

Institution: University of Cambridge		
Unit of Assessment: UoA17 Business and Management Studies		
Title of case study: Nurturing and Scaling Startup Businesses		
Period when the underpinning research was undertaken: 2014-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Stelios Kavadias	Margaret Thatcher Professor of Enterprise Studies in Innovation & Growth	01/10/2013 to date
Christoph Loch	Professor of Technology and Operations, Director CJBS	01/09/2011 to date
Paul Tracey	Professor of Innovation and Organisation	01/10/2007 to date
Sucheta Nadkarni	Sinyi Professor of Strategy and International Business	01/10/2014 -13/10/2019
Andreas Richter	Reader in Organizational Behaviour	01/09/2009 to date
Period when the claimed impact occurred: 2013-2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>Startups and scale-ups need to develop not only technology or products but effective business models to succeed. Research at the University of Cambridge which examines the entrepreneurial lifecycle from startups to scale-ups and established small and medium enterprises (SMEs) provides the foundation for Programmes delivered by the Cambridge Judge Business School (CJBS) Entrepreneurship Centre since 2013. The centre's Accelerate Cambridge (AC) programme has supported 253 companies, which have raised GBP230,600,000 in grant and venture capital funding, creating hundreds of jobs. In total 191 SMEs from across the UK have participated in programmes related to scaling, the Strategic Growth programme and Barclays ScaleUp UK (BSU). Those on the BSU programme achieved an average 28% sales growth in the following year, with 89% executing the growth plans developed during the programme to further develop their business.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>The transformation of new ventures from ideas into sustainable growing businesses has been an increasingly prominent driver in the growth of the UK economy. However, there is a gap in knowledge on how technology can combine with business models to create sustainable businesses. Entrepreneurship research within CJBS at the University of Cambridge has focused on developing managerial strategies and toolkits, as well as gaining theoretical insights on how to resolve tensions of scaling technology-based ventures.</p>		
<u>Unlocking new venture value through transformative business models</u>		
<p>Scalable new ventures are built on a foundation of technology that can meet evolving market needs. Research on transformative business models in 2016 [R1] uncovered six transformative elements underpinned by technology which enable new ventures to meet market/consumer needs in a way that generates strong growth. A survey of 40 "unicorn" companies from across the globe – those exhibiting continued growth and reaching</p>		

USD1,000,000,000 valuations, including UK and Cambridge-based firms - helped identify and explain the role of these elements in transformation. This effect of the business model elements highlights the importance of a mindset shift away from considering technology as “the business” towards technology *enabling* a transformative business.

Ladas, Kavadias, and Loch’s work on competing business models in 2020 [R2] deepened the insights of [R1] by developing an economic theory foundation to justify the value of one of the transformative business model elements, namely the usage-based pricing. The theory explains the reasons for the observed wide presence of pay-per-use (PPU) service offerings, displacing product selling and ownership, and transforming many industries. The paper’s theory rigorously establishes the conditions under which a PPU model may be favourable for a new venture over traditional product sales. It shows how various technologies (e.g. payment technology, sensors), which reduce service logistics costs (e.g. billing, tracking), work together to allow companies to meet a customer demand for low-frequency usage, and in so doing ultimately expand their market.

Scaling businesses through business model adaptation and pivoting – the value of management practices and processes

Adopting and implementing a robust business model relies on management actions that enable a systematic cycle of revision and feedback that occurs continually through the entrepreneurial journey – a series of “pivots.” To benefit from pivoting, businesses need to embrace three important approaches.

First, the build-up of the professional management skills required for the transitioning from an idea to a startup and then to a scale-up with a robust business model and growth trajectory. A report by the CJSB Entrepreneurship Centre in 2016 [R3] built a framework for enabling the scaling of businesses in the UK. It develops growth strategies with their associated management skills, leading to six recommendations for SMEs, government, and business creation partners (e.g. financial services).

Second, the explicit retrospective imagining of alternative scenarios that did not happen, known as *counterfactual thinking*. [R4] shows that it is an enabler of business model adaptation during growth. Specifically, venture founders who employed counterfactual thinking, to contrast deficiencies of past and present actions by imagining superior alternatives, were able to successfully pivot. By drawing on perspectives from psychology, the study advances the understanding of pivoting as a process that relies on founders’ abilities to reflect creatively on what did and did not succeed.

Finally, the contingency of pivoting choices on the business environment. Tracey’s work in 2020, [R5] illustrates the process that new venture founders undertake to manage competing expectations from multiple important stakeholder relationships during the pivoting process --- stakeholder relationships are sources of uncertainty just as much as technologies themselves. Tracey highlights the major challenges from and strategies for achieving major stakeholder related pivots.

3. References to the research (indicative maximum of six references)

- [R1] Kavadias, S., Ladas, K., & Loch, C. 2016. “The Transformative Business Model: How to tell if you have one.” *Harvard Business Review*
- [R2] Ladas, K.T., Kavadias, S., & Loch, C. 2020. “Product Selling versus Pay-per-Use Service: A Strategic Analysis of Competing Business Models” *Preprint available: <https://ssrn.com/abstract=3356458>*.
- [R3] Brahm, F., Loch, C., Kavadias, S., & Hiscocks, P. 2016. “Scale-up UK: Growing Businesses, Growing our Economy” *Entrepreneurship Centre White Paper supported by Barclays*

[R4] Nadkarni, S. Hambrick, D. C., Richter, A., & Yen Nee Oon, E. 2018. "Looking Back to Move Forward: CEO Counterfactual Thinking and Strategic Change" *Academy of Management Proceedings*, DOI: 10.5465/AMBPP.2018.15994abstract.

[R5] Hampel, C.E., Tracey, P., and Weber, K. "The Art of the Pivot: How New Ventures Manage Identification Relationships with Stakeholders as they Change Direction" *Academy of Management Journal*, 2020, Vol. 63, no. 2, 440-471. DOI: 10.5465/amj.2017.0460

4. Details of the impact (indicative maximum 750 words)

Research conducted at CJBS at the University of Cambridge has established the fundamentals of modern *transformative* business models and the skills to implement and adapt that are essential elements in new venture and SME success. These insights are used to underpin an established set of tailored teaching and mentorship programmes at the Entrepreneurship Centre.

The Entrepreneurship Centre stands on three programme pillars to provide support across the new venture lifecycle: idea generation and entrepreneurial learning through cross-disciplinary programmes; business creation and starting up through Accelerate Cambridge; and finally, scaling up and growth through the Strategic Business Growth and Barclays ScaleUp UK programmes. Since 2013 over 300 founders and venture leaders have been equipped with the practical skills to successfully start up and scale up businesses through these programmes.

Creating Long-Term Growth Businesses through Accelerate Cambridge

The Entrepreneurship Centre focuses specifically on creating growth businesses, which will generate employment and economic prosperity. Findings from research on the entrepreneurial process described in section 2 have been central to the approach undertaken by the AC programme, a business accelerator housed within the centre. Its teaching and mentoring emphasize the need for both a well-developed business model and the process of pivoting the model at key points. AC has nurtured 253 ventures since 2013 which have raised a cumulative GBP230,600,000 including major development grants, seed capital, and venture capital from a range of international investors, creating jobs and opportunities in the Cambridge region [S1].

Ventures like Spirea joined AC with substantial scientific or technical knowledge but with a limited understanding of business models. Business mentors and structured seminars guide ventures through the underlying principles of transformational business models drawn from key research insights, and their practical application. The founder of Spirea, which in July 2020 secured seed funding [S2], suggested that the focus on designing a business model "*to leverage the scalable components of my product has been extremely beneficial in identifying how I can grow and attract support along the way, including biotech partners and funders.*" [S3]

AC's approach ensures that new ventures pursue business models that are asset-light, agile and capture value through personalisation [R1]; an example is HealX's use of Artificial Intelligence to repurpose existing drugs to treat rare diseases. Throughout the process, founders are challenged to refine their value proposition and to define their business models. Moreover, the programme team helps businesses to nurture the right connections across the Cambridge ecosystem to ensure that they have wide access to potential customers, mentors, and funders as well as to opportunities to identify alternative pathways for their business [R5] [R4]. The founder of Pharmenable highlights how "*To date, we have grown our company from an idea to working with a number of multinational pharmaceutical companies since joining the programme and are currently on track to raise a seed funding round of £1.8 million. The programme was invaluable in helping us continue to drive our business forward, constantly reinventing, reimagining, and pivoting in the early stages*" [S4].

Enabling scaling up and growth: developing tools for SMEs

Whilst the AC focuses its impact on the Cambridge entrepreneurial ecosystem, the Strategic Business Growth programme has reached businesses across different regions of the UK, and beyond (Greece).

The programme began in 2014 and has since been delivered to over 60 businesses, many of which continue to experience significant growth. For example, Satavia, which participated in the programme in 2019, used the Growth Trajectory plans developed in the programme to *“formalize our business planning process... [which] has made a massive positive impact on the growth of SATAVIA Ltd” (CEO & Founder, Satavia) [S5]*. This has enabled them to build an investable business plan that has resulted in a GBP1,000,000 investment less than a year after completing the programme (between October 2019 and January 2020). Additionally, the company has won a large project funded by the European Space Agency for EUR1,900,000, and has grown the team to 18 staff members (12 of those full time) [S5].

Peterborough based law firm, Taylor Rose TTKW, completed the programme in 2016 following a major growth event, merging with Tucker Turner Kingsley Wood in 2015. Their developed growth plan boosted consulting revenue from GBP3,200,000 to GBP5,100,000 in 10 months, two months ahead of target. Since then, the firm has used the growth plan framework to forecast GBP20,000,000 in consulting revenue in their current fiscal year and plans to complete the Strategic Business Growth programme again in 2021 *“to review market opportunities/business strengths afresh and update our strategy for the next few years” [S6]*.

Through both its startup and scale-up programmes, the Entrepreneurship Centre has enabled companies to achieve significant, sustained growth in investment and employment to benefit the UK economy. HealX’s participation in both Accelerate Cambridge and the Strategic Business Growth Programmes has unlocked their potential to envision growth and develop strategies to achieve it. Recently, they were recognized as one of the “Top 100: Britain’s Fastest-Growing Businesses” in a leading industry report [S7]. Recent raising of a Series B round of USD56,000,000 has enabled them to grow their team to over 50, all new jobs which require technology and scientific qualifications [S8]. *“Since joining the programme in 2014, our company has grown from just a handful of employees to targeting upwards of 75 full time staff by the end of 2020. We have raised over £65 million in funding since that time and continue to grow.” (CEO & Founder, HealX) [S9]*

The Entrepreneurship Centre has established its reach beyond Cambridge through strategic partnerships with Barclays and the CJBS Executive Education programmes. The Barclays ScaleUp UK programme has reached 131 scale-ups based on critical gaps identified in management skills in [R3]. A recent survey [S10] of leaders from businesses who completed the Barclays ScaleUp UK programme found significant positive impact after completing the training. This initiative demonstrates the Entrepreneurship Centre’s contribution to fostering entrepreneurial capability across the country.

Percentage of respondents that:	
Found at least one module on the Barclay ScaleUp UK programme to have crucially impacted their business	92%
Have been executing a growth plan they designed on the Barclays Scaleup UK programme	89%
Regularly use at least one management tool learned on the Barclays Scaleup UK programme	57%

Growth Metrics following Barclays ScaleUp UK (BSU) Participation:	
Average annual sales growth since BSU	28%
Average annual employee number growth since BSU	18%
Average annual profit growth since BSU	18%
Average annual market share growth since BSU	13%

Advancing the growth potential of UK SMEs and new ventures

Hundreds of SMEs and new ventures have participated in programmes based on the research and translation of entrepreneurial tools in the CJBS Entrepreneurship Centre since inception in

Impact case study (REF3)

2013. This has resulted in a transformative level of entrepreneurial upskilling within Cambridge and across the UK, skills which are essential in the continued development of the economy and recovery in the current uncertain times. Programmes like Accelerate Cambridge continue to attract significant attention and result in the creation of new ventures, jobs, and economic benefits. In this way, the Centre continues to demonstrate continued impact through building sustainable and scalable growth ventures.

5. Sources to corroborate the impact (indicative maximum of 10 references)

[S1] Proprietary data collection using public (e.g. press releases, media coverage) and private databases (e.g. Crunchbase, AngelList, Beauhurst, PitchBook)

[S2] "Spirea completes seed funding round to develop the next generation of antibody drug conjugate therapeutics", July 13, 2020, Press Release <https://www.spirea.co.uk/>

[S3] Founder & CEO - Spirea Ltd, Testimonial Letter, 27 April 2020

[S4] Founder - Pharmedable, Testimonial Letter, 27 April 2020

[S5] Founder & CEO – Satavia, Testimonial Letter, 29 April 2020

[S6] CEO – Taylor Rose TTKW, Blog post, Business Leader Series: Taylor Rose, December 2020, <https://entrepreneurship.blog.jbs.cam.ac.uk/2020/12/22/business-leader-series-taylor-rose/>

[S7] "Top 100: Britain's Fastest-Growing Businesses" <https://www.syndicatoroom.com/guides-and-reports/100-fastest-growing-companies-uk>

[S8] Press Release, HealX, <https://healx.io/news/healx-secures-56m-in-series-b-financing-launches-global-accelerator-programme-for-rare-diseases/>

[S9] Founder & CEO – HealX, Testimonial Letter, October 2020

[S10] Survey results, Barclays Scale-Up Programme, June 2020