sources in the public domain.

Table 2: Mitoo

Mitoo

Founded in 2011 in London

Headquartered in San Francisco, US

Mitoo is a mobile platform for managing amateur sports leagues. The company was founded in 2011 in the UK as Bluefield. After encountering challenges in securing seed funding, which delayed the scalability of the start-up, the founder decided to enter a US start-up accelerator. One of the main reasons for relocating to the US was a meeting with 500 Startups, a US-based accelerator that invests heavily in Seedcamp start-ups. 500 Startups was one of the main investors in the company's $1m seed funding round in 2013. The company's decision to relocate to Las Vegas was the result of an investment from VegasTechFund, the investment arm of a city redevelopment project (Downtown Project). In 2013, the company rebranded after acquiring a US competitor to Football Mitoo. As of May 2015, 80% of Mitoo's total customer base (1.6m users) are in the UK, with company operations and headquarters in the US.[xxiv]

Mitoo illustrates the fact that because of better funding opportunities some UK start-ups relocate to the US early in their lives (see Table 2). In terms of statistics, those companies are typically not even recognised as UK scale-ups, because they move their headquarters to the US.

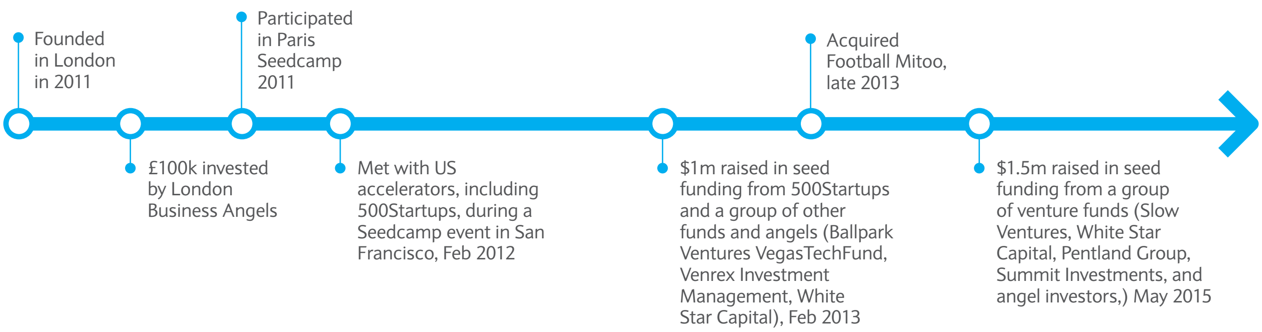


Table 3: Skyscanner

Skyscanner
Founded in 2003
Headquartered in Edinburgh, Scotland

Skyscanner became the most recent member of the UK Unicorn list in January 2016. Based in Edinburgh, Skyscanner is a search engine for flights and hotels – a competitor with Kayak, amongst others. It allows users to see travel options and book travel from providers such as Expedia and Travelocity as well as airlines and other providers. In January 2016, Skyscanner had more than 50m monthly users and had been profitable since 2009.

The company's latest funding round of $192m brought their estimated valuation to $1.6b. This is Skyscanner's third funding round, with previous rounds by Scottish Equity Partners in 2007, and Sequoia Capital in 2013. Skyscanner creates an unusual unicorn case, as it only went through three funding rounds and has been profitable since 2009. However, it shows the impact of a large international investor enabling scale-up at even a profitable stage of company development.

Skyscanner currently employs over 250 people with offices in Scotland, Singapore, Beijing, and Miami. The most recent funding round will support business expansion to capture a larger share of a market worth over £300b. This funding will also allow some of Skyscanner's shareholders to sell some of their shares.[xxv]

Skyscanner is an example of a UK company attracting US investors at the scale-up stage (see Table 3). For the A round the company was funded by Scottish Equity Partners, an established UK venture capital firm. The B round was provided by Sequoia Capital, a leading US venture capital firm. Round C, which gave the company unicorn status, was funded by a diverse syndicate that included UK, Japanese, and Malaysian investors. The syndicate also shows the diversity of investors in scale-up, including a global fund manager (Artemis), an asset management firm (Baillie Gifford), a sovereign wealth fund (Khazanah Nasional Berhad), a private equity firm (Vitruvian), and a corporate investor (Yahoo! Japan). Interestingly, the money invested in the C round was in part used for investment, and in part used to provide liquidity to existing shareholders. This foreshadows the point of challenge #five that scale-ups increasingly have a need for private liquidity, i.e., for the secondary sale of shares in privately-held companies.

	Round A	Round B	Round C
Amount Raised	£2.5m	Undisclosed	£128m
Investors	Scottish Equity Partners (SEP)	Sequoia Capital	Artemis Baillie Gifford Khazanah Nasional Berhad Vitruvian Partners Yahoo! Japan
Date	Jan 2008	Oct 2013	Jan 2016
Estimated Valuation (Pre-Money)	£5.6m	$800m (£500m)	£1,000m

Challenge 1:
The role of large venture funds

This section considers the provision of equity capital to scale-ups. The term 'venture capital' should be interpreted broadly, to recognise that there are multiple types of investors that provide equity to scale-ups, as illustrated in the Skyscanner example. This section addresses the question: What fund structures are required to be able to provide equity to scale-ups?

Understanding the role of fund size

Financing scale-ups requires large equity rounds. Structuring such large rounds requires experienced venture investors that have deep pockets and sufficient investment horizons. How big do funds need to be to participate in large scale-up investments? To get an idea of the kind of fund sizes needed for scale-up it is useful to consider the differences in fund sizes between the UK, US, and the rest of Europe. The Preqin data on venture capital funds with vintage years 2005 to 2015 provides useful information.

In the UK, the median fund was $78m, compared to $100m for the median US fund and $64m for the median European fund. Over 60% of UK funds are smaller than $100m, whereas in the US this represents less than 50% of VC funds. Figure 7 shows the size distribution of UK venture funds, comparing it once to US funds and to other European funds. Compared to the US, the UK has relatively fewer large funds above $100m. Compared to the rest of Europe, however, the UK remains strong in the larger fund categories. Figure 8 highlights that large funds over $250m are particularly rare in the rest of Europe.

Figure 7: Fund Size Distribution: UK vs US

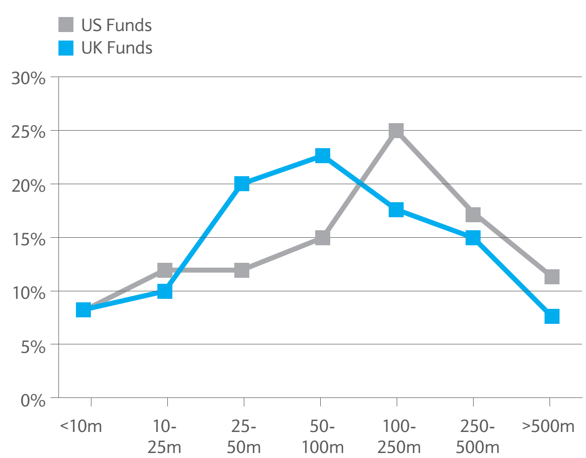
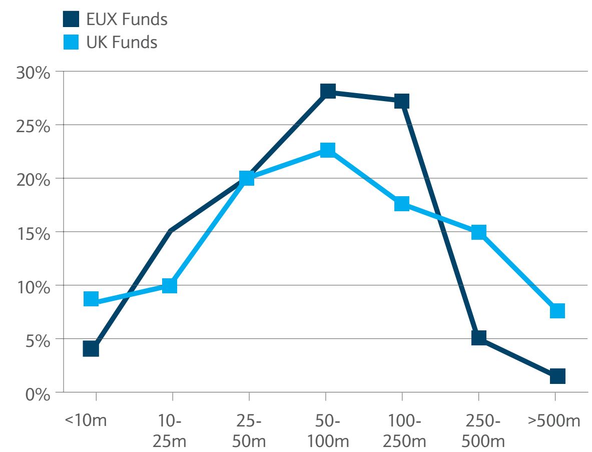
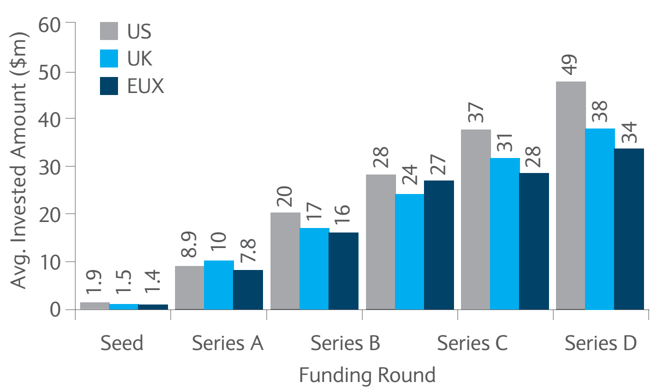


Figure 8: Fund Size Distribution: UK vs EUX



The size distribution shows what kind of funds invest, but not how often and how much they invest. Figure 9 examines investment volumes by funding round, comparing companies based in the UK, US, and the rest of Europe. It shows an increasing funding gap at the scale-up stages. In early rounds the average funding volumes are very similar across the US, UK, and EUX. Round A funding is even slightly higher in the UK than in the US and EUX. However, at later stages a divergence occurs, with UK companies raising 15% less in D rounds and 23% less in E rounds than their counterparts in the US. The rest of Europe experiences even larger gaps compared to the US, with 23% less in D rounds and 31% less in E rounds.

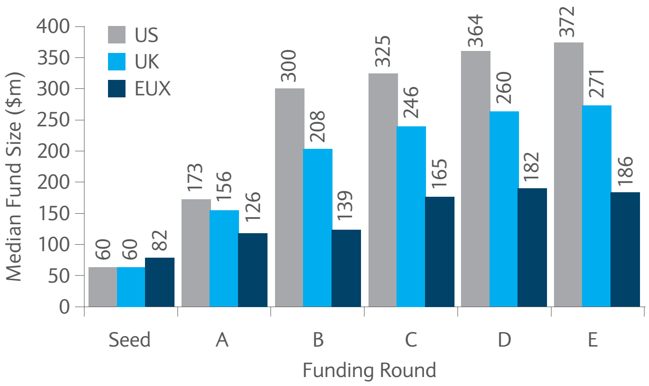
Figure 9: Average Investment Amounts by Funding Round



Venture capitalists hold portfolios where they have incentives to diversify, and face restrictions on how much money can be placed into any one company. Smaller funds therefore have a mechanical problem of making larger investments at the scale-up stage.

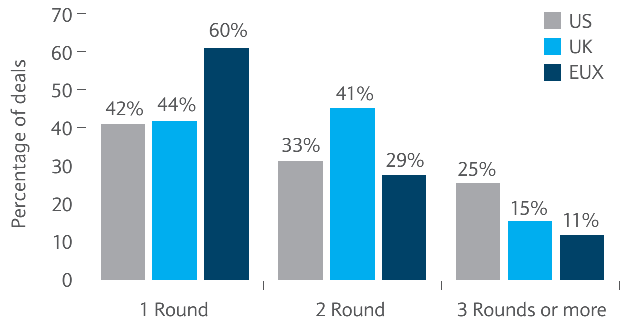
To see the relationship between scale-up funding and fund sizes, Figure 10 examines the median fund size of investors across different funding rounds. The data shows few cross-country differences in the early stages, i.e., the median fund sizes of investors in UK companies is very similar to those of US companies. However, at the scale-up stage there are differences. Compared to US companies, UK companies are funded by funds that are 25%–31% smaller. The differences are even starker for other European companies, whose median investors are 50%–54% smaller. Large funds allow investors to make larger investments and take bolder risks.

Figure 10: Median Fund Size by Funding Round



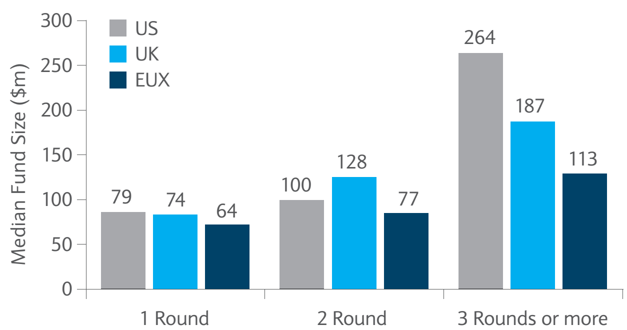
Companies like to have 'faithful' investors that continue funding them across multiple rounds. This provides continuity and ensures the continued engagement of informed investors.[xxvi] In the Preqin data US companies have investors that invested on average for 1.4 additional rounds after the initial investment, thus investing for a total of 2.4 rounds. UK companies have investors that invested for an average of 1.1 additional rounds after the initial investment, for a total of 2.1 rounds. In Europe it is 0.7 additional rounds for a total of 1.7 rounds. Figure 11 shows the distribution of how often companies have investors that invest over multiple rounds. Companies in the UK have 44% of their investors investing in a single round, which is very similar to the US (42%). In the rest of Europe, this number is notably higher at 60%. Some differences between the UK and US appear at the higher end of the distribution: UK companies are more likely to have investors who invest for exactly 2 rounds, whereas US companies have more companies that invest for more than 2 rounds. Specifically, only 15% of all investors in UK companies invest in more than two rounds, compared to 25% of US companies.

Figure 11: Frequency of Multiple Rounds



What types of investors are more faithful, supporting companies over longer periods? Figure 12 is based on the same data as Figure 11 about how often a company receives single versus multiple investments from the same investor. The new aspect of Figure 12 compares the median fund sizes of investors that make single versus multiple investments in the same company. Looking at all the US deals where investors only invest once in the company, the data identifies a median fund size of $79m, compared to a $100m fund size for deals where investors invest twice, and $264m fund size for deals where investors invest more than twice. A similar pattern of increasing median fund sizes also applies to the UK and the rest of Europe. The key insight here is that the more faithful investors that invest over more rounds are the larger funds.

Figure 12: Sizes of Funds Investing in Multiple Rounds



Solutions for the fund size challenge

The evidence so far suggests that the UK would benefit from having larger venture capital funds. The question remains what kind of investors and fund structures are needed.

How big does a large fund need to be to support scale-up? While this is largely a question for the industry to solve, the data above provides some suggestive evidence. Figure 7 shows that the size distribution of UK funds becomes thinner relative to the US above $100m (approx. £70m). But the data in Figure 10 suggest that even a fund size of approximately $150m (approx. £100m) would hardly be able to make substantial investments at the scale-up stage. Figure 8 further suggests that taking a Europe-wide perspective, there is a particularly large gap in the over $500m (approx. £350m) category. Moreover, Figure 10 suggests that in the US, the median fund size for funding scale-ups (i.e., funding round B and higher) is above $300m (approx. £200m). Based on this it may be argued that initiatives for large funds should focus on funds above £200m, with ambitions to create several funds over £350m. At the same time it should also be mentioned that there is a danger of creating funds that are simply too large, say over $1b (approx. £700m). Such funds are unlikely to find sufficient deal flow, and prior academic research suggests that performance decreases for venture funds that become too large.[xxvii]

Is the UK large enough to support such large funds? Scale-up funds need to invest in a market of sufficient size to develop more specialised industry and stage expertise. The venture capital industry has seen a gradual shift from local generalist funds to 'global' specialist funds. It is not clear that UK scale-up funds should limit their investment focus to UK companies only. Instead, such funds may take several approaches (or a combination thereof). One possibility is to focus on European scale-ups within a broad industry sector (for example, digital economy, life-sciences or FinTech). While addressing the UK scale-up gap, such funds could also take advantage of opportunities in the rest of Europe, which has an even larger scale-up gap than the UK. A second possibility is to focus on transatlantic relationships with the US or Asia. This second option would leverage the UK's existing connection to foreign investors, as documented in Figure 6.

The UK government might also want to rethink its current approach of supporting (directly or indirectly) a multitude of venture capital funds from different geographies. Governments across the globe often want to spread their support across a wide range of regions to reach a wider set of people. The UK also has a variety of regional venture capital initiatives.[xxviii] There has been little systematic evaluation of these programmes. Moreover, these kinds of smaller and more dispersed venture funds are unlikely to be suitable for the funding of scale-ups.

Recommendation 1:

Increase the number of UK venture capital funds that are sufficiently large to finance scale-ups.

Key Actions:

- The UK needs more venture capital funds that focus on funding scale-ups. This requires fund sizes to be over £200m. More experienced venture firms should aim to raise over £350m.
- Venture capital funds should invest over an extended investment time horizon and continue supporting companies across multiple funding rounds.
- UK venture capital funds should look for investment opportunities within specific sectors, investing both within and outside of the UK, and establishing themselves as pan-European or global leaders.
- Large funds should not be raised without the presence of experienced teams. The actions of Recommendation 1 must go hand in hand with those of Recommendation 2.

Challenge 2:
The challenge of smart money

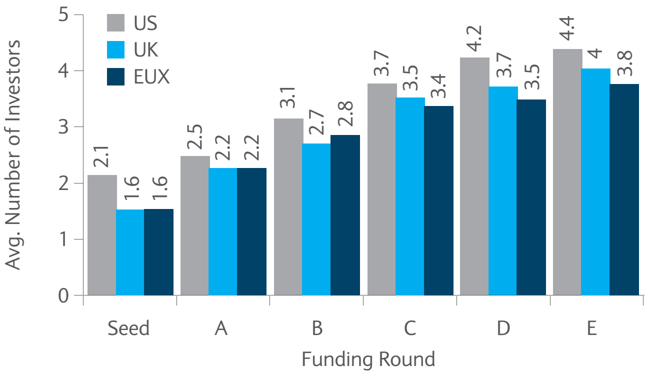
Fund size is not the only challenge for providing scale-up funding. In principle, it is relatively easy to set up a large fund. Investment vehicles are set up in the City of London all the time, and the low interest environment has created an environment where institutional investors are eager to seek out new investment opportunities. The challenge with venture capital is that it requires deep expertise and broad networks. Venture funds require not only financial savvy, but they need specialized domain expertise, strong international networks, and experience with the entrepreneurial process itself. As for the institutional investors who invest in venture capital funds, they require expertise in selecting the right 'smart' venture teams.

Understanding the role of smart money

Venture capitalists pride themselves to provide more than money; they see themselves as business advisors that provide managerial expertise and access to business networks. The Cambridge chapter on the 'crucial role of management' emphasises the importance of the interactions between investors and management. A growing body of academic research confirms the value-adding role played by venture investors.[xxix] One important finding is that effective venture investors require more business than financial skills.[xxx] Furthermore, the performance of venture investing increases with stronger investor network.[xxxi]

There are many different types of relevant networks (i.e., with other investors, with businesses, with executive talent, with governments, etc…), and many ways of measuring networks. To gauge networks, researchers often focus on syndication among venture capital firms. One simple way of comparing the UK with the US and the rest of Europe is to ask about the size of syndicates in a typical funding round. Figure 13 is based on the Preqin data and shows the average syndicate size, i.e., the average number of investors across different investment rounds. It shows that later round deals tend to have larger syndicates. Moreover, syndicates are larger in the US than in the UK. This data suggests a more networked structure in the US funding environment.

Figure 13: Average Number of Investors by Funding Round



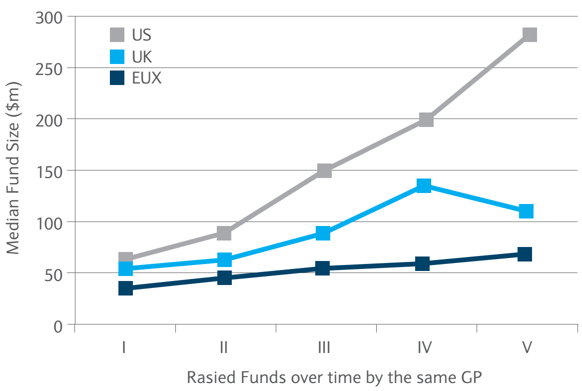
The example of Skyscanner provides a useful illustration of the role of 'smart money'. After the initial funding in 2008 from one of the most experienced UK venture firms, Scottish Equity Partners, the company turned cash flow positive and did not even strictly need to raise additional funding. However, in 2013 it accepted an investment from Sequoia Partners, one of the leading global venture capital firms that is based in Silicon Valley. As noted in the Cambridge chapter, the rationale for this investment was based on Sequoia's expertise and networks. This partnership led to Skyscanner's ongoing growth and a 2016 investment round from a diverse set of investors.

How do you create 'smart' venture funds? The value-added and networks provided by investors is largely based on the skills and experiences of the venture partners. It therefore cannot be created overnight, instead it requires a long-term perspective of creating an ecosystem in which venture capital funds can grow, develop their expertise, and build their networks over time.

Institutional investors might be sceptical of setting up large funds with unproven investment teams. Instead venture capital firms have to earn the trust of their limited partners, and gradually raise larger funds over time. The ability to raise funds therefore depends on the track record of venture funds, as well as the willingness of institutional investors to increase their funding commitments over time.

Figure 14 is based on the Preqin data and shows the evolution of successive venture capital funds over time. For first-time funds, the US and the UK are very similar: the median US fund raises $66m compare to $60m in the UK. Interestingly, funds in the rest of Europe are considerably smaller with a median of $35m. However, as venture capital firms proceed from their first to their second fund, differences start to appear: the median US fund is $90m, compared to $64m in the UK (and $49m in the rest of Europe). The differences become more extreme as one moves further out: fifth funds in the US are more than twice as large (median of $281m) than in the UK (median of $112m). Some of this pattern may be explained by a relative weaker performance of UK (and other European) venture funds, but Figure 14 also raises some questions about the willingness of institutional investors to back the development of a stronger venture industry.

Figure 14: Evolution of Median Fund Size over Successive Funds



Institutional investors have a difficult relationship with venture investing. This stems largely from the poor investment decisions that were made during the dotcom boom, and the large associated losses. Data on the performance of venture investments is also notoriously difficult to obtain, in part because of poor data quality, and in part because it takes a long time for returns to be realized and quantified. In the aftermath of the dotcom bust, many institutional investors therefore became wary of venture capital, especially in Europe. However, the recent rise of unicorns has put this negative stance into question, and there are some early signs of renewed interest amongst institutional investors.

'Smart money' means not only smart venture investors who know how to invest in good companies, it also means 'smart institutional investors' who know how to pick good investment teams. That is, investing in venture capital funds requires expertise by itself. Research finds that institutional investors with a better ability to evaluate fund management teams perform better, thus demonstrating the importance of institutional investor expertise for picking venture funds.[xxxii]

Smaller institutional investors often find it particularly challenging to invest in alternative assets, including venture capital. A study on size of investors finds that smaller asset owners achieve lower returns on their investments in large parts because of lower returns on their alternative asset portfolio.xxxiii Instead of building the expertise in-house, some institutional investors therefore prefer to delegate their venture capital portfolios to fund-of-fund managers, who aggregate the investments of multiple institutional investors into a fund that is specifically focused on making investments into venture capital funds. Fund-of-funds often face considerable scepticism because there are two layers of fees: one set of fees is paid to the venture capital firms, and second to the fund-of-fund managers. However, the second layer of fees is meant to compensate for the skills of picking good investments. A recent academic study finds that unlike in buyouts, in venture capital the fees paid to fund-of-fund managers are justifiable on the basis of superior performance.[xxxiv]

Solutions for growing access to smart money

Investors play an important role in helping scale-ups gain access to global resources, for entering market, hiring talent, or forging strategic partnerships. While the number of experienced UK venture investors is steadily increasing over time, it is hard to accelerate this process beyond its natural evolution. However, there are several ways in which this talent pool can be increased, and how talent can be deployed more effectively.

While it is important to build on the current expertise with venture investing, it is possible to augment the talent base by inviting existing venture capital talent from other countries, particularly the US. Instead of waiting for venture teams to come forth, institutional investors and business leaders in the UK could take a more visionary and deliberate approach to catalyse the creation of experienced scale-up funds. Traditionally, institutional investors take a passive approach of waiting for teams of venture partners to pitch their fund ideas. A more proactive approach would be some deliberate initiatives to bring together leaders of the investment community to actively seek the creation of large scale-ups funds. Partnerships and collaborations with leading US experts can further help make this a success. Alongside the UK developing a strategy for 'importing' the required talent to build a stronger scale-up funding system, there is also an opportunity to become the European leader for the provision of scale-up finance. The evidence provided in this report clearly suggests that the UK is ahead of the rest of Europe on most measures of scale-up funding. Given that patterns of cross-country venture investments follow established lines of trust among nations, the UK could therefore look amongst its most trusted trading partners for opportunities to become a 'net exporter' of scale-up financing.[xxxv]

Increasing access to smart money begins before the stage of making investments in scale-ups, it starts with institutional investors being able to identify talent at the fund management level. However, such more specialized expertise is often not available within institutional investment teams. One solution is therefore to delegate this expertise to fund-of-funds. This raises the possibility of government support for fund-of-funds. Prior research cautions against a direct role of government funding.[xxxvi] However, when governments use private market mechanism to support venture investing, outcomes often become comparable to purely private investments.[xxxvii] Government support for fund-of-funds is a relatively new concept, but in recent years the Canadian Venture Capital Action Plan has generated some broader interest in this approach.[xxxviii] There is currently an opportunity for the UK to explore the development of a fund-of-fund, with the possible involvement of the British Business Bank. Such an initiative would be timely, especially in light of the recent Capital Markets Union announcement by the European Union, which recommends a fund-of-funds approach to supporting venture capital and equity financing.[xxxix]

The UK has a large aggregate amount of pension savings which are managed by a large number of relatively small pension funds.xl In recent years, there has been a growing awareness of the challenges of small pension funds, and in October 2015 the Chancellor George Osborne announced a plan to merge local authority pensions into six wealth funds.[xli] The argument was to improve efficiency and facilitate infrastructure investments. In addition to physical infrastructure it is worthwhile to think about the infrastructure of the new economy, that is, the knowledge driven economy. There is an opportunity for these new UK pension funds to support the funding of smart venture capital funds for investing in scale-ups, either directly or through a fund-of-funds approach.

Recommendation 2:

Grow the number of experienced UK investors with in-depth sector expertise and strong international networks.

Key Actions:

- UK venture funds should build on existing strength and increase their talent base by linking up with experienced global investors, drawing in particular on US expertise.
- UK venture funds should establish themselves as the European leaders of scale-up financing, turning the UK from a net importer to a net exporter of scale-up finance.
- The UK Government should work with institutional investors to renew interest in venture capital, and to build up greater expertise for making allocations to scale-up funds.
- UK policy makers and the British Business Bank should actively engage with the European fund-of-funds initiative proposed under the Capital Markets Union framework.

Challenge 3: The role of venture debt

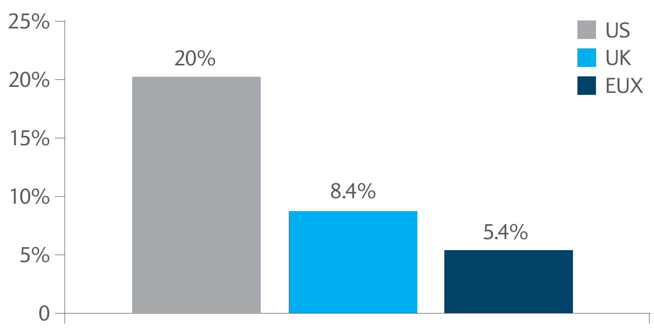
This section focuses on how debt can augment equity in the financing of scale-ups. Venture debt is a specialised form of lending to entrepreneurial companies that was largely pioneered by Silicon Valley Bank.[xlii] While there is no uniformly accepted definition of venture debt, it can be broadly described as senior debt to growth companies with negative cash flows. Typically the term venture debt is also used for loans to companies that already have some venture capital funding.

Understanding the role of venture debt

From a company perspective debt can become more attractive as the company moves from the start-up to the scale-up stage. The main attraction is to raise additional funding that, unlike equity, does not dilute ownership.[xliii] There may also be some tax advantages to using debt. From a lender's perspective, however, scale-ups are unlikely loan candidates: they are highly risky, have few tangible assets, and typically have negative cash flow projections at least for the short term.[xliv] The incentive to lend to scale-ups comes largely from upside returns, such as from warrants. Moreover, banks may invest with the prospects of forging client relationships that could generate future banking business.

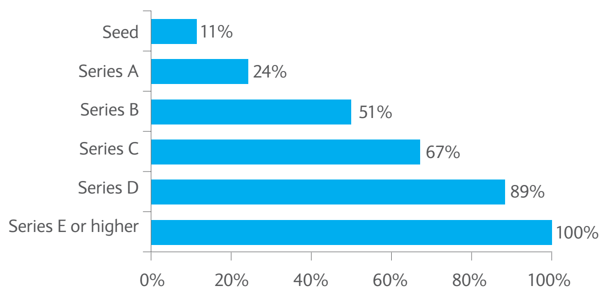
There is no systematic data collection on venture debt, but some useful data can be gathered from Preqin. While gathering data on venture capital investment, Preqin also records data on venture debt, where available. Of the data analysed, a total of 1,445 venture debt rounds in 881 companies in the US, 81 rounds in 65 companies in the UK, and 105 rounds in 77 companies in the EU (outside of the UK) were recorded. Figure 15 shows the fraction of companies that obtain venture debt at some point of their recorded funding histories. In the US, 20% of venture capital backed companies obtain venture debt at some point, compared to 8.4% in the UK and 5.4% in the rest of Europe. Based on the alternative database of Crunchbase, 14% of all unicorns raised venture debt at some point.

Figure 15: Percentage of Companies that Obtain Venture Debt



For all the companies with venture debt, Figure 16 shows the timing of when companies are accessing this type of financing. The figure is based on US companies only, although the pattern remains similar if the UK and European are added to the data. Companies that raise venture debt rarely do so in the earlier stages. However, more than half of companies that obtain venture debt have done so by the time they have raised a Series B equity round, and 89% have done so by the time they have raised their Series D.

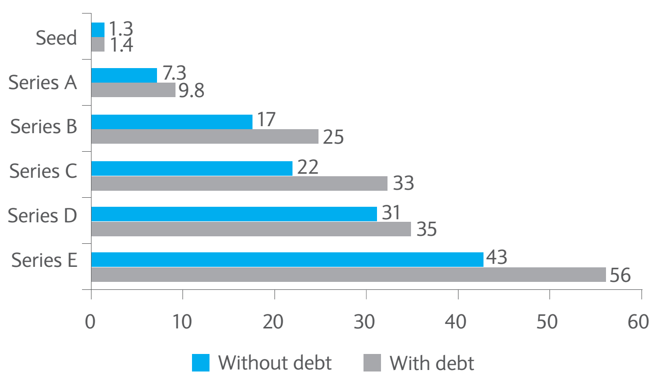
Figure 16: Stages at which Companies with Venture Debt raise First Venture Debt Deal



How much funding do scale-ups receive from venture debt providers? Average deal sizes can provide a skewed picture because of a few large outliers, such as Uber raising $1.6b in the US. The analysis here therefore focuses on median deal sizes. It finds that in the US the median deal is $8m, compared to $5.2m in the UK, and $5m for the rest of the EU. Another interesting perspective comes from the analysis of unicorns that is based on the Crunchbase data. There the median size of venture debt rounds is considerably larger at $50m.

Does venture debt augment the amounts of money raised from venture capital, or does it provide a substitute for venture capital? One way of looking at this is to compare the size of equity rounds of companies that raise or do not raise venture debt. Generally, it can be expected that equity rounds are smaller if venture debt is a substitute to venture capital, but larger if venture debt is a complement. Figure 17 below compares the size of equity rounds of US and European (including UK) companies across different rounds, depending on whether they had raised venture debt at the time of the equity round. The figure shows that companies with venture debt actually raise larger equity rounds. This suggests that venture debt is used to augment, not replace venture capital.

Figure 17: Equity Fundraising of Companies with and without Venture Debt ($m)



How important is venture debt for the financing of scale-ups? According to the Preqin data, the debt to equity ratio is 28.1% on average (median of 21.9%) at the time of raising venture debt.xlv Over the entire fundraising cycle the debt to equity ratio is 21.8% on average (median of 15.9%). Overall, this suggests that while venture debt is clearly less important than venture capital, it still constitutes a non-trivial fraction of the funding for a subset of scale-ups.

Solution for the venture debt gap

The analysis so far explains the potential role of venture debt, and identifies a gap in the UK and European market. What would it take for the UK to narrow that gap? Currently there are two competing models of providing venture debt: funds and banks. Venture debt funds can only become economically viable when benefiting from some of the upside, mostly through getting some equity or warrants alongside the debt. Banks gain potential strategic benefits from building stronger client relationships, but will likely also need to participate in the upside to justify the high risk of this type of lending. Venture debt providers therefore need to secure some financial position on the equity side. Both models hold promise of becoming viable sources of venture debt. They are likely to provide differentiated services, based on their different business networks, and their access to related services, in particular other banking services.[xlvi,xlvii] A vibrant venture debt market would benefit from a competitive level playing field.

One challenge is that by the time that a company raises venture debt, it is likely to have several layers of preferred shares that are senior to the warrants of the venture debt provider, who therefore face additional challenges of valuing their upside. More generally, there is a problem that capital structures often become unwieldy in scale-ups. For early-stage companies the rules of the EIS tax credits impose simplicity and transparency on the capital structure of UK start-ups. No such standardisation exists at the scale-up stage. There thus remains a challenge for scale-ups and their investors to create simple and transparent ownership structures that facilitate further investments, such as from venture debt providers. A similar argument also applies to the market for secondary shares, discussed later in this report.

There are some regulatory obstacles to providing venture debt. Banks face relatively high costs of capital due to the fact that venture debt typically attracts a high risk weight under the so-called 'Basel III' regulation.[xlviii,xlix] As the venture debt model becomes more established, and as better data

Companies with venture debt actually raise larger equity rounds. This suggests that venture debt is used to augment, not replace venture capital.

becomes available, it is conceivable that these risk weights will improve over the medium term. Over the short term, however, they seem an unavoidable regulatory cost.

In the UK there is a second regulatory issue concerning the Prudential Regulation Authority's so-called 'ring-fencing' requirements.[l,li,lii] This poses a mixture of regulatory and organizational challenges. UK banks have to define which activities are inside or outside the ring-fence. In the case of venture debt, this poses difficulties because the client companies may start small and have limited needs, suggesting that they fit within the ring-fence. However, as companies grow and make use of increasingly sophisticated financial products, they are likely to fall outside the ring-fence. More generally, it should be noted that venture debt poses considerable organisational challenges for banks, in terms of different parts of a bank looking after deal sourcing, deal structuring, and client relationship management.

Beyond venture debt for scale-ups, there is also the important question of debt financing for SMEs and start-ups. This vast topic is outside of the focus of this report, and has been written about extensively elsewhere.[liii,liv] Several government programs are already addressing some of these problems, such as Start-up Loan programme administered by the British Business Bank.[lv] The 'Help to grow' programme, recently announced as part of the 2016 budget is also worth noting in this context[lvi]

Finally, it should be noted that data about the UK venture debt remains sparse. There is little systematic data collection on venture debt investments made, and virtually no data on terms and structures. There is also no data on the performance of venture debt loans, such as when and how they get paid out or restructured.

Recommendation 3:

Develop a UK venture debt market to complement equity funding.

Key Actions:

- UK banks and specialised funds should develop a larger venture debt offering.
- The UK Government should resolve any regulatory uncertainty surrounding the lending of venture debt.
- Scale-ups and their investors should simplify their capital structures to more easily access venture debt.
- Data on venture debt deals should be gathered more systematically.

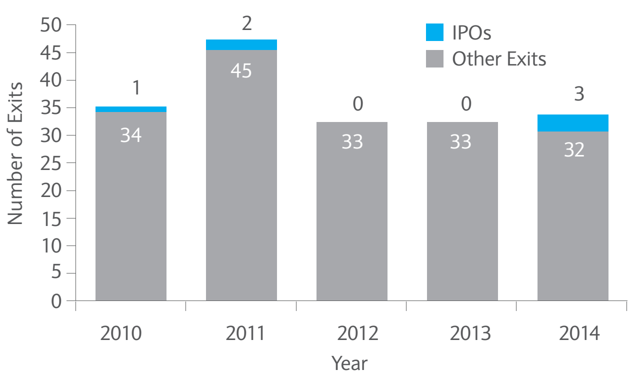
Challenge 4: The role of stock markets

This section examines the role of stock markets for scale-ups. Public exchanges provide two distinct roles for scale-ups. First, they enable companies to raise funds. With an active stock market, companies can attract large funding amounts at a relatively low cost of capital. Second, stock markets provide liquidity for existing shareholders. This is particularly important for earlier-stage investors who can exit their investment by selling at or after the Initial Public Offering (IPO). Liquidity is important for the broader scale-up ecosystem, because it addresses a key concern at the start-up and early scale-up stage. That is, the ability to take companies public affects the willingness to invest at all investment stages. A vibrant IPO market shortens investment horizons, and makes investing in start-up and scale-ups more attractive to a broader class of investors. The question arises how much today's stock markets manage to fulfil these economic roles?

Understanding the role of stock markets

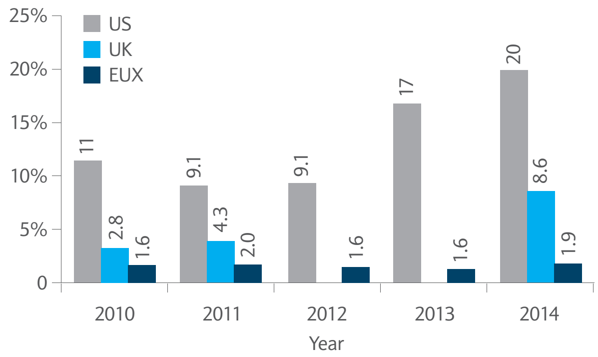
In recent years, venture capital backed companies have rarely gone public. Figure 18 reports the UK exits for the period 2010 to 2014, based on the data from the Venture Capital Associations in Europe (Invest Europe).[lvii] According to this, the UK had no venture capital backed IPOs in two out of the last five years. Figure 19 combines the data from Invest Europe and the National Venture Capital Association in the US (NVCA) to show the relative importance of IPOs as an exit route for VC-backed companies for the period 2010 to 2014. The highest number was three IPOs in 2014, representing 8.6% of all VC backed exists in that year.

Figure 18: Number of Venture-Backed Firm Exits (UK)[lviii]



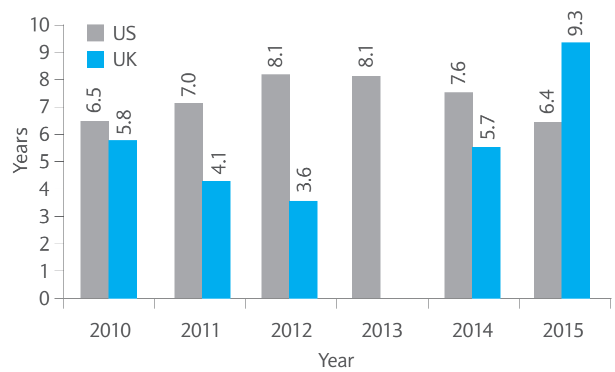
The picture is very similar for the rest of Europe, where IPO exits represented less than 2% of all exists over the same time period. In the US, however, VC-backed companies report a stronger IPO rate, with an average of 13.3%.

Figure 19: IPO Ratio of Invest Europe and NVCA Reported Exits[lix]



Another metric to consider is the time to IPO, i.e. the age at which companies go public. Figure 20 uses data from Thomson Reuters VentureOne. This data uses a slightly different definition than Invest Europe and the National Venture Capital Association (NVCA). It shows the average time to IPO for VC-backed companies in the US and the UK. Since the passage of the JOBS Act in the US in 2012[lx], the average time to IPO in the US decreased from 8.1 to 6.4 years. Over that same period, however, the average time to IPO went from 3.6 to 9.3 in the UK, thus trending in the opposite direction to the US.[lxi]

Figure 20: Average Time to IPO UK vs US[lxii]



The low number and increasing age profile of VC-backed IPOs in the UK raises concerns about how suitable the UK stock market environment is for scale-ups. At the same time, it is important to point out the unique potential in the UK to address this problem. The UK has a stronger stock market culture than most countries, and the London Stock Exchange is the leading European stock market. Figure 21 uses data from the "PwC IPO Watch Europe" report and the "EY Global IPO Trends" report for 2015. It compares the number of IPOs and the amounts raised across the main European and US stock markets, showing data for all markets with more than 10 IPOs. The LSE had the highest number of IPOs in Europe, and also the largest offering value at IPO.

Figure 21: The IPO Market in Europe and US[lxiii]

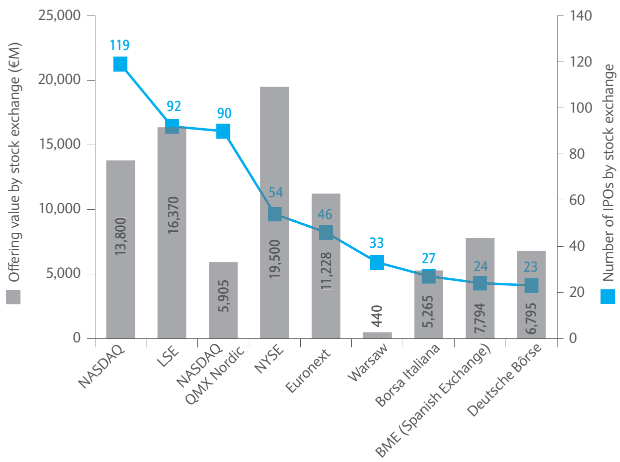
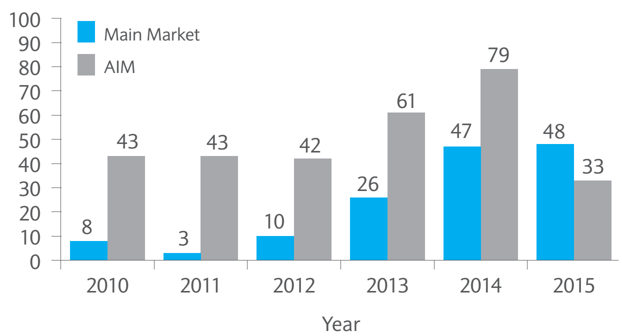


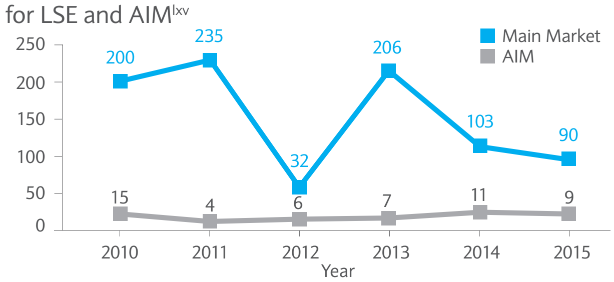
Figure 22 shows separate data published by the London Stock Exchange about the number of IPOs that is broken down by the two most important stock market segments: the Main Market, and the Alternative Investment Market (typically referred to as AIM).

Figure 22: Number of IPOs on the London Stock Exchange[lxiv]



While the LSE's main market is mainly used by established companies that are beyond the scale-up stage, AIM focuses on smaller but growing companies. To see the difference, Figure 23 reports the median amount of funding raised by newly listed companies on the two segments, as reported by the London Stock Exchange. The median for the LSE main market has a wide range, with a low of £32m and a high of £235m. The median for the AIM ranges between £4m and £15m, well below the typical funding requirements of scale-ups.

Figure 23: Median Amount of Funds Raised at IPO (in £m) for LSE and AIM[lxv]



Two additional points are worth noting in this context. First, the UK AIM market provides a unique platform for smaller companies to raise public funds. This market place has no close comparison in the US or indeed most other European countries (with the notable exception of Italy, where the LSE set up AIM Italia in 2012, which is a market devoted to SMEs and the Italian entrepreneurial ecosystem).[lxvi] Second, the amount of funds raised at the IPO is only the beginning, as companies can make subsequent further share issues. According to the LSE, there were 1877 further share issues in 2015 on AIM, raising a total of $4.22b.[lxvii]

Solutions for strengthening the stock market environment

Based on the evidence above, there is a concern as to how much the stock market manages to meet the needs of scale-ups. It appears that the LSE shares this concern, as witnessed by the launch in 2013 of a new special segment of the main market, called the High Growth Segment (HGS).[lxviii] The HGS was created with a mandate to address the unique needs of high growth companies in the UK and other European countries. The HGS is meant to provide a public market for companies that are growing too fast to be suitable for AIM. Relative to the main market of the LSE, one of the most notable features is a lower minimum free float requirement of 10% (compared to 25% on the main market). The HGS also targets companies that fulfil the characteristics of 'gazelles', namely, 20% growth in revenue over a three year period. Overall, the launch of the HGS was conceived to provide a more suitable entry route for high growth companies that eventually are seeking a listing on the main market of the LSE.

However, since its inception in 2013 only two companies have been listed on the HGS: Just Eat (headquartered in London) and Matomy (headquartered in Tel Aviv). Just Eat went public in 2014 at the HGS but transferred shortly after to the LSE main market. Matomy is currently the only listed firm at the HGS. It recently announced that it is seeking to become a dual listed company, as it plans to be also listed on the Tel Aviv Stock Exchange (TASE). It therefore appears that the HGS has not yet become an attractive option for scale-ups.

Designing a path towards a public listing remains a challenge in the UK. One notable initiative of the LSE is the launch in 2014 of ELITE, a growth programme for pre-IPO companies. The ELITE initiative aims to support a selective group of high-growth companies in their next stage of growth, and to stimulate an appetite for investment from investors. As a member of the ELITE programme, high-growth companies can take advantage of a unique network of advisors and investors. These companies also participate in regular educational modules, workshops that focus on growth strategy, financial planning, and IPO masterclasses.[lxix,lxx]

While the stock market can improve access for scale-up companies, it cannot by itself create the demand investing in those companies. One central challenge remains the apparent lack of interest from UK institutional investors. This report already mentioned several of the reasons why UK institutional investors avoid investing in venture capital. In principle it should be easier for them to invest in publicly-listed scale-up companies. However, even in the public markets there appears to be a lack of interest and expertise. One aspect that is important for invigorating interest amongst institutional investors is transparency of information. This requires not only high disclosure requirement for companies, but also expertise in the market to interpret the information. Analysts play an important role in the dissemination of information that is needed to create liquidity in a stock.[lxxi] Yet there are two fundamental challenges facing the economic viability of analyst coverage. First, there is a vicious circle that in the absence of liquidity there is no economic justification to hire an analyst, but without an analyst there is not enough information to create market liquidity. Second, an analyst does not cover one but many stocks. This requires specialised industry expertise, especially in the high technology sectors. A stock market therefore requires a critical mass of stocks within a technology sector to make it sufficiently attractive for investment houses to hire analysts. This suggests important economies of scale. It will be much easier to create a vibrant UK stock market for scale-ups if the market does not rely solely on UK companies, but attracts companies from all over Europe.

Market size and economies of scale matter not only for analyst coverage, they also matter for market liquidity more broadly. Stock markets are characterised by powerful feedback effects. A larger number of listed companies and active trading of those companies make it more attractive for investors to invest, which in turn make it more attractive for companies to list. Liquidity comes from having a sufficient number of buyers and sellers that are actively trading in the stock. This requires simultaneous efforts to convince more companies to list, and more institutional investors to invest.

In its response to the proposed Capital Markets Union, the London Stock Exchange reports that there are at least 19 markets in Europe that could be considered to serve the SME Growth Market.[lxxii] With over 3,000 companies and a combined market capitalisation of over €200b, critical mass will be easier to reach at a European level. Stock markets from across Europe face similar issues showing that there is a need to overcome some of the historic barriers to cooperation, and think of European solutions for the creation of an active stock market for scale-ups. The recently announced merger between the LSE and the Deutsche Börse provides a unique opportunity to revisit the question of public listings for scale-ups. Alongside with the ownership of the Borsa Italiana, the LSE Group is now well positioned to play a leading role in the design of a liquid market place that addresses the financing needs of European scale-ups.

Recommendation 4:

Establish the London Stock Exchange as the leading pan-European stock market for scale-ups.

Key Actions:

- The LSE should continue and enhance its efforts to cater to the needs of scale-ups, most notably by rethinking the design of the High Growth Segment.
- Government and industry should work together on attracting foreign companies and investors, in order to create a critical mass of buyers and sellers.
- The LSE and the Deutsche Börse should work alongside other leading European stock markets to create a liquid market for scale-up stock.
- Government, industry leaders, and the investment community should work on novel solutions to improve the level of analyst coverage for scale-ups.

Challenge 5: The role of private liquidity

This section examines the role of private liquidity. The trend of fewer and later IPOs has changed the way investors navigate the path to liquidity, and thus their strategies for scale-up. The previous section examines the role of liquidity from public markets; this section addresses the issue of private liquidity, i.e., the sale of private shares or what is commonly referred to as 'secondary transactions'. Better stock markets are desirable and will appeal to some of the scale-ups. However, even a very efficient stock market is unlikely to be suitable for all scale-ups, let alone be suitable at all stages of the scale-up process. Even with a perfect stock market there is a role for private secondary transactions. Moreover, the less the stock market manages to cater to scale-ups, the larger the role of the secondary private shares market.

Understanding the role of private liquidity

At present, the market for secondary shares is a highly fragmented, opaque, and inefficient segment of the entrepreneurial ecosystem. Transactions can occur as part of primary funding rounds, via individually negotiated sales, through online brokerage of share transfers, or by means of derivative contracts that are based on the value of the share.[lxxiii] The sellers in the market can be incumbent investors, founders, or managers and employees that received stock options (and that may have left the company since). Buyers in the market could be individual investors, as well as venture capital, private equity, hedge-, cross-over-, or other specialized-funds. Buyers may range from unsophisticated retail buyers to sophisticated institutional investors. They may want to buy shares on a stand-alone basis, or as part of a larger funding round. The demand may range from a few individual shares to large blocks.

Secondary share transactions pose challenges to all parties involved. Buyers face the problem that sellers may only want to sell when their stock is overvalued. Moreover, buyers have limited information and potentially high due diligence costs. Sellers face limited competition for their stock, and in the presence of preferred stock may have difficulty communicating their position within a complex capital structure. Companies are wary of rumours created by these transactions, and want to maintain control over who owns their shares. Overall, secondary share transactions have limited transparency. Valuations are also believed to be low, reflecting severe information and liquidity constraints.

In the US, the leading marketplace for secondary shares is aptly called 'SecondMarket' (see Table 4).[lxxiv] It was recently acquired by NASDAQ Private Markets. The insert below provides additional detail. In the UK, 'Asset Match' has developed a comparable online platform. It allows companies to post a corporate profile, which is shared with interested investors. Shareholders are permitted to list their shares on this site and the company can approve transactions between sellers and buyers. Asset Match posts a total transaction volume of 'more than £22m'.[lxxv]

Table 4: SecondMarket and NASDAQ Private Markets[lxxvi]

Named Technology Pioneer of 2011 by the World Economic Forum, SecondMarket built a digital platform to facilitate the exchange of previously illiquid assets. SecondMarket was established in 2004 with a focus on illiquid financial assets (bankruptcy claims, mortgage-backed securities, public company restricted equity, convertible debt, and warrants). In 2007, SecondMarket shifted focus to providing liquidity to shareholders of private companies. By 2009, Facebook employee shares were being sold at a weekly auction and represented 40% of SecondMarket's business. Facebook's IPO, as well as regulatory changes, resulted in an evolution of SecondMarket's business model, shifting focus to target businesses looking for liquidity for early employees, founders, and early investors. In October 2015, NASDAQ acquired SecondMarket (both the company and the team) with SecondMarket CEO, Bill Siegel, becoming the Head of NASDAQ Private Market. NASDAQ Private Market provides equity management support services to private companies. This includes software, cap table management, investor relations, and shareholder liquidity. The evolved SecondMarket business model is seen in NASDAQ Private Market's Structured Liquidity Programs which helps companies manage equity ownership by facilitating transactions, including allowing companies to determine who, when, and how much shareholders can buy and sell. The transaction volume on NASDAQ private markets reached $1.6B (£1.15b) in 2015.

An improved market for secondary shares could benefit three important stakeholders: investors, founders, and employees. Concerning investors, the problem of illiquidity is not unique to the scale-up stage; it equally applies to start-up investors. The problem of illiquidity is relevant every time a private company goes through a transition phase where new investors with different skills and networks are needed, whilst the existing investors play a diminished role in the company. Prolonging the investment holding period of early-stage investors increases their overall cost of capital. It also deters a larger set of fund managers that might have invested if there was more liquidity. Greater liquidity might even increase the interest of institutional investors who sometimes shun the entire venture capital sector because of liquidity concerns.

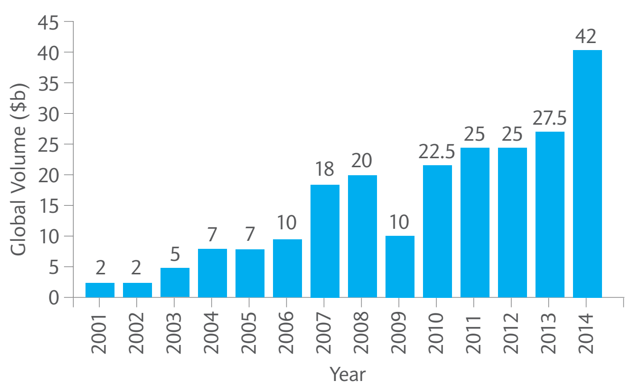
Concerning founders, secondary transactions can be used to offer partial liquidity, which allows founders to 'take some money off the table'. In the debates around scale-up, it is often argued that UK entrepreneurs are fairly risk-averse – see also the discussion in the Cambridge chapter. Allowing founders to sell off smaller parts of their stakes would address their personal liquidity needs.[lxxvii] This could make UK entrepreneurs more risk-tolerant, and increase their appetite for building significant scale-ups, rather than selling their companies.

> "I have evolved my point of view on this issue a lot over the years and I now believe that providing some founder liquidity, at the appropriate time, will incent the founders to have a longer term focus."
>
> Fred Wilson
> Co-Founder of Union Square Ventures

Concerning employees, offering liquidity is particularly useful for departed employees. More generally, the ability for employees to sell their shares improves the overall desirability of working for entrepreneurial companies.

Is the market for secondary shares inherently inefficient, and is it impossible to enhance it? There are reasons to believe that there is room for improvement – not only in the UK but worldwide. Consider the experience in buyout markets. Figure 24 shows that since 2000, transaction volumes of Private Equity fund shares in the secondary market have increased 20-fold.[lxxviii] Similarly, the proportion of secondary buyouts among exits has nearly quadrupled since 2000 levels.[lxxix] Arguably secondary buyouts are simpler, because the underlying companies are more predictable, and because they typically involve the sale of an entire company. However, the point is that the buyout industry went from not having a secondary market to developing a reasonably efficient market for such transactions.

Figure 24: Secondary Transactions in Private Equity Buyouts[lxxx]



Solutions for private liquidity

Two complementary steps are required to unleash the UK market for secondary shares. Arguably there are many willing sellers, what is needed is more informed buyers, and a more efficient market place. In line with the argument here, the Investment Association recently also highlighted the need to develop the secondary market in the UK.[lxxxi] The first part of the solution concerns buyers. The most natural purchasers of secondary shares are the sophisticated professional investors, including venture capital funds, hedge funds, and cross-over funds. They already have the expertise and are actively purchasing primary shares. However, fund mandates often complicate their involvement in the secondary market. Some of the funds are not allowed to make any secondary purchases, others require cumbersome special permissions. In recent years there has already been more openness towards these types of transaction, a trend that is encouraging. Institutional investors in the UK and elsewhere can foster this trend by relaxing the formal requirements or informal expectations that venture capital funds only invest in primary shares.

Another recent breakthrough was the relaxation of European state aid laws that previously prohibited the use of subsidised government funding for secondary share transactions.[lxxxii] The UK government is now in a position to rethink its restrictions on the use of government funding for secondary share purchases. This applies both to its funding programs administered by the British Business Bank, and the UK tax credit programs such as the EIS/SEIS. Note that a rethink need not imply a complete withdrawal of all restrictions on secondary trades; this could open the door to undesirable investment behaviours. Instead, what is needed is a nuanced approach that permits those secondary transactions that are likely to foster the overall mandates of these government programs.

The second part of the solution concerns the creation of a new market place. This challenge cannot be implemented over night, but requires a longer-term perspective. The evidence in this report indicates that the market for secondary sales may be ready for disruption. There is an opportunity to shape the emergence of a new market mechanism that could benefit the entire entrepreneurial ecosystem.

The recent rise of new financial technology has shown how technology can fundamentally transform financial markets. In the area of entrepreneurial finance, there has been a rise of electronic investment platforms, commonly referred to as crowdfunding. In the UK, equity crowdfunding platforms such as Crowdcube[lxxxiii] or Seedrs have enabled retail investors to fund start-ups.[lxxxiv] Other fundraising platforms like AngelList cater mostly to more sophisticated investors. Syndicate Room allows retail investors to invest in syndicates that are led by more experienced investors. Recently Syndicate Room also became a member of the London Stock Exchange, paving the way for a novel approach of allowing retail investors to invest in IPOs.[lxxxv] Currently there is considerable diversity across platforms, and a lot of experimentation. While it is too early to assess how much funding will come from such electronic platforms, there is increased recognition that technology enables new ways of arranging the financing of private companies.[lxxxvi] It is only natural to expect that these kinds of technologies might also be applied to the problems of trading secondary shares.

Designing a more efficient marketplace for secondary shares is far from trivial; it will require a combination of different expertise, and the mobilisation of key industry players. Five major design challenges stand out.

The first design challenge concerns transparency for buyers. There is a fundamental problem of insider trading, namely that existing shareholders are tempted to sell their stocks when they have private information that suggests the stock is likely to be overvalued. In order to generate buyer confidence a credible disclosure system is required to give buyers reliable information about the underlying companies. In addition there is a need for transparent capital structures that allow buyers to easily understand the rights associated with different types of preferred shares. A similar point was also raised in the context of the venture debt market.

The second design challenge concerns privacy. What information is disseminated, when, and how widely? Investors may be reluctant to publicly disclose their interest in selling a stake, as this may reveal sensitive information about themselves. Companies too may want privacy in order not to spread rumours about their business. A new market for secondary shares therefore needs to define what information sellers have to disclose, and what criteria have to be met for potential buyers to access that information. Electronic market places provide a unique level of customisation where different types of information can be selectively released to a limited set of buyers, under a variety of mutually agreed conditions.

The third design challenge concerns companies' control over the shareholder registry. Companies typically retain the right to approve the sale of secondary shares, and may be concerned about the identity of the buyers.

The fourth design challenge is how to attract a critical mass of interested buyers and sellers. Launching such a marketplace requires efforts to mobilise the initial interest. The above-mentioned relaxation of fund restrictions on buying secondary shares would be one important step. Beyond that stakeholder of the broader entrepreneurial ecosystem, including large institutional investors, and even the government, can play an important role in mobilising a sufficient number of interested buyers and sellers.

The final challenge concerns the appropriate regulation and taxation of such a market place. Stock markets are heavily regulated to protect the interests of unsophisticated investors. The secondary shares market would most likely be driven by sophisticated investors, and could therefore benefit from lighter regulation. Importantly, the design of a secondary shares market should not evolve into a duplication of publicly listed stock, the objective is to generate liquidity whilst retaining the benefits of having privately-held companies. Finally, secondary sales of shares typically receive less favourable tax treatment. Investments on AIM are exempt from stamp duties, but no equivalent exemption is yet in place for investors in private secondary shares. Moreover, secondary share purchases are not eligible for any of the tax benefits of the EIS programmes. It would therefore seem appropriate to review the tax status of secondary transactions, and allow for privileges equivalent to those granted to AIM and/or EIS investments.

Recommendation 5:

Develop new approaches for creating liquidity in private company shares.

Key Actions:

- The UK Government and the investment community should find new and more efficient ways of trading secondary private company shares.
- Later-stage venture capital investors should be open to using some of their funds for providing liquidity to founders, employees, and early investors.
- New electronic platforms should work with the industry to design a new marketplace that attracts a critical mass of buyers and sellers in secondary shares.
- The UK Government should revisit the regulation and taxation of secondary share transactions, to enable an active market in private liquidity.

Challenge 6: Monitoring scale-up progress

In order to measure progress on the financing of scale-ups, industry players, industry associations, research institutions, data providers, and the government should cooperate to develop more reliable metrics. Online data collection methods have already improved the quality of data in recent years, but important information still remains hidden. There is also a need to bring together and harmonise diverse sources of information.

This report identifies four key areas for data collection and monitoring. The first concerns funding availability. Both venture capital and venture debt are relevant for scale-ups, systematic data about both types of funding need to be captured. The relevant data includes company fundraising of debt and equity. The hardest part is to collect data not only on investment amounts, but also valuations and terms. Other relevant data includes fundraising by venture capital funds, venture debt funds, and other relevant investment vehicles.

The second concerns investor characteristics, such as experience, networks and investment horizons. Expertise is harder to measure, but can be glanced from data about the track record of venture funds, biographical measure of investor expertise, and investor participation on company boards. Networks can be measured through syndication patterns. It would also be useful to track measures of investor diversity, in terms of country origin, investment histories, and industry expertise. Concerning investment horizons, this involves tracking investment timings, how frequently investors continue to invest across multiple rounds, and the time it takes companies from founding to exit. Investment horizons can also be tracked at the investor level, in terms of lengths of fund cycles (planned and actual).

The third concerns investor returns. This requires two distinct efforts. First, it requires better data on exits: while IPO values are easily measured, acquisition values and the values of secondary transactions often remain hidden. Second, to establish individual investor returns, information on ownership, share prices and/or valuations of all investment rounds is required. Gathering returns data remains a challenge because of the sensitive nature of the data. Yet, more could be done to systematically collect such data on an anonymous basis, with public reporting limited to aggregated trends.

The final key area concerns the measurement of market liquidity in the stock market and the secondary shares market. Data should naturally include fundraising amounts and secondary trading volumes, but may also involve tracking the amount of analyst coverage of listed companies, and qualitative measures of market transparency, listing and disclosure requirements. While some of this data is readily available for the public stock markets, very little exists for private secondary trades.

Different parts of the suggested data are already available. However, much of the data remains incomplete, and is often not comparable across different data providers. Therefore, there is a need to track data on scale-ups in a more systematic and unified manner, both for the UK and for the rest of Europe. The Scale-Up Institute in the UK would be a natural promoter and coordinator for some of these data collection efforts. The broader community of stakeholders can contribute by providing more credible and comprehensive data.

Recommendation 6:

Collect systematic data about the financing of scale-ups.

Key Actions:

- The broader community of scale-up stakeholders should contribute to creating a more credible and comprehensive dataset that includes both investment and exit data.
- Investment metrics should focus on funding, valuations, investor experience, and syndicate networks.
- Exit metrics should focus on measures of investment horizons, exit valuations, and investor returns.
- Government and industry professionals should coordinate with the Scale-Up Institute to establish best practices and more unified approaches.

Conclusion

This report assesses the current state of the funding environment for scale-ups in the UK. The empirical evidence suggests that the UK is well positioned within the European market, but lags behind the US. Over the last year the UK has developed a strong entrepreneurial ecosystem for start-up companies. The next step is to build the ecosystem for scale-ups.

This report makes six key recommendations concerning the required actions to support the financing of scale-ups in the UK. First, the UK needs more venture capital funds of sufficient size to support scale-ups over several large funding rounds. Second, these venture capital funds must be managed by skilled and experienced venture partners with extensive international networks. Third, venture debt should be developed in parallel to venture capital. Fourth, the London Stock Exchange should become the leader for listing European scale-ups. Fifth, there is an opportunity for creating a new market for secondary private company shares. Finally there is a need to gather better data and monitor key metrics.

Overall the report concludes that the UK is currently facing an important inflection point. If the UK builds on its strong start-up ecosystem and develops an attractive scale-up ecosystem, it is well positioned to become the European leader of the scale-up movement, and a driver of economic growth. However, if the current problems with scale-ups remain unaddressed, then there is a concern that the UK start-up revolution could become endangered itself. The proposed recommendations in this report outline a pathway towards UK scale-up success for entrepreneurs, investors and the economy at large.

> If the current problems with scale-ups remain unaddressed, then there is a concern that the UK start-up revolution could become endangered itself.

Acknowledgements

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Appendix: Data sources and usage

The data for the report is derived from the following databases: Preqin[lxxxvii], Beauhurst[lxxxviii], Invest Europe[lxxxix] (formerly known as European Venture Capital Association), National Venture Capital Association[xc], Thomson Reuters ThomsonOne[xci], London Stock Exchange Statistics[xcii], CrunchBase[xciii], and CB Insight[xciv].

Preqin:

All data for Fund- and Funding-level analyses are taken from the Preqin Venture Capital data base. The full data set covers about 30,000 funding rounds in 10,000 deals in the period 2010-2015 for Western and Eastern Europe, the Nordics, and North America.

The analysis focuses on Funds and VC deals in the EU-27 region, including United Kingdom, as well as the United States. Specifically, the observed countries are (countries listed in alphabetical order): Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Poland, Portugal, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, and US. The data includes all Nordics to cover the Scandinavian VC market comprehensively, as well as Switzerland in order to have full coverage of continental Europe.

Several filters are applied to the data, such as the availability of funding volume per investment round, or the location information for VC funds. The data is merged across different Preqin data sets, resulting in further losses of observations. The final data set therefore covers 22,949 funding rounds in 7,725 VC deals made by 1,781 funds of 1,023 different fund managers.

This data is used in Figure 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17.

Beauhurst:

All data on aggregate level investments in UK start-ups are taken from Beauhurst. The full data set covers close to 17,000 fundraisings by over 9,000 companies. Fundraisings are not restricted to VC equity investments alone, and include debt, government grants and other sources of financing for early stage firms.

The data filters specifically for UK companies, and it sorted by stage of development – seed, venture or growth – at the time of investment. To fully capture deal activity in the UK, across all forms of financing, both equity and non-equity investments are included. The Beauhurst data includes both announced and unannounced deals (the latter being those for which no formal press releases were issued), but the analysis only uses unannounced deals. The final filtered data set covers 5,999 investments made in UK start-ups between 2010 and 2015; 2,631, 2,044 and 1,594 in seed, venture and growth stage firms respectively.

This data is used in Figure 2, and for the Mitoo and Skyscanner cases (Table 2 and 3).

Invest Europe:

Data for Venture Capital activities (investments and divestments) in Europe are taken from the Invest Europe Annual Activity Statistics. The data captures activities from more than 1,800 private equity firms, which are representing Invest Europe's members. The full data set covers about 26,745 investment deals in the period 2010-2014 for the following countries in Europe (countries listed in alphabetical order): Austria, Baltic countries, Belgium, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Other CEE (Ex-Yugoslavia & Slovakia), Poland, Portugal, Romania, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom.

This data is used in Figure 3, 4, 18, and 19.

National Venture Capital Association:

Data for Venture Capital activities (investments and divestments) in the United States are taken from the PricewaterhouseCoopers/National Venture Capital Association MoneyTreeTM Report, which comprises data from Thomson Reuters. The full data set covers 24,829 investment deals in the period 2010-2015 for the United States.

This data is used in Figure 3 and 19.

Thomson Reuters ThomsonOne:

Data for the time to IPO for the UK and the US are taken from the Thomson Reuters ThomsonOne data base. All Private-Equity backed company's IPOs in the period 2010-2015 for the following stock market exchanges have been considered for the UK: London Stock Exchange, Alternative Investment Market (AIM), LondonTech (LTM), and PLUS. For the US data, the following stock market exchanges have been included: American (AMEX), Boston (BOST), Detroit(DET), NASDAQ, New York (NYSE), NYSE Amex (NYAMX), NYSE Arca (NYSEA), NYSE MKT (NYSEM), OTC, Pacific (PACIF), Philadelphia (PHILA), Pink Sheet (PINK), Small Capitalisation Market (SMCAP).

This data is used in Figure 20.

London Stock Exchange Statistics:

Data for the historical IPO activity in the UK are taken from the London Stock Exchange New and Further Issues Statistics. The full data set covers about 5,292 IPOs and a total of £224,760m funds raised for the period 1995-2015. Since the data is filtered to only include IPOs at the LSE and AIM for the period of 2010-2015, the final data set comprises 435 IPOs.

This data is used in Figure 22 and 23.

CrunchBase and CB Insight:

Data on unicorns was sourced from CrunchBase and CB Insight. CrunchBase is a crowd sourced database which captures contributions from users, investment firms, and their network of global partners.

Unicorn data was first selected according to a list of unicorns reported by CrunchBase and CB Insights as of 17 March 2016. The CrunchBase and CB Insight lists contained 161 and 155 companies, respectively. The CrunchBase list was used as the basis for this report, with some adjustments made for ccompanies with known additional information. Additional information on three companies was used. One company, POWA Technologies, was removed because it was separately confirmed that it entered 'administration' (bankruptcy). Two other companies, Transferwise and Hootsuite, were added due to inclusion on many other unicorn lists. Some countries of origin were adjusted to align with other public sources of information.

871 unicorn rounds were pulled from a total of 125,478 deals reported in the CrunchBase dataset between 1960 and 2016. For the unicorn companies, the relevant period of deals is 01 May 2001 to 16 March 2016. Of the 871 unicorn rounds, 793 include the amount raised and 791 identify the round in which the funding event took place. These filters left 728 unicorn funding rounds for data analysis.

Geographic distribution of unicorns was determined using the adjusted CrunchBase data set. Companies were categorized into five areas, UK, US, the rest of Europe (specifically the Czech Republic, France, Germany, Luxembourg Netherlands, Russia, Sweden, and Switzerland), and the rest of the world (specifically Argentina, Canada, China, India, Israel, Japan, Korea, Malaysia, Nigeria, Singapore, South Korea, Thailand, and the UAE).

This data is used in Table 1 and 4, as well as numbers mentioned in the main text.

OECD:[xcv]

Gross Domestic Product (GDP) data was obtained from the Organisation for Economic Co-operation and Development (OECD) database.

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Dr. Thomas Hellmann is a Professor of Entrepreneurship and Innovation at the Saïd School of Business, University of Oxford, and the Academic Director of its Entrepreneurship Centre. He holds a BA from the London School of Economics and a PhD from Stanford University. He previously was faculty at the Graduate School of Business (Stanford), and at the Sauder School of Business (University of British Columbia). He also held visiting positions at Harvard Business School, Wharton, the Hoover Institution, INSEAD, and the University of New South Wales. He has taught numerous executive, MBA and undergraduate courses, focusing mostly on entrepreneurship and entrepreneurial finance.

His research focuses on entrepreneurial finance, entrepreneurship, innovation and public policy. His academic writings have been published in many leading economics, finance and management journals, including the American Economic Review, the Journal of Finance, and Management Science. He has been a consultant to a variety of clients, including the World Economic Forum and the Government of British Columbia. He wrote numerous case studies on entrepreneurial companies and venture financing. He is also the founder of the NBER Entrepreneurship Research Boot Camp.

Stelios promotes entrepreneurship as the key context where business school disciplines should focus to generate valuable knowledge and decisively impact economic growth and scale-up.

Stelios Kavadias

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Stelios Kavadias is the Margaret Thatcher Professor in Enterprise Studies with a focus on Innovation and Growth at the Cambridge Judge Business School. He holds a MS in Electrical and Computer Engineering from the National Technical University of Athens (NTUA), and a Ph.D. from INSEAD in France. Previously he has held the Steven A. Denning Chair in Technology and Management at the Scheller College of Business at the Georgia Institute of Technology (Georgia Tech), and he has been a Fellow at the Batten Institute of Innovation and Entrepreneurship at the Darden School of Business, at the University of Virginia. He has developed, led and delivered numerous MBA, EMBA, and executive education programmes on the topics of Innovation, Entrepreneurship, Strategy Execution and Project Management in a number of schools in addition to CJBS (Georgia Tech, INSEAD, Darden Business School, ALBA).

Stelios has spent his career researching and teaching on the challenges of innovating and growing across the company lifecycle; from early stage ventures all the way to established large corporations. He is interested in business model innovations, the strategies that support scale-up and growth, and his recent projects explore the type of strategy pivoting that makes start-up efforts succeed or fail. His research has featured in top academic outlets like Management Science, where he is also an Associate Editor in the department of Entrepreneurship and Innovation. He has authored award winning case studies, and has acted as a consultant to large and small organizations across the globe. Recently he has authored "Six Degrees of Innovation," a thought leadership report in partnership with AT&T's Global Services Business codifying the transformational traits of the business models of the future.

Stelios has led the creation of a gateway for entrepreneurial support and knowledge within (and beyond) the Cambridge Ecosystem. He was instrumental in the establishment of the Entrepreneurship Centre at CJBS, promoting an integrated approach: driving awareness around entrepreneurialism, supporting, and nurturing early stage ventures through an in-house accelerator programme, and cultivating the strategic management skills required for scale-up through a SME growth programme.

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