Scaling the User Base of Digital Ventures Through Generative Pattern Replication: The Case of Ridesharing

by

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To Yuriy Kelestyn (1964-2016)

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DECLARATION

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree at any other university. All the work presented here including the data and analysis was carried out by myself.

In the process of writing this thesis parts of the research have been published:

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ABSTRACT

Digital ventures, for example Uber and Airbnb, seek to scale their user base quickly and effectively across markets in order to lock out competitors and drive adoption through positive feedback loops. I view such rapid global scaling as an organising logic by which digital ventures replicate a generic solution to recurring challenges. This thesis intends to understand the process by which digital ventures scale across a multitude of varied regional markets. By arguing that this process is qualitatively different from our current conceptualisations of scaling I aim to encourage more researchers to pay heed to scaling as an integral part of digital innovation literature.

To this end I present a qualitative study of a digital venture called BlaBlaCar, a ridesharing venture that rapidly scaled its user base into 22 markets. My findings are based on original data, collected over a course of two years in two stages. First, by collecting observational data for four months, and second, by collecting 58 interviews across 15 offices globally.

In this thesis I distinguish and describe scaling as the process of generative pattern replication (GPR), where an existing scaling pattern is specialised to the specific circumstances of a new market, and applied there. I trace three mechanisms underpinning rapid scaling across regional boundaries: instantiation, venture meshing, and value frame. I explain these mechanisms and how they interact in the process of GPR. My research speaks to the digital innovation literature by making a unique contribution: a novel perspective on scaling of digital ventures including a process model and related mechanisms. In addition, my proposed research findings have the potential to offer valuable insights for digital ventures looking for novel scaling and digital innovation management tools.

1. INTRODUCTION

The user base, that is, the number of users who have registered for a service, is often used as a measure of success of digital ventures (Huang et al. 2017, Tucker and Zhang 2010). Since it assigns weight and legitimacy to a new digital service, the velocity of user base growth (Oliva et al. 2003, Prasad et al. 2010, Shankar and Bayus 2003, Sun et al. 2004, Tucker and Zhang 2010) is imperative for most, if not all, digital ventures. Digital ventures are also driven by "winner-take-all" perceptions (Eisenmann et al. 2006, Hill 1997, Schilling 2002), which are associated with a sense of urgency to grow quickly. In this regard, scaling in digital ventures is qualitatively different from the industrial age scaling (Huang et al. 2017). Back then, growth was associated with acquiring new resources to expand the capacity of a business to meet increases in demand (Schumpeter 1947, Penrose 1959) and reducing the cost of production (Abernathy and Utterback 1978, Chandler 1990).

Recent research attempts to revise some of these industrial age assumptions, focusing on other ways of growing, more in line with the digital innovation logic. A study conducted by Huang et al. (2017) offers a detailed account of how a digital venture can rapidly build their user base, looking at a digital venture's growth within a single market. I use Huang et al.'s (2017) work as a starting point for this doctoral thesis, however I expand my research focus to scaling of digital ventures across regional markets. I view this focus on multiple markets as an important step towards advancing the knowledge of the scaling process, since in reality the promise of a large user base of digital ventures involves expanding across regional markets. For instance, Uber scaled its user base to 8 million members across 67 countries (DMR 2016). Similarly, Airbnb grew to 60 million users in 190 countries (Airbnb 2016). Indeed, many digital ventures have an international agenda, and creating a large user base necessitates ways to handle differences in contextual conditions between regional markets. As the understanding of digital innovation develops (Eaton et al. 2015, Kallinikos et al. 2013, Yoo et al. 2010, Yoo et al. 2012), the IS research

community needs to learn more about the process by which digital ventures scale their user base across regional markets.

1.1. Research Aims and Significance

Digital technology has undeniably changed the way organisations incept, interact with markets, as well as organise themselves (Yoo et al. 2010). Transforming multiple industries and companies, digital technology also gave rise to companies that are digital by nature. These novel forms of ventures – digital ventures, require us to develop an understanding of the intricacies that make them different from the pre-digital ventures. One very prominent difference is in the way digital ventures scale, particularly internationally. Industrial scaling logic, well studied and documented in the work of Chandler (1962), is based on acquiring resources, standardisation, and economies of scale. Digital technology challenges some of these theories through the affordances (Kallinikos et al. 2013) that do not require digital ventures to acquire costly and 'sticky' resources to grow. Instead, digital ventures capitalise on existing infrastructures (Brynjolfsson and McAfee 2014) such as roads, cars, mobile phones, etc., recombining the capabilities and features of their products and services in a flexible and highly responsive manner.

This study is driven by the need to understand the differences and the ways in which digital ventures scale internationally at an unprecedented speed, creating the so called 'hockey stick growth' trajectories and sky high valuations for organisations that possess little or no assets or infrastructures (Huang et al. 2017). Therefore, the aim of this thesis is to investigate the ways digital ventures scale their user base rapidly across regional boundaries. Stemming initially from a study of digital entrepreneurship and the inception, shifts and scaling of digitally enabled every day practices (Kelestyn and Henfridsson 2014), this study was motivated by the gaps in research on the fascinating new ways in which digital technology affects organisations and users (Yoo 2010).

The proposed research is important because scaling is a relatively new and thus understudied topic in the field of Information Systems (Huang et al. 2017,

Nambisan et al. 2017). The ideas and preliminary findings of my study have been presented and developed during some of the most prominent IS community events, namely ICIS2014, ECIS 2016 (Doctoral Consortium), and HICSS 2017.The latter presentation generated a lot of interest from the audience in the Digital Innovation track and the paper was nominated for the Best Conference Paper. All of this helped to give the study a more sense of direction and strengthen my assumptions that I am following an important topic that will attract appropriate and sufficient IS audience. Following this, the importance of the study is in its anticipated findings, which can aid multiple ventures in scaling internationally.

1.2. Narrowing the Research Focus

My investigation begun with several streams of ideas and assumptions.

Firstly, following Huang et al. (2017) I adopted the same definition of rapid scaling, viewing it as "a generative process by which venture's user base increases significantly between two points in time" (p. 302). The process is seen as generative due to several key, inherent to digital technology characteristics. These include multiple affordances of digital (Kallinikos et al. 2013) and democratisation of innovation (von Hippel 2009) that opened up endless innovation opportunities. The flexibility and malleability of digital allows to create multiple product iteration and combinatory possibilities (Henfridsson et al. 2014, Kallinikos et al. 2013). Leveraging of the existing infrastructures and resources (Brynjolfsson and McAfee 2014, Henfridsson and Bygstad 2013, Yoo et al. 2010) allows to remain flexible and adaptive to multiple and fast changing environments. Scaling, nevertheless, cannot perpetually sustain its own generativity and requires other factors to come into play. Other such factors include positive network effects – a powerful force that allows digital ventures to boost scaling once the point of critical mass is reached (Parker and Van Alstyne 2005). Critical mass of users, together with instantly and constantly user generated data, as a by-product of the use of digital products and services, form a generator of insights for digital ventures (Ries 2011). Empowered with these

real time user insights, digital ventures' scaling opportunities are endless: innovation, experimentation, new markets, extension of existing products, just to name a few. Users interact with a product or a service allowing digital ventures to capture and collect various pieces of data. This creates a constant stream of feedback on the product or a service, without having to conduct any explicit marketing research in its traditional sense, easily and effectively extending user reach (Ries 2011). Feedback allows a digital venture to work on iterations in quick cycles, launching and immediately testing new versions of a product or service. The value, constantly delivered to users through iterations and new product or service features, can be developed directly in response to user demands determined by the feedback. Growing value attracts more new users and retains an existing user base, allowing for the feedback loop to exist and create further positive externalities for a digital venture.

Conceptualising innovation and experimentation as being made possible through the feedback loops and virtuous cycles (Figure 1), I painted a preliminary picture of scaling as an almost independent process. Attempting to demystify this, I turned to motivations for rapid scaling. Many digital ventures seek to scale rapidly to land grab and create a foothold in as many markets and regions as possible. Due to the aforementioned democratisation of innovation, the rates of competition skyrocketed, putting pressures on venture's ability to scale and therefore survive. As such, many of them seek winner-take-all logic (Eisenmann et al. 2006, Schilling 2002). Sustaining scaling and its generative nature under this logic assumes the need for an element of agency and the presence of reflective agents (Garud et al. 2010).

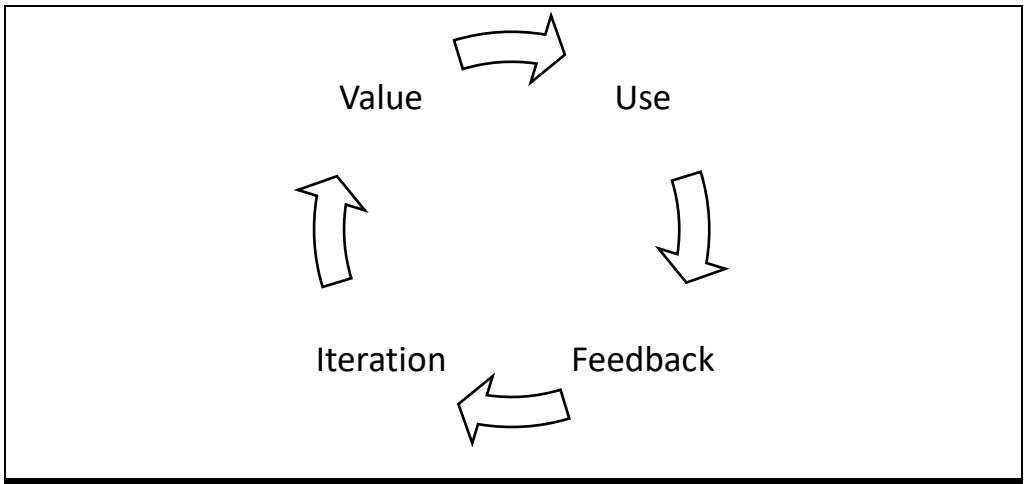

Figure 1. Virtuous Cycle of a Digital Venture

An important part of trying to understand the phenomenon of scaling, particularly in relation to the notion of agency and reflective agents, is the way scaling is measured. For instance, recall the Uber and Airbnb scaling figures in the opening of this chapter. Digital ventures are measured in different units in comparison to the more traditional indicators of success such as profit, revenue, turnover, sales, etc. The measurements of the traditional indicators would be irrelevant for a bootstrapping (Hanseth and Aanestad 2003) digital venture that usually starts with very little resources and on a promise of making profit or its ability to monetise. As such, these were replaced by the more digitally appropriate metrics such as number of users, traction, conversion, impressions, etc. Naturally, given the shift in the measurement units the questions around a single measure and its accuracy emerge. When it comes to scaling in an international context, indicators such as number of countries, market share, number of users, and number of active users, etc. are more fitting. Ries (2011) and Parker et al. (2016) offer rich practice-grounded insights on the way digital ventures operate and scale. Highlighting the need to understand digital ventures scaling metrics differently, Ries (2011) for example, puts forward arguments towards using validated learning instead. Whereas Parker et al. (2016) argue the case for ensuring frictionless entry and matchings between users, and careful curation of network effects for sustained scaling.

Puzzling these together, digital technology is at the core of rapid scaling, however it cannot sustain the affordances-generated speed eternally. Thus, a better understanding of scaling agency and the role of reflective agents in maintaining this generativity is needed. Scaling motivations of those reflective agents can be linked to the need to compete and scale internationally, however with few universal and relevant to the digital age ways of managing and measuring scaling.

In an attempt to extend these views but understand scaling in a more fundamental way, I started spotting unanswered questions in our current understanding of scaling of digital ventures across regional boundaries.

1.3. Research Question

In the narrowing of the research focus I understood digital ventures and the way they scale to be qualitative differently from the widely understood and accepted ideas of the industrial age scaling. Therefore, some of the initial questions guiding this research have been formed by the gap in understanding the underlying mechanisms that might contribute to creating positive feedback loops, 'winner take all' and network effect based externalities (Eisenmann et al. 2006, Schilling 2002).

The starting point for my questioning was Huang et al.'s (2017) scaling of the user base of digital ventures, which despite its richness explored scaling in a single market. The study posed many interesting questions and avenues for further research that helped to mould my enquiry. Furthermore, I was particularly intrigued by the work of Nambisan et al. (2017) and the argument for the need to reinvent digital innovation management research by challenging the traditional boundaries that define the current state of the research landscape.

Growth and scaling of digital ventures in the context of multiple markets is such a widely reaching phenomenon. It attracts interest from researchers, practitioners, and general public alike. As such, by diving into this novel and intriguing stream of research, I also wanted to ensure that my research question carried relevance for both academia and practice.

Taking these three above points into account, in the process of conducting and writing this thesis I posed the following research question:

What is the process by which digital ventures scale their user base across regional market boundaries?

1.4. Methodological Considerations

In order to answer the posed research question, I conducted an in-depth case study (Gerring 2007) of BlaBlaCar, a ridesharing service, which managed to scale its user base to 30 million users and enter 22 regional markets in a 9-year period. Following my aim to understand the process behind the scaling of digital ventures I was guided primarily by the teaching of Langley (1999) and Langley et al. (2013).

In order to understand the process and the underlying mechanisms to offer interesting and valuable insights, original data was needed. More specifically, understanding the inside workings of a digital venture, its organising logic, scaling timelines, main scaling decisions was essential. It goes without saying, that an understanding of more than one regional market was key. Using these anticipated data needs as my starting point for thinking about methodology I connected my considerations to the three points of my research question from the previous section. Thus, my investigations needed to take place in the context of:

- a digital venture
- that has shown rapid user scaling trajectories
- across a number of varied regional markets.

As such, I focused on searching for and exploring a single extreme case study (Gerring 2007) of a successful digital venture. I then further narrowed down the key requirements towards selecting a case for this study to the following:

- venture that meets the prosed definition of a digital venture (whereby I understood a digital venture as one that draws on digital technology and existing infrastructure to create disruptive products and scale in extreme uncertainty),

- a user base that has rapidly grown consistently and consecutively over a certain period of time,
- a user base in more than one market,
- market conditions that vary between themselves (economically, politically, etc.).

From a practical standpoint, case selected for this study needed to present an opportunity for gaining access to the organisation, internal documents, or other types of data and people to explore the organising logic of digital innovation and scaling in depth. Similarly, access to more than one regional team was crucial to enriching the research findings.

In order to find access to a digital venture targeting the mentioned requirements I leveraged my personal and professional contacts and several social media channels. I started with searching for a venture that had presence in either UK or Ukraine. My initial aim was to open up a dialogue with a member of a venture. I then intended to gradually grow my sample by asking already interviewed participants to recommend and connect me with other members of the teams.

The relative understudied nature of the phenomenon lent itself for a qualitative methods approach, where new explanations for the process and mechanisms of scaling could be built up from rich data insights. My goal was to generate a sizable number of observations and interviews, aiming at around 60 interviews, from a range of regional contexts to help me create richness for the empirical part of this doctoral work. Having received training in Nvivo software I used it for coding and analysis work of any fully or partly transcribed interviews and other sources of primary and secondary data that emerged in the research process. In order to supplement and contextualise interview findings, I also used a large amount of resources that were publicly available such as online media articles, videos, blogs, venture presentations, etc.

As a researcher attempting to study scaling in the digital age I expected to face challenges obtaining data from digital ventures. Firstly, any data and insights were of high strategic value to a digital venture. Such sensitivity

lowered any chances of gaining access and using data, even for research purposes. Secondly, negotiating access to more than one market could be time consuming. Developing a level of familiarity with teams in an online environment without any previous interaction was particularly challenging. The adopted snowballing interview strategy did not guarantee a sufficient number or quality of interviews to form the basis of a doctoral study. Thirdly, cultural barriers between regional teams and myself, even from a practical standpoint such as language and time difference, needed to be accounted for. Similarly, developing a certain level of understanding of the context and regional specificities for each studied market and team was needed.

1.5. Research Contribution

In relation to the motivations and the posed research question I offer several contributions.

Firstly, I shed light on the generative process of scaling of digital ventures, and propose a generative pattern replication (GPR) process model and explanation of the mechanisms (instantiation, venture framing, and value frame) that contribute to stimulating and generating rapid growth (cross boundary and compound) of the user base of digital ventures. By viewing scaling as an integral yet understudied stream of digital innovation research I call into question some of the assumptions that determine the ways we understand scaling and digital innovation management. As such, I offer one of the first empirical accounts of the new logic of theorising about digitalisation of innovation proposed in a recent paper by Nambisan et al. (2017). Since my analysis and findings were set in a multiple markets context I considerably extend the focus of existing scaling of digital ventures research that has to date explored scaling within a single market (Huang et al. 2017). Moreover, my research points towards the use of replication as a strategy (Winter and Szulanski 2001) for rapid scaling of the user base of digital ventures. I extend replication from the industrial and franchise setting to digital ventures and the way they scale their user base.

Secondly, by challenging some of the long standing assumptions that dictate the ways scaling is understood, managed, and measured this research advances the knowledge of scaling. Viewing scaling as qualitative different from the industrial age, yet still requiring a disciplined management approach, I reverse the common misconceptions of innovation as requiring little or no control. Therefore, with this doctoral thesis I extend the work of Ries (2011) and Kim and Mauborgne (2015) in arguing for the need to find new management tools for improving the success rates of digital ventures. I also suggest that GPR contributes to the understanding and addressing of the complexities of managing tensions (Hanseth and Aanestad 2003, Hanseth and Lyytinen 2010, Tilson et al. 2010) associated with digital innovation management and scaling.

Lastly, I offer a rich account of the inside working and scaling processes of a digital venture that successfully and rapidly scaled into over 20 regional markets. In doing so my research contributes to developing accounts of digital ventures in order to replace the classic, yet less relevant to the study of digital ventures case studies such as Du Pont and General Motors (Chandler 1962). This creates positive externalities in forming the basis for a blueprint for other digital ventures looking to follow similar strategies in pursuit of growing their user base across regional boundaries. By 'lifting the curtain' on many intricacies of the internal working of a successful digital venture, my findings can be of interest to start-ups and ventures looking to replicate and learn from a success of a company valued in billions of US Dollars. My findings can also potentially be relevant to internal ventures within larger organisations, start-ups within start-ups, and any other organisations looking to build and scale digital disruptive products and services under conditions of uncertainty.

1.6. Structure of the Thesis

This monograph thesis is structured into several chapters unravelling the research process, case story, and unique contribution in the form of a process model and related mechanisms.

Chapter 1, Introduction, explained the main reasoning and rationale behind

the selection of the research stream and the undertaking of the research. It acts as a foundation upon which the next section is built on. Chapter 2, Literature Review, outlines the conceptual and theoretical framing guiding this research. It explores and discusses several streams of IS literature relevant to explaining the scaling of the user base of digital ventures. This chapter additionally draws on theories that were incepted outside of IS research, for example Christopher Alexander's pattern language, but were crucial in studying and understanding the phenomenon in question. Chapter 3 on Research Methodology is dedicated to the empirical research undertaken as part of this doctoral thesis. Using qualitative research concepts this chapter outlines the main steps taken to design, conduct, analyse and, evaluate original empirical data, collected as part of and for this doctoral research. Next, in the Case Study, Chapter 4, a case study storyline is presented, laying out the context in which the research and empirical data collection was set. The case of ridesharing allowed to draw out and present observations that underpin the contribution of this research. Building on this, Chapter 5, Analysis and Findings, retraces the steps taken to organise, analyse, and interpret research data. Drawing on the findings outline, Discussion and Implications, Chapter 6, layers the findings of the thesis with the literature in order to piece together a comprehensive process model explaining the scaling of digital ventures across regional boundaries. Chapter 6 also outlines the significance of the research findings and their implications for both research and practice. Chapter 7, Conclusion, briefly summarises the research and explains the limitations of the study, on the basis of which suggestions for future research are offered. A brief reflexive account explores and reflects on parts of the research process. Finally, Chapter 8, Epilogue: BlaBlaCar Hitting the Brakes, accounts for some of the most recent ridesharing venture's announcements. Despite taking place outside of the data collection timeline, these announcements are contemplated against the main findings in a brief rhetoric.

2. LITERATURE REVIEW

I started theory exploration with the view on digital innovation (as a stream of IS research) as immature and in need of novel perspectives (Nambisan et al. 2017). In this chapter I frame the phenomenon under study and the way we understand and conceptualise scaling in the digital age, breaking it into several streams.

Firstly, I explore the concept of digital innovation in order to gain a better understanding of the main assumptions that currently exist in the way we study digital innovation and digital innovation management, which includes the phenomenon of rapid scaling of the user base. Aiming to extend the argument that digital innovation impacts and creates new forms of organisations, I intend to zoom in on digital ventures and begin building my case of scaling in the digital age as qualitatively different from that of the industrial age.

One such distinction, scaling across regional boundaries, is underexplored in the context of digital ventures. Where industrial age companies drew on standardisation and adaptation in order to minimise complexity, I want to understand the ways digital ventures rapidly deal with underlying complexities of scaling into different markets without the traditional notions of the economies of scale. This understanding, albeit a number of research conducted on dealing with complexity, heterogeneity, and managing control and change across multiple contexts has not captured the phenomenon of rapid scaling of digital ventures.

In an attempt to conceptualise this scaling and complexity management process I propose a novel perspective on rapid scaling of digital ventures as based on replication. To this end, I aim to understand the grounding behind using replication as a strategy. I then link rapid scaling via replication to the concept of generativity and begin to probe whether replication and generativity contribute to scaling of digital ventures by exploring the notion of patterns.

I conclude with a summary and a preliminary framing of the phenomenon of rapid scaling of digital ventures as I understand it post literature review.

2.1. Digital Innovation

Digital era has "opened the floodgates" (Yoo et al. 2010, p.5) for new possibilities and opportunities for technology experimentation and digital innovation. The ease of access to digital technology liberated many to partake in the innovation processes (Tuomi 2002, von Hippel 2009) creating an entirely new generation and breed of born digital organisations. This growing and ubiquitous nature of digitalization creates new organising logic and socio-technical arrangements (Tilson et al. 2010, Yoo et al. 2010) that we do not fully understand as scholars, and cannot leverage fully as practitioners.

Further to this, inspired by the arguments in Yoo et al. (2010) I also recognise the shift towards the increasing complexity of innovation processes (Boland et al. 2007; Van De Ven et al. 1999) as digital products become more generative and their innovation becomes more unbounded. Looser couplings between contexts, needs, affordances, artifacts and features create infinite number of combinations (Yoo et al. 2012) and a seedbed for experimentation (Ries 2011).

Multiple scholars have shown the increases in this heterogeneity and interplays, and the implications these have on organisational and innovation processes. Yoo et al. (2010), for example, claims that innovation activities are increasingly becoming more horizontal and Bygstad (2010) talks about the emergence of "space of possibilities" for innovation. Henfridsson and Bygstad (2013) outline the innovation and adoption mechanisms that draw on each other, creating futile ground for scaling and evolving digital infrastructures. Whereas, Boland et al. (2007) highlights the interplays of complex patterns of innovation and the significance of heterogeneous communities of actors that collectively produce diverse innovations, or the so called wakes. Multiple wakes, according to Boland et al. (2007), create complex innovation landscapes.

At the core of these combinatorial possibilities of digital innovation are the "intentionally incomplete" Garud et al. (2008) structures, which allow for the scope, features, and value to continue evolving even after an idea or innovation has been enacted in the first instance. Lyytinen et al. (2016) similarly shows that scale and scope can be expanded, since it is based on somewhat incomplete

designs. Organisations in the digital age leverage these changes and possibilities in repeated cycles of implementation and experimentation, which are significant to the speed and scope of the innovation processes (Ries 2011).

Despite creating multiple spaces for innovation, providing for a more proactive rather than reactive approach to 'problem solving' in the digital age, this creates multiple organisational challenges that we do not currently fully understand or have the tools to harness and govern. As noted by Benner and Tushman (2015) the axioms that in the past have been dominating organisational research and school of thought are being challenged and changed by the all-encompassing effect of digital revolution. Since innovation got 'rebranded' into digital innovation scholars have further highlighted the tensions and challenges that arise when organisations attempt to develop, deploy, and manage digital innovation (Yoo et al. 2012). In the case of management in particular, the argument for whether digital innovation can or should be managed in its traditional sense is often challenged (Ries, 2011).

Nambisan et al. (2017) is the latest call for the need to comprehend the "variability, materiality, emergence, and richness of the sociotechnical phenomenon called digital innovation" (p. 224). Not only does the paper define digital innovation as encompassing the product and/or service, but the business processes and models that result from the use of digital technology. This broader definition and perception of digital innovation includes a social aspect in the shape of heterogeneous and reflective agents. It also assumes a fluid underlying structure that supports those actors in generating innovation. This is a welcome change from viewing innovation as simply changing the end product using digital technology. It also implies that digital innovation is not an outcome of a free reign, messy process or its lack of, contrary, it requires some form of 'nudging'.

I adopt Nambisan et al.'s (2017) definition of digital innovation as "...the use of digital technology during the process of innovating" (p.223), and the aforementioned underlying argument that considers a range of outcomes of digital innovation, including those that are not in itself digital, but are considered

digital as a result of the use of digital technology in creating those outcomes and making them possible. This definition captures my own perceptions of the phenomenon studied and the role of digital technology and innovation in making scaling of digital ventures possible. For example, the notion of a playbook explored further in the thesis, might not necessarily be an entirely digitised element of scaling and innovation, however it is digitalised (Tilson et al. 2010). Following Nambinsan et al.'s (2017) logic in defining digital, when overlaying digital information upon an artifact (in the case of a playbook) new usage possibilities are created and the meanings of interactions and activities associated with the artifact are expanded (Yoo et al. 2010). Therefore, I understand the role of digital technology in creating innovation as broadly affecting various aspects of digital ventures, processes, afforded business models, and subsequent product and service offerings. As such, along with Nambisan et al. (2017), I challenge the three main assumptions of digital innovation in that it is a well bounded phenomenon, its agency is centralised, and that processes and outcomes are distinctly different.

Boundaries between the different innovation stages are blurred and indeed in a multiple market setting they are more so unclear and even non-existent. Constantly evolving and intershaping, such as in the case of digital ventures, different elements of the product and the venture itself exist and evolve at different rates. Somehow, nevertheless, they interconnect in an underlying delicate feedback loop structure. Transcending the boundaries and multiple levels, something that might have simply started as product features innovation might be touching upon strategic decisions. Remaining in such a state of flux and constantly evolving, digital ventures position themselves for flexibility, matching and even beating the expectations of the users, competitors, markets, and ecosystems they operate within.

Agency in digital innovation management and scaling is decentralised and has its complexities. Functions, global and regional teams work in multiple strategic and operational directions, ensuring that all innovation opportunities and avenues are explored. In the case of BlaBlaCar, I saw a number of structures

and decisions that supported this decentralisation. For example, the split between local and global functions, supported by the common underling structures for constant synchronisation between the two. This allows to consistently capture snippets of the market details and the bigger organisational picture and direction. Similar to the previous point, this creates flexibility and agility in decision making, seeking and creation of new opportunities when zooming in and out of regional or functional contexts.

In the case of BlaBlaCar the innovation process is the innovation outcome (and vice versa), where processes are never fully complete but evolving from market to market. The outcome of each process instead of being polarised is used in the next iteration of the process, improving future outcomes as a result. Context in the case of digital ventures and digital innovation is also an active ingredient in the process of digital innovation and scaling. In the cross market setting, the number of such ingredients increases.

Digital is an enabler of these processes at all levels of organisational multiplicity and actor heterogeneity. Having briefly challenged Nambisan et al.'s (2017) three assumptions, it seems in the case of digital ventures these terms can even be perceived as interchangeable and stratified into layers that constantly transcend (Leonardi 2011).

As such, I view the processes of digital innovation as closely linked with scaling, previously shown by Huang et al. (2017). In this thesis I also link them further in multiple cycles of experimentation and exchanges. Afforded in turn by the feedback loops that synchronise and leverage the incompleteness of organisational structures and heterogeneity of actors.

2.2. Digital Ventures

Having highlighted throughout this thesis that the digital age organisations and thus scaling is qualitatively different, not least through the impact of digital technology, I want to understand and pinpoint what makes digital ventures different. Using Table 1, I condensed and contrasted some of the key features of digital ventures with industrial companies.

Table 1. Contrasting Digital Ventures with Industrial Companies	
Industrial	**Digital**
Built on own infrastructure: heavy infrastructure investment and high sunk costs	Built on existing infrastructure: low infrastructure investment and little sunk cost (Brynjolfsson and McAfee 2014)
Physical assets and infrastructures are the source of value	Digital assets and infrastructures present opportunities for recombination and finding/creating other sources of value (Henfridsson and Bygstad 2013)
Difficult to repurpose assets	Easy to repurpose, reproduce, and replicate assets (Yoo et al. 2012)
High initial investment	Little initial investment , bootstrapping (Hanseth and Aanestad 2003)
Proof of concept/profitability	Minimum viable product and traction (Ries 2011)
Product changes are rare/customer needs driver	Frequent product changes/experimentation driven (Ries 2011)
Focused on standardisation	Focused on innovation (Grisot et al. 2014)
Cost of production: lowering the cost per unit	Cost of user acquisition: cost per unit is already low or non-existent, instead the focus is on adding value (Henfridsson et al. 2014)
Progress measured by high quality goods	Progress measured by lower quality frequent version iterations and validated learning (Ries 2011)

I characterize digital ventures as 'born digital' organisations that appeared in the digital age. They are a different breed from the industrial organisations and those organisations that have undergone digital transformation from industrial or non-digital to digital. Examples of digital ventures, aside from the previously mentioned Uber, Airbnb, and BlaBlaCar are also Spotify, Eventbrite, and Dropbox.

Building on Huang at al. (2017) and Ries (2011), I define digital ventures as ventures that draw on digital technology and existing infrastructure to create disruptive products and scale under conditions of extreme uncertainty. Digital ventures aim to simplify the use of the product and simultaneously increase the value delivered to the users. Leveraging digital technology, they look to rapidly develop, launch, grow and monetise transformational products and services.

Digital ventures create spaces for extending their business into multiple directions geographically and functionally. This requires careful balancing between operating the core business whilst trying to figure out future strategic pivots and opportunities.

I view digital ventures as organisations as platforms. Ciborra (1996) explores the notion of organisation as a platform, calling for the need for a more dynamic perspective when looking at organizational structures and processes. "Chameleonic organization, the platform, conceived as a laboratory for rapid structuring" able to "generate new combinations of resources, routines and structures" (Ciborra 1996, p.104). Digital ventures, aside from offering digital products and services, adopt a similar organising logic to that of digital innovation (Yoo et al. 2010), connecting people, functions, locations, contexts, ideas fast and effectively in one space almost instantly.

Projecting these conceptualisations on the case study explored in this thesis, it can be added that digital ventures expand the novelty from the industry that they reshape and often create, to the products and services that affect user behaviours and consumption patterns. Consequently, this changes the scope of activities, demanding to increase the speed and scale at which products and services are delivered, and at which users receive value in use. This idea prompts to re-think organisational structures and the ways digital ventures are organised to maintain such platform like flexibility.

Digital ventures are often built on entrepreneurial activities, that aim to find sources of sustainable growth through strategic manipulation and mindful deviation, perpetuating the cycle of opportunity discovery and creation (Barney and Alvarez 2007). Albeit acknowledging entrepreneurial empowerment created by everyday computing (Yoo 2010) and the use of digital, the focus of this research is not on entrepreneurship or the role of entrepreneurial action in scaling the user base *per se*. Instead, I account for the role of heterogeneous actors and their entrepreneurial actions scattered across a digital venture.

Operating under extreme uncertainty digital ventures cannot rely on the traditional management methods and tools. Contrasting this yet again with the

industrial age companies, strategizing relies on market research, planning, and forecasting, which in turn is based on a long term and stable operating history, as well as a static environment (Ries 2011). Contrary to this, the context in which digital ventures operate does not allow for forecasting with little or no historic data, from either own operations or other companies (present or past). This is because in many instances digital ventures, their products, services, and activities disrupt and create entirely new industries. Equally, the environments in which digital ventures operate in are novel, fast changing, and aggressively competitive. All this taken into account, the difficulty of scaling is amplified when ventures scale across regional boundaries. Moreover, faced with the need to keep up the pace of growth, digital ventures need to strategically manipulate their scaling capabilities as a path dependent process (Garud et al. 2010). Scaling can eventually slow down, even if it is rapid and in the digital realm. Due to the uncertainties mentioned earlier, slowdown in scaling can happen more frequently and less expectedly.

Often defined by their product, digital ventures are more than just an app. For many users, however, it is hard to believe that Facebook, for example, is an actual fully functioning company, as well as popular social network. Product is what is being 'consumed' and is therefore an absolutely essential element in attracting users, and building a user base. As such, it can be argued that digital ventures in order to scale need to get the right product, or their product right. According to Ries (2011) this is only part of the trick. The real challenge is turning product insight into a well-functioning venture, which is more complex than just having a product. One way to look at this distinction between product and venture is to point out the fact that many can and have attempted to copy the products of successful digital ventures. In reality, from a technological point of view, copying is not always a challenging thing to do. The opportunities and technology behind them is available to most nowadays (Kelestyn and Henfridsson 2014, von Hippel 2009), unlike in the industrial age, where companies operated on costly to copy inputs for production and distribution. What however is unique about many digital ventures, particularly those that

operate as platforms and two sided markets, is the collective knowledge of the heterogeneous and reflective actors on the one hand, and the community of users – the user base, on the other hand. These form the foundation of the unique competitive advantage of digital ventures, since technology and strategy in itself can be imitable and replicable (Rivkin 2000). User base is a source of growth in terms of both the direct value that stems from network effects: a certain level of user base maturity allows digital ventures to monetise; and indirectly, as an engine for experimenting and collecting usage feedback in order to create constant product iterations, rigorously testing the assumptions and data to create growth and scaling momentum. Maintaining such constant beta state redefines organisational structure and creates a collective experimental mindset.

2.3. Scaling: Digital vs Industrial

Chandler (1962, 1990) offers detailed accounts of industrial age firms and their scaling logic. Firms such as General Motors and DuPont required substantial upfront investment to build their own infrastructure for scaling the business. Scaling an industrial age company emphasised driving down unit cost of production to produce competitive advantage (Chandler 1962, Chandler 1990, Langlois 2007, Teece 1993, Tirole 1998).

In the case of digital, unit cost is represented as the cost of user acquisition. This cost in digital ventures, in comparison to the industrial age cost per unit, dramatically falls once the initial design of the product is established. This design can then be replicated at little or no cost multiple times over. Unlike the physical assets, digital technology possesses a set of unique features (Kallinikos et al. 2013) that allow such replication. Therefore, digital ventures focus their attention on retaining user attention and loyalty. Dealing with markets where bigger, better, and cheaper is constantly being introduced by competitors, this task is much harder. In the words of Andrew Grove (1998) "only the paranoid survive." Thus, speed, pushing the boundaries of the product or service, and constantly delivering value is key. To do so, digital ventures build on frequent early failed experiments and replications.

In terms of challenging the traditional business approaches, choosing a single competition strategy (customer intimacy, operational excellency, or product leadership) is dictated by the industrial scaling logic. In the case of digital ventures, many will target all three with little time to adapt to the changing market circumstances and specificities. Further to this, market research, traditionally used as a tool for many strategic and scaling decisions, as well as regional adaptation carry high opportunity costs for digital ventures. Instead of engaging in lengthy and costly marketing research campaigns digital ventures probe by launching a product or service to the market first, with little or no guarantee of survival. New versions of a product or service are taken to the market(s) and their success is being measured and evaluated *post factum*.

Downes and Nunes (2013) challenged Bower and Christensen's (1995) arguments on disruptive technologies, which has become the conventional wisdom, pointing towards the new understanding of market disruption, competition, and growth. The article offers an argument to confirm that scaling among the so called "big bang disruptors" is qualitatively different. Authors argue however that disruptive innovation requires more 'discipline' that what conventional wisdom might otherwise suggest. Ries (2011) also argues that successful management tools for digital ventures are needed, however in his methodologies he draws on the concepts of lean thinking, borrowed from the Japanese car manufacturing success (i.e. industrial scaling logic).

The scaling of digital ventures such as BlaBlaCar and Airbnb suggests a different scaling logic. BlaBlaCar and Airbnb expanded into their first foreign markets 3 years after their founding, whereas it took General Motors 15 years. Likewise, BlaBlaCar reached 30 million users in 9 years (BlaBlaCar 2016) and Airbnb amassed 60 million users in 8 years (Airbnb 2016), whilst General Motors needed 32 years to have produced 25 million cars, and another 14 years to hit the 50 million mark[1]. As such, new theories to explain these shifts in the

[1] History 2016, In 2016, private equity markets placed the value of Uber, a demand economy firm founded in 2009, above that of GM, a supply economy firm founded in 1908. This also points towards the shift from traditional metrics and indicators to measure a firm's value, performance and potential.

nature of scaling and scaling trajectories are needed, along with more timely ways to manage scaling and innovation strategies.

Scaling, where it could have been linked to technological capabilities, was limited to the ventures' response to increases of demand: processing power, server workload, web applications etc. This type of scalability requires little change from the organisational point of view. Purchasing more processing capacity, storage, or investing in the cloud solutions are not different to the industrial scaling focus on acquiring further resources. This understanding of scaling, despite being hugely relevant and a stepping stone to reaching the current understanding of scaling, gave little weight to concepts such as sociomateriality, heterogeneity, generativity, modularity. It also overlooks other concepts related to the entanglements of human actors, their agency, and other features of digital innovation afforded by the malleability of digital technology. Scaling remained boxed under the static resource acquisition thinking.

Rather than making significant investments in proprietary production technology and distribution systems, in order to reach economies of scale (Chandler 1990), digital ventures exploit existing digital infrastructures. First, the malleable nature of digital technology (Kallinkos et al. 2013) allows ventures to reproduce and reiterate fast, leveraging existing infrastructures (Hanseth and Lyytinen 2010; Henfridsson and Bygstad 2013; Huang et al. 2017), as opposed to building own costly and proprietary infrastructures. In addition, there has been a shift to different metrics, in particular user base and speed. Together these assumptions form a certain logic of the way digital ventures scale.

Industrial theories of scaling and competitive advantage rely on a firm's ability to find and acquire costly to copy inputs for production and distribution. Unlike tangible assets, their digital counterparts incur costs merely in the design stage, not during reproduction and distribution (Shapiro and Varian 1999). Moreover, digital technologies have no natural capacity limits for copies. The foundation of competitive advantage is not driving down production costs, but rather finding a superior design (Verganti 2008), diffusing it rapidly on a global scale, and perfecting the design during scaling. Rather than selecting a strategy,

the demands of the digital economy and affordances of digital technology allow companies to pursue blue ocean strategies (Kim and Mauborgne 2015), focusing on amassing a large user base quickly in a bid to disrupt the market and lock out competition.

2.3.1. Leveraging Infrastructures

As in previous sections where I challenged the applicability of some of the widely accepted notions that emerged during the industrial age, infrastructure is not an exception. One key distinction between digital and industrial is their ability to build and draw on existing infrastructures (Brynjolfsson and McAfee 2014). Infrastructure in the world of digital innovation has undergone some changes in the way we conceptualize it, see its role in affording innovation, and the emergence of new organisational forms such as digital ventures.

Over time, as technology and its impact on organisations started to change, we moved away from the traditional view of infrastructure (associated with the notion of a public good such as railways, roads, electricity grids). Constantinides (2012) when conceptualising the new understanding of information, building on Khan and Cerf (1988, p.11), defines information infrastructure as possibilities "to augment our ability to search for, correlate, analyse and synthesize available information" situated across geographically distributed sites. Constantinides proceeds to suggest that this definition has pushed for the need to develop appropriate set of tools and avenues for those 'possibilities' to be harnessed.

Constantinides (2012), in his work on information infrastructures, also points out the fact that the majority of studies of large technological systems have focused on developments of technology that emerged from industrial revolution, dominated by case studies that have little resemblance with the modern ways of organising. Previously built on exclusive communities of experts (Hughes and Hughes 2000), infrastructures in the 20th century has seen different styles of development. Geared closer towards inclusive participation, the development and scaling processes are open to non-experts in open design negotiations (Benkler 2006). Henfridsson and Bygstad (2013) made similar suggestions for

the increase of heterogeneity and combinatorial possibilities to be linked to the evolution and scale of, in their case, digital infrastructure.

Digital infrastructure is defined as "the basic information technologies and organizational structures, along with the related services and facilities necessary for an enterprise or industry to function" (Tilson et al. 2010, p. 748). Within this definition authors embed openness, unboundedness, heterogeneity. Following this claim they argue that infrastructure can no longer be defined through distinct set of functions or strict boundaries. Digital ventures draw on various components of digital infrastructure to generate new possibilities. Digital infrastructures in turn are built on social and technical infrastructures with layers and linkages that ventures leverage in their favour.

Such multiple layers need to have a degree of drift to allow unintended outcomes to emerge. This however creates challenges and tensions between the ways an infrastructure is designed and the way its scalability can be directed. Ciborra and Associates (2001) studying tensions between control and drift explore information infrastructures as emerging in practice and evolving over time through interactions between actors. As such, instead of being fixed and static like the more traditional infrastructures, information infrastructures are constantly being negotiated across boundaries. As we move further into the digital age, information infrastructures undergo constant transformation with injections from technological developments, further decoupling between different elements of technology and infrastructure. Boundaries between functions, previously existing silos, regions, and seniority are blurring as we move away from structured corporate information systems into the new organisational forms that exist and function across multiple boundaries without formal structure dictated by the information systems.

Constantinides (2012) argues that the logic of collective action, as it becomes more heterogeneous and multi-layered, does not derive from core structure but from networked interdependencies. Looking into the context of digital ventures I tried to understand what is the meaning of this single core structure. Research into information infrastructure explores contexts of end user collective action in

environments such as Flickr, in the case of Constantinides (2012), but also other open source environments, where expertise are blended, open for actors with different backgrounds and levels of expertise into a network of communities. As I aim to explore similar heterogeneous and multi-layered organising logic of digital ventures, it would be beneficial to further explore the way collective action takes place across regional boundaries, digging deeper into the significance of this single core structure in the case of digital ventures that rapidly scale and replicate. Any shift in the logic of collective action will create new and potentially unexplored ways and processes of infrastructure development and evolution. In the case of digital ventures and digital innovation, these are expected to challenge some of the established and commonly accepted models and process explanations.

The development of information infrastructures, particularly in the organisational context requires a level of management. In the digital age scholars are grappling with issues of control and drift between top down and bottom up approaches to doing so. A recent study by Constantinides and Barrett (2015) made a step towards understanding and addressing this issue by viewing the development of information infrastructure through and as collective action.

2.3.2. Managing Complexity

Hanseth and Lyytynen (2010) define complexity as the dramatic increase in the number and heterogeneity of included components and their dynamic and unexpected interactions. In the case of digital ventures complexity is of dynamic nature and is based on balancing generic and specific, local and global, control and generativity. With multiple strategies and regional scaling motivations digital ventures require a more emergent, distributed, episodic forms of control in order to maintain its flexibility and preserve the benefits of its heterogeneity.

Hanseth and Aanestad (2003) develop a rich, three case studies based account for the use of bootstrapping in designing and growing networks and networks based systems. By studying a context of telemedicine in an attempt to increase the uptake of technology by a network of users, the research offers extremely valuable insight for the topic of scaling of the user base. Interestingly, the notion

of the user base, as argued by the authors, needs to be considered not only by its size, but also the heterogeneity of its elements, as well as the associated heterogeneity of use areas, contexts, and situations. In this paper it is suggested that the interplays between such different levels of heterogeneity naturally has surrounding complexities that create possible conflicts. Ciborra et al. (2000) too claims that too much cross boundary heterogeneity creates chaos and requires balancing. The tools for balancing such multiplicities have been developed in the industrial age. Tilson et al. (2010) for example, argue that tight couplings inherent in the industrial age due to analog and inflexible nature of technology resulted in "…single purpose nature of the services and the high fixed cost of the infrastructure…" subsequently leading "…to the concentration of ownership and control, the need for mass markets, and a strong regulatory hand further reinforcing industry boundaries and stability" (p.749). Yoo et al. (2010) also acknowledges the differences between digital and non-digital products and services, that "require a very different infrastructure and set of knowledge resources" (p.224). The paper adds to this line of argument by suggesting that changes to the products and services made by digital also affect the way organisations are structured, their capabilities (Tripsas 2009), and the underlying internal institutional relationships (Benner 2008). Removing the tight couplings between some of the key inherent components of the industrial age organisation result in the creation of a new reality (Yoo et al. 2010, Tilson et al. 2010), built on new social and technical infrastructures, which we currently fall short of explanations for.

Reis (2011) puts forwards an argument that builds on controlling and managing innovation, which is often seen as a controversy. In his view, engineering successful scaling is not only possible, it can also be learnt and replicated both within the venture, and elsewhere through accelerated feedback loops. Speaking about the differences between traditional management techniques and their transition into the digital age, Ries (2011, p. 11) says:

"As a society, we have proven a set of techniques for managing big companies and we know best practices for building physical products. But when it comes to start-ups and innovation, we are still shooting in the dark. We are relying on vision, chasing the "great men" who can make magic happen, or trying to analyse our new products to death. There are new problems, born of the success of management in the twentieth century."

An example to illustrate this is the widely used Six Sigma and Lean Six Sigma, adapted based on the lean thinking, that rely on team collaboration for improvements in performance and waste reduction. These tools target all those metrics by reducing variation. This is counterintuitive to the ways in which heterogeneity based digital ventures scale and innovate, which is based on replication and increase of variation.

Therefore, instead of simply studying the complexities we need to explore the nature of such networks. Combinatorial innovation, such as in the case of digital ventures scaling across regional boundaries requires balancing control with generativity.

2.3.3. Scaling Motivations

A key motivation for rapid growth is the prospect of network externalities derived from the user base (Grisot et al. 2014, Lee at al. 2006, Song et al. 2009, Suarez 2005). Many digital ventures are in a hurry to scale because the power of network effects helps to achieve and sustain growth that is self-reinforcing. Once the number of users who adopt the digital technology reaches a critical point, the value of that platform for potential users increases rapidly. This creates positive feedback loops and the incentives for existing users to stay and others to join become high, all whilst creating less room for competition (Evans 2009, Evans and Schmalensee 2010). Gaining the momentum of network effects in digital ventures such as Uber and Airbnb might mean longer lead times, but these are then followed by explosive growth, sometimes referred to as 'hockey stick' growth trajectories. As such, scaling in digital ventures is a strategic imperative.

Not for the achievement of the production side economies of scale, but for the demand side economies of scale granted through the network effects (Shapiro and Varian 1999).

Growing the user base rapidly is possible since the costs of reproducing digital technology, once the initial design is developed, become negligible (Brynjolfsson and Saunders 2010). Furthermore, the modular and layered architecture of digital technology (Yoo et al. 2010, Henfridsson et al. 2014) creates almost infinite opportunities for flexible configurations and customisations. It creates possibilities to cheaply modify existing technologies when and where needed to sustain growth. Digital technology has therefore had a huge impact on organisations, their strategies (Yoo et al. 2010), and their ability to scale rapidly (Huang et al. 2016). This impact extends beyond the industrial age logic to explain scaling, requiring new approaches suitable for the digital age (Sambamurthy and Zmud 2000, Lyytinen and Yoo 2002).

So, the nature of digital technology allows digital ventures to focus on speed of iteration instead of producing a high quality product. Output and growth in the industrial age was traditionally measured by production of high quality goods that often require long development times and marketing research. Digital ventures achieve this, paradoxically to the industrial age logic, by having an imperfect product and launching it fast, constantly iterating and collecting feedback from users as they interact with it. Quick iteration cycles are not only permitted by the malleable nature of digital technology but are also demanded by the users, making it a prerequisite for digital ventures' survival and success in the digital economy where speed is key. Thus, digital ventures are more focused on the speed, not perfecting the product, as it helps them get through the feedback loop faster. Further to this, it also allows to speed up product iterations delivery, as well as pass on the value to the users, in turn advancing venture's understanding of the market and the consumer. Better experience and better price from day one is contrasted with the more accepted view of entering at the lower end of the market and slowly moving up.

Cost of production is also part of this equation, but for digital ventures it is cost of user acquisition. Once digital venture establishes feasible channels and target users, it can lower the cost of user acquisition and quickly scale a proven successful strategy into other markets. Whilst the cost of acquiring users falls, retaining user attention and loyalty (in constantly changing digital ventures' market landscape) that expect bigger and better from technology, as well as cheaper, is much harder.

Investors, on the other hand, are seeking traction – proof of the viability of a business model to deliver. Thus, digital ventures face tensions of customer retention and venture capital (VC) traction, as well as the need to manage different staged markets across boundaries (opening new markets, simultaneously with launching new product or product features to existing markets and re-segmenting existing markets). Therefore, ventures constantly need to meet expectations of both scaling and value adding. In this case users are not simply a metric or a passive part of the equation. Neither they are simply a consumer of the product or a service, they are a resource for scaling (Figure 2). The larger the user base the higher the traction and the chances that digital venture will receive funding and resources from investors. Funding in turn buys resources for scaling and increases the number of users, creating virtuous scaling cycle, where user base is a central notion.

Because of such long lead times and the significance of user base, profit or other financial metrics, often used to measure success of a traditional business, do not reflect the true value of a digital venture. For a continued period of time it may operate at a loss on the promise of explosive growth and subsequent profit generation. Thus, the size of a user base is an important success metric when it comes to digital technology that banks on network effects (Lee et al. 2006).

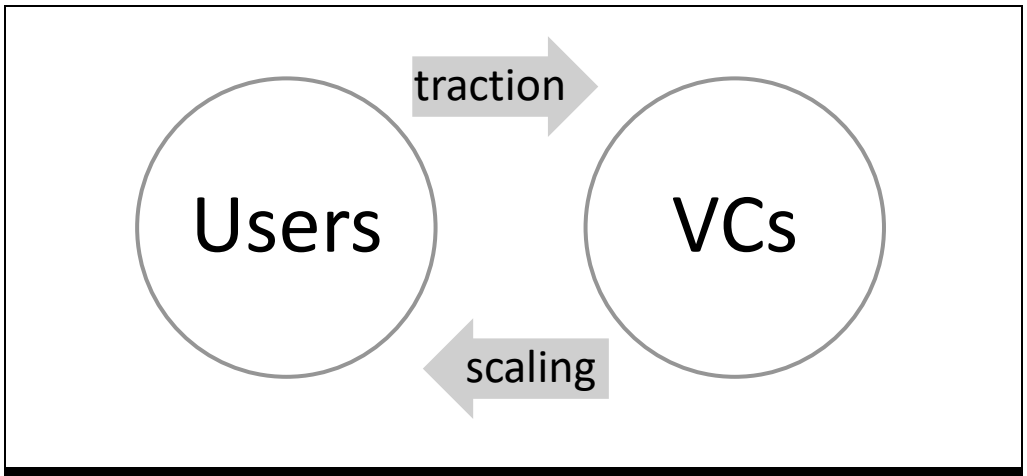

Figure 2. Relationship Between Users and Funding

2.3.4. Measuring Scaling

Traditionally, growth is measured in vanity metrics.

As previously mentioned, this 'speed not perfection' distinction is permitted by the malleability of digital (Kallinikos et al. 2013) that reshapes the way organisations work, organise themselves, and the ways they view and analyse their performance.

In the context of network effects, the figures and metrics that they use make a large difference. For example, it is important to make a distinction between the user base and a customer base. Customer base unlike the user base, involves past purchase behaviour (Schmittlein and Peterson 1994). Nevertheless, user base is a valuable performance metric and a focal point for media reports, used as a powerful tool to increase the attractiveness of a digital venture and draw more user in (Oliva et al. 2003, Prasad et al. 2010, Sun et al. 2004). Consider media reporting a large number of users downloading an app. It is likely that someone will download and use the app because a lot of people are using it already. Moreover, these high figures are often reported as a sign of traction, to attract funding opportunities and further interest from media. In turn, this helps to disseminate the figures to both potential and existing users as well as investors. There is a shift in these too: from vanity to actionable metrics. Vanity metrics in the case of digital ventures are click rates, impressions, page views, etc. These

are easily manipulated and create a false sense of success and progress. Neither of these, however, represent conversion. By 'conversion' digital ventures mean a transition from registering or signing up to using the service, creating a profile to being an active user. It also means conversion from intent to a purchase behaviour, or overall change in user behaviour towards changing some established practices (such as in the case of using ridesharing instead of trains, for example). Vanity metrics bias decision making and skew the ownership of success away from teams working on specific projects or across markets.

Actionable metrics, on the other hand, are the opposite of vanity metrics. They usually include metrics such as a number of active users, engagement rates, cost of user acquisition and retention. These metrics help digital ventures to leverage conversion into monetisation, and ultimately revenues and profits. Focusing on real actionable metrics allows digital ventures to focus on product improvements. Those multiple and frequent iterations allow them to focus on speed and staying ahead of the competition by attracting more users and delivering more value in use.

Measurement units used by digital ventures have also shifted. Progress in manufacturing is measured by production of high quality goods. Progress in digital ventures, on the other hand, is frequently releasing product or service updates. Ries (2011) argues that digital ventures should instead measure progress in validated learning, whereby data demonstrates that key business risks have been addressed by the current version of the product. Testing something in a given market or across markets is taking a risk. The size of this risk will be determined by the cost in terms of number of users, future scaling, the size and maturity of the market, etc. Taking a risk with a new strategy or idea can either work or not. If that risk pays off, the strategy is scaled and replicated elsewhere. If that risk doesn't pay off, lessons are taken away on why a certain strategy did not work in that context, and how this mistake can be avoided from being repeated or made elsewhere in a different market.

Through such product centred learning, ventures are able to turn ideas into products, measure how customers respond, and in turn learn whether to pivot or

preserve. Through the use of effective feedback loops, over time ventures develop an awareness, a set of tools, and an organising logic to test any new visions and ideas continuously. This shift towards the new metrics is both shaped by the need to remain fast and responsive, but it equally shapes the internal organising logic towards failing fast. Failing fast and learning fast implies less perfect, but cheaper and quicker to market updates to the product.

Ventures are shifting towards investing time in building processes and tools to reduce resources investment required for each sale of the service or product. Whilst this might have also been the case in the case of industrial age scaling, with resource efficiency being one of the timeless business targets, the cost of replicating a digital product or service is near zero once the initial design is established. Therefore, working on improvements and correcting mistakes, and allocating resources where and when needed creates a different type of resource efficiency. This type of efficiency is particularly desirable in the early stages of scaling and in an across market scaling context.

2.4. Across Market Scaling of Digital Ventures

Huang at al. (2016) makes an important contribution to our understanding of scaling in the digital age by addressing scaling of the user base in the context of a single market. As the scope of a single market in terms of growth is not infinite, digital ventures need to expand across regions and markets. An important aspect of scaling of digital ventures is replicating the same service internationally, across regional markets with slightly different conditions.

Speed is a key distinction when scaling digital ventures across regional boundaries. Scaling and speed go hand in hand not so much as a motivation, but as a pressure. These are just some of the reasons rapid scaling across markets is such a strategic imperative for digital ventures:

- Being first to market
- Land grabbing and increasing global ‘footprint’
- Network effects
- Testing new markets

- Getting traction
- Attracting funding
- Delivering value to stakeholders
- Public relations

These pressures to scale rapidly can be linked directly to generating scale through network effects. The more users and markets does a venture operate in, the more likely it is to generate matching between the users of both sides of the platform.

When viewing scaling from a global perspective, digital ventures are faced with a task of meeting local user needs fast whilst maintaining a competitive global product and a coherent brand. Uber as one of the most prolific examples of rapid global scaling failed to capture several Asian markets. One such example is an Indonesian start up Grab that Uber failed to outstage, despite an earlier entry. Cases such as this are becoming more common among digital ventures of all sizes. This begs the question of what other forces, beyond a large user base and an established brand, come into play when scaling into regional markets?

Schilling (2002) looked beyond idiosyncratic forces in locking out competitive technologies in order to secure 'winner take all' market dominance. He claims that modelling and prediction are important factors as well as the significance of a "hidden order underlying a complex system" (Schilling 2002, p.395). Such a system in an organisation would allow to leverage information and knowledge in a way that creates opportunities for prediction and modelling. Leveraging a system of previously proven successful and generic solutions and applying them to recurring problem in varied market conditions is a challenge digital ventures are faced with when scaling across boundaries.

The nature of digital products and services at its core is almost a prerequisite for replication. The properties of digital technology create very favourable conditions and incentives for ventures to scale rapidly by replication. A working digitally powered idea, once gained proof of concept, has the potential to be replicated globally. In order to do so, digital ventures need to understand their

markets in great detail, which takes time and a lot of market research. With such great emphasis on speed and market liquidity, digital ventures have not time to waste, and are under pressure to launch markets rapidly and 'land grab' to establish a foothold. As such, ventures launch with minimum features to get the product off the ground in a given market, gradually placing bets and testing new things as well as applying learnings and know-how from other markets. Pursuing this line of argument, a certain type of replication is used by digital ventures as a scaling strategy that contributes to rapid scaling and impeccable precision of meeting diverse local market needs.

2.5. Replication as a Strategy

Replication as a business strategy has previously been explored and advocated in the work of Winter and Szulanski (2001). They built their replication arguments on very tangible, chain and franchise like businesses using examples such as Bradach (1997), who explains cloning of units in chains, and Schumpeter (1947), who describes the case of adaptation and tuning of the model with traces of the origins of the concept.

Winter and Szulanski (2001) contrast two views on replication: exploitation and exploration and highlight them as two phases of replication. Exploitation is repeated replication of a simple recipe or formula, which is assumed to be known and reproduced accurately each time it is replicated. Exploration, on the other hand, occurs when a business model is discovered and refined by choosing the components for replication in suitable locations, developing capabilities to routinize knowledge transfer, and maintaining the model once it has been replicated. The transition between the two is a critical point of creating capabilities that support the replication processes and activities to follow. The authors argue that maintaining both exploitation and exploration is essential to the long term success of a business, but usually results in a trade-off in favour of exploitation.

Replication based on adaptation to local needs is another way to look at replication as a strategy. Organisational theory suggests that replication is

complex and therefore organisations tend to merely adapt to the specificities of the market (Florida and Kenney 2000). Schumpeter (1947) distinguished between firm's adaptive responses and creative responses. The latter are more likely to be innovation-driven and not just adaptations to the market specificities. Weick (1979) however suggested that a firm's ability to influence, construct or enact its environment is dependent on the size. The notion of size in the context of digital ventures, in particular in their early days, has a different connotation than the industrial scaling logic, where companies exert market power or rely on economies of scale. In the case of digital, size-related benefits emerge as replication capability evolves with the number of replications that increase with more markets and more trials and errors to learn from.

Replication "requires the capability to recreate complex, imperfectly understood, and partly tacit productive processes" (Winter and Szulanski 2001, p.731). Capabilities to support replication exist in forms of knowledge assets codified into frameworks, blueprint templates, best practices, or according to (Winter and Szulanski 2001) in a form of a historic template. These have often been used in contexts of global roll-outs of standardised information systems, where organisations face challenges of balancing local needs with global standards. Building on Nelson and Winter (1982), Winter and Szulanski (2001) define a template as a guiding example for reproducing success enjoyed at a particular original setting. Shapiro and Varian (1999) reflect on flexibility of a template or a pattern as an important aspect of successful replication. A pattern needs to be principled but flexible in order to understand the actual core of the success of the business.

In the context of replication in digital ventures, powered by the modular and malleable nature of technology, ventures extend replication with an aspect of generativity (Zittrain 2006). In the case of digital ventures replication takes on a different form, which deviates from replication in cases such as McDonald's and Starbucks. The language around the use of replication and patterns needs to be updates with more timely concepts. Digital ventures looking to scale via replication will leverage coherent structures that allow to address conflicting

issues as they arise in dynamic environments across regional markets, contrasting the notion of precise replication based on sheer resource acquisition.

Ries (2011) argues that in-advance calibration is not the way to scale. His thinking in this direction, however, is directed by precise instructions, typically used in industrial age replication. Replicating precise instructions in the digital age when dealing with extreme uncertainty can be lethal for digital ventures. Even small errors in assumptions and any external shocks can knock the entire scaling strategy down. Therefore, there is a gap in understanding and theorising such replication in the digital age, whereby ventures do use pre calibrated instructions, but without the precise instructions, more typical for the industrial age replication strategies.

Replication can be used as a starting point for building an argument for rapid scaling of the user base of digital ventures. In this case, replication differs from the 'pure' form of replication typical for the industrial age scaling via replication. In the case of digital ventures, given the challenges of across market scaling, replication must take on a generative nature and create avenues for innovation with many unbounded outcomes across these multiple contexts. Pushing different strategies across markets, maturity, and functions requires digital ventures to think differently about replication. Seeking to further understand, address, and test these assumptions, I next turn to the concept of generativity and borrow possible explanations from architectural pattern language.

2.6. Generativity

The concept of generativity has more recently gained momentum in the IS community. Calls for research, such as those of Tilson et al. (2010) and Yoo et al. (2010), encourage to explore the concept as novel yet transformative in terms of its contribution to the organisational structure and identity, as well as, in more broad terms, innovation management research. Coined by Zittrain (2006) generativity is defined as the capacity of a technology or a system to be malleable by diverse groups of actors in an anticipated way. The heterogeneity

of these actors produces unprompted changes (Tuomi 2002, Zammuto et al. 2007, Zittrain 2006). According to Yoo et al. (2010) it is malleability and social heterogeneity of technology that makes a digitalised product generative.

As "generativity allows individuals, groups, and organizations to cocreate services, applications, and content" (Tilson et al. 2010, p. 750) it provides a perfect seedbed for growing radically novel business models. Ventures that are built on digital infrastructures are faced with dynamics that transform their activities and interactions internally and externally to "connect-and-coordinate" from the more of an industrial age "command-and-control".

Yoo et al. (2010) describes generativity as one of the six dimensions of digital innovation. The paper argues that generativity is a direct quality of digital technology that allows actors who were not directly involved in the original creation and maintenance of technology to create new forms and products, services, and contents. These may or may not be consistent with the original purpose of the artefacts due to re-combinability and reflexivity of digital technology (Zittrain 2006).

Among other dimensions relevant to this research is also heterogeneity. It assumes that with digital previously unconnected knowledge, activities, artefacts, capabilities, as well as a number of diverse actors are all brought into the innovation processes. Such diversity shifts the locus of innovation, de-centralising it towards more open source like innovation spaces that are distributed and heterogeneous. As such, innovation spaces will be created from the inside, flowing across the organisation and to its edges and periphery, creating distributed intelligence in multiple locations meshed by distributed actors. Such reversal of some of the traditional management and organising logic creates new accelerated pace trajectories, at which change to 'new' is enabled by digitalisation.

2.7. Patterns

Alexander (1979) describes a pattern as "a rule which describes what you have to do to generate the entity which it defines". Pattern therefore despite

being just one element of design contains within itself the entire design. Thus, each design produced using a pattern might be unique but share many features at the same time.

Alexander (1999) views patterns as responses to problems which occur over and over again in an environment. He states that the core of the solution to those problems is such that this solution can be used million times over, without ever being used the same way, or producing the same outcome. Patterns are therefore used to create reusable design elements. A combination of patterns, and their inherent flexibility produce a sound and consistent design.

A pattern that has been used in a number of situations has generality. According to Grabow (1985) they are "general enough to permit its applicability to an endless variety of induvial circumstances" (p.8), consisting of an "if-then" statement representing a "context-form ensemble" (p.53). Patterns, despite their generic nature, exhibit known quality attributes and are therefore selected for a particular reason and not at random. Moreover, as previously mentioned, pattern itself describes a problem which occurs in similar variations within bounded problem space, as such patterns allow for adaptability to and within that problem space.

Gamma et al. (2005) elaborating on patterns from a software design point of view defines design patterns as "descriptions of communicating objects and classes that are customized to solve a general design problem in a particular context." (p.3) Gregory and Munterman (2014, p.639) define patterns as "rules of thumb that provide a plausible aid in structuring a problem at hand or in searching for a satisfying artifact design". Douglas (2003, p. 50) in turn claims that patterns are "generalized solution to a commonly occurring problem". As a recurring decision making and strategy phenomenon, patterns allow to surface "tentative relationships" (Nambisan et al. 2017) between various elements used by digital ventures when innovating.

Patterns are can be used to not only to generate unique design or solutions, but also as a reference that helps to bridge a gap in understanding for people in different fields and those who are not experts. Patterns hold a certain amount of

information (or 'memory' as labelled by Nambisan et al. 2017) in order to create equal opportunities for innovation by the innovators within a heterogeneous network and across a number of scenarios. As such, in the case of digital innovation pattern are used to support a network of innovation agents, distributing agency across a digital venture, creating multiple innovation trajectories, and distributing the "ecologies of interactions" (Boland et al. 2007).

Patterns are based on the notions of half-baked solutions (Yoo, etc) and designs that do not have a clear expectation of the outcome or function of the final digital product (Svahn et al. 2017). Digital ventures create and adopt portfolio of problem-solution pairings, where each is grounded in specific contextual conditions and scope. The new definition of the logic of digital innovation management offered by Nambisan et al. (2017) specifically highlights this notion of pairing or coupling, and the layer of affordances and dualities that are typical for digital innovation. As such, in line with Svahn et al. (2017) and Nambisan et al. (2017), digital innovation can be viewed as a constant process of "discovery, manifestation, and combination of one or more design pattern" (p. 228). Each pattern holds different relationships that define the pathways and processes to making innovation and scaling happen.

2.8. Towards Generative Pattern Replication

In line with Alexander's understanding of generativity of patterns, I envision the original pattern as providing the structure that enables the creation of a pattern in the most appropriate way to the setting and problem they are trying to solve.

Alexander (1999) argues that generative patterns are not just collections of good ideas and practices, but rather coherent structures that allow to generate coherent entities and solutions. Each new pattern embodies and carries the structure of the original pattern despite being a solution never applied before, but within the same framework of guidelines that form a generative structure of the pattern. This enables teams to create their own solutions when solving

problems in infinite variety, replicating broad ideas and components instead of specific solutions.

Balance between structure and guidelines, and innovation and creativity is central to Alexander's way of thinking about generative patterns. Based on this, I believe a scaling pattern that is generative can be both generic and specific at the same time and can create indefinite recombination possibilities. Pattern, once attained, introduces an element of 'standardisation' to the replication process and can help to allocate resources and make strategic decisions that are more effective over time, whilst preventing unnecessary duplication of efforts. Instead of designing resource-consuming strategies for each country, elements of the pattern could be used as tools to draw necessary resources together. Furthermore, the more markets the pattern was used to expand into and learnt from, the better the pattern can become. Experiences and learnings that evolve with scaling are documented and formalised, and then fed into the scaling pattern.

Patterns translated into regional contexts, increase the number of possible solutions and innovations available at any point in time. This can help deliver novel, fast and effective response to an emerging opportunity even in a non-existing market. Patterns not only serve as a basis for localised decision making but also as a tool for unlocking innovation opportunities for teams and individuals, regardless of their expertise and experience. Documented patterns can allow organisations to bridge a gap in understanding for non-experts and experts shuffled in a matrix structure. This is crucial in the increasingly multicultural environment digital ventures are facing, where challenges of coordination collide with the need to retain the start-up culture and team agility.

2.9. Conceptual Framework Summary

In summary, my conceptual basis argues for the need to understand scaling in the digital age as qualitatively different. However, our understanding of this difference is currently lacking. (Huang et al. 2017, Nambisan et al. 2017, Yoo et al. 2010). This difference is linked to the emergence of the new organising

logic of digital innovation that the field of IS research has begun to conceptualise some years ago. Nevertheless, efforts to conceptualise digital innovation are yet to notice scaling as its essential part, exemplify, illustrate, and study it (Yoo et al. 2010, 2012).

I have traced two interesting and equally valid sides of the argument for rethinking the ways digital innovation management is perceived. One side of this argument comes from a serial entrepreneur Eric Ries (2011) who argues that there is a need for viewing and conceptualising management of digital innovation (from the practice point of view) as requiring a coherent management paradigm and managerial discipline. Ries argues that "entrepreneurs have been trying to fit the square peg of their unique problems into the round hole of general management for decades" (p.15). Conversely to the commonly perceived belief for the need of "just do it" attitude, whereby those in charge of running digital ventures avoid any formal management style, Ries argues for a more formalised approach.

The second argument comes from a pivotal paper by Nambisan et al. (2017) that argues that digital innovation management, of which scaling is a part of, needs to be reviewed. Currently understood as building on three dated assumptions, (1) innovation is as well-bounded phenomenon, (2) innovation agency is predefined, and (3) studies of innovation processes and outcomes focus on one and not the other, digital innovation management conceptual basis is open for new theory building. Nambisan et al. (2017) propose a new logic of theorising about digitalisation of innovation, suggesting several new agendas for the IS community.

Having spotted this gap in the understanding of digital innovation management and the need to find new conceptualisation of scaling in the digital age, I uncovered the next issue: measuring scaling. The key scaling metrics traditionally measured in profit, sales, number of units produced have less relevance in the digital age. Research such as of Oliva et al. (2003), Prasad et al. (2010), and Sun et al. (2004) argues for using the user base as the focal point for

tracing scaling of digital ventures as a more appropriate way to understand the phenomenon.

One way to understand rapid and lean scaling of digital ventures is through their ability to add to existing infrastructures (Brynjolfsson and McAfee 2014, Henfridsson and Bygstad 2013, Yoo et al. 2010), and leveraging the malleability of digital (Kallinikos et al. 2013). According to (Huang et al. 2017) scaling in the digital age is built on digital innovation and three distinct mechanisms: data driven operation, instant release, and swift transformation. Currently, researchers do not fully understand how digital ventures sustain growth beyond the what is generated by the affordances of digital. Equally, little is known of exactly how ventures change internally to match and make the most of those affordances (Huang et al. 2017).

Practice rooted research recognises that digital ventures that have successfully scaled are those that are able to leverage feedback loops, fail fast, and build on frequent iteration, experimentation, and implementation cycles (Ries 2011). This broad conceptualisation does not reveal enough about the mechanisms behind these loops and cycles, let alone the ways they are leveraged generatively across regional boundaries. Having said that, at the root of these loops and cycles based explanations is replication, which as a strategy has existed for some time (Rivkin 2001, Winter and Szulanski 2001). As with several previous arguments here, it is not fully understood in the case of digital, where the concept of adaption, the main premise of replication in its traditional sense, is no longer valid due to the high speed with which ventures scale and innovate across regional markets. Moreover, previous research on evolution and scaling of information systems and its underlying complexity often explores replication and standardisation in the context of global single patient record in healthcare (Aanestad and Jensen 2011, Damtew and Aanestad 2012, Kimaro et al. 2008). Issues and tensions arise when attempting to match local work practices, organised to specifically suit the needs of those practices, with standardised global strategies. Single patient record systems need to be standardised to be efficient and serve their primary purpose, but the intricacies

and efficiencies of the local practices can be ruined by standardisation. Despite acknowledging this local vs global dilemma, the context they are studied in remains different to that of digital ventures and their scaling. Thus, there is a need to understand and theorise the way these tensions affect the way digital ventures negate their influence, and leverage them to generate and sustain growth.

Following this replication thread, I turned to the notion of patterns, which have been used as generic design templates for replicating and scaling designs (Gamma et al. 1995), and as living structures (Alexander 1979) to be reused without generating the same design twice (Alexander 1999). These ideas despite being rooted in design and architecture help to expand our thinking about replication as a strategy. Our understanding of patterns beyond product and software design in the context of digital ventures is limited. Particularly, the way they come about and exactly how are they leveraged in digital ventures to maintain the generativity of scaling, or what mechanisms generate replication (capabilities) in order to rapidly scale across regional boundaries. These are all important questions that have the potential to answer scaling, as well as other digital innovation research questions. One such example might be helping to resolve and untangle tensions between maintaining structures for both control and flexibility for change when managing digital innovation (Tilson et al. 2010).

3. RESEARCH METHODOLOGY

This chapter lays out the methodological approach and tools used to study scaling of the user base of digital ventures across regional boundaries. In order to understand the phenomenon in as much detail as possible but with an accurate representations and applicability of findings I carried out an in-depth study of a ridesharing venture called BlaBlaCar. Over the course of this study BlaBlaCar grew from less than 8 million users to a user base of 30 million. Since company's expansion into its first foreign market in 2009, BlaBlaCar rapidly grew into 22 countries across three continents, presenting a unique case for understanding scaling across regional boundaries.

I structured this chapter using O'Gorman and MacIntosh's (2015) Methods Map to summarise and visualise all parts of the research methodology. Following the Map (Figure 3), I split the chapter into the main three parts, Research Paradigm, Data Gathering, and Data Analysis.

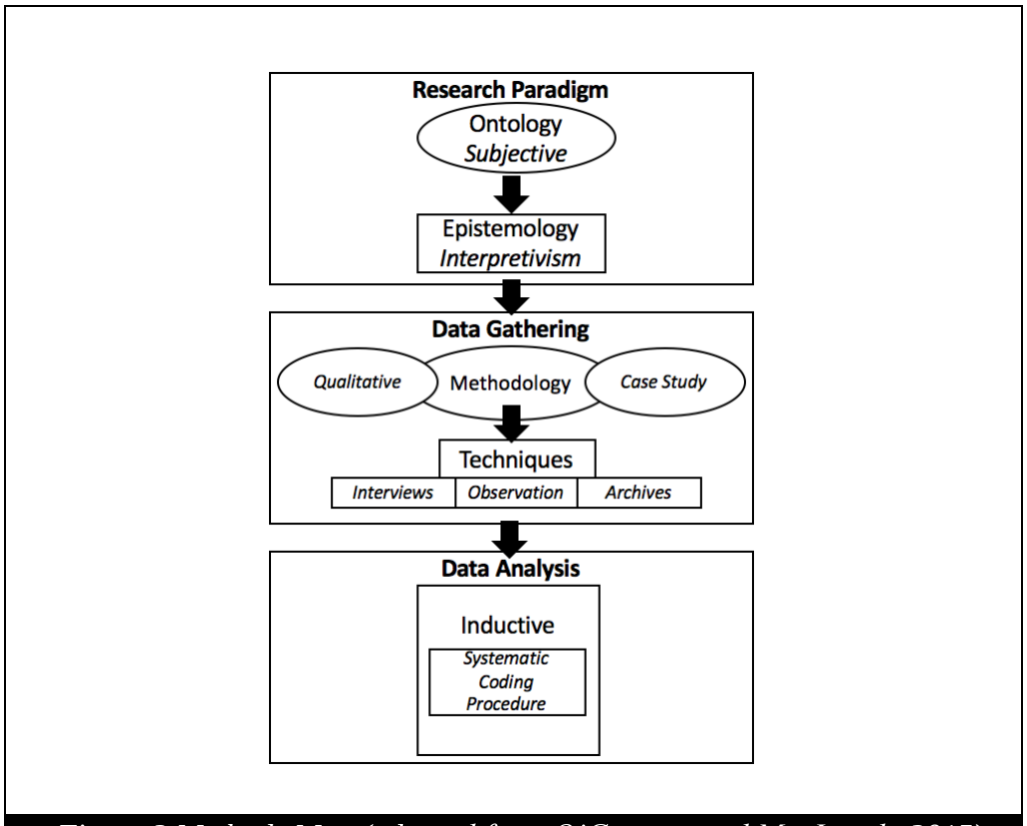

Figure 3 Methods Map (adapted from O'Gorman and MacIntosh, 2015)

3.1. Research Paradigm

My empirical research draws on interpretivism through an in-depth case study, with qualitative data collected over two distinct periods between 2014 and 2016 from the largest ridesharing venture in Europe.

Interpretivism allows for flexibility and was therefore very suitable for qualitative and exploratory research, particularly because the phenomenon of rapid scaling of the user base of digital ventures remains underexplored. In the case of this thesis, interpretivism allowed me to remain open throughout the study and explore scaling in depth without any pre-set research parameters (Walsham 1995, 2006). Cross regional boundaries context of the study further skewed the decision towards interpretivism, allowing to build explanations for the emergence of phenomenon, in this case scaling, as it takes place in any given and across regional markets.

Employing this lens led to several methodological implications. Firstly, my investigation was driven by qualitative methods. Secondly, in my case selection and data gathering I was motivated to explore emergent themes related to scaling in a natural setting. I achieved this by placing myself into a digital venture that scaled rapidly across several regional markets. Upon conducting series of observations in two data gathering periods with a goal of establishing objectivity of my interpretations, I developed and included a reflexive account as part of this thesis (See 7.2). When it came to coding, I developed a coding procedure on the basis of my initial interpretations, which I derived from my time spent in the natural setting and the different perspectives of interview participants (Walsham 2006). These initial interpretations were then refined in the second cycle of coding allowing me to make adjustments to the emergent interpretations to begin developing a coherent understanding of the phenomenon (Miles and Huberman 1994).

And although using interpretivism, I was also guided by some of the ideas of Pawson and Tilley (2014) when exploring digital venture's interplay between individuals, different teams and markets, as well as agency in the way digital ventures scale. As such, I used Pawson and Tilley's (2014) mechanism + context

= outcome ‘formula’, drawing inspiration from existing work on scaling of digital ventures (namely Huang et al. 2017). In a similar way, looking to explore scaling mechanisms but in a multiple markets context and extend the explanations of the ways digital ventures scale their user base, I heavily drew on the elements of process research (Langley 1999).

3.2. Data Gathering

The philosophical assumptions of this study took me to the next step of the Map of collecting appropriate to the study and research question empirical data. This process was driven by the qualitative methodology. Qualitative research methods are appropriate in the case of studying scaling of digital ventures, as there is limited existing understanding of the ways digital ventures scale, particularly across regional boundaries. With the aim of this research being to explore the use of replication in the scaling process, my motivations behind using qualitative methods was to gain a holistic overview of scaling of digital ventures. I wanted to understand the underlying mechanisms behind scaling that might be facilitated or made possible through digital, but at the same time affected by other ongoing strategies that cannot be attributed or explained merely through the affordances of digital technology. Qualitative methods gave me the right tools to explore a digital venture from inside and outside as I switched between being an outside observer and an involved researcher (Walsham 1995). In the next few sections I outline the way this was possible through two data collection phases and a distinct period of time in which I did not work on data analysis in order to distance myself from the case and regain a sense of reflexivity over data and the digital venture studied.

I decided to follow the case study method using three data sources, or as O’Gorman and MacIntosh’s (2015) refer to them research techniques: interviews, observations and archival data linked to a single case of a successful digital venture in order to gain a deep understanding of the mechanisms at play that create rapid scaling of the user base of digital ventures.

3.2.1. Case Selection

For this study I selected BlaBlaCar out 4 other shortlisted digital ventures. BlaBlaCar was a very appropriate extreme case (Gerring 2007) of rapid scaling venture in an international context. Extreme cases according to Gerring (2007) "are paradigmatic of some phenomenon of interest" (p.101), focused on the variables that the research zooms in on, and therefore are a great tool for building theory. Other ventures that were considered included Waze (navigation), HealthTap (healthcare) and NearPod (eLearning), under the initial intention to study the development and scaling of a new digital practice, rather than scaling across regional boundaries. As the focus of the research narrowed, BlaBlaCar became the most suitable case for this study. BlaBlaCar represents a new breed of digital ventures with similar growth trajectories, such as the previously mentioned Airbnb and Uber. This makes the research relevant, generating findings and theory that can help explain the user base scaling mechanisms of other digital ventures. BlaBlaCar is different to many other digital ventures that scaled internationally at a similar rate. Other similar success stories first scale in a relatively homogenous US market. BlaBlaCar, on the other hand, incepted in Europe and scaled across 19 European states (and 3 non-European markets: India, Mexico, and Brazil) with different languages, cultures, legal and financial systems. Scaling in such varied market conditions creates more challenges in adopting the product and service, setting up a local team, and generally speaking, conducting business. It requires really rapid rates of familiarising oneself with the local specificities of a given market. For this reason, the case of BlaBlaCar was the best possible option for exploring rapid scaling of the user base across multiple regional markets. The company was aggressively investing in its digital marketing and many members of the public as well as other research audience would have heard about BlaBlaCar, making the study applicable, accessible, and interesting within and outside of the academic IS circles. Further to this, I gained access to the company and was presented with an opportunity to collect rich primary data, which I supplemented with secondary data, spanning data analysis across three sources: interviews, archival data and participant observation.

3.2.2. Ethical Considerations

The research explored the digital venture from various angles, building on insights and documents with various levels of sensitivity and strategic importance. In order ensure that this information was handled ethically and was disclosed in the most unbiased way I took the following steps to adhere to the University ethical considerations. Each participant was sent a number of research documents: a research brief document that outlined the main purpose, aims and agendas of the research projects. Participants did not receive interview questions ahead of the interview, so the research brief had to outline the key themes that may be explored in the course of an interview. The interview brief was split into four main themes. This decision was made to leave space for exploring scaling in a semi-structured way, allowing for the participants to explore the most important, timely, and, relevant concepts to scaling as they see it in their role, team, market context, and in a given timeframe. Supplementing the research brief, I also used a research consent form, adapted and based on the University consent form with the University and Supervisor contact details, following the main ethical considerations and offering participants the flexibility and avenues to explore the research and procedures in more details, should they wish to do so. Participants signed the consent forms which allowed me to use the information disclosed for the propose of conducting this research. Participants also had an opportunity to ask questions before and after the interview. I sent regular updates on the status of the research to the student liaison and a few other members of the team that were interested in the final research outcomes. This way I also maintained a link to the digital venture studied for any follow ups and ensuring that research reflected the processes of scaling in a most accurate and yet sensitive manner. Where interviews were fully transcribed, they were shared with the participants in order to avoid revealing any sensitive content or information that might have been exposed in the interview unintentionally. Participant names and roles have all been omitted form the transcripts, including the company name, and any other identifiers, such as names of events, or terms that in parts or fully included the name of the

company. Each interview participant was given a unique code that allowed me to identify their belonging to a function, a regional or a central team, which helped to structure data in the analysis stage. These identifiers were used for internal research purposes and when interview quotes were used in text, they were attributed to a manager from a particular team, with no regional identifiers. All data, recordings, transcripts, and consent forms were stored on my personal computer and hard copies of transcripts or consent forms were stored and locked in the University Doctoral offices.

3.3. Data Gathering Timeline

In the process of this empirical study which started in May 2014 I spent 4 months (until September 2014) as part of the Communications and Events team at BlaBlaCar in London, UK. During this period of time I also visited the central offices in Paris twice and once more in the subsequent interview data collection stage. In the next stage of data collection, I interviewed 58 participants between November 2015 and May 2016. During both periods (May-Sept 2014 and Nov 2015-May 2016) a number of events took place that cemented BlaBlaCar's global lead as the largest ridesharing digital venture. It went through two rounds of fundraising, launched 10 new markets, acquired its largest European competitor, amongst a whole range of deals partnered with a large insurance company, and increased the number of users by over 300%. Following the venture as these events unfolded, allowed to understand the events in details, as well as follow the scaling logic and the ways in which the teams processed and responded to these events both externally (through media articles) but more importantly internally, in as much detail as I had access to in period 1, and as much as participants were open to disclose in period 2.

3.3.1. Period 1 (May 2014-September 2014): Involved Researcher

During this period data collection consisted of spending several months with the regional UK team, participating remotely in global meetings with all other regional teams, and spending a number of days with the global team in France over three trips to Paris. During this time, I participated in meetings, team

presentations, and training sessions. In order to develop a stronger case and research setting background knowledge, I undertook an informal internal document analysis, searching project descriptions, local and global team activity reports, presentation materials, statistics and customer survey data.

Collating this data, I developed a strong understanding of the venture and case background that was essential for developing a case story, as well as for developing interview questions and key interview protocol themes. The use of multiple data sources, combined with continuous engagement with the studied digital venture and all of the regional teams, enhanced the trustworthiness of the data set (Lincoln and Guba 1985).

During this time a number of important events took place that were both a result of and affected by rapid scaling. These events included two rounds of funding, $100 and $200 million US dollars in July and September respectively; BlaBlaCar announced its 10 millionth member and launched its first market outside of Europe – Turkey in September. Working on a number of international projects allowed to cross regional boundaries and explore the impacts of these events on the venture and scaling in more detail that I otherwise would have as an outsider. Having said that, being a temporary employee, my access to many data sources was restricted. One initial research intention to explore the quantitative scaling figures, layering them with major events or strategic moves to establish the links and relationships between them, did not materialise. On the other hand, it was the qualitative data that was of more value to the studied phenomenon: relationships, evolving logics, values, processes and information flows that would not be visible with quantitative data, and equally to an outsider. As such, by embedding myself into the venture allowed to significantly enhance the authenticity (Golden-Biddle and Locke 1993, Schultze 2000) of this research and its findings. As described in the earlier sections of the thesis, the research questions itself was moulded as a result of this crucial phase. Beyond that, the protocol and the next stage that allowed to drill deeper into some of my observations were also shaped throughout this period.

3.3.2. Period 2 (November 2015-May 2016): Outside Observer

Data collection in this period consists of 58 semi structured interviews with members of different teams across functions and locations. BlaBlaCar's rapid scaling does not allow for a constant organisational structure, but at the time of data collection, teams were divided into Members Relations, Growth, Tech, New Business, Product, Communications, Marketing & Design, and Admin. Within this division there were local and global teams split based on their activities as either being on the ground on a day to day basis, or offering support and coordination to local teams within global strategic vision. At the time of data collection there were 22 local teams spread across 15 countries.

Initial participants were selected from the UK and Communications and Events team. Interview data was collected for a period of one year, and followed up with several informal email exchanges and meetings in order to mitigate bias associated with retrospective research (Golden 1992, Eisenhardt 1989).

A working relationship, developed during phase 1, allowed to schedule these interviews much faster and helped to develop a recommendation and snowball effect for other interviews. Despite this recruitment technique, most participants were not randomly or self-selected. I predominantly targeted Country and Growth Managers, of whom I eventually interviewed 11 and 9 of, respectively. Country Managers that were not available (of which there were only 2) for an interview referred me to regional Marketing Managers, who curate and process most of growth data and strategies in local markets, and thus were able to offer accurate and updated insight on scaling in their given market. Other participants included members of global teams who looked after other functions centrally, coordinating activities and acting as the central experts on their given area of expertise. Marketing, Member Relations, Monetisation, Business Development, Communications have all been represented in the sample allowing to build a very comprehensive picture of both local and global growth, as well as strategic and day to day operational decision making.

An interesting area that was captured in the interview was related the work on localising global strategies. Individuals working on localisation optimised

strategies developed for all markets centrally for local market, as well as communicated the learnings from implementing and experimenting with strategies locally. Members of the Localisation team were a major source of insight, sense making, and communication between many functions and geographical location and thus, were instrumental in understanding the exchanges and execution of scaling mechanisms across regional boundaries.

The least represented function remained Product and Tech teams, who offered little response and did not engage with the research project, deeming it as irrelevant to the functions of those teams. Having said that, these teams indeed were less strategically and more operationally oriented. Much of decision making related to product and tech were made in other central teams, and thus any strategic insight related to product and technological changes affecting scaling of the ventures were often mentioned in the interviews, or prompted by asking for examples of particular product changes that might have been reflected in scaling related insights.

Growth Managers interviewed captured a sample with a variety of experience and areas of responsibility. Moreover, the fluidity of the organisational structure in the studied digital venture meant that many participants have switched roles and moved up from local into global teams. This allowed, even after a few initial interviews, to rapidly fish out insights that became the backbone of my theory building. This also helped to follow the natural flows of information and insight across the organisation, as knowledge spillovers were an integral part of the way BlaBlaCar functioned, at least during their initial scaling phases. This became more challenging as the size of the teams grew. In order to mitigate this, the teams became structuring themselves slightly differently, developing clear information flows and identifying key boundary spanners that facilitate these flows.

It is worth noting that this specificity did not apply to the Growth team only. All team members interviewed without exception worked in other functions and within global teams, either before their present role or due to the nature of their

work, offering a very broad and mixed perspective on the mechanisms that could be attributed to explaining the scaling of the digital venture.

During this period several events took place that affected the growth trajectory of the venture. Firstly, several new markets were launched outside of Europe, making the venture a truly global ridesharing network and creating multiple publicity and media appearances and features. India was launched in January; Mexico, Hungary, Serbia, Romania, and Croatia were launched in March. An acquisition of a major European competitor took place in the same month, allowing BlaBlaCar to take the lead in the German market. Following this, BlaBlaCar announced a partnership with a global insurance giant AXA, providing insurance for all ridesharing trips, adding credibility and a layer of trust to the service, and thus attracting more new users to the service.

My cut off point for interview data collection was December 2015, despite the last interview taking place in May 2016, due to scheduling difficulties in the winter season. As such, Czech Republic and Slovakia, launched in January 2016, were not captured in this sample. No subsequent markets have been launched between the end of data collection and the writing of this thesis, allowing to capture and research 20 markets (out of the current 22), in all four regions: CEE, Europe, LatAm, and Asia.

Switching the lens to an outside observer helped to view the scaling process from a different angle and more objectively, despite multiple challenges that I faced when trying to distance myself from the venture post phase 1. My embeddedness and the dynamic nature in which BlaBlaCar scaled, meant that I viewed the process and strategies only from a positive angle, preventing me from giving some of the events a critical and objective evaluation. I resolved this issue with spending time away from data and the venture.

3.4. Research Methodology Iteration Process

Loose organisational structure allowed me to interact with multiple functional and regional teams through:

- A weekly stand up style presentations to the entire company from different teams (broadcasted live from the central office in Paris) allowed to get a really good sense of the overall strategic and operational direction of the venture.

- A weekly conference call with all regional Communications and Events teams allowed to develop an understanding of the simultaneous activities taking place in every market across the function as well as any other activities in other teams that might be relevant to the project.

- A weekly local team meeting with the UK team with all functions reporting to the Country Manager on the latest projects, progress, and issues.

- An intense week long training programme in the central office in Paris, integrating into other teams, and covering many aspects of the global and local operations.

- Other miscellaneous international calls and meetings based on ongoing global and local projects.

Initially looking to explore the way the practice of ridesharing itself grew and evolved across so many markets, at the end of my time at the company I made several observations. These changed the course of the study towards scaling of the user base of digital venture and the way it worked to achieve such rapid success. These observations included activities, projects, and initiatives that were replicated from other markets. Local and global teams were constantly communicating and exchanging their growth progress. Such flow of information allowed to create iterations that were captured and codified into documents and presentations to be used as centre points for communication between teams and individuals. Very little was done and few decisions were made in isolation to just one function or market. Most decisions considered possibilities of scaling activities into other markets, or questioned the success of a similar activity, had it been tried elsewhere within the company. Other observations included values developed internally by the founders and the team. These were visually present

as posters at the offices, stickers on devices, as slogans on apparel, etc., influencing multiple activities and shaping the collective mindset where scaling and replication were at the core of every activity. Tremendous effort went into introducing new hires to the rest of the team coupled with regularly hosted company events, helping to create a very tight network and clear routes for finding the right members of the team to collaborate with and learn from.

Using these observations, I looked through a number of media articles and internal documents in order to fill any gaps in my understanding of the company background and history. Several key themes that presented opportunities to be further unpacked grabbed my attention. Using these I began iterating my initial interview protocol, developed before entering the organisation. The main shifts in the themes were from studying future shaping practice of ridesharing and any preceding (pre-digital) practices and their successful inception, uptake, and scaling; to then looking at the role of technology against the role of people in the success of ridesharing; and finally to internal practices and rituals that could be attributed to the successful scaling of ridesharing across regional boundaries. In its final revision my interview protocol aimed to explore four main themes:

1. Country and international market characteristics – questions to understand the cultural and historic context of each market and how these might have more or less favourable conditions for rapidly creating a ridesharing marketplace.

2. *Growth patterns and challenges* – questions to understand the ways in which growth patterns have been replicated, challenged, and managed internationally.

3. *Key success factors* – questions to explore the opinions on the key factors or attributes of rapid ridesharing success.

4. *Events and shifting points* – questions to understand how any potential external and internal events might have created shifts in the expansion of ridesharing across multiple regional boundaries.

Depending on the function, region, and seniority of a participant certain interview themes explored in the interviews were prioritised. For example, when interviewing a participant working in a regional market the interview would start with the features of that given market, zooming in on theme 1 of the interview protocol. When interviewing a member of the central team, on the other hand, theme 2 would be more important and relevant to their experience, although most team members had a really good grasp of all themes due to high mobility across the venture. Interviews were conducted between November 2015 and May 2015, with the exception of two initial interviews that were conducted in November 2014.

Very quickly it became apparent that one of the main themes in the work of both local and global teams were:

- playbooks
- booking system
- 'glocal' approach
- BlaBlaCar values

Having noted these concepts from my informal observations collected during period 1, I was able to understand some of the unique internal mechanisms and processes that took place at BlaBlaCar. As mentioned above, I then continued to explore them in period 2. I briefly outline these observations and explain each concept. As these concepts became the central point of data collection in period 2, the concepts and their significance to scaling are unpacked in the remainder of the thesis.

3.4.1. Playbook

The notion of a playbook was one of the first observations as part of my time spent at BlaBlaCar. A tool that exists in a form of a presentation deck, or a document, often communicated in both written and oral form during presentations and meetings. A source of information that formalises previously used, both successfully and unsuccessfully, strategies. It is a central information repository for every team and function, constantly updated and communicated

across the venture. Playbook contains a number of half-baked solutions that can be used, experimented with, improved, and built on.

My own training and onboarding began with understanding the key concepts that were tried and tested across several markets and time periods in the context of my role and the team I was in. These were not limited to the regional context, which was to be acted on and reacted to by myself and the team. These key concepts are communicated across teams and functions, in order to update the teams and spread of information across all markets. They are also particularly important in bringing new recruits up to speed with the specificities of the inside workings of the digital venture. So, the effect of a playbook and the way it was used was particularly apparent in two ways. Firstly, in a communication and scaling context, where a particular version of BlaBlaCar's playbook is used to disseminate information, allowing information and knowledge to flow between teams and functions. It facilitates decision making in providing the right information, to anyone looking for it fast; updates the teams on the latest thinking of the market and the venture as a whole; creates a 'meeting' and a reference point between and across teams; facilitates the exchange of the most up to date information when it is needed. As such, the notion of a playbook impacts scaling at BlaBlaCar, helping to improve the effectiveness (instantly and over time), speed, and flexibility of decision making. Secondly, in a recruitment and training context, whereby members of the team are introduced to the internal organising logic, decision making, and strategic direction regardless of their seniority. It allows to hire members of the team with a lot of potential and not necessarily a lot of decision making experience, where digital venture can teach a new recruit everything they need to know. This is not limited to the context of a new recruit's role, but extended to the way the venture operates and scales both locally and globally. It also empowers each member to make decisions in many different contexts. Since playbook is used as a guide for acting in a given situation, it presents multiple opportunities for innovation whilst removing the need for micro management. This in turn improves speed and flexibility not only of decision making, but of the organisational structure.

In cases where a new decision was made or something was being tested, information was immediately added to the playbook and circulated across regional boundaries.

3.4.2. Booking System

The booking system is a system used for booking seats and paying for ridesharing, resembling any travel service booking. It allows to add an additional dimension to the ridesharing service in simplifying the processes that had to exist offline or be done manually. For example, drivers no longer had to make changes to the seats available manually, rather the system amended them with each booking. Similarly, passengers no longer had to call and message a number of drivers before they could find availability and book in an instant. The booking system acts as the monetisation tool that BlaBlaCar implements and rolls out across markets, depending on their readiness and maturity, as well as several other practical factors unique to a regional market. It also acts as another layer of value adding to the users, helping to scale further, as well as to develop more data collection and monitoring levers that came with fully moving the transactions online. This in turn allows to explore new business avenues, scale, improve and add the services, as well as leverage data for business decisions and partnerships.

3.4.3. 'Glocal' Approach

Teams across BlaBlaCar are structured into either local or global, depending on their location and area of expertise. Local teams are the teams located on the ground, in regional offices across 22 countries. Global teams are located in Paris HQ and look after global issues that concern across all regional market. This includes marketing, growth, communications, public relations, and every other aspect of the venture's operational and strategic direction. BlaBlaCar created this approach that does not prioritise any given market or function. It allows to assign equal importance to all teams, based on their exchanges with each other, and information flows from local to global, and vice versa, when making decisions and launching campaigns. Global teams act as a central source of

information or competencies, communicating with local markets on strategies and operations. They act as boundary spanners between teams and experts scattered across the venture and help identify and put together ad hoc task-based teams when needed. Local teams, in turn, ensure that global teams understand local contexts well and communicate relevant local information and opportunities upwards, disseminating it across other teams. The approach spans further and across the venture allowing to maintain a global value proposition which does not change, yet tailoring it to the local needs across regional market boundaries. It also helps to prioritise and ensure resources are effectively and fairly directed and distributed to each market based on needs and maturity stages. Finally, it also places emphasis on developing frameworks instead of sets of rules. This facilitates decision making and helps teams maintain a global strategic direction locally.

3.4.4. BlaBlaCar Values

Company values (Figure 4) play a big part in forming and sharing a collective mindset in the digital venture. Drafted internally by the team, values reflect the way BlaBlaCar organises itself, makes decision, and ultimately scales. Keeping to the core of these values allows to create a cultural standard across regional boundaries. It is one other way to overcome the differences between local cultures and their ways of working. By giving local teams those values and levelling the playing field, a level of autonomy is granted. This autonomy allows individuals and teams to make decisions fast and locally within a set of overall guidelines that help sense check and shape a decision of any significance. It allows the teams to not simply replicate every detail or step in a playbook for a particular decision. Instead, it allows to act independently in their given market context, where they are considered an expert, using the values to frame their local decisions. And since those decisions are of high significance to the growth of their market as well as overall scaling and innovation, this helps to ensure that each decision is accurate, timely, and scalable.

Figure 4. BlaBlaCar Values (source: BlaBlaCar.com)

3.5. Data Analysis

Following the next and final step of the Map, I analysed my data by following an inductive approach, which is based on *a posteriori* argument that I intended to derive from the findings of my empirical investigation. The novelty of the theme explored in the context of several regional markets, as well as the novelty of the entire research stream looking into scaling of digital ventures has

challenged me to adopt an exploratory mindset. My analysis was guided by a systematic coding procedure with multiple rounds of coding, constantly iterating emerging theories and constructs, moving between my conceptual framing and other sources of data.

3.5.1. Stages of Process Data Analysis

Guided by Langley (1999) and Langley et al.'s (2013) theorisations from process data, I followed several stages of data analysis, mapping out tasks and outputs for each respective stage (Table 2).

Table 2. Stages of Data Analysis

Stages	Tasks	Outputs
1. Trace the user base scaling trajectories	1. Map out market entries and reported user base figures to construct cross boundary growth trajectory at BlaBlaCar between 2006 and 2016. 2. Cross check the user base growth, key events, market launches, and milestones with the central teams.	Visualisation of user base and across market growth, and its varying speed over time (Figure 5).
2. Construct case narrative	1. Layer growth visualisations with episodes of funding and other events significant to scaling, as identified by the interview participants and reported as major company news in the media. 2. Develop a scaling story line, bracketing it into three distinct time phases, as the basis for the next stage of analysis. 3. Identify several key but preliminary concepts for provisional and in vivo coding.	Rich case narrative with traces of evolving organising logic and preliminary evidence of replication.
3. Identify and analyse instances of pattern replication	1. Using provisional, in vivo, and descriptive coding methods analyse interview data, interpreting scaling techniques and organising logic of scaling in a digital venture. 2. Search for instances and examples of replication and pattern enactment and replication. 3.Continue clustering the categories through systematic coding into themes, towards developing the key pillars of scaling.	Evidence of pattern replication and its three pillars – the underlying replication mechanisms (Figures 14, 15, 16).

	4. Consider how each pillar relates to and differs from other pillars.	
4. Generate model of scaling through pattern replication	1. Map replication mechanics within a context of a regional market, in relation to patterns, and feedback loops, modelling the mechanism's roles and interdependencies in the process of scaling. 2. Analyse the linkages between pattern, its enactment and replication towards the other components of the model. 3. Label and describe the nature of the two-way interdependencies between the three replication mechanisms. 4.Elicit the nature of the user base growth	Conceptual model of scaling though GPR (Figure 17).

In the initial first stage of data analysis (Table 2), I mapped all markets onto a chart to create a visual presentation of scaling across regional boundaries (Figure 5). This visualisation, despite its simplicity, allowed to explore the varying speed at which BlaBlaCar expanded across markets. Initially, with a slow start, digital venture started expanding into a few similar neighbouring markets, drawing on the apparent similarities of the regional markets. It then went on to rapidly land grab markets and clusters, with growth clearly gaining momentum. Geographical outreach expanded along with a considerable variation in local market specificities, once the initial product and business model was developed in the first market.

In the second stage (Table 2), I drew on secondary data and some initial interviews to construct a descriptive chronological story of scaling across regional boundaries, illustrating the evolving organising logic that was driving scaling. This thick description, outlined in the next chapter, became the basis for developing my interview protocol further. In my questions I probed participants on the changes that took place as the scaling logic was transforming towards pattern spotting and replication of existing techniques across regional

boundaries under certain assumptions that the central team was holding about their first few markets.

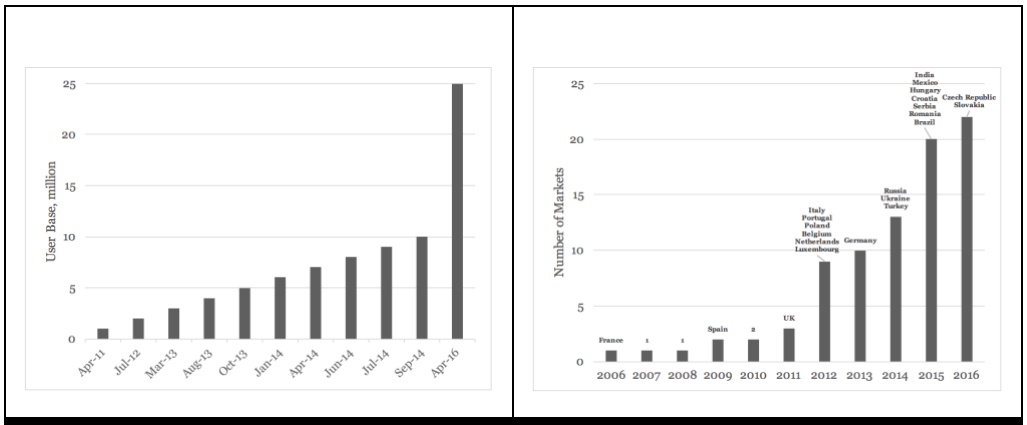

Figure 5. BlaBlaCar's User Base Scaling Across Regional Boundaries

Following Barley (1986) I questioned participants of the study on the turning points or changes considered important by the participants. Through several media sources I also identified other external factors affecting the studied phenomenon. I used both sources to help identify points for bracketing the scaling across regional boundaries. The time phases I created were based on arbitrary assignment (Pettigrew 1990), used to help guide the process of theory building.

Next, I developed and used a systematic coding procedure, taking my interview data thought two cycles of coding, drawing on different types of coding. Whilst going through the cycles, I was aiming to make constant comparisons between data, my understanding of the case, and some initial theoretical assumptions shaped by the literature and the two distinct data collection phases.

The process of developing the coding scheme and the coding itself is a rather messy one, and, according to Siedel and Urquhart (2013), guidance for coding is a subject to a variety of interpretations. My own interpretations of the data, coding scheme, and the coding methods changed and evolved with the analysis.

3.5.2. First Cycle Coding

In the third stage (Table 2), having identified replication as a possible explanation for rapid scaling of the user base of digital ventures, as well as having developed background case understanding, my coding decisions were shaped both before and during the review of the data corpus. All subsequent analysis activities were also shaped by the notion of replication that became evident early on in the coding process.

Following replication, scaling naturally became another key notion in understanding and extracting the scaling processes from my first level coding scheme. The initial coding was based on the basis of my strong understanding of the case, its background, and some preliminary findings collected in phase 1. Thus, were largely driven by provisional coding, where I developed a list of predetermined codes, anticipated prior to the interview data collection. I began with a short list, allowing myself to explore my data in more depth, keeping in mind my proximity to the case. Beyond *scaling* and *replication*, this list included initial labels named *playbook*, *glocal*, *booking system*, and *values*, which have all subsequently became the central categories for my coding.

Provisional coding also helped to develop a level of flexibility. Particularly, as I adopted other types of codes I was able to revise, remove, and expand some of my initial thinking about the digital venture. Keeping the initial list also helped to minimise 'if you go looking for something you'll find it' bias (Saldana 2016, p.169) associated with the use of provisional coding. Therefore, I used provisional coding mainly as a tool to get my analysis started.

As I proceeded with my coding, indeed, I found that many of the codes fit my initial understanding of the data. BlaBlaCar developed and used vocabulary for many relevant to the research concepts. This helped to single out some of the most important notions to scaling really fast. In order to do so, I used in vivo coding, i.e. using mostly the names and the language used by the venture, to complement and extend my coding scheme. Moreover, having developed a BlaBlaCar vocabulary myself I was able to inject my interview protocol questions with a selection of terms. This meant that in vivo coding was

appropriate to analysing my interview data as I followed the trails in "the terms used by [participants] themselves" (Strauss 1987, p.33). In vivo coding was a great tool to explore some of the notions I noticed in phase 1, but prioritising participant's voice (Saldana 2016, p.106) and in doing so making sure the research was "more likely to capture the meaning in people's experiences" (Stringer 2014, p. 140).

For notions and concepts that were more novel to my understanding of the case, and for the most parts of the transcript text, I used descriptive coding. I labelled text passages with codes summarising the notions in either words or phrases, identifying topics surrounding the in vivo codes, which already in the first cycle appeared interlinked. This allowed to further develop a basic 'vocabulary' of the research, helping to find descriptions and categorise my observations of the interview data that I otherwise couldn't with just my knowledge of the case.

Coding instances of replication, I generated codes describing what growth managers did when they began spotting similarities and differences, challenging their assumptions about regional markets that eventually led to them grouping these observations and developing patterns. I also traced the ways local and global managers were responding to these changes, with the way they organised themselves, their work and, more specifically, developed structures to support information exchanges and rapid replication of patterns into varying local context across regional boundaries.

At the end of the first cycle I noted explanations, observations, and some initial patterns that were emerging or seemed logical and relevant to answering the research question. Once again, relying on my understanding of the case and some of the narratives and analytical memos that I had written prior and during the analysis, I started building up categories that were emerging before the second cycle.

3.5.3. Second Cycle Coding

The richness of data coupled with my in-depth understanding of the case allowed to transcend the boundaries between first and second level coding.

Following my initial conceptualisation, I revisited some of the concepts that emerged in the first cycle of coding. In the second cycle I continued building up and refining categories and making linkages between the codes. Leveraging many of the initial codes, I attempted to unpack some key concepts in more depth. I relied upon some further in vivo coding, where participants' definitions were a better fit for explaining the category. In addition, using pattern coding I further filtered and labelled data into interpretative clusters (Miles and Huberman 1994). This helped me trace and understand the elements of pattern replication and linkages between those elements, eventually looking to create a comprehensive picture of the scaling processes and mechanisms. Clustering was guided by the following questions:

- What links the codes? What are the overlapping and recurring themes here? Can these relationships be explained?
- Are there any generative properties in the clusters emerging? If so, what are they, do they relate to other codes or clusters?
- Does this cluster explain something independently or does it need further iteration or joining up with another cluster(s)?
- What supporting or underlying mechanisms might be needed to create a certain phenomenon or observation emerging from a cluster?

These questions were used as a means of intellectual saturation of the coding process, attempting to extract as much as possible from the data corpus and explore the mechanisms in depth. The linkages between clusters were really tight and begun emerging really early on in the second cycle of coding. The aim to understand or assign generative properties to any of the clusters (pre-mechanism explications) was not one that I set out to discover in my data, but one that emerged from the data and conceptual literature. Each of the three pillars that emerged in the end possessed generative properties (Zittrain 2006).

At times, instead of offering higher level categories or explanations, second cycle coding helped me to unpack some of the high level concepts and clusters particularly those generated through in vivo coding. Understanding them in a more granular way, across multiple regional boundaries as expressed by the

interview participants helped to then redefine the category. I used this zooming in and out strategy, moving between the levels of abstraction to help verify my understanding of the data and some initial theory hunches. During the later stages it additionally helped to shape my theoretical contribution into a coherent process model from the initial mid-range theory process visualisation.

When making sense of my interview data post coding I adopted the "top ten" technique (Saldana 2016) collating any passages that stood out as the most interesting or intriguing in terms of their novelty to me, and their representation in the study. As the next step I then attempted to identify the "trinity" and regrouped my "top ten" concepts, comparing and clustering them until apex concepts emerged. As I continued to refine these apex concepts I arrived at three mechanisms of GPR: instantiation, venture meshing, and value frame.

Once the three mechanism emerged, I began questioning the linkages between them. In the process of probing these similarities I questioned which codes and aspects were high level items and why. As the next logical step, I then questioned the ways these high level elements influence, affect, or possibly interrelate with other codes in my scheme.

Exploring the three pillars central to my theory, I view them as equally important elements of replication-based scaling of the digital venture. The magnitude of each pillar-mechanism is reflected in the duality of the relationships between the three mechanisms that when situated into a regional market generate scaling and innovation opportunities. I will reveal these relationships along with my final theory later in the thesis, in Chapter 6.

At the end of my analysis, in the fourth and final stage (Table 2), building on the three pillars-mechanisms that support replication, the aforementioned instantiation, venture meshing and value frame, I began constructing the process of scaling of the user base of digital venture through pattern replication. Revisiting all my data sources in this final iteration, I highlighted the importance of feedback loop and the context of a regional market where replication takes place. As I then added the outcomes of replication as a twofold growth of user base, I highlighted the significance of the continuous process of pattern

enactment and replication. Finally, I uncovered the key aspect of the proposed process model of scaling of the user base of digital ventures across regional boundaries – generativity (Zittrain 2006, 2008).

3.6. Limits of the Study

The study consisted mostly of primary qualitative data and secondary quantitative data. The sensitivity of quantitative scaling data was too high to be used in the study and was not possible to access, despite multiple negotiations. Quantitative data would have allowed to explore a more accurate growth timeline. It could have helped to stablish a stronger cause and effect relationships between certain events and the implementation of scaling strategies, as well as the trends in the increases and decreases of the user base. Nevertheless, given the objectives and the research question posed by the study, the qualitative data collected sufficiently answered many questions and provided a rich picture of the scaling processes.

I was also limited in the number of interviews and the number of markets explored. Firstly, due to data collection taking place during a hyper growth phase, the more senior the team members targeted were, particularly in the Business Development and Growth teams, the harder or longer it would take to negotiate an interview and its length. The nature of qualitative data richness poses challenges for any qualitative researcher in defining the cut off point for data collection, processing, and analysis. The research sample is representative of multiple functions, teams, and geographical locations, overall giving a comprehensive picture of the phenomenon under question (see section 3.3.2). Secondly, data collection stopped shortly after the launch of Czech Republic and Slovakia, so these two markets were not included in the analysis or the findings. To counterbalance this gap, I managed to track several other markets that were launched during data collection. Thus allowing me to understand the processes and activities that follow prior and shortly after the launch, both offering valuable insight for answering the research questions.

4. CASE STUDY

The focal point of this thesis is the case of ridesharing that zooms in on scaling of a digital venture called BlaBlaCar. In this chapter I lay out the story of the way BlaBlaCar scaled rapidly and successfully across a number of regional boundaries, becoming the largest long distance ridesharing digital venture in the world. Using all three data sources I construct a thick description of the venture and the ridesharing concept itself, the timeline, main events bracketed into three phases, and the surfacing of the distinct features of the way BlaBlaCar operated and scaled across 22 regional markets (Figure 6). I illustrate the case story and claims with quotes from my findings and examples of pattern replication uncovered in the process of collecting and analysing the data.

Figure 6. BlaBlaCar Markets Map (source: BlaBlaCar.com)

4.1. Case Background

The concept behind ridesharing is a marketplace between car drivers with empty seats and passengers looking to book those empty seats and travel (Figure

7). When posting a trip online a driver specifies several details of the trip, travel preferences such as smoking, pets, music, chattiness level (hence the name of the venture – BlaBlaCar), and seat availability. Using several search parameters and same travel preferences, a passenger can search for a trip and a matching driver, based on common preferences, and book a trip. Drivers and passenger create profiles when registering with profile pictures, short bio, travel preferences, and accumulate ratings from other users with every trip, all moderated by BlaBlaCar. An additional travel preference 'Ladies Only' is also available to women looking to travel with women only.

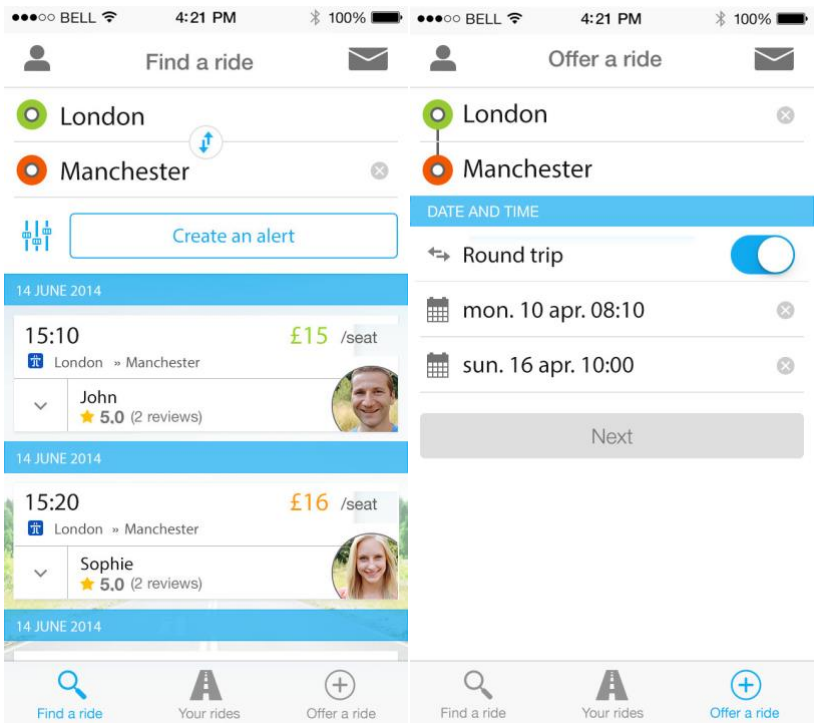

Figure 7. BlaBlaCar App Interface (source: BlaBlaCar.com)

The price of the trip is capped under a certain amount that does not allow a driver to make any profit, merely to cover the cost of the trip, so as to not invalidate the driver's car insurance. The price of the trip does not change based on the date of travel, offering passengers a low cost trip even when booked last

minute. Passengers and drivers agree on a meeting point, travel together to their destination, and passengers either pay the driver directly in cash or through an online booking system. The nature of this transaction is determined by the specificities of the market such as banking system, level of card payment penetration, or local cultural payment preferences, etc. After the trip drivers and passengers rate each other and leave reviews, helping to foster trust, building users' status in the community (from Newcomer to Ambassador), and increasing the likelihood that both passengers and drivers will be selected to travel with in the future.

BlaBlaCar is one of the digital pioneers of ridesharing that successfully built a marketplace for passengers wishing to travel and drivers with empty car seats on long distance trips. This niche service quickly established a foothold in the native French market, grew into a single European marketplace and eventually into Asia and Latin America. Figure 8 shows the numerous diverse markets BlaBlaCar entered since its inception in 2006.

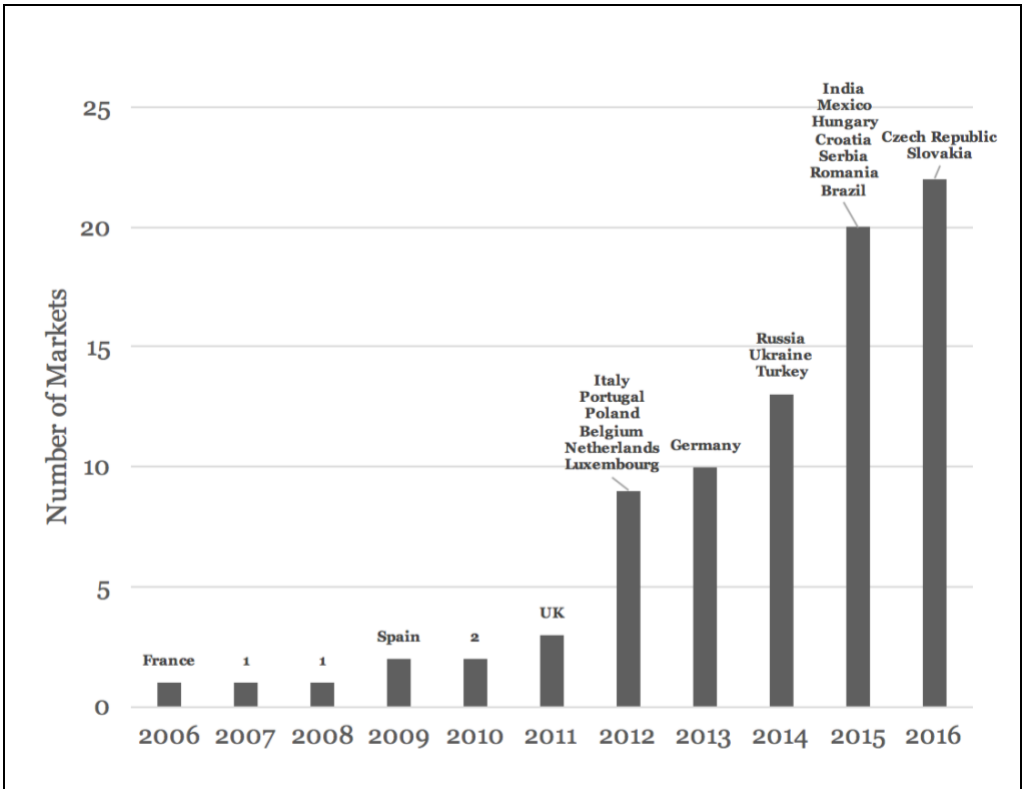

Figure 8. BlaBlaCar's Growth Timeline

BlaBlaCar started its growth with a period of development of the core of the business model. This process took several years of developing the product, the key features of the platform, and the ways it is to be governed and monetised.

Once the right model was developed, BlaBlaCar initiated and traced some first instances of replication across regional boundaries. First replicating its business model in Spain and then rapidly scaling into another nine markets in Western Europe. This rapid replication however created monetisation bottlenecks, where replicating an identical monetisation model put pressures on the business model and created friction in local regional markets.

Each regional market will have individual qualities and characteristics that can make it easier or more challenging to replicate. A combination of factors will determine how successful the inception, shift and scaling will become. As such BlaBlaCar characterizes the markets by the population of the car owners and the size of the transportation market. Other major characteristics are related to cultural specifics, such as attitude to strangers and personal space, travelling preferences, historical indication and significance of sharing cars before the emergence of ridesharing in a digital format. Regional markets will also have different indication of their digital readiness. This includes tendency to use smartphones and mobile applications as opposed to using a desktop website version of the service, as well as general public digital literacy. Digital readiness also reflects consumers' willingness to pay online and via an inbuilt booking system that lets passengers pre book and prepay their seats. Other payment preferences and subsequent payment method adjustments might also include cash payments and top up/credit transfer. Additional market characteristics that BlaBlaCar considers when replicating include competition, political and economic climate, and regional digital and transportation innovation agendas and legislation.

4.2. Scaling the User Base: Basic Steps

BlaBlaCar through its organising logic and processes scales using several key elements. Firstly, there is a basic checklist that helps the digital venture to decide on the attractiveness of a given regional market, such as smartphone use and penetration, card and other payment method preferences, car ownership, and the state of other modes of transportation in the market, geographical location and distances between main cities. Finding the right market fit for the product requires minimum features to get the product to take off, helping to scale faster in a given market. So, once the market has been identified, BlaBlaCar investigates the size of its potential user base, cost of user acquisition in a given market, and the main channels for acquiring those users.

4.3. Three Scaling Phases

Once a market has been established it gets clustered based on three phases, determined by market characteristics and maturity. Such cross boundary clustering helps to distinguish and roadmap a market's strategic direction on the basis of the three phases (Figure 9). A clear understanding of market characteristics and maturity is a prerequisite for successful market inception, shift, and scaling. BlaBlaCar's notion of maturity is based on liquidity, or matchings between passengers and drivers over time.

On the basis of the phases BlaBlaCar determines its engagement with the user base in each market context, ranging from communications to marketing, and product features. For instance, the launch of the online booking system in any given market is usually planned between phases 2 and 3, where market has matured over time and reached a certain level of liquidity. Booking system readiness in each market is determined by other background factors, such as, for example, cultural preferences for payment (either cash, such as in Germany, for example, or cashless such as in the UK).

This roadmap despite its linearity does not exactly translate into linear execution. Instead, it is based on learning and iteration from other markets that have transitioned into a different, more advanced phase and shifted clusters.

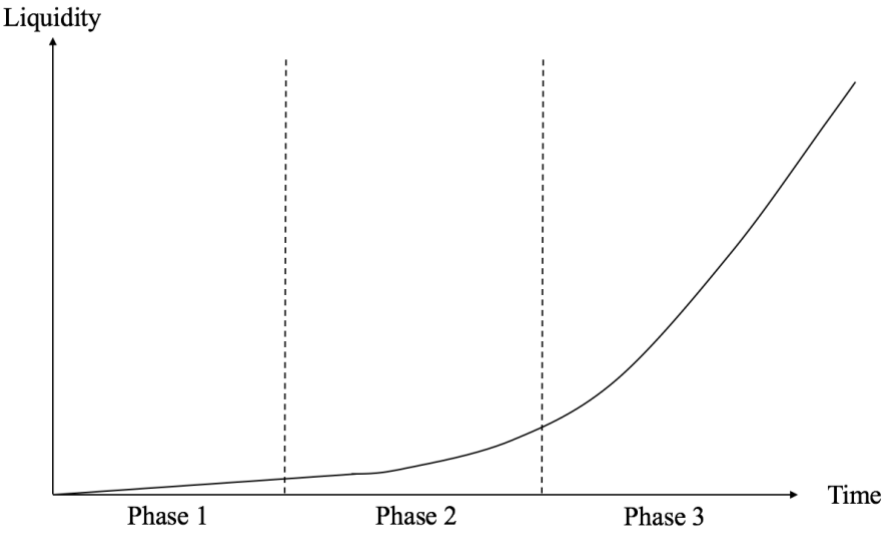

Figure 9. Phases of Scaling (adapted from BlaBlaCar's Internal Scaling Strategy Model)

Clustering and the uses of phases is BlaBlaCar's antidote to premature execution, which can be costly in terms of the size of the user base. To illustrate this, BlaBlaCar can be contrasted with its long term German competitor Carpooling, which BlaBlaCar merged with in 2016. Carpooling did not have the right understanding of the readiness of the market when rolling out its monetisation. As the market was not adequately prepared both in its natural maturity and, on that basis, the way the system was communicated, introduced and rolled out, Carpooling lost their legitimacy and was eventually acquired by BlaBlaCar.

4.4. Elements of Scaling

On the basis of the three phases, which indicate the inception, shift (the point of reaching critical mass), and scaling of the user base, BlaBlaCar developed the core of its strategic scaling decisions, consisting of four elements (Figure 10).

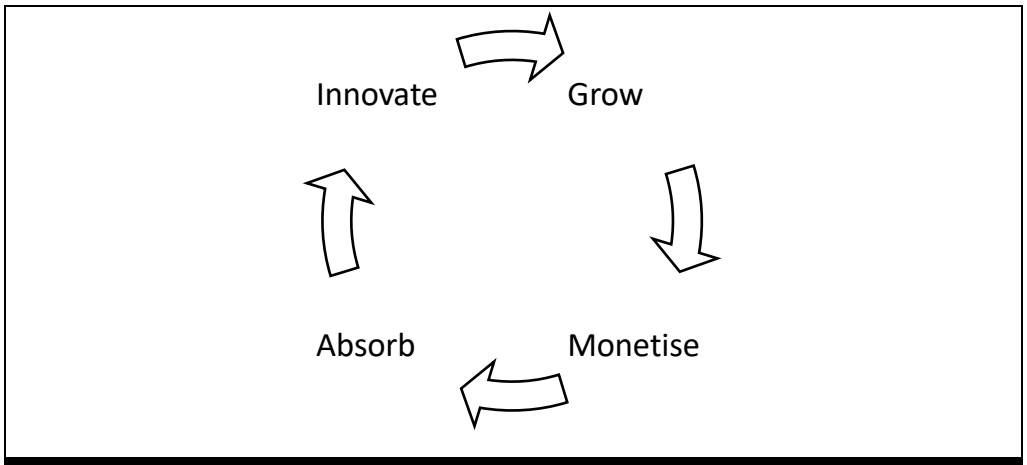

Figure 10. BlaBlaCar's Strategic Scaling Cycle

4.4.1. Grow

Every BlaBlaCar's strategy has an element of scaling in it, aiming to expand the number of users, number of markets, and areas covered by the ridesharing service. The latter means market axes, which gradually grow from a few main travel routes into a full regional ridesharing network. It also means strategic market launches for enlarging venture's geographical footprint and securing the 'winner take all' benefits. Digital venture invests effort into growing the user base and generating a certain level of stickiness as a first mover locally, and to increase the network effects globally. Such land grabbing technique in the case of BlaBlaCar also meant there were spillover cross border trips. For example, markets such as Austria and Switzerland have a number of trips and users, however there is no official team or resources dedicated to these markets. The first strategic step is to attract as many users to the platform in order to create liquidity (matching between passengers and drivers).

4.4.2. Monetise

In the next element, once a market has reached a certain level of maturity and liquidity, the team redirects its strategy to monetisation. Having said that, over time, as BlaBlaCar was developing its replication capabilities and enriching its monetisation playbook, certain markets were launched with different booking and monetisation system configurations and roll out plans (see Table 3).

This stage is very complex and requires a lot of careful consideration of the market background. Users will no longer be able to use the service for free, and thus need to be 're-sold' the paid service with more added value. At this point, a displacement of the user base takes place, with many initial users of a certain market demographic leaving the platform, and with a more mature demographic joining the service that is perceived as more reliable and trustworthy. Introducing the booking and monetisation system is also a way to build a platform for creating and extending value, and by doing so, further increasing the scope for monetisation. It is also a data collecting and monitoring tool. As more transactions move online because of the system, the more data can be collected. In the case of BlaBlaCar this wasn't only directly helping to improve the service, but was also a way to find and create new avenues for extending the service and partnerships locally and globally.

4.4.3. Absorb

Each strategy gets absorbed by the entire team across all regional boundaries regardless of maturity, function, or location. When it comes to scaling every strategic move has relevance and learnings for the teams. These are shared regularly in a very organised manner, with subject matter experts emerging and clearly identified as boundary spanner figures across the venture.

4.4.4. Innovate

As the strategies and patterns get absorbed, enacted, and replicated they mature. Having gone through several such feedback loops, patterns create space for data driven experimentation and innovation. For example, in the case of Brazil, BlaBlaCar's 20th market, digital venture understood its payment system pattern and launched the market with the booking system from the onset. Building on several favourably market background conditions, it was able to apply all four elements and go through the cycle instantly (Figure 10). In turn, absorbing this new successful scaling strategy affects the Brazilian market and every existing market. Furthermore, it affects all subsequent market and booking

system launches as well as creates space for other booking system experimentations.

Figure 10 shows a linear and cyclical progression: one thing logically building on another creating a market maturity based sequence. Despite this visualisation, in reality the relationships between the four elements are less linear. Instead, they are more iterative, market specific, and changing over time. Different elements get used and recombined at different stages of scaling of the user base as the scaling pattern evolves. For each regional market different element or a combination of them will be more appropriate. In order for the four elements to be implemented across regional boundaries certain processes must be put in place to maintain each element and smooth transition between them. BlaBlaCar ensures that a new combination of the elements is not simply repeated across all regional boundaries but selected appropriately and iterated between enactments and replications.

As the study of the elements of scaling of the user base progressed, the above mentioned observations were supported and even more deeply reflected in the ways the teams viewed scaling:

> *"So headquarter functions are mostly coordination, synchronisation, knowledge sharing, best practice sharing and support. And we also try and create like the infrastructure for the local markets to thrive like KPI tracking and tools, tool implementation, and then of course the whole product platform is totally centralised. But apart from that all our consumer facing, so marketing operations, PR operations, communications, community engagement, all of that is completely locally driven but with central support. So kind of put the countries first. And to answer your question that I think that's been a major, it's been a key factor of success in speed because it's actually more, it's a less linear way of growing. You can add a whole new country that functions pretty much self-sufficiently with a team of three to eight people in a couple of months.",* Growth Team Manager

Each market goes through the three phases, however at different paces and with different steps and strategic decisions. Scaling through replication creates infinite possibilities for such recombination, empowering a digital venture to 'negotiate' strategic and operational direction in each local market whilst ensuring the overall scaling of the user base.

Challenges of patterns translation are drawn from country characteristics and can be both common for every launch and individual to the market. These relate to main problems that BlaBlaCar has or might encounter when launching in a new market. These can include legal action, booking system hostility, aggressive competition, difficulty in enforcing community code of conduct, misconception of the service and principles of ridesharing which result in trust and insurance issues, etc. Understanding pattern translation challenges means BlaBlaCar can forecast certain pattern scenarios and mitigate the negative consequences or reactions.

Solutions emerge with time and as a result of learning from other, more mature markets. Therefore, in some cases, in particular for the initial markets, these might be non-existent or non-apparent. Pattern translation solutions can be applied to reduce the negative impact of shifts or during the inception of the new markets. These often relate to educating existing and potential members, marketing of the service itself and using communication strategies to change the perception of the public.

In the process of ironing out issues in regional markets, BlaBlaCar created ways to mediate them locally whilst replicating certain core principles outside of the business-model-tested Western Europe into Eastern Europe, Asia, and Latin America.

Table 3[2] briefly outlines instances of replication using the online booking and monetisation (charging a booking percentage fee) system as an example. This started a new wave of scaling into unchartered markets with more regional variety, where BlaBlaCar took more weighted and rolled out approach to

[2] Accurate at the time of data collection. Regional booking and monetisation systems might have changed since the end of Data Gathering Phase 2 in May 2016.

monetisation and booking system replication. There was a transition to a more staged scaling approach as a result of leveraging and transferring a certain portion of the knowledge accumulated from previous successful monetisation and booking replications.

Table 3. Instances of Pattern Replication Across Regional Boundaries

Market	**Pattern Replication Across Regional Boundaries**
France (2006)	• Original monetisation pattern was enacted, where a free service model was replaced by a paid service. The free services simply matched drivers with passengers. A passenger would have been given a list of drivers travelling to the same location, having to contact and make pick up and drop off arrangements with their driver. Drivers had to make adjustments to the number of seats available based on the bookings they have received. This was a slow and inconvenient process that BlaBlaCar had little control over. It significantly limited venture's capacity to innovate, monetise, collect data, and make service and product improvements. Under the monetisation model passengers were to pay a booking fee charged by BlaBlaCar on top of the cost of the trip, similarly to how a user would book a train or a plane ticket. • Backlash from the community over the loss of a start-up image and negative reaction towards the new 'corporate' fee based booking system. • BlaBlaCar learns to rethink its social media and communications strategies when introducing the online booking and payment system across regional boundaries. A more staged approach of the communication strategy is decided upon for the next booking system implementation. • Backlash caused user base displacement, from young early adopters to late comers. Service legitimisation through the booking system attracted more mature users. In order to leverage this shift BlaBlaCar took user acquisition towards offline channels such as TV, radio and print in France and later in other regional markets.
Spain (2009) & Portugal (2012)	• Due to a community backlash in France, more careful approach was designed for Spain. • Despite the approach, Spain faced legal competition law issues with local bus companies.

	• Eventually winning the case, BlaBlaCar 'injected' the scaling pattern with this experience and outcomes, thus equipping all new market with tools to manage legal action from the regional travel industry incumbents.
UK (2011)	• One of the UK's biggest challenges was insurance and lack of users' understanding of the insurance policies surrounding the C2C based ridesharing. • In order to address this barrier to user base growth BlaBlaCar partnered with an insurance company AXA. Each ridesharing trip on the basis of the booking system was automatically insured for free, in a bid to create more trust, educate, and remove barriers for signing up and using the platform. • As this partnership developed and increased the legitimacy of the service, all markets eventually were offered the insurance option, providing the booking system has been rolled out and was mature enough.
Italy (2012)	• A rolled out approach to monetisation by axes was taken, whereby the most popular routes were monetised first, with others slowly added based on the progress/success of each previous axis. In this case the pattern was replicated as usual, since the more popular axes would be taken up faster in an all axes launch approach. Replication with a rolled out approach slowed down the pace of scaling in the short run. This allowed to make fewer mistakes and smooth out any booking system changes that might have been required. This however boosted the speed of scaling in the long run for the regional market and the venture as a whole. • This approach was taken into all other markets subsequently as a result of pattern replication in France, Spain and UK. In these markets an all axes approach led to backlash, legal, and insurance issues, stifling the user base scaling, and needed rethinking. • Introduction and roll out strategies of the booking and monetisation systems evolved thorough pattern enactment and replication.
Poland (2012)	• Due to local banking system differences in Poland (and in fact several other Easter European markets) and in some cases payment preferences, online booking and payment system would eat into profit margins. • An elaborate solution was devised that would allow to charge commission during booking but allow members to pay for the ride on-board. • Similar strategies were developed in Germany, where local users prefer using cash.

	• The nature of the booking and monetisation system evolved thorough pattern enactment and replication.
BeNeLux (2012)	No data
Germany (2013)	• Pattern enactment and replication was shaped as a result of the unsuccessful booking system and monetisation launch by BlaBlaCar's largest European/German market competitor. • Competitor repeated some of BlaBlaCar's initial mistakes in the launch of the booking system in France with little communication and a big bang approach. • German booking system introduction had to be really carefully planned. • Cash payment preference and a long standing history of pre digital age ridesharing required BlaBlaCar to draw on all previous booking systems introductions to create an optimal for the German market booking system and a careful roll out plan to scale the user base.
Ukraine & Russia (2014)	• Similar to the Polish market, this cluster's financial system and payment preferences challenged the booking system model. • Based on this and user friction in other regional markets BlaBlaCar introduced the booking system first, with an intention to gradually move to monetisation. • Users were gradually introduced to the booking system, allowing to instantly book a seat, update seat availability, arrange a meeting spot, and simplify other trip logistics previously done offline, usually over the phone. • This gave users time to accept and get used to the booking system. This pre-monetisation booking system offered only benefits to the users, softening the eventual transition to monetisation.
Turkey (2014)	• Trust and security were major barriers to user acquisition. • National ID checks were put in place, in order to scale the user base and create liquidity. These were done manually, by users posting their IDs for checking. • Other online security checks such as connecting user's BlaBlaCar profile to their LinkedIn accounts, displaying the number of professional connections. • This option was later introduced to other markets. The introduction of the booking system attracted more and more mature users that valued having this indicator when selecting their co-travellers.

India (2015)	Same as above
Mexico (2015)	• The market was launched as a result of an acquisition. • The local start up, now BlaBlaCar's Mexican team had already launched the booking and monetisation system before the acquisition. The system was based on charging the driver for posting the trip, rather than the passenger for booking the trip, allowing users to choose the preferred payment, either cash or card. • The system had to be dismantled because BlaBlaCar's scaling pattern based on a gradual roll out. BlaBlaCar's approach to frictionless non booking and gradual user base scaling was taken instead of adopting to the existing local system. • As the first LatAm market with similar market characteristics to the Spanish market, Mexico anticipated the same bus companies' legal friction and acted accordingly and proactively prior and during the launch.
Hungary, Croatia, Serbia, Romania (2015)	No data
Brazil (2015)	• Unlike any other market Brazil's booking system was introduced from the beginning, with the launch of the market. • This decision was made on the basis of the success of the booking systems as a platform for transaction monitoring, which allowed to add a layer of security through ID checks system. • Manual ID checks, previously implemented in Turkey and India, created friction as the transfer to online transactions took place considerably slower in those regional markets. • This booking system configuration was also a response to the market specifics, such as high mobile phone penetration and social media engagement. • The introduction of the booking system simultaneously with the launch was necessary for growing the user base and liquidity. This process has been reversed in other markets, where the booking and monetisation system was introduced at a certain size of the user base, user based readiness, and market maturity.
Czech Republic &	No data

Slovakia (2016)	

In order to continue exploring the process, I drew on my empirical analysis to develop a case narrative, that offers a broader overview of the research setting, key rapid scaling events, and instances of replication in the interviewees' responses.

4.5. Preliminary Visualisation

At this point of my analysis and narrative sensemaking I started to understand and visualise the process of scaling and pattern replication presented as Figure 11.

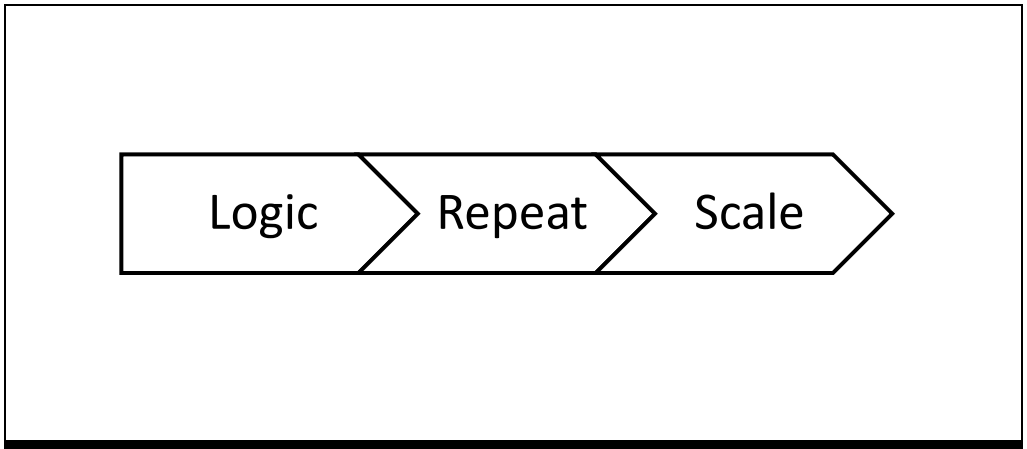

Figure 11. Preliminary Scaling Process Visualisation

Building on the empirical data and BlaBlaCar's internally developed and used phases from section 4.3, I used Figure 11 as a framework to interpret the main events, shifting points, and interview findings. This framework then helped to bracket my findings into a scaling timeline. The timeline consists of three data-driven phases, extending BlaBlaCar's scaling phases depicted in Figure 9, tracing the development of a pattern, it gaining traction and reaching critical mass, and monetisation of ridesharing.

4.6. Scaling Timeline

In order to explore the impact of the phases and various events further, I outline the three data derived phases, bracketed to create a timeline of the inception, shift, and scaling of pattern replication of the user base of the digital venture. These three data derived phases are:

- Pattern development phase (2006-2011)
- Traction and critical mass phase (2011-2014)
- Global monetisation phase (2014-ongoing)

4.6.1. Pattern Development Phase

This phase, traceable between 2006-2011, commenced with a launch of the company Covoiturage, and its first website. This phase can be described as a 'garage phase' where the concept of online ridesharing was being refined. Covoiturage enjoyed organic growth with little investment and effort, based on the attractiveness of the digitally enabled ridesharing. The main focus of the phase is the development of the core of the product:

> *"There was a three to four-year garage phase, right, where things weren't quite right yet. I think ratings for instance were introduced in 2009 which speaks to having the right product, right. It takes time to have really the product that is going to crack the market...",* Growth Team Member.

The service started gaining momentum in 2007, when a series of transport industry strikes left few other travel options for the French public and a large number of signups created positive liquidity, matching between drivers and passengers and their travel plans. This was a major turning point in the development of BlaBlaCar. This demand spike led to the opening of the first office in Paris and hiring of the first employee in 2008.

Figure 12. B2B Ridesharing Web Pages (source: BlaBlaCar.com)

Covoiturage's initial consumer to consumer (C2C) offering was expanded into a business to business (B2B) platform (Figure 12), selling services to local companies and authorities. B2B quickly became a source of revenue in contrast to a free C2C platform, which on the other hand, was growing faster with fewer resources.

Despite the profitability, B2B required high client customisation and this had little scalability potential, making BlaBlaCar rethink the business model. BlaBlaCar spotted positive feedback loops that would allow to grow the user

base rapidly in France and internationally and redirected its focus entirely to scaling the C2C platform. Scalability became the centre of the team's focus:

> *"[We] realized that C2C marketplace is growing much faster and on its own and in a more efficient way with a lot of traction. Much more than the B2B platform that's less scalable with a lot of education, communication skills required…It was a different business model but that's not where the growth is so they needed to make their bets",* Global Team Member.

Up until the introduction of the current business model at the end of 2011/early 2012 Covoiturage trialled a series of business model options. The move towards the right business model and 'proof of concept' in France resulted in BlaBlaCar raising €600,000 in 2009. Following this, with the right product and financial resources, BlaBlaCar was able to launch the first market outside of France:

> *"And then from having the right product then you start getting traction in the market, investors can see that, they back you with money and suddenly you have the budget to really explode. And also hire people or acquire other teams…",* Growth Team Member.

In December 2009 the company announced expansion into Spain, replicating the service and product under the name Comuto. In the same year BlaBlaCar launched its first mobile application.

In 2010 further €1.25 million investment was secured. Around the same time European transport infrastructure got shaken up by an eruption of volcano Eyjafjallajökull, causing air travel disruption across Europe and creating a surge in demand and subsequent high price and low availability of other 'traditional' means of transport. This event created undoubted traffic to BlaBlaCar's website and heightened public and media interest towards the venture across Europe.

4.6.2. Traction and Critical Mass Phase

In 2011-2014 BlaBlaCar began getting traction and gathering critical mass on a rapid scale. In December 2011 BlaBlaCar received a further investment of $10 million. In May 2011 BlaBlaCar entered its third market – the UK and reached its first million members. At this point the team started spotting patterns of growth that have been maturing in the pattern development phase. BlaBlaCar took advantage of a number of similarities between markets and opportunities for replication of the French market scaling trajectories:

> *"At the time, we were starting to operate in three countries and we already started to see that we could draw patterns from one country and apply it to another one, find levers that worked somewhere and try them somewhere else. That was the focus at first then you grew around that...",* Growth Team Manager.

As a result of drawing on these patterns, the year of 2012 saw rapid expansion across Europe, which started with Italy in May with an acquisition of a local startup PostoinAuto. In October BlaBlaCar launches in Portugal, Belgium, Netherlands and Luxembourg, as well as Poland by acquiring another on the ground start up Superdojazd. The focus on scalability created the need for a stronger international brand. Towards the end of 2012 company consolidates Covoiturage and Comuto under one global brand and name – BlaBlaCar:

> *"The first name of the company was Covoiturage, which means ridesharing in French, which is the wrong name because you're never going to expand. So, initially its easy because it's good for SEO, so it's kind of an easy way to start your business as an Internet company, but it doesn't scale, right, so we had to rebrand",* COO, speaking at Webrazzi.

BlaBlaCar had the product, the team of founders, nine markets, the brand, and the finance, so they began the project of monetising the service. The

finalised business model, online booking system, was to become transactional, based on an inbuilt booking which levies a fee on each trip. The nature of the system allowed to maximise scalability. More first time users were attracted to a legitimised and governed ridesharing service, as the booking system added a layer of security and trust to the platform. The system simplified the booking process and on board logistics of a ride, reduced cancellations and improved members' commitment. A member of a global team summarises the role of the booking system as follows:

> *"…Our belief is the more present that we can be as a third party inside that connection, the better it is because we can add value, add confidence, add service layers, add customer support. So everything that we can, any way we can structure the transaction and be present, not just enable but be present throughout that transaction, is a good thing for us",* Global Team Member.

The booking systems were first rolled out in France and Spain. The successes and errors from the transition in France and Spain were transferred across other markets and became the basis for launching all consecutive local systems (see Table 3). A member of a global team emphasises the role of sharing and replication in booking transition:

> *"…The booking transition in Spain which was the first one after France was a bit difficult to handle because there was a great backlash of the community whereas now we've transitioned many other countries, progressively there was very different strategic approach especially on the Comms side. And what you have seen what is happening currently in Italy is much more smoother actually in terms of change, so we are seeing how much we are sharing more and more really",* Global Team Member.

In April 2013 BlaBlaCar stands up to its main European competitor, a local German ridesharing start up, and launches in Germany, announcing 5 million members.

4.6.3. Global Monetisation Phase

From 2014 onwards BlaBlaCar has been focusing on global monetisation. Shortly after launching Germany BlaBlaCar makes a decision to step out of Central Europe and launches in Russia and Ukraine in February 2014 by acquiring Podorozhniki. In summer 2014 an investment announcement was made: $100 million to bankroll BlaBlaCar's expansion into Asia and South America. Company launches its first country outside Europe – Turkey in September 2014 and announces plans to launch India, Mexico, and Brazil. At this point BlaBlaCar boasted 200% year on year growth, with 10 million registered users. Continuing with monetisation many other countries have initiated the switch to online booking, which in terms of both the product features and the roll out process was altered in light of every previous booking system launch. As a result, several booking system configurations were developed to suit the local needs and market intricacies and many countries begun the monetisation with a non-payment booking system, preparing the community for a smooth introduction of the payment:

> *"So the challenge here is really to prepare this in the right way so there's a lot of work planned maybe a year ahead to, especially in terms of payment …, we want to scale as much as we can and to have one product that scales everywhere in the world as much as we can, but when it comes to payment it's just very country-specific",* Global Team Member.

In September 2015 $200 million were raised. Subsequently, in January 2015, BlaBlaCar announces its launch in India; the following month acquisition of AutoHop and expansion into Eastern Europe launching Hungary, Croatia, Serbia and Romania, all in March. In April BlaBlaCar announces its merge with a

German competitor – Carpooling, becoming the largest long distance ridesharing service in Europe and the world.

In the same month, BlaBlaCar acquired Rides and launched Mexico whilst UK was being transferred to the online booking system, making it the third country to monetise. For the rest of the markets the gradual switch to the booking system was ongoing. The platform created by the booking system opened multiple partnership and service extension opportunities for BlaBlaCar, such as one with global insurance giant AXA. This partnership allowed BlaBlaCar to offer additional insurance on every trip, to all members, rapidly increasing the value to users, boosting trust and attracting older demographic to the service. A global team member comments on the value of the booking system:

> *"In that sense, in itself, [booking system] brings a lot of value and on top of that we can track and we can have a lot of knowledge then you can get many other things on top of it. Partnerships, extended business lines, extended services…",* Global Team Member.

Later that year BlaBlaCar received a $1.6 billion valuation making it one of the Unicorn club companies, putting it alongside giants such as Uber, Dropbox, Spotify, and Skyscanner. November 2015, another Latin American country was launched – Brazil, and in early 2016 BlaBlaCar announced it launching Czech Republic and Slovakia.

The nature of pattern replication points to spillovers into other areas of the digital ventures. Replication of externalities can be traced into and across regional teams, but also across functional teams, touching upon those working on launching markets, communications teams, monetisation teams, and reaching as far as external venture's partnership firms.

5. ANALYSIS AND FINDINGS

What can be traced from the case story is a gradual introduction of the replication of learnings into global projects but adjusted for local demands, such as in the example of the booking system and monetisation roll out. The spotting and leveraging of patterns comes through initially in the early country launches, in the consolidation towards a global recognisable brand, and in the search for the right business model with the maximum capacity to scale across boundaries.

Scaling pattern incepts in the middle of a dynamic relationship between opportunities for new business, growth of existing projects, local and global growth context. BlaBlaCar simultaneously works on acquisition and activation of new, and retention of existing users, as well as localisation of a pattern and its global strategic alignment.

Patterns are enacted and replicated in a given setting which can either be a new or a known setting, such as either a new or an existing market. In the same way, patterns can be either new or known, i.e. existing in a different market or used in a different team or function. These, when combined, can create four pattern enactment and replication scenarios: known pattern-known setting, new pattern-known setting, known pattern-new setting, new pattern-new setting (Table 4).

Table 4. Scaling Pattern Scenarios

Pattern scenario	**Example**
Known pattern-known setting	A scenario where a well-established, previously used pattern is being applied in an existing market to grow and activate a user base locally. Example: annual BlaBlaTime, a member meet-up event, which takes place every year and has the same format replicated globally.
New pattern-known setting	A scenario where a new pattern is being developed and applied in an existing market to activate and acquire new users with new growth strategies. Example: Member Stories videos that were rolled out country by country to showcase local

	ridesharing use cases to grow and promote user base demographic diversity.
Known pattern-new setting	A scenario where a known generic pattern is applied in a new market to grow an entirely new user base using tested strategies. Example: launching a new country and following the established roadmaps that worked well in previous launches.
New pattern-new setting	A scenario where a new pattern is being trialled in a new market to grow a new user base by betting on a new data driven strategy. Example: launching a new country (e.g. Brazil) simultaneously with a booking system, as opposed to following a known pattern of market maturity based booking system introduction.

The notion of a new pattern, which cannot emerge by itself, but rather is an action or series of actions, is perceived by the team members as a data driven strategic bet. If data or information are pointing towards an actionable insight that can be used to scale the user base and has the potential to be replicable across other markets, the team picks up on it and takes calculated risks.

> *"…for example, I am in Paris, I don't really know what happened in neighbouring countries, so first I would have to check the data. So every month, every week we receive some reporting and we can see what kind of marketing campaigns have been launched, what are the results. So first is analysis of data to see what has been done and how it performs. And then it is also a lot of communication with the team to support them in the implementation of the best practices, to inform them that we have done this in this country, it works pretty well or it doesn't work so they should do it or not do it."* Growth Team Member.

A state of constant flux when it comes to patterns and settings is assumed. As the number of potential problems and opportunities grows, so does the number of solutions. By recognising a setting where a pattern can be used, a ready-made but half-baked solution is available to be applied by any team member.

Replication and constant iterations and experimentation loops came through evidently in interviews with the growth team, who have created the basis for preliminary mid-range theory of scaling through replication. Two different managers from the growth team made the following remarks about replication:

> *"So the objective will be first to test new channels and then manage to automatise what we can automatise. And we do this in order to scale, so the idea is to do a lot of things, a lot of efficient things in the smaller time"*

> *"I would say that we experiment everywhere. So we experiment in every market. The culture at [name of firm] is really to test, test, test and share. So you will never meet a country where that never tests something."*

5.1. Mid-Range Theory

At this point of analysis, I visualized (Figure 13) scaling of the user base of digital ventures as a process with three elements: Artifact, Flexible Organising, and Value Framing. Artifact in the form of a playbook, Flexible Organising in the form of global-local strategic and organising interplay, and Value Framing in the form of BlaBlaCar's values, based on my preliminary observations (section 3.4). A scaling pattern would be used or reused on the basis of the elements, creating a generative scaling process. I called this process generative pattern replication (GPR).

Using this process, BlaBlaCar was able to scale the user base through two types of growth: cross boundary and compound. Former, by rapidly adding new markets, and latter, by building up the knowledge, its replication, and consequently venture's ability to meet user needs faster and better.

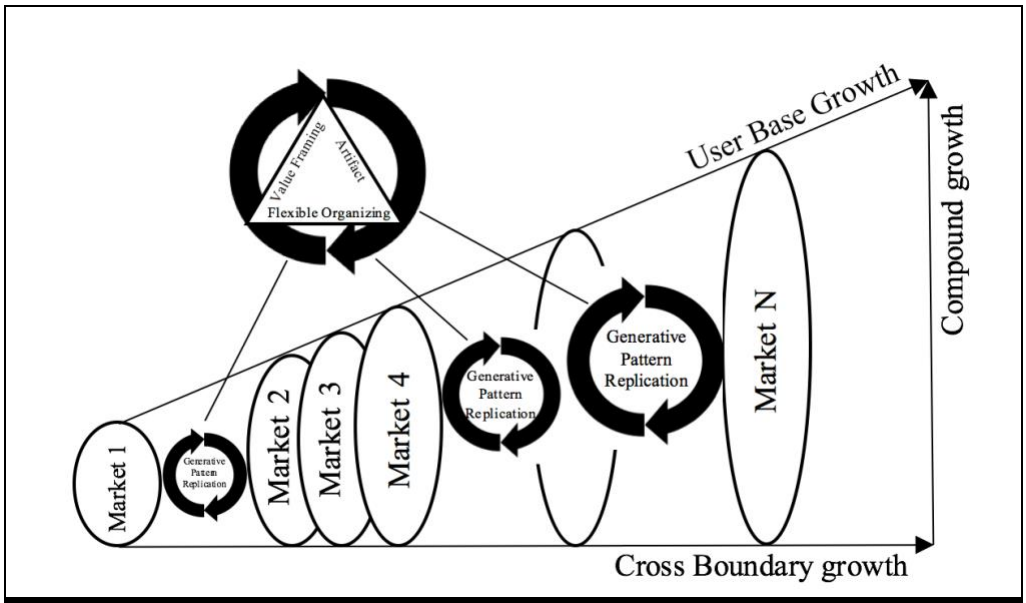

Figure 13. Scaling Through Replication Process Visualisation

I proceeded to develop some preliminary definitions and conceptualisations, summarised in Table 5. These crated a strong basis for the next data and findings iteration, and the development of the process model.

Table 5. Mid-Range Theory Concepts and Definitions

Concept	**Definition**
User Base	The number of users who have registered for a digital service. (Different from "customer base", since a customer has "past purchase behavior" (Schmittlein and Peterson 1994), which is not always the case for users in the context of digital innovation)
Digital Venture Scaling Pattern	An organising logic for the digital venture's ambitions and attempts to grow the user base. It offers a generic solution to recurring challenges in growing a user base in the particular market of the digital venture.
Generative Pattern Replication (GPR)	A process of replicating a scaling patter (a generic solution to a particular setting) resulting in an open ended three way scaling dynamic relevant and applicable across boundaries to individual markets and the venture as a whole: i) solving a problem in a market/setting a pattern was replicated in; ii) providing insight for solving similar/other challenges in similar/other markets; iii) becoming the basis for new opportunities/solutions. GPR is built on three pillars-mechanisms: artefact, value framing and flexible organising, creating two types of growth: cross boundary and compound growth, that collectively grow the user base of a digital venture.

Cross Boundary Growth (=sum of all markets)	Digital venture's growth by rapidly launching new markets in a modular logic through GPR, leveraging the existing know how from previous launches. It is the growth (horizontal) of the number of markets.
Compound Growth (>sum of all markets)	Digital venture's growth by generating and synchronising knowledge across boundaries, redistributing the outcomes of GPR. It is the growth (vertical) of the size of the markets and the venture overall.
User Base Growth	User base grows with compound and cross boundary growth. As the number of markets increases with cross boundary growth, network effects incentives for users become stronger; with compound growth the value delivered to users and subsequent venture attractiveness increases faster with generative replication of projects, partnerships, product features, etc.
Artifact	A tangible embodiment of a scaling pattern that collates the outcomes of pattern replication through trials, errors and successes, formalising them into principles that can be easily transferred across boundaries.
Flexible Organizing	A digital venture's agile team structuring logic, maintaining a constant state of synchronisation across teams and boundaries.
Value Framing	Digital venture's cultural values translated into a set of generic principles guiding internal processes and practices within the scaling through replication organising logic.

5.2. The Three Pillars

Having traced several elements that form a structure for replication at BlaBlaCar, and defined some preliminary findings and concepts, I zoomed in on the three distinct mechanisms-pillars. After several rounds of iterations, I re-labelled artifact, flexible organising and value framing to instantiation, venture meshing, and value frame, accordingly. I then begun constructing the process model of scaling through pattern replication. I proceed to reveal the process of analysing my data that led to the final interpretations of the three pillars.

5.2.1. Instantiation

A successful scaling strategy or technique becomes a pattern that can be replicated in other settings. Learnings from applying a pattern are captured as a framework in BlaBlaCar's playbook and in this way are disseminated across all teams.

> *"Playbook is basically the know-how through trials and errors and successes that's been formalised into a set of reasonable principles and processes that can be transferred to other teams easily so you can tell them "hey, this is what works/doesn't work, this is the right approach, this is something that might or might not work and this is something that surely won't work"",* Growth Team Member.

So, the first element of scaling through pattern replication is instantiation (Figure 14). This pillar is based on a physical manifestation of the pattern in the form of BlaBlaCar's playbook. Any team member can access and replicate a pattern from the playbook. Best practices in replicating a pattern are fed back to the playbook constantly, and a pattern is then further circulated into multiple new versions of the pattern in local markets. The playbook acts as a conversion tool that allows the teams to process local learning into shared global best practices. These can then be adapted locally, either across boundaries or in the market where they originated as an updated version of the original solution.

At the core of instantiation is the notion of not having to 'reinvent the wheel' each time a new market or campaign is launched. Instead of starting afresh, the elements of instantiation work together to continuously compound existing knowledge and value of that knowledge into a living (constantly updated) structure (Alexander 1979) that helps to solve a whole range of problems with the same generic solution, making digital venture flexible, reactive, and fast to scale on tested principles across regional boundaries.

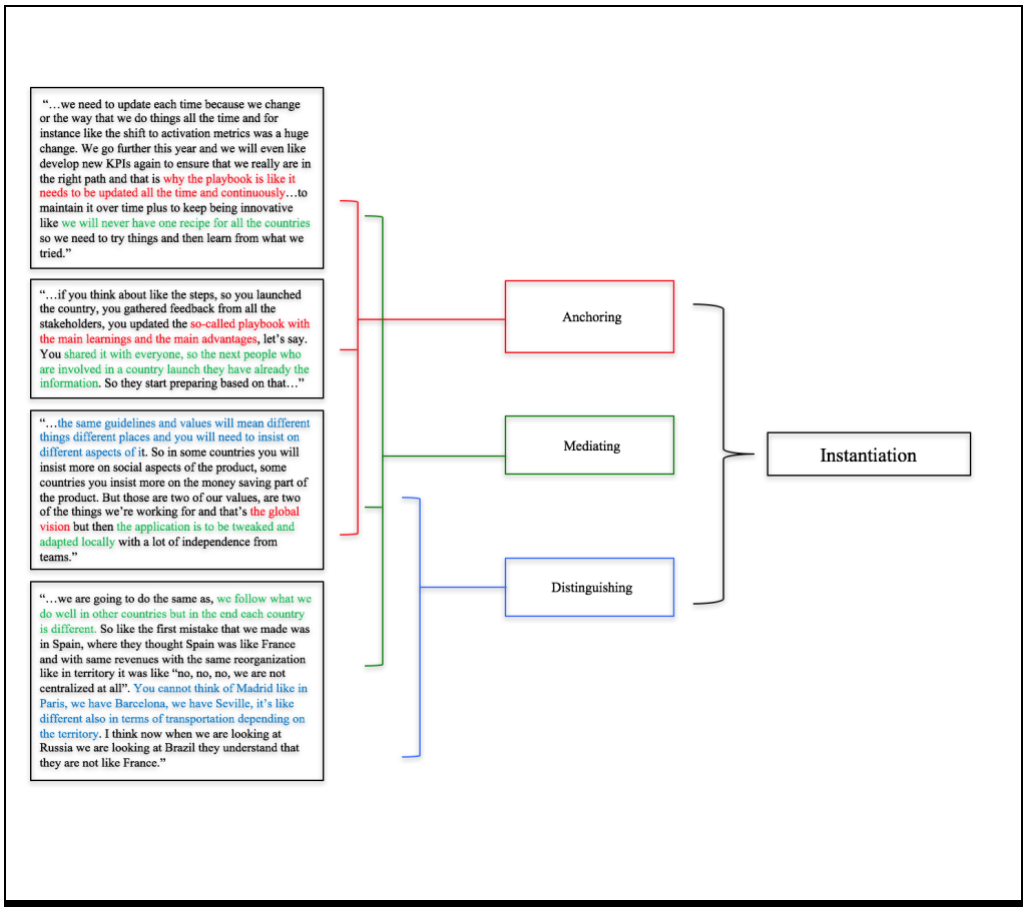

Figure 14. The Mechanism (pillar) of Instantiation

In generating the term instantiation, I was driven by the initial visualisation of the scaling via replication process (section 5.1), and borrowed the term from programming. There, instantiation means creating instances from a template that are executable. This analogy perfectly explains the way digital venture relies on the pattern to replicate previously successful scaling strategies into a number of local markets where those localised instances can 'function' in their context.

Instantiation has three parts to it: anchoring, mediating, and distinguishing.

Anchoring is used by the members of a digital venture to find a common reference point for decision making, an artifact, or in the instance of BlaBlaCar, the playbook. Anchoring allows to collate the outcomes of replication through trials, errors and successes, formalising them into generic components. These components act as tools that can be easily transferred and leveraged across

regional boundaries. Anchoring helps to create a shared understanding of venture's current performance and strategic position across regional boundaries.

*Mediating***,** by bringing teams to a common understanding through sharing information encoded in an artifact, allows to reflect on it, and equalize any gaps in understanding between teams and functions. Mediating allows for functional coordination and transversal communication in a flexible matrix structure, typical for digital ventures.

Distinguishing, building on Anchoring and Mediating, creates a non-generalised logic for decision making, where at the heart of replication lie differences between regional markets, not their similarities. By creating a common reference point and a shared understanding of the generic decision making principles across markets, individuals, using their market specific knowledge, can distinguish and select the most appropriate successful technique applied elsewhere, adapt and apply it when solving a local challenge.

5.2.2. Venture Meshing

Playbook embodies the pattern and serves as a carrier for knowledge, but it is only an extension of the learnings, held by the 'experts' that have previously and successfully replicated a pattern. Replication becomes possible with high market and team mobility, required to pull together resources when replicating the pattern effectively and rapidly. So, the second pillar of scaling through pattern replication is venture meshing (Figure 15).

Venture meshing is agile team structuring that allows to maintain a level of synchronisation across teams and boundaries, allocating patterns and team resources where they are needed most. Building on a playbook and leveraging agile teams allows to balance new business opportunities with growth of existing projects, local and global growth context, the need for operational, day to day running of the business with forward looking innovation strategizing.

> *"So when building something you actually think that it should be scalable. So when structuring the team you will think already that we're going to grow and you think "okay, so when we are going to be fifty how*

like would these processes be applicable or not". So can I build such processes which would be applicable now as well as in ten years, you know, it's something like that. And if your answer is 'no' then you should take this into consideration and take into account that "OK, now I am building something for one year, in one year we will need to change", but ideally you try to find a way which would be scalable and applicable for twenty people, as well as thirty, as well as fifty", Growth Team Member.

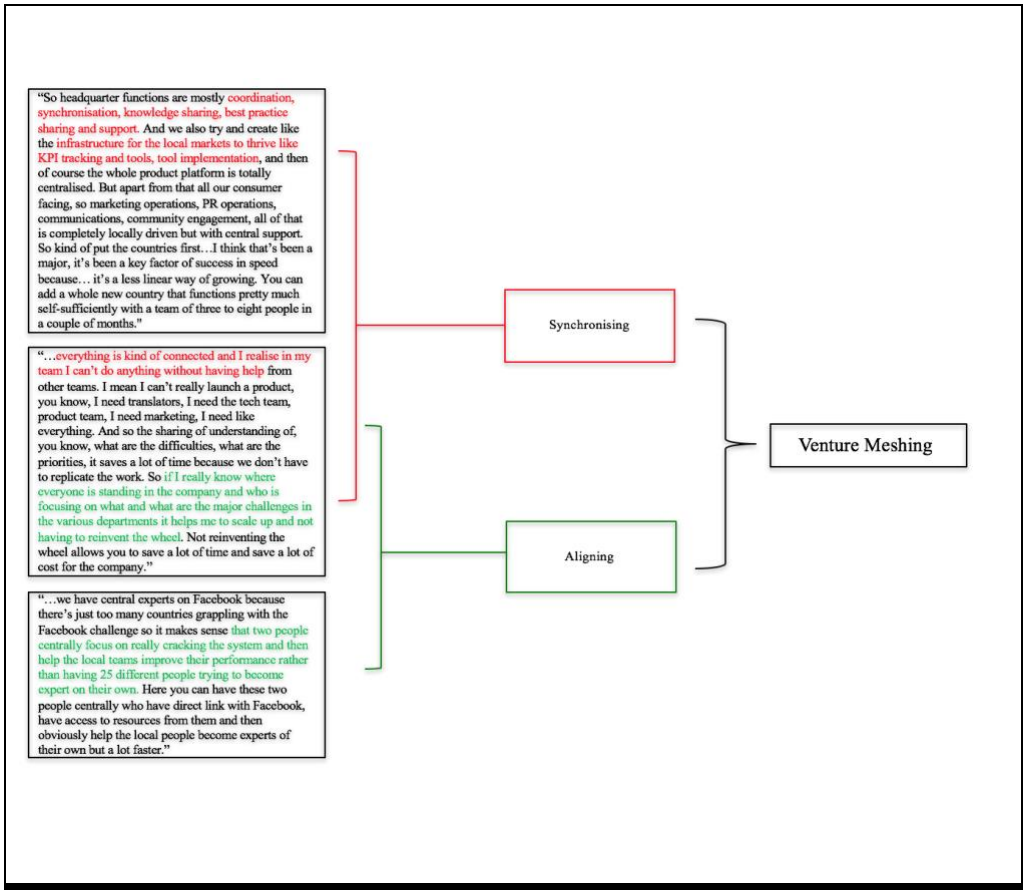

Figure 15. The Mechanism (pillar) of Venture Meshing

Within the venture meshing pillar, I recognise digital venture's ability to successfully manage several tensions associated with scaling across regional boundaries. These include previously mentioned conflicts between local and global, growing existing and new markets, time and resources allocation to

planning vs. day to day. Venture meshing allows digital ventures to balance such dual organising through the processes of *Aligning* goals and continuous *Synchronisation* of practices across regional boundaries and different functions. In this way digital ventures deliver snapshot awareness of tensions and conflicts locally and globally, allowing leadership and autonomy to exist on local and global levels granting freedom, flexibility, and speed. This in turn creates space for replication, resource allocation, and decision making faster, regardless of context, job title, seniority, or geographical location.

In generating the term venture meshing, I attempt to explain how components of different ideas fit together, where tensions and conflicts between different agendas and scaling 'directions' might exist. This particularly takes into account pressures to balance the overarching global strategies with the specificities of the local market. Meshing, a term borrowed from engineering, assumes locking, connecting, and entangling between components that allows 'shifting gears' efficiently and rapidly in order to generate a change of speed. This analogy perfectly explains digital venture team's ability to rapidly interlock and mesh themselves into well-functioning taskforce that leverages existing learnings and generates new ones at the same time, thus helping to solve those tensions rapidly and where needed.

5.2.3. Value Frame

The third pillar, value frame (Figure 16), is comprised of 10 values (Figure 4). These have been drawn up internally by the team, and govern everyday practices and processes in the organisation. Values create a common 'language' and decision making reference point that facilitates regional boundary crossing and replication.

> *"I mean the values are very much like…kind of prophecies you can point to… I remember I was speaking to one of the senior guys here and I was struggling working with maybe 5 people in a cross project and also across a few countries and they deal with like 30-40 people. I'm like "how do you bring everybody to consensus without just saying 'no, this*

is the way it's going to be?" And he just pointed to the values and said you nudge them and in doing that everyone feels equal and there isn't so much of like a sort of residue of politics…", Global Team Member.

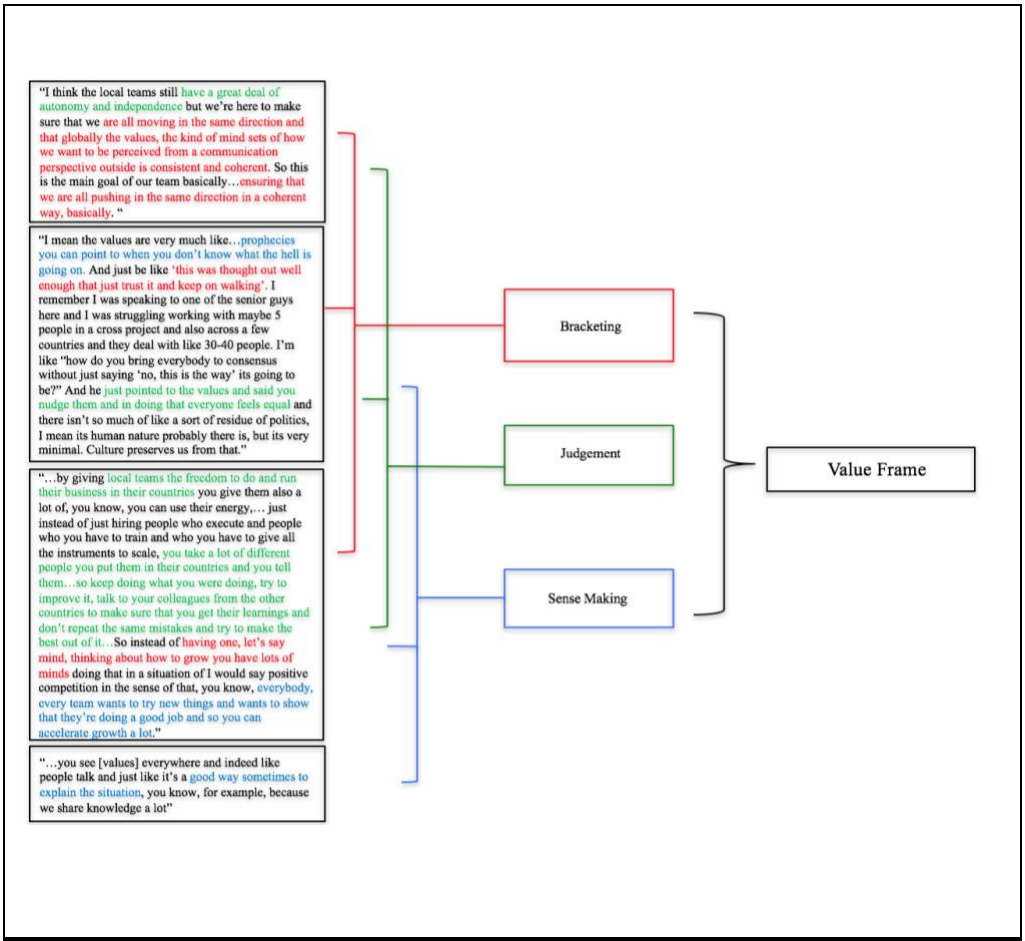

Figure 16. The Mechanism (pillar) of Value Frame

What this pillar does, is that it creates a frame, a metaphorical 'safety net' for a digital venture, reducing reliance on micro management. This allows to create a market or find a solution in circumstances where there are no obvious processes or management structures in place. Imposing tighter control across regional boundaries with rigid processes and layers of management can potentially dampen innovation, reduce localisation, and the speed of response to a market. This can diminish the affordances of digital and venture's scaling potential. Thus, *Bracketing* properties of value frame fence off and provide decision making and innovation space when digital venture is faced with either

an issue or an opportunity. Each individual within a digital venture has the ability to exercise their own *Judgement***,** based on the unique information available to them in the local context, and the stock of existing global knowledge within the frame of brand values. Such ongoing, collective, and complex *Sense Making* across regional boundaries democratises individual opportunities for innovation and creates externalities in the form of speed, localisation to the precise needs of a given market, and optimisation of the use of resources.

In generating this third and final value frame pillar, I simply envisioned a frame. A way for a digital venture to create a safe space, or the previously mentioned 'safety net' for decision making, where speed and accuracy of that decision had to be balanced with the pressures of creating value and innovating. In the case of BlaBlaCar I understand culture and values as deeply rooted, playing an integral and tacit part in generating scaling across regional boundaries. Values directly contribute to creating a pattern replication culture. As such, this frame analogy, in my view, perfectly explains digital venture team's ability to rely upon a set of values to sense and direct each decision in the same way, and with an overall venture's strategic direction.

The three pillars create a generic yet adaptive structure, a 'safety net' for replicating the pattern, in an autonomous way, on individual and company level, globally and locally, but within the overall company strategy and vision.

> *"…we need to spend a lot of time understanding how to prioritise. So making sure that all markets get what they need. And beyond that it also requires us to set up frameworks. So rather than having a set, you know, set of rules, we actually set a framework that countries can adapt to their local needs",* Growth Team Member.

I proceed to develop the pillars further and explain the way these three mechanisms interact, piecing the process of rapid scaling of digital ventures together in the next chapter. I place my findings in the context of the studied

literature, attempting to extract implications from the abstraction of the three pillars and the suggested generative process of rapid scaling.

6. DISCUSSION AND IMPLICATIONS

In order to begin the Discussion and Implications chapter, I summarise the research so far and allow the reader to recap the key points of the thesis. I then layer the key existing research concepts against my main findings, aiming to tell a compelling story of my research contribution and implications for practice.

6.1. Research Restatement

Scaling of the user base is emerging as an important branch of the digital innovation management literature in the field of Information Systems. A seminal paper by Huang et al. (2017) makes a giant leap in this direction, viewing scaling of the digital ventures as qualitatively different. By building on the emerging new stream of IS literature on digital innovation (Kallinikos et al. 2013, Lusch and Nambisan 2015, Nambisan 2013, Svahn et al. 2017, Tilson et al. 2010, Yoo et al. 2010, 2012), they showed that digital ventures sustain scaling generativity through digital innovation, however doing so through a single market case study research.

Digital ventures seek to scale their user base fast to lock out competitors and drive further adoption through positive feedback loops. One important strategy for such rapid scaling is to scale the same service across regional markets. However, regional markets exhibit slightly different conditions that challenge digital ventures to create ways to fit their product or service within the intricacies of the local market conditions and preferences. In order to stay ahead of the competition, which is constantly growing amongst digital ventures, scaling strategies have to be appropriate and effective across a range of regional markets, but also fast and innovative. An additional challenge is to address not only each new market one by one, but also capturing and sustaining scaling and innovation across existing markets. In this thesis, I aimed to extend the work of Huang et al. (2017) by looking into across market scaling, approaching it as a process by which ventures replicate a generic solution to recurring challenges across regional boundaries.

Additionally, Huang et al. (2017) concludes with a call for research that would explore internal organisational malleability. Huang et al. (2017) believe this might have been overlooked or taken for granted by researchers and managers due to the high level of malleability of digital technology behind the organisational scaling and innovation capabilities. My original findings and theory building take a step towards answering this call for research.

Collating my ideas and preliminary assumptions about scaling of the user base of digital venture, I created a conceptual basis that argues for the need to understand scaling in the digital age as qualitatively different. Having adopted and revised my standpoints outlined in 2.9 throughout the research process, I was able to frame scaling of the user base of digital ventures across regional boundaries. Throughout this thesis I view scaling as based on the use of internal structures that allow digital ventures to stay flexible, whilst maintaining a level of control across a number of markets. These structures exist in the form of previously successful solutions that have been taken through at least one feedback loop cycle, with this process potentially speeding up with each loop. Further to this, internal structures are replicated across markets in such a form that allows digital ventures to do it effectively, rapidly, and most importantly, generatively. Replication is angled towards leveraging and boosting the network effects. These allow digital ventures to scale its user base in a self-reinforcing cycle, where the stronger the network effects were, the better and faster the replication would be, and vice versa.

Through this empirical doctoral study, I did indeed trace elements of replication, used as a scaling strategy. I was able to further understand and theorise the internal workings of a digital venture, its organising logic, and the way it scales rapidly across multiple regional markets, whilst maintaining the generativity of the scaling mechanisms beyond what is permitted by the affordances of digital infrastructure it was drawing on. Using my initial understanding, based on some of the latest literature in IS and digital innovation, I argued that there is a need to enrich the current explanations of scaling of the user base that has to date been largely overlooked. Now, using an original and

rich empirical account of the case of BlaBlaCar, I have distilled theoretical explanation of the scaling of the user base of digital ventures deeply grounded in empirical data, in the context of multiple market scaling. The end result is a novel model of a rapid scaling process that I called generative pattern replication (GPR). In the next few sections I unfold the proposed process model, along with my explanations of the ways digital ventures scale, concluding with several relevant research implications.

6.2. Scaling Through GPR

Based on the conceptual framework and my empirical work, I propose that digital ventures scale across regional boundaries through the process of generative pattern replication (GPR).

I found that digital ventures organise themselves in a unique way that allows them to pull together previously successful solutions into generic principles that can then be applied to recurring problems across all their regional markets. I call these generic principles patterns. Manipulated by digital ventures patterns are never instantiated or used in the same way twice, creating an infinite number of combinations and possibilities to choose from when planning and executing a scaling strategy. Using patterns removes the need to 'reinvent the wheel', creating positive speed and scope externalities for the scaling process. Further to this, digital ventures are able to grow and innovate simultaneously, and fast. They stay generic and responsive to change on the one hand, and specific and relevant to local market needs, on the other. Thus, patterns make digital ventures' scaling a generative and dynamic process, whereby they rapidly scale the user base on the basis of a generative reuse of generic structures. The inception and reuse of the pattern is based on the three mechanisms. These mechanisms continuously interplay between each other and support digital venture's unique way of organising that allows for such generative scaling across regional boundaries via pattern replication.

When abstracting from data, I drew inspiration from Pawson and Tilley's (2014) *context* + *mechanism* = *outcome* theory structuring. A pattern, consisting

of past scaling decisions and insights set in a regional market context, is inputted into the three mechanisms (instantiation, venture meshing, value frame) that allow for a pattern to be enacted and replicated. The outcome of the process is scaling of the user base (cross boundary and compound). Once the process is complete, any insights and learnings on the process and the outcomes are fed back into the pattern through the feedback loop.

This feedback driven process of GPR generates a greater scale of the user base, but also builds up resilience to competition, and value to users through network effects. Despite its constantly updating and dynamic nature, GPR allows digital venture to preserve its organising logic, generatively scaling the user base.

To illustrate my theory, I arrived at the GPR process model (Figure 17 and Table 6) that consists of the following: (a) an initial *pattern*, a generic structure that is compounded from previously successful solutions; (b) the *replication mechanisms* that allow a digital venture to leverage a pattern to scale through replication; (c) the *regional market* context in which a pattern is enacted and/or replicated; and (d) the *outcomes* of replication in the form of a twofold user base growth – cross boundary and compound.

In short, I define GPR as a process of replicating a scaling pattern resulting in a generative scaling dynamic, relevant and applicable across regional boundaries, to individual markets and the venture as a whole. I view, and this has been corroborated in my interview findings, the process model as generic, applicable to any type of strategic decision and response made by BlaBlaCar. From my understanding of the case, this applicability extends into multiple context (i.e. regional markets). At the core of the process model is BlaBlaCar's philosophy of not having to reinvent the wheel in everything they do. Inherently, any type of strategy links to generative scaling and its three mechanisms (instantiation, venture meshing, value frame).

> *"you know what works, what do not work and every time that you test something and you learn about the tests you know what are the bad*

practices so you know better on the, what you could test, how to test it and then duplicate. And then in the second test you learn again something more. So when you will duplicate it a third time you will learn from the two previous tests and will be sure that you will apply all the good practices. In this way we can scale.", Growth Team Member.

"I would say that we experiment everywhere. So we experiment in every market. The culture at [here] is really to test, test, test and share. So you will never meet a country where that never tests something…the idea is really to test, to verify, to test in every country", Growth Team Member.

I proceed to unpack each element of the model, unravelling the nature of the GPR throughout the chapter.

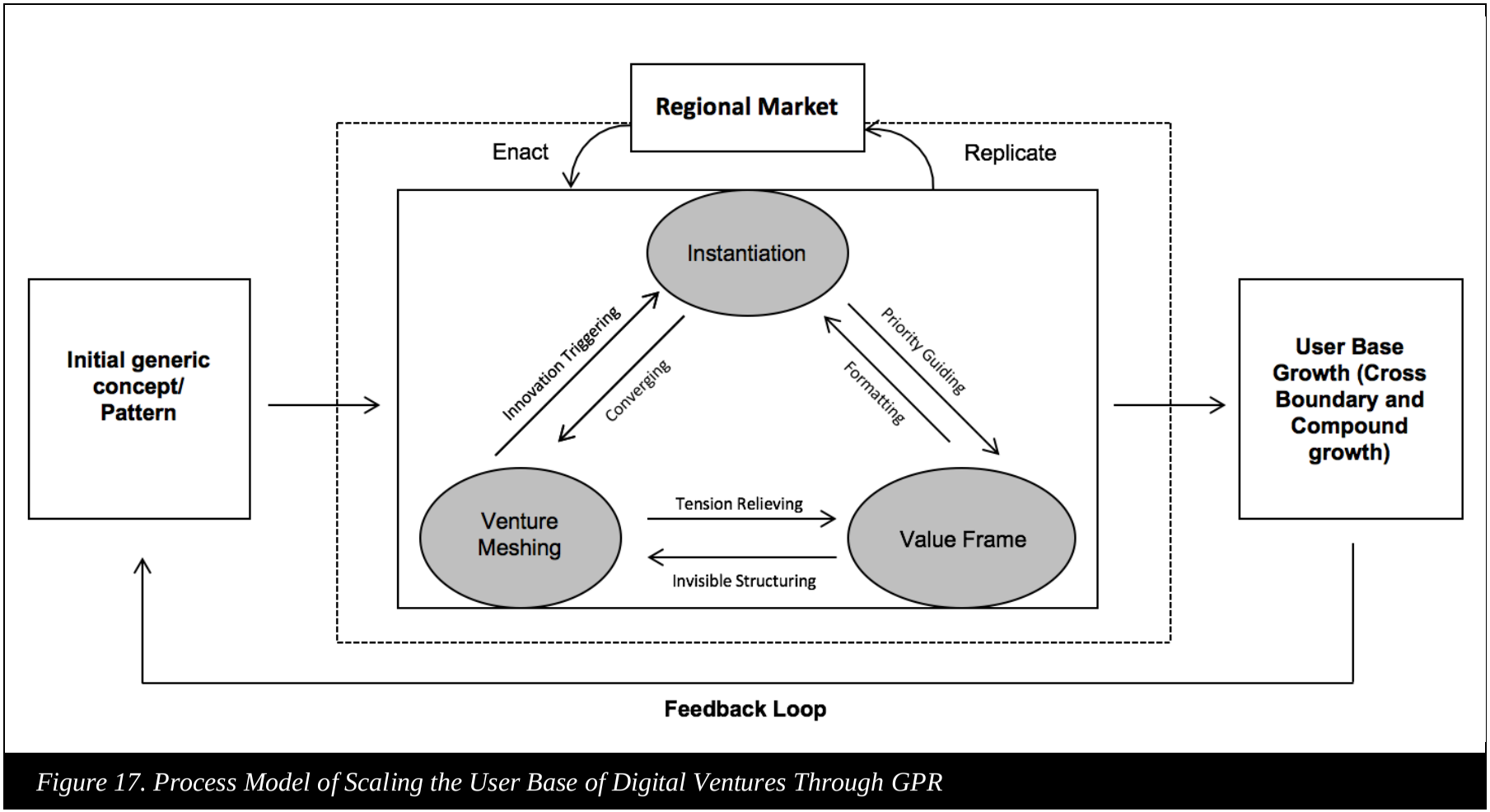

Figure 17. Process Model of Scaling the User Base of Digital Ventures Through GPR

6.2.1. Pattern

Pattern is an essential starting point of the replication process. It is born when a successfully or unsuccessfully applied scaling technique, and the externalities of its application are formalised and collated into a set of learnings. Pattern can be described as a collection of coherent, contextual, and current information that takes into account past and current states of the venture, the markets it operates in, as well as future strategic intents. Pattern is an organising logic replicated across multiple contexts digital ventures operate in. Circulated across functions and teams it is at the core of scaling in multiple scenarios (Table 4), which include scaling in existing markets and across existing functions.

In very simple terms, everything within a digital venture is part of a pattern, which is in constant motion. Pattern represents 'the whole', which is contained in each and every one of digital venture's parts. Therefore, every single piece of information and decision making contained within a digital venture's pattern would have the whole picture contained within it. As such it is important for a digital venture to feed in the information through the feedback loop, giving the pattern as much material to work with as possible, in an almost algorithmic learning manner.

> *"…everything is kind of connected and I realise in my team I can't do anything without having help from other teams. I mean I can't really launch a product, you know, I need translators, I need the tech team, product team, I need marketing, I need like everything. And so the sharing of understanding of, you know, what are the difficulties, what are the priorities, it saves a lot of time because we don't have to replicate the work. So if I really know where everyone is standing in the company and who is focusing on what and what are the major challenges in the various departments it helps me to scale up and not having to reinvent the wheel. Not reinventing the wheel allows you to save a lot of time and save a lot of cost for the company,"* Growth Team Member.

The volume of iterations is important in the enactment and replication of the pattern. Gathering data and insights from markets and teams that might not even be relevant at the time, can at a later date be puzzled into a solution. The more information and feedback loops (or instances of replication), the more likely the pattern to work and set the instantiation mechanism in motion over time. In turn, instantiation has to be supported by venture meshing and value frame mechanisms that allow the feeding of the pattern through the flexibility of organising, lateral information flows, and matrix organisational structures.

In an increasingly multicultural environment, BlaBlaCar is facing multiple challenges of coordination. Given the need to retain the start-up culture, patterns provide a way to capture and document expert knowledge to be used by non-experts. The same applies to capturing knowledge of those embedded within a market context to be used by those located elsewhere or working in a different function.

Digital venture's pattern possesses certain characteristics and mirrors the organising logic of digital innovation. Firstly, the pattern is scalable. It has the ability for upward adjustment when a new market or other scaling opportunity is identified. It is also modular. It is embedded within and acts as part of a network of smaller and autonomous markets, which connect and communicate into one transportation network and digital venture. Furthermore, I understand the pattern as having interoperability features. In my view this means that resources used in the enactment and replication of the pattern are compatible and connected (e.g. common product features, language used for communicating both internal and externally, logo, etc.). Lastly, availability of information and data to anyone across the venture, regardless of space, location, function, or time. All those features together make pattern into a powerful engine for digital venture's growth. Borrowing this engine analogy from Ries (2011), I characterise it as having strong generative capacity. This means that when 'the growth engine' is revved up it sets in motion an entire process. This process is called GPR.

Whilst the scope of this research did not aim to tell the user side of the story,

the pattern ultimately contained certain behaviour patterns. Gathered from different markets and scaling attempts, these allow digital venture to predict ahead of a market or particular campaign launch, and have thus became a large part of the pattern replication phenomenon.

GPR as a process continues to seek for a solution, regardless of whether a specific market or team member is actively working (conscious of it) on it or not, since the pattern moves and freely flows through the venture in multiple lateral ways.

It is a living structure (Alexander 1999), a big picture vehicle that embeds and at the same time allows digital venture to chase 'Rumsfelds'[3] (known knows, known unknowns, and unknown unknowns) through a series of scenarios (section 5.1), using them to make decisions, set targets, make predictions, take weighted risks, and measure progress. Patterns allow digital ventures to partake in retrospective and anticipatory sensemaking simultaneously. Digital ventures proactively recombine existing mechanisms and successful strategies with new information and elements inherent to the local markets. This allows to complement rapid scaling with ongoing innovation, since in one of its true definitions, innovation is recombining existing elements to create something new. Summarised in other words, it is doing by inventing the way of doing (Gherardi and Perrotta 2013).

Pattern is initiated in two ways: either locally, in a bid to address a new opportunity or an issue specific to a local market, or globally, addressing an opportunity or a common issue in more than one market. Pattern is enacted and replicated and, as it becomes the subject of a feedback loop, it emerges as either a new pattern or an advanced version of the original pattern.

My research at BlaBlaCar shows several examples of this sub process. One such instance is the case of replicating a monetisation model in Eastern European

[3] From Rumsfeld's original comment made in 2002 "As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know."

countries, where the financial systems differ in nature and their transaction charges to those of Western and Central Europe. The successes and challenges of replicating the monetisation model were taken into account to optimise local operations and their scaling onto all axes (ridesharing routes), but also communicated into a monetisation pattern that will be driving all further regional market monetisation and scaling strategies globally. The challenges of the regional market specificities catalyse digital ventures into seeking ways of localising their knowledge from generic principles that will remain relevant and scalable in every other regional market and the venture overall.

Pattern, in the case of BlaBlaCar and several other digital ventures such as Eventbrite for example, partly takes on a tangible form as a playbook. Having said that, the playbook can take on many forms for several recurring processes that take place in regional markets. Examples of this include summer community meet ups, which follow similar formats locally, driven by the global team, all whilst giving local engagement and community managers the freedom to find the most suitable venues, activities, and ways to invite members of the community, etc. The format of the event and a generic pattern of executing a successful event under the brand guidelines are communicated with the team before the events. Local teams are supported throughout the project with regular 'stand ups' and by exchanging insights from other more mature regional markets. The scheduling of the events globally is not simultaneous. Instead, they are executed in stages, thus allowing for the effects of the feedback loop to have positive effects on pattern replication. This ensures the success of the events as they take place, instead of waiting for patterns to be enacted and replicated in regional markets the following summer. Having said that, after all of the events take place the learnings are formalised and condensed back into the playbook, and communicated with central and regional teams in order to enhance the pattern, and scale it more effectively the following summer. BlaBlaCar's playbook is as a tangible element of one of the three replication mechanisms that I discovered empirically.

6.2.2. Replication Mechanisms

The three replication mechanisms serve as an engine for the replication process. They highlight the generative nature of pattern replication in the case of scaling digital ventures across regional boundaries. The three mechanisms impact the replication process in their own unique ways, nevertheless are difficult to separate and detach from each other. As I show later in this chapter, they build upon each other in a specific to the regional market way, giving life to the GPR process. The three mechanisms (summarised in Table 6) are instantiation, venture meshing and value frame.

Table 6. GPR Mechanisms Explained

Construct	**Definition**	**Components**
Instantiation	The mechanisms by which digital ventures continuously compound existing knowledge and value of that knowledge into a living (constantly updated) structure – a generic solution, allowing to scale on tested principles across regional boundaries.	*Anchoring* is a process by which digital ventures finds a common reference point for decision making, an artifact. *Mediating* is a process of bringing teams to a common understanding through sharing information encoded in an artifact. *Distinguishing* is a process of creating a non-generalised logic for decision making, based on the differences between regional markets.
Venture Meshing	The mechanisms by which digital ventures successfully manage several tensions associated with scaling across regional boundaries simultaneously.	*Synchronisation* of practices across regional boundaries, and *Aligning* of goals across functions, exchanging snapshots of the ongoing tensions.
Value Frame	The mechanisms by which digital ventures mitigate the uncertainty associated with the novelty of a regional market.	*Bracketing* is a process of fencing off decision making space and authority in a regional market. *Judgement* exercised by an employee of a digital venture based on the local context of decision making.

		Sense making is a process of ongoing sensing of a regional market needs and appropriate allocation of resources allowing individual decision making and innovation.

6.2.3. Relationships Between Mechanisms

Each mechanism plays a distinct role in answering a set of hypothetical questions (Table 7). Instantiation helps to define how and when to enact or replicate the pattern. Venture meshing in turn highlights whom (i.e. team or team member) and what (i.e. tools and resources) to enact and replicate the pattern with. Value frame guides towards why or whether at all to replicate and enact the pattern.

Table 7. Replication Mechanisms Explained

Replication Mechanism	**Corresponding Question**
Instantiation	• How? • When?
Venture Meshing	• With whom? • With what?
Value Frame	• Why? • Whether?

Beyond these distinct roles the three mechanism interplay into six complex relationships (see Table 8). These relationships point towards complexities embedded in digital venture's scaling capabilities, which go beyond the affordances of digital.

Table 8. Summary of Relationships Between Scaling Mechanisms			
Replication Mechanism	Instantiation	Venture Meshing	Value Frame
Instantiation		Converging (1a)	Priority Guiding (1b)
Venture Meshing	Innovation Triggering (2a)		Tension Relieving (2b)
Value Frame	Formatting (3a)	Invisible Structuring (3b)	

Instantiation plugs into venture meshing and value frame through converging and priority guiding.

Relationship 1a: Converging

> *Instantiation stimulates venture meshing and team convergence by facilitating exchanges, and providing common reference points for replication.*

Relationship 1b: Priority guiding

> *Instantiation coupled with value frame creates priority and decision making guidance points for replication.*

Turning to the next mechanism, venture meshing relies on instantiation and value frame for innovation triggering and tension relieving.

Relationship 2a: Innovation triggering

> *Venture meshing building on instantiation senses and pieces together triggers for replication and innovation that are rooted in, but might be*

scattered across the local and global context, generating recombination options.

Relationship 2b: Tension relieving

Venture meshing tensions and decision making pressures are relieved though value frame that guides teams and individuals into a more straightforward values framed replication.

Lastly, value frame interplays with instantiation and venture meshing through formatting and invisible structuring.

Relationship 3a: Formatting

Value frame guides and facilitate instantiation by acting as a formatting framework for the playbook, ensuring instantiation's generalisability is balanced for replication.

Relationship 3b: Invisible structuring

Value frame interlinked with venture meshing provides foundations and intangible structures for replication processes in new settings, where no patterns have previously been enacted or replicated.

6.2.4. The Regional Market

The mechanisms and their interrelationships play out in the context of a regional market in several ways.

Venture meshing and the unique team organising within a digital venture allow global teams to pass initiatives and knowledge top-down onto local teams, whilst 'listening' to what is happening across boundaries bottom-up locally, both through instantiation. This allows for a two-way sensing mechanism for *picking*

up innovation triggers, and acting out upon them as they occur locally, globally, or simultaneously. Similarly, allowing global and local teams to *converge* in a rapid and timely way through instantiation, allocating and reallocating resources through venture meshing onto areas and projects with the most potential for scalability.

Dualities arising in venture meshing (global vs local, every day vs strategy, growing existing markets vs creating new ones, etc.) create tensions when making decisions and investing resources. Value frame helps to *relieve some of the tension* associated with decision making. Venture meshing and value frame interlink to build *invisible structures* in places where processes and teams have not yet been developed or solidified.

Value frame embedded within instantiation *guides the logic and priorities* behind replication and decision making. It also guides the use and reuse of the right components of the playbook for a given market or issue, and the exchanging of patterns with scalability potential (both tested and new) across regional boundaries. Value frame create a *formatting* framework for instantiation (i.e. the writing of the playbook).

6.2.5. The Outcomes

The outcome of a successful GPR is the growth of the user base, which takes on a form of either cross boundary or compound growth.

Cross boundary growth occurs when digital venture rapidly launches new markets through GPR, aggregating a number of markets in a modular way. GPR allows digital ventures to launch new markets fast by leveraging the patterns. As the number of markets increases with cross boundary growth, network effects incentives for users become stronger, reinforcing the growth of the user base.

> *"Again, the bigger we get, the better it gets. It definitely helps and it also helps because you can draw more patterns from ... It's a simple math thing, if you want your sample to be representative it needs to be big enough. If you want a statistic, you cannot build a statistic based on ten*

users, you can only do it when you have a sample that's big enough", Growth Team Member.

Compound growth occurs as a result of synchronisation between pattern enactment and replication in regional markets across boundaries. Redistributing the outcomes of GPR increases the value to the users as each market from the very beginning contains the patterns from all other markets. As the value delivered to users increases with generative replication of projects, partnerships, product features make the venture more attractive, the user base grows.

"What happens after that is you can really start thinking in terms of compounded growth, meaning what you've learned on the markets. An example of that would be Spain or France have historically been big playgrounds for us to test stuff. We allow ourselves bigger bets every time so bets three years ago were 100 Euro bets. Now, of course, we make bigger bets because the impact is larger so we try bigger things. We always have to learn from them and other countries can learn from them, too", Growth Team Member.

The growth of the user base comes from the combined effect of both cross boundary and compound growth. The effect is that it extends the size of the user base in terms of the number of markets (creating stronger network effects) and shared knowledge (attracting users by delivering more value faster). Such complex scaling context evolves over time horizontally, by adding new markets in a modular fashion, and vertically, by improving the efficiency of existing markets.

6.3. 'Stress Testing' GPR

Before moving to the next stage of this chapter and stating my final contribution claims that scaling in the digital age is qualitatively different, I wanted to clarify what distinguishes the process of GPR. I intended to make a

quick comparison between my views on scaling, and the more traditional and understood approach to scaling via replication such as franchising, more commonly derived from the likes of Starbucks and McDonald's.

I came across an article by Nielsen (2013) that states that McDonald's implements strategies in a three step process, described as "Learn, Share, Scale." Drawing parallels between one of the BlaBlaCar's values, namely "Share More, Learn More", got me to further question the uniqueness of scaling in the digital age, and particularly scaling via replication.

McDonald's process is based on firstly conducting market research, then sharing its knowledge with management and franchisees, and finally, on the basis of this knowledge, scaling and implementing new products.

Unpacking this against digital ventures' scaling via replication I went through each of the steps drawing the line between the two. Beyond the role of digital innovation in the process of scaling of digital ventures, I identified four distinctions between the basic steps of "Learn, Share, Scale".

First, market research. Digital ventures do not rely on the traditional marketing research to drive innovation and scaling. Various data and digital traces are collected instantaneously, as users interact with the digital product or service. Instead of slow and costly market research, digital ventures engage in the process of rapid and frequent data driven experimentation, conceptualised by Huang et al. (2017) as the mechanism of *instant release*. According to (Ries 2011) this process doesn't always have to be user needs and insights driven, rather digital ventures adopt the logic of "we were much more likely to run experiments on our customers that we were to cater to their whims" (p.4). Moreover, in the case of GPR, once encoded in the playbook it becomes part of the pattern, and when enacted and replicated through feedback loops, it takes on dynamic and generative features that are different, if not opposite from the static market research findings.

Second, is the evident top down approach to gathering insights, interpreting them, and developing and sharing strategies with management and franchisees. In the case of digital ventures, insights are generated differently, as mentioned

in the previous point, as well as often fed upwards from the markets. Constant communication and living structure (Alexander 1999) supporting this bottom up and lateral communication allows digital ventures to share in all directions: top down, bottom up, across functions and regional boundaries. Therefore, local markers do not only execute the strategy, but also actively engage in its formation and innovation opportunities sensing through the three GPR mechanisms. This autonomy creates multiple pockets of innovation, layered with previous point of instantaneous data collection, it spans scaling and digital innovation capabilities across the entire venture. Once again, contrasting the case of McDonald's where this is restricted to top management.

Next, is the outcomes of this three step process – new products. McDonald's product development and testing processes, which only once perfected can be replicated across regional market, have an acute awareness of local tastes, supply chains, and other market characteristics. Digital ventures' scaling process challenges this. On the basis of the first two points, through the flexibility of digital (Kallinikos et al. 2013, Svahn et al. 2017, Yoo et al. 2012) and ventures ability to build on existing infrastructures (Brynjolfsson and McAfee 2014, Henfridsson and Bygstad 2013, Yoo et al. 2010), digital ventures are more likely to create new version of the product, or launch and roll out new features in shorter and faster iteration and replication cycles, as shown by Huang et al. (2017) and Ries (2011).

One final observation, beyond the "Learn, Share, Scale" process, is the magnitude of McDonald's brand. It is a well know name in almost every country in the world. Facing its own scaling and innovation challenges, an organisation such as this, relies on its own infrastructure and operates with more certainty than a digital venture, where uncertainty is common and stakes are much larger in the making of any decision, let alone scaling. This requires them to rely on different processes and develop a new set of tools such as GPR and the three mechanisms. What is more, franchise based scaling also requires a certain level of scale, popularity, and justification before it can be rolled out to suit the level of customer demand across regional boundaries. In this case, a franchise based

scaling would require first, to generate a base, then replicate across regional boundaries, and only then innovate to add value and sustain evolving customer demands and wants. For digital ventures this order is slightly different, since replication in itself is the tool to scale. Digital ventures reverse this order by first innovating and disrupting the market or industry with their product or service, scale via replication to generate and retain a certain level of the user base, which then allows to generate critical mass and a recognisable brand.

To summarise, the above attempt to contrast GPR and a franchise type business shows that the process of GPR differs through its use of real time data and leveraging of this actionable data effectively through the use of patterns and the instantiation mechanism, making GPR a dynamic and emergent process enabled by digital technology. The knowledge and control needed for rapid decision making and replication is distributed, placing innovation capabilities into the hands of heterogeneous actors across regional boundaries through the value frame mechanisms. Data and actors are embedded and enmeshed in the living structure of the pattern through the venture meshing mechanisms, allowing to constantly reshape and extend the service and product. This makes the product and service relevant and responsive to any context, market, and user. Scaling through GPR and its two-fold outcome, cross boundary and compound growth, increases the speed and scope of innovation and value diffusion to customers, constantly making the service and product bigger and better. This, in turn, shifts the nature of scaling of digital ventures, their innovation processes and outcomes to a qualitatively different level.

6.4. Research Implications

In this study I have sought to respond to a research question related to the way digital ventures scale their user base across regional boundaries. In particular, having envisioned scaling as a process I wanted to understand the key components that contribute to this process in allowing digital ventures to scale their user base across varied regional markets. As such, the research question that I posed throughout this thesis was:

What is the process by which digital ventures scale their user base across regional market boundaries?

Using process theory (Langley 1999, Langley et al. 2013) and a case study with 58 interviews with a global ridesharing digital venture that (at the time of the study) rapidly scaled its user base to 30 million across 22 different markets, I developed a perspective that helped to shed light on the process of rapid scaling. With this study I contribute to the body of research with a process model of scaling of the user base of digital ventures through the process of GPR. I also further highlight the gap and the need to give scaling more attention in the digital innovation management research. I recognise it as firstly, understudied and qualitatively different from the industrial age conceptualisations, and secondly, as an important and emergent phenomenon with implications for research and practice.

In these final few sections of the chapter, I conclude my thesis by extracting this study's main research contributions. I briefly foreground some of the implications for practice, as well some of the directions for future research stemming from this thesis, as I see them.

My research recognizes both theoretically and empirically that there is a different, new organizing logic of digital innovation (Yoo et al. 2010). Built on the malleability of digital technology it allows to create new designs and combinations to suit new and diverse circumstances (Kallinikos et al. 2013, Yoo et al. 2012). It also democratizes and makes innovation process more inclusive, as the cost of designing and replicating digital products and services allows many people to participate (Benkler 2006). Understanding and dealing with complexity and tensions (Constantinides and Barrett, 2017, Hanseth and Lyytinen, 2010, Tilson et al. 2010) associated with these digitally enabled developments is an ongoing effort for both researchers and practitioners. Having applied these streams of literature in the context of digital ventures, which I understand as a whole different breed of organisations, I contribute to

our understanding of the way digital ventures scale. I also shed light on the way ventures deal with various evolving complexities associated with scaling the user base across regional boundaries.

This research contributes to the emerging stream of literature on digital innovation (Huang et al. 2017, Svahn et al. 2017, Nambisan et al. 2017, Tilson et al. 2010, Yoo et al. 2010, 2012) by tracing and theorizing the process of scaling of the user of base of digital ventures across regional boundaries. Thus, I provide a case to illustrate the new organizing logic of digital innovation (Yoo et al. 2010) and highlight rapid scaling as an essential part of this new logic.

My main contribution is the process model of scaling of the user base of digital ventures through GPR (Figure 18). The model extends our current understanding of scaling beyond industrial age (Chandler 1962), and a single market setting (Huang et al. 2017). The central part of the model illustrates the three mechanisms, namely instantiation, venture meshing, and value frame. The model highlights six relationships between these mechanisms, by which digital ventures enact and replicate patterns (previously successful scaling solutions turned into generic principles) into regional markets in order to generate two-fold user base growth (cross boundary and compound), which in turn feed the pattern through a feedback loop.

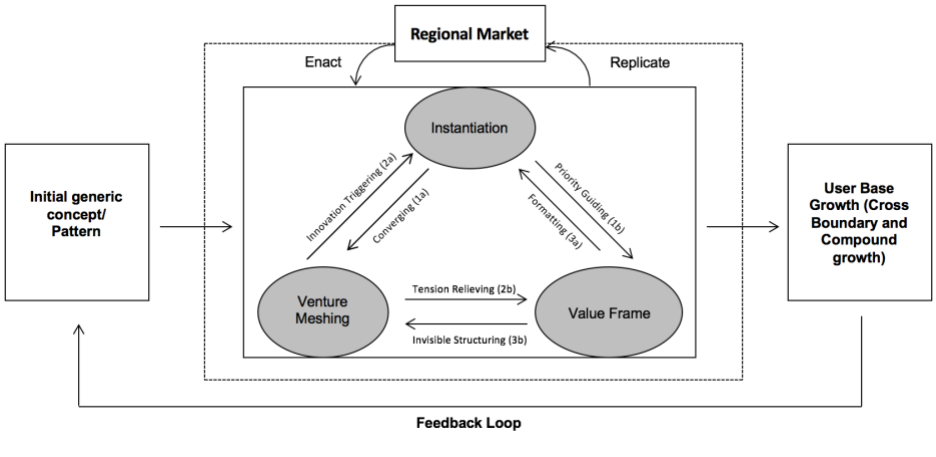

Figure 18. Process Model of GPR

There are several implications running from the process model, which I proceed to discuss in the next section, as well as a number of practical implications discussed later in this chapter.

6.4.1. Scaling: Industrial vs Digital

This research generated knowledge about the way digital ventures scale. The process model shows that digital ventures' scaling is indeed qualitatively different from that of industrial age firms, thus making a contribution to the currently existing limited evidence that makes this claim, such as that of Huang et al. (2017).

Traditional accounts of scaling in the industrial age such as of Chandler (1962) would argue that standardization is needed in order to maintain and benefit from the effects of economies of scale. Digital ventures, on the other hand, leverage the affordances, flexibility, and malleability of digital (Kallinikos et al. 2013, Svahn et al. 2017, Yoo et al. 2012). Building on this, together with their ability to create disruptive products and services over existing infrastructures (Brynjoslfsson and McAfee 2014, Henfrdisson and Bygstand 2013, Yoo et al. 2010), digital ventures 'disregard' the importance of having to create economies of scale as such.

In summary, what my process model points towards, is that instead of standardization digital ventures scale across regional boundaries through a process that is based on a generative (Zittrain 2006) and living structure (Alexander 1999) that supports and stimulates scaling momentum in digital ventures. I show that with a larger user base and higher number of markets, validated learning (Ries 2011) increases. Nevertheless, unlike the industrial age scaling, digital ventures leverage the local differences and heterogeneity in team composition, rather than attempt to standardise them. As such, 'economies of scale' based replication in the case of digital ventures comes from the use of scaling patterns, which formalise scaling strategies that are generatively enacted and replicated across regional markets.

6.4.2. Scaling and Digital Innovation

By drawing on a study by Huang at al. (2017) that made a significant contribution to our understanding of the process of scaling of digital ventures, I extend it in two ways. First, my findings confirm the agency perspective on scaling of digital ventures, and that digital innovation is indeed an integral part of rapidly scaling the user base of digital ventures. Second, I extend Huang et al.'s (2017) model, built on a single market, into a multi-market setting. To the three single market scaling mechanisms, namely data driven operation, instant release, and swift transformation, proposed in Huang et al. (2017), I add the three mechanisms of scaling across markets: instantiation, venture meshing, and value frame. My three scaling mechanisms create invisible structures that help digital ventures generate options, ensuring that scaling takes place in multiple directions. These directions are expanding the market outreach and recombining the elements of scaling to advance the speed, use of resources, and value delivered to the user base.

Further exploring the agency of scaling, I built on Nambisan et al. (2017), which I found to be of high relevance when developing an understanding of digital innovation in the context of this research. My findings further challenge the three assumptions that prevail in existing digital innovation management literature. My findings show firstly, that digital innovation boundaries are indeed blurred and its impact can be extended to organisational structure and strategy, particularly in the context of scaling of digital ventures across market boundaries. Secondly, innovation and scaling agency is not centralised or predictable. On the contrary, my findings show the way digital ventures organise themselves and develop unique capabilities to distribute agency and collective action. On the basis of this, ventures rapidly scale and innovate across regional boundaries. Thirdly, innovation and scaling process and outcomes are interlinked and mutually shaping. I illustrate this with a generative pattern based replication process, where outcomes of scaling are part of the process, and vice versa.

As such, my research is among the first to challenge the assumptions and offer empirical evidence for the new logic of theorising digital innovation (Nambisan et al. 2017). Table 9 summarises the ways in which I confirm the new logic.

Table 9. Nambisan et al.s (2017) New Logic and the GPR Mechanisms

Elements of the New Logic	**GPR Mechanisms**
Dynamic problem-solution design pairing	Instantiation, Venture Meshing
Socio-cognitive sensemaking	Venture Meshing, Value Frame
Technology affordances and constrains	N/A
Orchestration	Venture Meshing, Instantiation

First, dynamic problem-solution design pairing that replaces the previously used perception of clear cut outcomes and processes of digital innovation, evidently came through in my findings. The notion of pattern enactment and replication closely corresponds with the proposed in Nambisan et al. (2017) logic of temporary couplings and "continuous matching" of the various factors, making rapid scaling possible within a given context. The notion of GPR resides on the use of previously successful solutions, or what Nambisan et al. (2017) calls "memory of earlier couplings". BlaBlaCar has successfully leveraged this 'memory' to create an underlying structure that allows it to zoom in and out of contexts, and easy couple and decouple elements of the pattern where and when needed. In the case of BlaBlaCar, however, the emerging scaling problems, unlike argued in the paper, are both predefined and emergent at the same time. Instead of replacing the predefined problem solution spaces with vast innovation spaces, BlaBlaCar leverages both. It senses opportunities at various levels through the venture meshing mechanism, whilst maintaining the scaling and decision making momentum with as set of predefined patterns, embedded within the playbook and the instantiation mechanism. In the case of digital ventures, innovation agency is distributed. It allows local and global teams to collaborate in creating and searching problem-solution pairings across multiple regional

boundaries. Using the three mechanisms BlaBlaCar created tools for integrating various organisational layers into the process of GPR, and an organisational mindset for constant scaling and innovation. The paper uses the notion of patterns, referring to artifact design. My research conceptualises patterns and couplings on an organising logic, rather than just on a product level. Therefore, GPR enriches theorisations outlined in Nambisan at al. (2017). GPR generates a number of problem-solution pairings through patterns mobilised by the innovators within a set of affordances, tools, artifacts, and sociotechnical conditions. It does so by using memories of previous couplings in order to innovate and create space for new pairings.

Second, socio-cognitive sensemaking is the next layer of the new logic proposed by Nambisan et al. (2017). My research traces similar elements in the empirical data. This concept is based on the interactions between the agents to create ongoing socio-cognitive sensemaking. The phenomenon is explained as an ongoing sensemaking of technology in both the individual cognition and within the wider social system of innovators. This takes place simultaneously, as argued in the paper, and as seen in my findings in the context of BlaBlaCar. Synchronisations and decision making are ongoing and take place at various levels, sensing trends both locally and globally through the venture meshing mechanism. This is in turn possible due to the changes in framing (Benford and Snow 2000). In the case of BlaBlaCar, the value frame mechanism is one of the key parts of the GPR process. It can determine the speed of decision making and scaling in a heterogeneous network, where innovation and scaling span across multiple functions, as well as regional boundaries. Communicating and developing shared understanding that span these multiple boundaries is essential. According to Nambisan et al. (2017) constant reframing, deframing, and breaking existing frames allows actors to see new possibilities and thus innovate (Verganti 2008). In the case of BlaBlaCar, framing was what remained constant, giving the venture a shared understanding of scaling and innovation processes and outcomes. Despite the presence of social construction (Berger and Luckman 1967) and "narratives of sensemaking" in the process of enactment

and replication of the pattern across regional boundaries, I did not find any evidence for the need to break the existing frames. Instead, embedded in the value frame mechanism, a solid shared framing was key to GPR.

Third, I did not make any connections with the technology affordances and constrains part of the new logic, since the use and interaction with digital technology as such was not zoomed in on. Nevertheless, it is worth noting that in the process of scaling and in maintaining its operations BlaBlaCar did not have a knowledge management system up until around 2016. Before the introduction of Slack and Lifesize in 2016/2017 for communication and video calls, the teams were using Google Hangouts and Gmail to communicate across teams and functions. Scaling via replication as a process was supported almost solely by the playbook. This included the playbook in the form of word of mouth and direct transfer from other members of the team at the beginning, and continuously over time. The playbook, despite sometimes taking on the form of a physical artifact with its affordances, existed on the basis of, and was maintained by the teams. Its use and updates, whilst being incremental, were facilitated by full company gatherings. During these large sensemaking events new strategies were developed, and existing discussed. This allowed new ideas and connections to be made in a less structured and more serendipitous way, long after the gatherings had finished. Therefore, the initial spotting and enactment of the scaling pattern, as well as the process of GPR, did not require any complex technology or global information system for managing scaling and digital innovation.

Lastly, the concept of orchestration as identified by Nambisan et al. (2017) is matching of problems and needs with potential solution by a "loosely connected crowd of contributors" (p.230). In the case of digital ventures, as mentioned in the previous point, digital technology did not play a direct role of an orchestrator. Instead, technology played a more indirect and supporting role. The instantiation mechanism and the playbook were more evident avenues for supporting sensemaking around digital technology, and consequently generating new

scaling and innovation pattern couplings. As for the "crowd", their connection was facilitated by the venture meshing mechanism.

Regarding orchestration, this concept can be an interesting way to replace the word 'management' in the digital innovation research and conceptualisations. Disruptive innovation requires more discipline and control than might appear at face value (Ries 2011). The nature of digital innovation and our current understanding of it asks to view digital innovation management, at least from the practice point of view, as more of a balancing, or orchestration process. This is particularly the case when envisioning the process of scaling across regional boundaries. Digital ventures, conceptualised as a new breed of organisations, surely are in need of new metrics, as I have highlighted in the case of the user base metric, as well as management tools that aren't simply adapted from the industrial age. As such, it only makes sense to continue developing the concept of orchestration as an alternative for 'management' in the digital age, where control and innovation do not have to be opposing forces. As shown by my research findings, the apparent instability of replication and multiple pattern iterations are balanced with the stability of the pattern structures and the mechanisms underlying the process of GPR.

In summary, it appears that the four elements of the new logic of theorising digital innovation are married in the empirical data of this thesis, answering several questions posed in Nambisan et al. (2017). The logic is interwoven in the case of BlaBlaCar. I found reflections, and in some cases extensions of the four principles of the logic in my data, the proposed GPR process, and its three mechanisms (summarised in Table 6). Thus, I make a contribution to the development of our understanding of the new organising logic of digital innovation (Yoo et al. 2010) and the new logic of theorising about digitalisation of innovation (Nambisan et al. 2017).

6.4.3. Scaling and Replication

Replication in the context of industrial ventures or in the pre-digital era has existed in a different form. Winter and Szulanski (2001) claim that companies in over 60 industries use this approach to scaling. Replicating the same designs

and standardising to bring down the cost of production has remained at the forefront of many industrial age business models, as shown by Chandler (1962). Similarly, in the context of across regional boundary scaling, replication existed in the form of adaptation to local needs as the "McDonald's" approach (Winter and Szulanski 2001, p. 730). Subtle tweaks to the product or service features dictated by the top management were commonly applied to adopt the product to local specificities. As such, replication has been an important aspect of scaling and has been successfully used strategically by organisations prior to the emergence of digital innovation and digital ventures. Other research on replication, duplication, imitation, adaptation, and copying explored this complex phenomenon from either inter-organisation perspective, competitor imitation (Rivkin 2000), in the context of maintaining uniformity (Bradach 1997), or in the franchising (Szulanski and Jensen 2008), or a non-digital organisational context (Kogut and Zander 1993, Ruuska and Brady 2011). Moreover, most of this research explored the phenomenon using quantitative methods, thus revealing little explanation of the underlying organising logic of replication as a strategy.

Digital age replication differs from that of industrial in two ways. Firstly, digital ventures replicate the logic of their product or service, not the product or the service itself. This is more typical of replication in the industrial age. Secondly, digital ventures replicate through localisation, rather than adaptation, more inherent to the industrial scaling logic. In the industrial age, global scaling was based on standardisation, whereas localisation was seen as eroding scaling advantages.

My findings show that digital has given replication an 'upgrade'. In my research, in the case of digital ventures, I traced a different type of replication logic. Replication as a strategy in the digital age takes on a form of a complex generative process. Instead of standardising service or product, and it delivery, digital ventures build on the new organising logic of digital innovation (Yoo et al. 2010). In doing so, they are able to leverage this logic to specialise themselves

to different markets, and scale across regional markets using previously successful strategies that worked in other regional markets.

Digital ventures scale across regional boundaries through GPR. This process allows digital ventures to progress through an iterative cycle with unbeatable speed. The cycle starts with a departure point of great understanding and knowledge of the issue, in the context in which it was instantiated. With this as a basis, planning for change and innovation becomes a less risky, but more of a natural organizational occurrence, as the deliverables and outcomes are more or less known. As predicting these outcomes gets easier, so does becomes the mapping of the strategic moves and scaling trajectories. This allows to map out ahead and proactively by drawing on existing resources, and staying ahead of the competition. Venture consequently close this loop by assessing and measuring the actual outcomes, looking to understand them and use them to enrich existing knowledge and scaling plans that initially set the loop in motion.

GPR is associated with speed and minimisation of failure and loss. In the case of digital ventures that operate on little or no funding, particularly at the early stages of scaling, reuse of resources and replication are important strategies. GPR also allows to leverage each market carefully and balance their separation from each other. Too much compartmentalisation of regional markets, or too much of a separation between functions creates silos. Digital ventures are good at linking smaller units, start-ups within start-ups, creating faster iterations, and making digital ventures lean. When boundaries are challenged, however, this can create conflicts, in which case the process of GPR helps to create a sharing culture and minimise any potential conflicts.

By paying heed to the notion of replication, my findings contribute to enriching and extending the significance of replication as a strategy (Winter and Szulanski 2001). In extending these theories my findings showed that replication process in the case of digital ventures is generative. In my theorizations I understand the generative nature of scaling through replication to appear at each stage of the process. In its first stage, where an initial generic concept or a pattern emerges, patterns act as platforms from which a decision, strategy, or innovation

can be generated into either local or global setting. Secondly, at the point of pattern enactment and replication in a regional market, the interplays between the three mechanisms-pillars create structures that permit a decision, strategy, or innovation to be consequently enacted and/or replicated into a local context. Finally, generativity can be traced indirectly (through cross boundary growth), where more markets create more space and scope to experiment with decisions, strategies, or innovations; and directly (through compound growth), by generating more value for the user and subsequently customer base, as well as more patterns, which decisions, strategies, or innovations can further emerge from through positive feedback loops.

In summary, by conceptualising scaling of the user base of digital ventures via replication as GPR, my findings show that replication is used beyond design software (Gamma et al. 1995) and industrial, particularly manufacturing setting (Kogut and Zander 1993). Digital ventures also leverage replication as a strategy, however it is built on the basis of a generative living structure (Alexander 1967, Zittrain 2006), qualitatively different to the cases documented in previous replication research.

6.4.4. Scaling Outcomes and Complexity

Digital ventures maintain the generative nature of scaling through two-fold growth: cross boundary and compound. The relationship between the two is such that one is shaping the other. A digital venture cannot generate and sustain compound growth without cross boundary. At the same time compound growth further stimulates cross boundary. Working together they produce a cumulative two-fold effect of both scaling the user base, and growing patterns and replication capabilities. Growing this ‘core’ of the digital venture helps to create a platform like structure for digital venture’s further scaling and innovating.

Splitting scaling as having two outcomes of GPR can also help to understand complexity management, associated with scaling. Digital ventures that are replicating on the basis of GPR in a cross boundary context, manage the challenges of balancing bootstrap and adaptability (Hanseth and Lyytinen 2010), control and drift (Ciborra et al. 2000), and change and control tensions (Tilson

et al. 2010). They do so on the basis of the three mechanisms-pillars that allow digital ventures to create structures. These allow local autonomy for innovation whilst guiding global decision making, and vice versa, maintaining network effects with generic, yet generative patterns for meeting local needs. As I have previously shown, BlaBlaCar did not rely on complex IT to support or generate the process of GPR. My research findings help to transfer complexity management out of the context of information infrastructure and complex IT management research into digital innovation management.

Furthermore, in this research I explored the heterogeneity of contexts in which digital innovation and scaling takes place when digital ventures scale across multiple regional boundaries. Distributed innovation agency, as an innovation context where a collection of actors with divers goals engage in the innovation process, was evident in the context of BlaBlaCar and 22 markets. Such heterogeneity has previously been shown to create complexities of maintaining the flexibility for change with control and governance of the innovation processes (Constantinides and Barrett 2015, Hanseth and Lyytinen 2010, Tilson et al. 2010). My findings show that digital ventures overcome those complexities and scale rapidly through replication, by leveraging patterns, enacting and replicating them in any given, and across regional markets. Digital ventures leverage and redefine dimensions of change and control through the mechanisms of GPR enmeshed into the scaling and innovating process. Global and local mechanisms combined into the BlaBlaCar's 'glocal' approach is how these interplays are redefined into socio-technical relationships, which are at the forefront of the digital venture's organizing logic. As argued by Nambisan et al. (2017, p. 225), innovation often takes place outside of control of the primary innovator. In the case of GPR and BlaBlaCar, primary innovator does not control the generativity of the process. Neither does he or she controls the multitude of directions that the innovation process might be taken into by the heterogeneity across multiple regional markets. Having said that, the primary innovator as an embodiment and extension of the playbook is connected to the network at all times. Acting as a 'nerve centre' or the primary contact for that particular

innovation, primary innovator becomes somewhat a specialist, consulted on anything related to the primary innovation. So, the source of the innovation is 'in the air' with multiple possibilities existing and 'floating' to be generated afterwards at any point (Nambisan et al. 2017, von Hippel and von Krogh 2016). This, hand in hand with the malleable, editable, open, transferable (Yoo et al. 2010, Zittrain 2008) nature of digital means that any innovation and scaling strategy can evolve within a digital venture after the original idea has been implemented.

In summary, the findings produced shed light on GPR and its outcomes, helping digital ventures to deal with the underlying complexities of scaling across regional boundaries. They do so through 'glocal' structuring, based on the generative use of patterns, and the three mechanisms of GPR. This research has also highlighted that user base is a useful metric when trying to understand and measure scaling of digital ventures. I show that scaling of the user base is based on two types of growth: cross boundary and compound. Consequently, I understand the two as requiring different types of management in order to sustain the cumulative effect of rapid scaling dynamics.

6.5. Practical Implications

Digital ventures are aware of the need to scale for all those reasons discussed in previous chapters such as securing the 'winner take all' market dominance benefits, etc. They are less so aware of what to do about scaling in practical terms, and what relevant management tools can be used once they have successfully entered and disrupted the market. In other words, they know they have to do something to avoid being wiped out, but what are the tools to scale the initial disruption?

After careful consideration of the research implications, I transfer some of the insights into practice by offering a number of practical implications. It can be argued that "anything that really addresses relevant concerns is beyond the scope of a single Ph.D. study" (Lyytinen 1999, p.25). I currently view practical implications and understand the relevance of this research not so much in

providing a snapshot, easily digestible solution for managers of digital ventures, but rather as "something that can elevate and reshape professionals' thinking and actions in a longer perspective" (Lyytinen 1999, p. 26). Having said that, the list below comes with an acute awareness that in order to make any solid impact, implications need to be deciphered and developed further, in close collaboration with the industry and entrepreneurs looking to scale their digital ventures across regional boundaries. Within the scope of a doctoral thesis, my research offers a number of practical implications and some recommendations.

First, my findings show that multiple stakeholders involved in the scaling of digital ventures perceive the user base as an important metric in measuring growth. Digital ventures publicise this metric for attracting new and retaining existing users to build a customer base, extending product value in use, increasing matchings and liquidity, and as a powerful indicator of traction for securing venture capital funding. While users do not directly or initially contribute to the creation of revenue streams for digital ventures, a large number of users is required in order to generate positive network effects, to gain an entire chain of positive externalities, as mentioned above. Therefore, digital ventures looking to scale across regional borders, need to shift away from hard financial metrics. Instead, they need to monitor user base related metrics in order to be able to generate monetisation opportunities, as well as create alternative user and partner revenue streams over time.

Secondly, since it is particularly important to understand and appeal to users' emotional needs (in the case of BlaBlaCar these were trust, safety, environment, socialisation) in the initial bootstrapping stage, digital ventures need to connect with users locally. Digital ventures looking to scale rapidly, need to allow local teams to pay attention to the details that matter to the users, and act as local upwards and downward strategy 'interpreters'. An important detail is to understand what is different about the markets a digital venture is targeting. On the basis of this, use non-generalised logic for localisation, rather than depart from the point of similarities. My research shows that scaling across regional boundaries through replication is a generative process. As such, it allows to

create innovation spaces and opportunities for growing each individual market, as well as the venture overall. Managers should therefore consider putting in place structures that can help build and sustain replication capabilities. Scaling through replication has the potential to create and sustain stickiness and user retention by improving the product or service. Replication can also help digital ventures minimise the amount of unknowns, because of a better monitoring and understanding of local market dynamics, and targeting those with lower risk first.

Third, digital ventures need to understand scaling strategy as building on two types of growth: cross border and compound. Scaling the number of markets is key. Having said that, digital ventures need to adopt a level of foresight, and consider building a growth strategy alongside, particularly once cross boundary scaling gets exhausted. Compound growth needs investment and should not be disregarded, as it is the type of growth that is more generative, and thus offers more monetisation possibilities in the longer run.

Fourth, digital ventures looking to rapidly scale across a number of markets, need to invest in educating only a few team members on any specific skill or capability required for growing the user base, turning them into central experts. Examples of this might include training a few team members to become SEO or Facebook Ads experts. Instead of making every local manager into an expert, designated central experts can help span the cross market boundaries and bridge skills gaps. This allows to reshape the hiring process from skills based to potential based, lowering the costs, and scaling up expertise faster and more effectively. Further to this, digital ventures can nominate these experts to start building the playbook, establishing some core practices and checklists when working on a particular project across regional boundaries. In order for the 'local to global' and 'experts to non-experts' dynamics to work, digital ventures need to hire with diversity in mind, and ensure communication is ironed out through clear lateral connections between each team member.

Fifth, digital ventures looking to scale generatively, need to give local teams autonomy, and dedicate a proportion of their budget to experimentation.

Previous point on establishing clear communication is important in this case too. In order to maintain autonomy, markets need to be clustered based on their maturity, as well as geography. As user requirements evolve over time, sorting and matching them to product roll outs according to market maturity is important when managing scaling across markets. In the same way, different metrics need to be foregrounded and adapted based on maturity of the market. Therefore, each local market needs to establish what distinguishes them in terms of local specificities and maturity of the local user base. Then, as the next step, create clear market metrics and targets accordingly, in order to scale and grow the right way for that given locale. Monitoring the market landscape, on the other hand, in the case of digital ventures, should not be too localised, but be on a broader level, including all direct and indirect competition from digital and non-digital market players.

Sixth, getting organisational structure right is nearly just as important, as getting the product right. In order for structure to scale with the venture and the team, managers need to think of developing a value frame at the point of maturing the product with the core of the team. Embedding values into organisational structures supports managers when addressing complexities associated with control and change.

Lastly, from more of a business studies perspective, a detailed account of a digital venture produced as part of this research can be repurposed and used towards building a database of successful scaling stories in the digital age. Moving away from success storied of General Motors and DuPont, thus helping to further develop and disseminate knowledge about actual digital venture's experiences of successfully and rapidly scaling across regional boundaries. In the same manner, it can be converted into a business studies case study and used for teaching and learning purposes.

7. CONCLUSION

My research contributes to the digital innovation literature by proposing a novel perspective on scaling of digital ventures, including a new process model and related mechanisms. My findings point towards the use of replication as a strategy for rapid scaling of the user base of digital ventures. I extend the current understanding of the way digital ventures scale their user base, with analysis and findings set in a multiple markets context, expanding the focus of existing scaling of digital ventures research that has to date explored scaling within a single market.

This research discovered and concluded that digital ventures scale across regional boundaries through a complex and dynamic replication process that bridges innovation and standardisation across a number of internal functions and geographical locations. This process rests on several mechanisms-pillars namely instantiation, venture meshing and value frame. The three pillars within them have a number of subcomponents that set the replication process in motion, replicating a pattern in a regional market context. The outcomes of the replication process are two types of growth of the user base. The first one is based on the modular launching, and subsequent increasing of the overall number of markets and the user base, which I called cross boundary growth. The second one is a product of the increase in the collective learning from scaling patterns, translated into the increase of the value delivered to the users of each new and existing market, which I called compound growth. The scaling process is fuelled by positive feedback loops, and strengthened by the affordances of the network effects.

Furthermore, this research links into practice. Firstly, by being deeply rooted in a real, timely and relevant case of ridesharing. Secondly, the findings and contribution are of value to any digital venture looking to scale rapidly across regional boundaries. The proposed process model carries multiple learnings that can be adopted into practice, either in parts or as a whole. Beyond the process model, the case story allows to further ‘lift the curtain’ on many intricacies of the internal workings of a successful digital venture. The case story can be of

interest to start-ups and ventures looking to replicate and learn from a success of a company valued in billions US Dollars.

In order to conclude this thesis, I offer some of my reflections on the research process and findings, identifying areas for fruitful future research.

7.1. Limitations and Future Research

There are several limitations to my research.

First, while BlaBlaCar serves as a great example of scaling the user base across regional boundaries, I recognise the role of marketing and funding that BlaBlaCar has received to fuel and sustain growth of the venture. Funding, however, was received when patterns and replication processes have started emerging (post 2009), and marketing has become one of the initial functions that benefited from the use and interplay between the three pillars of scaling. In fact, it can be argued that digital ventures in receipt of venture capital funding managed to show traction, and early strong signs of their ability to scale the user base rapidly and sustainably. When it comes to scaling across regional boundaries and rapidly launching new countries in the case of BlaBlaCar, application and rapid activation of marketing efforts was made possible through the use of the playbook and the process of GPR. Separating these factors and their individual impact on the phenomenon of scaling of the user base is a complex, if not an unattainable task in the context of digital ventures. Nevertheless, any future research can make further attempts to explore the interplays between the three replication pillars and marketing efforts.

Second, it was beyond the scope of this study to capture the way each pillar specifically influenced digital ventures as it scaled. The research does not dismiss a possibility of the existence of more mechanisms; that there might be more bidirectional relationships between the individual mechanisms; or that mechanisms affect scaling across regional boundaries to a different extent. Therefore, further research can broaden the scope of the model by looking deeper into the sequence of scaling to better understand the ways the three mechanisms interplay, and in what other potential ways they configure over

time. Further to this, scaling processes captured in this research evolve as the size of the venture increase. As new and more varied markets are added, the replication processes evolve. Capturing these nuances of pattern evolution offers interesting insights into the evolution of GPR and allow to not only gain, but to sustain rapid scaling trajectories in the long run.

Lastly, the research explored the phenomenon of scaling in a single case. Thus, further research could explore the phenomenon across a number of digital ventures in order to improve the generalisation of the proposed theory, helping to understand any variations of GPR across sectors and geographies other than what was covered in the case, as well as changes of the replication process, as the number of markets and the size of the venture increases.

Despite these limitations, in relation to the research questions and research objectives, I believe this thesis on generative scaling of the user base of digital ventures helps to advance the ground broken by Huang et al. (2017) in the study of growth and innovation in the context of digitalization (Tilson et al. 2010). With this thesis I also support Huang et al.'s claims that widely accepted and traditional industrial age scaling assumptions of the ways we measure growth should be revisited. In the digital era, innovation (rather industrial age standardisation) is an essential element of scaling, if not an interchangeable term. This pushes us to challenge some of the traditionally accepted claims made by Chandler (1962). The tensions that arise in the formation of the complex sociotechnical structures and collective action, (Hanseth and Lyytinen 2010, Tilson et al. 2010) that exist in the ways digital ventures organise themselves for rapid scaling of the user base, are an intriguing and promising arena for IS research. I hope that this thesis can stimulate further research in this direction and provide an exciting foundation for further digital innovation theory development, helping organisations solve practical challenges associated with such tensions and paradoxes of control and change.

Finally, glimpsing into the not so distant future with the rise of artificial intelligence (AI) and the use of machine learning, one can expect a further shift in many digital ventures taking significant steps towards replication. The

advances in machine learning and AI constantly open new opportunities for creating valuable insight from information previously scattered across teams and regional boundaries that are constantly being generated by people and systems. These opportunities can be unlocked once the logic, algorithm, or pattern is understood (McAfee and Brynjolfsson 2017). This creates more spaces for pattern enactment and GPR, and potentially even automation of some parts of its mechanisms. Digital innovation, beyond offering operational efficiency and scalability, leads organisations to harvesting collective intelligence for generative replication, even faster scaling and innovation trajectories. GPR in this context, beyond potentially reducing the need for costly resources previously needed for scaling, and increasing the number of digital start-ups, has the potential to create new, and build on existing tools to help drive down the number of failed digital ventures, and stimulate economic growth.

7.2. Thoughts on Reflexivity

In this final part of a qualitative thesis I intended to include a brief reflexive account. Having spent a certain amount of time in the studied organisation, despite not having conducted ethnography in its traditional sense, I would like to acknowledge and reflect on the research process.

According to Weber (2004), "interpretive researchers understand that their research actions affect the research objects they are studying. They also understand that the research objects in turn affect them. The researcher and the research object are interdependent" (p.7). As such, I have made attempts to document the iterative processes throughout the thesis. I included descriptions of these processes where appropriate to the flow of the argument, having highlighted iterations of the research focus and methodology (sections 3.3 and 3.4), as well as theory building (section 4.5 and 5.1).

All social research absorbs some of researcher's identity, particularly in the case of this research that involved an element of me embedding myself in the studied organisation (Schultze 2000). Having switched between awareness and

non-awareness of this fact over time, as I entered and left the organisation, was an interesting observation in itself.

As I switched between the roles of a researcher and practitioner, I wanted to explore both of these 'voices'. The separation between the two had a less straight forward distinction in the write up process. Parts of my data and analysis iterations were done through discussions and presentations. In those settings it was easy to fall into a trap of painting an exciting picture for the case. Over time, it was pointed out to me that my accounts of the studied digital venture were resembling marketing pitches, rather than academic empirical accounts. This 'tone of voice' was something that I had to address, as I developed my academic writing and research practice. Switching between the two data collection phases and allowing time between data collection, transcribing, and analysis helped to create some distance, and to gradually develop a more critical stance.

Observations that formed a part of my data, helped to shape my understanding of the case, and were used as means to conduct rich interviews. As such, I did not follow a rigorous ethnographic research process or methodology. Rather, through my diary notes I developed an awareness of organisational identity, key terms and notions, which I used to build up a vocabulary, and a preliminary understanding of the scaling organising logic.

When conducting the interviews, participants treated me as an insider. Indeed, having taken the role of an active-member-researcher (Schultze 2000, p. 10), I worked as part of the Communications and Events team, and developed an identity closely associated with that of BlaBlaCar. Working in a user facing role required me to follow BlaBlaCar's values, and be the embodiment of company's identity and brand. This allowed me to sense parts of the organising logic that were tacit, whilst making the detachment and distancing process a challenging one.

Nevertheless, having developed such high level of commonality with the teams helped to establish a level of trust and rapport with participants. This familiarity with some of the concepts and team members helped to uncover insights that would not be otherwise shared with an outsider, and perhaps my

sample would be significantly lower, had I not been placed in the organisation beforehand. Having said that, in the context of the interviews this also had its drawbacks. I had to be really aware of participants assuming I understood or knew of everything they were revealing in an interview. Participants were at times surprised that I seemingly wasn't aware of certain topics or explanations. I took this stance in order to move from a mere descriptive nature of the conversation to an explanatory one, drilling deeper into the interview explanations. This created a level of suspicion and some initial participants questioning my work at BlaBlaCar and research intentions. In order to mitigate this, I structured the interviewing process by starting with local teams and some of my immediate colleagues from the UK team. I did this to give myself an opportunity to practice and refine the questions before moving to interviewing members of the global teams. In some cases, I also tried setting this expectation at the start of the interview, asking participants to treat me as a newbie. I found that this helped in terms of participants' reaction when I was asking follow up questions, they were more patient with answering and clarifying. Nevertheless, I did not notice much difference in the level of details revealed or the themes covered by the participants where this technique was used.

At the analysis stage, once again my proximity to the case helped to optimise the transcription and interpretation process. I was also able to kick start my coding process with provisional and in vivo coding. On the other hand, moving to second level coding was harder. I had to constantly challenge some face value concepts and interpretations made prior to analysing, and during first level coding. Informal discussions and mind mapping, particularly Saldana's (2016) "top ten" and "trinity" techniques, were helpful in abstracting from data.

As the findings, my ability to explain them, and the contributions matured, I relied less on having to paint an exciting picture for my case, and instead switched to the significance of the research findings and implications. Developing implications is a challenging and creative process, which requires another level of reflection upon data and findings. With time, I detached from the organisational identity that I had developed, and naturally adopted a more

critical, outsider perspective to both the venture, the findings, and my abstractions of the observed and reported in this thesis.

7.3. Concluding Remarks

The aim of this research was to advance our current understanding of an emerging but overlooked area of digital innovation management – scaling in the digital age. More specifically, this research was conceived with a vision of making a contribution to knowledge of the scaling of the user base of digital ventures in the context of more than one regional market. I intended to further the knowledge of the phenomena in a very practically grounded direction, as it is difficult to find a digital venture that doesn't have intentions of going global, or considers expanding beyond one market or region. This doctoral research, in line with its aim, offers implications for the study of scaling of the user base of digital ventures. Firstly, by highlighting the significance, and calling for further studying of this interesting and rich part of digital innovation management. Secondly, by advancing the understanding of the venture, the process of scaling the user base in the context of multiple regional markets, and how these might be used by other digital ventures looking to scale across regional markets.

By proposing a process model of scaling of the user base of digital ventures with its several derivative implications, I fill the knowledge gaps by contributing to the research area that to date has been dominated by "anecdotal evidence" (Huang et al. 2017) to suggest that scaling of digital ventures is qualitatively different from the scaling documented in the industrial age research and scholars such as Chandler (1962). Indeed, my findings show that scaling of the user base is a generative process made possible through the three scaling mechanisms-pillars, in turn existing on the basis of a digital infrastructure.

From the practice based point of view, my findings offer a rich account of the inside workings of a successful digital venture that rapidly scaled its user base across regional boundaries, pointing towards the key factors that made this scaling success possible.

To conclude, following Yoo et al. (2010), I remain convinced that despite its data richness, this research has only scratched the surface of the scaling of digital ventures "…and therefore can only dimly observe the forms of the emerging organizing logic of digital innovation." As such, I too remain emboldened "that as the transformative power of digital technology accelerates, it will become the new epicentre of our enquiries." (p.734). Future research on this topic is promising in terms of theoretical contribution and research impact. Thus, I hope that this thesis, and any publications based on the results of this study, will stimulate further work in this area of IS research, and provide a foundation for interesting and insightful theory development.

8. EPILOGUE: BLABLACAR HITTING THE BRAKES

After the data collection part of this thesis was finished, I came to learn about some changes in BlaBlaCar's rapid scaling plans. Despite being outside the data collection and analysis timelines, I followed an example of Lyytinen and Rose (2003) to include this epilogue-update and tiny snippets of venture insights that now, connecting the dots, can be contextualized and interpreted in view of this thesis and proposed research findings.

On 30th March 2017, BlaBlaCar's ex COO (now CEO) made an announcement on LinkedIn titled *Move Fast. Be Lean. Live Long*. This announcement was written in a form of reflection on the scaling success of the venture, pausing plans for aggressive expansion into the Asian markets, in favour of focusing on growing existing markets. Below is an extract from this announcement:

> *"After years of successfully investing in international expansion, we decided to put it on hold and focus instead on bold innovation, the creation of new services, and growing usage in our existing markets."*

Despite later revealing them noticing a market slowdown and the pulling back of a few private investors in Q4 in 2015, BlaBlaCar managed to maintain a great deal of the scaling momentum, having expanded into a number of countries and raised finance. At the time of the statement BlaBlaCar's user base consisted of more than 40 million members across 22 countries, and an astonishing larger number of travellers per quarter than that of British Airways. In the summer of 2016, BlaBlaCar reported a record 35,174 departure points in France, indicating that this figure beats the number of railway stations in France by 10 times.

Cash burn, a common issue for many digital ventures, and a possible explanation for BlaBlaCar's slowdown, had little plausibility due to large two rounds of financing, totalling to $300 million, allowing BlaBlaCar to continue growing in the short run.

Rapid scaling across regional boundaries saw BlaBlaCar's team multiply by 6 times between 2012 and 2016. The team that in January 2016 consisted of 400 people had talks of having to reinvent some processes, as the team scaled up with the number of regional boundaries. I have traced evidence of team's understanding of the looming challenges that came with rapid scaling in some of my interview transcripts. Revisiting some of them in light of these announcements showed that this was an ongoing process that was to take place organically and as part of clustering regions into CEE, Western Europe, Asia, and LatAm. In an interview with a member of the Growth team (conducted on 29th January 2016), speaking about the playbook in BlaBlaCar's emerging markets and potentially redefining for new market clusters, the response was as follows:

> *"So we're currently redefining our playbook in the sense that we are learning by trial and error and it's sure that our emerging markets are very different from one another. So you're not talking about one geography the same way you would talk about, you know, Central Europe, you're actually talking about Asia on the one hand and then South America on the other hand. And to me it very much seems that we will need to actually become even smarter at what we do. So go for moving away from the one playbook that we'd done with the, at the start. I do not actually have an answer to your question beyond that because it's very much a work in progress."*

Speaking about scaling across regional markets and further expansion, it was noted that BlaBlaCar had exhausted its potential for growing geographically into more countries. Despite many sources claiming the next logical move would be digital venture's expansion into US, then COO commented:

"We're not sure there's really a market for car sharing in the United States, and penetrating the Chinese market is almost impossible. So there are few new market opportunities for us, except perhaps Japan"

Indeed, Asian markets that BlaBlaCar has been particularly exploring and targeting with multiple research missions taking place, particularly in Indonesia, have been challenging for many digital venture giants. In China for example, even a digital venture heavyweight such as Uber has failed to beat its rival Didi, and Airbnb was being squeezed out of the market by local players Tujia and Xiaozhu.

On 15th October 2017, I received an update on BlaBlaCar closing down their UK office, with team being absorbed back into the Paris HQ. Warsaw Tech Hub, which outsourced some of the tech and product development has also become part of scaling back on regional offices. Further to regional cutting back, a layer of Community Managers, brand and design teams were all wiped, significantly altering the global structure of the digital venture. According to the LinkedIn statement, BlaBlaCar begun this process of shifting its "scale-up" back into disruptive innovation mode in the last quarter of 2016.

Reflecting on the closing of the UK office, BlaBlaCar has made statements on more than one occasion that the UK market failed to take off as much as they had expected, and the exact reasons for this are not fully understood by the venture themselves. As an ex-member of the team working on community management and events, having spoken to a vast number of UK users and community managers from other regional markets, where scaling the user base and consequently customer base, I can say that indeed, the UK market differs tremendously in its cultural connotations and perceptions towards ridesharing. Despite introducing online payment and free insurance for every trip, the UK population on both the passenger and the driver sides reported being put off by sharing personal space with strangers.

BlaBlaCar's plans for 2017- onwards were to continue building an ecosystem around a carsharing experience, exploring different verticals. As an insider, I

know these plans include but are not limited to insurance, particularly working on creating insurance premium measurement tools using driver and passenger ratings, as well as other data generated by the user base. Furthermore, having purchased many domains related to travelling, BlaBlaCar does not exclude a possibility of expanding into other low-cost travel industries and services. Whilst BlaBlaCar is claiming to be reconfiguring some parts of the venture "with the mission of disrupting our company from the inside" it remains to be seen what effects might these changes have on the playbook, global and local structures, the nature of the booking system, and the GPR itself.

8.1. GPR Process Reflections

So, how does this affect the proposed model of scaling of the user base of digital venture through GPR? In my understanding of the case and the process model, these new developments might have several relevancies to the GPR.

Firstly, one way to understand what BlaBlaCar is experiencing is to look at the developments as liminality of the pattern, and what can subsequently be observed as a trajectory shift (Henfridsson and Yoo 2014) in scaling through GPR. Recall the initial pre-scaling stage in in the case story (see section 4.4) where pattern, which sets the GPR in motion, was established. This required time and some internal disruption to create the living structure (Alexander 1999) that became the basis for GPR and the underlying mechanisms. Having reached a certain saturation point in its growth potential and pace, having built such a dispersed community and across market reach, the playbook might have started losing its relevancy. Thus, through the mechanisms of reflective dissension, BlaBlaCar having gone through the other two phases, critical mass and traction, and global monetisation, potentially had to re-enter a new phase, developing a new innovation trajectory.

Secondly, flowing from the previous point, I perceive this liminality of the pattern to be requiring recalibration of the playbook and the pattern itself, adjusting for the new scaling mode, reining it in, back to the so called internal disruption. By doing so, potentially enacting new patterns that shift the trajectory

of scaling and GPR to another level, in order to allow a digital venture to surpass the scaling saturation point and plateauing. When viewing this slowdown from a more practical point of view, venture capital funded digital ventures are pressured to maintain promising projected and actual growth as well as financial returns. This might, and usually does mean a shift to a leaner structure that now leverages the pattern or redefines the pattern to suit the new direction of growth towards more focused and more efficient. In this case, it would appear that more so than ever generative replication becomes relevant, when a digital venture is driven to use resources more effectively whilst delivering value and maintaining innovation capabilities and speed externalities.

Having said that, one common narrative that I have observed throughout data is using replication, the playbook, and patterns as a way to avoid having to 'reinvent the wheel'. Thus, one might assume that BlaBlaCar is 'hitting the brakes' to reinvent the wheel and recover from the liminality, whilst the new pattern emerges and scaling trajectory shifts.

This point might also signal the final completion or the coming of full circle of the pattern. The garage phase where the product has been nailed down, footprint achieved, and winner take all dynamics have settled, so what's next? In this case, what this might be telling us is that the pattern has finally reached its limit or capacity for replication. Thus, digital ventures seek to kick off the swift transformation mechanisms of the rapid scaling of the user base (Huang et al. 2017) and establish a new wave of rapid scaling. Antonopoulou et al. (2014) additionally sheds light on emergent articulation of value and the redefining of the business model, particularly in the context of high uncertainty, using processes of mutual adjustment and reconciliation to support digital innovation.

My third observation is regarding metrics. When it comes to the initial pattern and rapid scaling, user base is an essential metric for attracting attention from various stakeholders. Once a certain critical mass is generated, reports of rapid growth and frequent releases of the number of users become less frequent. Same goes for the number of markets, when it comes to scaling across regional markets. This could support BlaBlaCar's claim for the need of internal

disruption and refocus on user retention in existing locales rather than continuing scaling across. Perhaps using the user base as a scaling metric is only useful up until a certain point, before liminality kicks in, redefining what growth means, and how it is measured.

Finally, rapid scaling across regional boundaries required an equally rapid scaling of the team. As we know, heterogeneity of actors in the context of digital innovation is very much a positive thing, if not a prerequisite, but in this case, scaling of the team had negative externalities. The 'speed' of venture meshing mechanism did not match the speed that instantiation was moving at, and the stability of value frame.

8.2. Venture Meshing Bottlenecks

After conducting an informal interview with one of the members of the Growth team I discovered that indeed, some of my speculations regarding the issues with communication not flowing well across the venture were true.

Growth took place so rapidly that it slowed down the venture meshing mechanism, and the underlying aligning and synchronisation no longer worked. This has in turn disrupted the relationships with other mechanisms, overall slowing down the process of GPR.

As pointed out in an informal interview,

> *"…people forget to put you in an email loop,"*

whereas the cost of maintaining and supporting online interaction with face to face increased exponentially, as the team became larger. And with some teams being half-half in different locations

> *"…travel to Paris often just became too complex."*

Certain elements and aspects of the digital venture that I explicated as kept in house for faster replication, such as branding for example, were being shed. The

creative side of the digital venture's operations are now being moved to an agency based model.

Additional layers were added to the way BlaBlaCar functioned previously, including CEO moving to become the Executive Chairman (Founder on LinkedIn) and former COO becoming CEO (CEO and Co-Founder on LinkedIn), and informally also looking after operations. This includes managing a team of data heavy VPs, and team leads in charge of operations. According to the growth team member, the structure started to resemble more of a hierarchy rather than the Spotify organisation that BlaBlaCar viewed itself as, claiming that now:

> *"…there is way more structure."*

Previously, team members across the venture understood who to go to for help and guidance with an open door policy. Now, communication bottled up, limited to founders commutating only with top management, with fewer bottom up flows.

In one of the initial data collection interviews another member of the Growth team said the following about synchronisation and sharing between the teams:

> *"Because I think that they realised that miscommunication is lethal. But how exactly do they come up with those practices. I think it's when the company is smaller so they exchange on a daily basis, so they see that communication when the, okay, they exchange on a daily basis, and everything works very well and then they start growing at a certain point they realise that there is some bottleneck and this bottleneck is lack of communication so probably they have to stir this up. So I guess that it's more like the experience and the capability of making a step back where it's realising what do I miss here or how can I prove that. But this is very intangible."*

This reveals that this process might have previously taken place at the very initial stages of pattern development, where venture meshing might have emerged as a mechanism, which now needs recalibration in view of the structural and volume changes in the team.

Changes that are gradually taking place shift the locus of control more on the global teams that are further taking the lead, working on strategy with 1-2 experts on big and common issues, or strategies centrally. Local teams are focused on smaller local projects. This means localising central or agency developed content, working on local partnerships, and monitoring local competitive landscape. Separating planning and execution into two processes can potentially be detrimental to both the scaling and innovation processes. Nevertheless, despite these tweaks andnaccording to the latest insight, the playbook remains at the forefront of the way BlaBlaCar works, with the growth manager viewing it as:

> *"almost like a step back,"* however stating that the playbook based scaling strategy is *"all up and running"* still.

Following this line of argument, the manager underlines the significance of replication in the initial stages of scaling for speed externalities, with now being the time to absorb and adapt to the changes.

What I understand from these insights is that the innovation power of individual, previously given to the team members thought the mechanisms of value frame, diminishes. It appears that in order to maintain leanness individual team member's significance within the network drops. At the same time the strength of the network falls, making it harder to push/pull ideas and requests across the venture in a lateral way that existed due to the effects of the venture meshing mechanism. In turn, this can create top and local management cliques that no longer synchronise effectively. The mechanism of venture meshing is not in place or working as it normally does or should, reducing the effects of other mechanisms. Value frame loses its power, further affecting venture

meshing, and the tension relieving and invisible structuring relationships between the two. This could potentially mean that over time, heterogeneity generated externalities of regional markets, and the reduction in the empowerment of individual team members reduce the space and scope for innovation inception and integration. Such bottlenecks can affect and potentially stop the GPR process.

Heterogeneity that allows to unlock the next level generative growth, as part of digital innovation, when removed in the race for operational efficiency can no longer 'kiss to life' insights and information generated across digital venture, particularly locally. Pattern, and embedded within it information and learning, even when being updated and circulating formally, means nothing, if not used. This cancels out one of the key digital venture metrics of validated learning (Ries 2011).

8.3. New Pattern?

Among the scaling back news, on 2nd May 2017 BlaBlaCar announced the launch of BlaBlaLines, as an extension of the ridesharing service on two French axes (namely Reims to Châlons-en-Champagne (45km), and Toulouse to Montauban (50km)). In its announcement BlaBlaCar describes the new ridesharing service as:

> *"Drivers enter their regular commute from home to work. As soon as the platform detects sufficient volume on a specific route, it assigns a "line" to it — just like a route on public transport — with pick-up and drop-off points along the way. Passengers are attributed a line that most closely matches their demand and don't need to rely on a return journey with the same driver. They can simply arrange a lift home from another driver on the same line."*

This, although on a much smaller scale, is currently delivering additional value to users through local partnerships. These are believed to stimulate more

lasting user retention based growth across regional boundaries. Examples of such partnerships in France include VINCI Autoroutes motorway network, leasing company ALD Automotive, car manufacturer Opel, Total petrol stations, PUR Projet in, ADEME, the French Environment and Energy Agency, and the myclimate climate compensation in Germany.

This change of the nature of scaling might be telling us that digital ventures need to go through the process of securing the 'winner take all' footprint by rapidly scaling first, and then re-focusing on increasing the scope of its scaling and innovation. Turning to the model of GPR and particularly its outcomes, perhaps cross boundary growth can be understood as, albeit crucial in generating network effects, less generative than compound? Cross boundary growth can be further conceptualised as a prerequisite for expanding the scope of the platform-like structure of the digital venture. Compound growth, on the other hand, allows to expand this platform-like structure into multiple directions on the basis of a large and solid user base, as well as user generated data.

8.4. Other External Factors

One other external reason behind BlaBlaCar 'hitting the breaks' on its rapid cross boundary scaling strategy, mentioned in an informal interview, was the maturation of the global transportation market. The competitive landscape has shifted for BlaBlaCar, with the industry all over the world being reshaped and changed rapidly by digital, with more players spotting the opportunity. Previously, BlaBlaCar was competing with other ridesharing start-ups, whereas now, after having legitimised and normalised the service, became part of the transport network, as one of many travel options. BlaBlaCar is now competing against the traditional and industrial age players. Such normalisation of market disruption questions whether there are more arguments for the user of GPR in the early stages of scaling, in order to create the necessary footprint faster, and although equalise with the traditional modes, beat any other digital rivals to the 'winner take all' strategies?

To summarise, these recent 'curveball' developments in BlaBlaCar's scaling

timeline offered an additional interesting standpoint to view GPR from. The emergence of BlaBlaLines along with other potential service extensions, and their scaling over time are the ones to watch. This liminality (Henfridsson and Yoo 2014) offers a fascinating opportunity to further connect the dots in the scaling of the user base of digital ventures research, particularly in the context of GPR.

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