



Bridging the gap between ‘Fin’ and ‘Tech’: The role of accelerator networks in emerging FinTech entrepreneurial ecosystems

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ABSTRACT

As the global startup ecosystem matures its constituent actors are co-evolving in interrelated ways, producing localised entrepreneurial ecosystems around the world. The entrepreneurial ecosystem literature has identified the shared attributes of these systems, but understandings of their inner-workings, interconnectedness, and variance across such systems is lacking. This paper explores the emergence of FinTech entrepreneurial ecosystems in London and Singapore, finding that a single accelerator actor has played a significant role in driving their emergence out of the existing, broader, entrepreneurial ecosystems. It argues that while the entrepreneurial ecosystem literature benefits from a conceptualisation of these ecosystems as complex adaptive systems, there must be a consideration of the potential for transformative agency by actors in the evolutionary dynamics of entrepreneurial ecosystems.

1. Introduction

The growth and concentration of startups in cities around the world, in what the [Economist \(2014\)](#) has referred to as ‘a Cambrian moment’, has led to a resurgence in popularity for the entrepreneurial ecosystems (EE) and accelerator literatures. Thus far, the EE literature has focused on identifying the core characteristics of such systems and the actors involved ([Malecki, 2018](#)), typically seeing EEs as singular entities that can be recognised based on shared characteristics ([Spigel, 2019](#)). While many EEs have been identified around the world, the literature has said little about sectoral variations across these ecosystems ([Brown and Mason, 2017](#)). Sectoral variations are an increasingly pertinent issue; as EEs grow and develop, they often adopt certain specialisms, and industry literature often identifies them by these specialisms ([StartupGenome, 2019; 2020a; 2020b](#)). For instance, Boston has a world-leading EE that focuses on life-sciences and robotics, while London specialises in FinTech (Financial Technology) ([StartupGenome, 2020a](#)); the types of actors, processes and opportunities involved in these EEs are likely to differ significantly, affecting the locational tendencies and performance of different startups.

This paper focuses on FinTech EEs. FinTech as a ‘concept delineates processes and practices at the interface of finance and digital/online information and communication technologies (ICT) which might radically transform or ‘disrupt’ the nature, or at least the practice, of finance as commonly understood’ ([Bassens et al, 2017, p.2](#)). As one of the most

notable startup subsectors, FinTech has attracted an increasing share of all global venture capital, peaking with 17% in 2018 ([Crunchbase, 2020](#)). FinTech is considered one of the more ‘mature’ subsectors, having risen significantly in popularity since the global financial crisis (GFC) shocked the traditional finance sector in 2008, and is closely linked to other notable subsectors like Cybersecurity and the rapidly growing Blockchain subsector ([StartupGenome, 2019](#)). FinTech EEs are now a globally widespread phenomena, with a recent industry report identifying 45 FinTech EEs, and sorting them into categories of ‘Top 20’ and ‘Ecosystems to watch’ ([StartupGenome, 2020b](#)). The effects of this growth are felt acutely in the traditional finance sector that it is drastically restructuring, with the rise of online ‘challenger banks’, alternative payments solutions, robo-investing, and cryptocurrencies, amongst others ([Gomber et al, 2018; Haddad and Hornuf, 2019](#)). This relationship with the traditional finance sector is a significant departure from that of startups typically, in that they look to banks and other large financial firms (LFFs) not just for funding in the traditional sense, but as competitors or partners in an industry they are attempting to disrupt. Consequently, this is a significant subsector that operates with fundamental differences to other startup subsectors, and which offers an ideal opportunity to explore sectoral variations in EEs.

The EE literature is limited by its lack of understanding regarding the inner workings of these systems, with calls for a more relational appreciation ([Spigel, 2017a](#)), and more dynamic perspectives ([Malecki, 2018; Roundy et al, 2018](#)). The literature has identified the principal

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components and how they typically work together, but there is little substance on the evolutionary aspects of EEs, notably how they emerge and change over time, and the role of actors in this process. The case studies explored here offer valuable insight towards answering these questions. In both the case studies explored in this paper, of London and Singapore, the broader EEs predated the emergence of the FinTech EEs, and often shared geographical locations, sets of actors, and important processes. Thus, this paper seeks to explore not just how the London and Singapore FinTech EEs emerged, but how they emerged out of, or in relation to, the existing broader EEs that were in place.

In exploring the emergence of FinTech EEs in London and Singapore, in particular, how they emerged in relation to the existing EE, the paper conceptualises EEs as complex adaptive systems (CAS) (Roundy et al, 2018). These are not singular entities but instead consist of numerous diverse actors and relationships that are constantly co-evolving to drive changes in the complex system as a whole, making them highly varied (Martin and Sunley, 2015). EEs as complex systems are embedded within, and composed of, numerous other complex systems. For instance, a local EE is embedded within both their national and the global EE, and consists of numerous firms and organisations, each of which could be said to be their own complex systems (Martin and Sunley, 2015). Consequently, CAS is an ideal conceptual tool for identifying not just the variance between a FinTech EE and a broader EE, but the relationships and interactions between the systems and the actors within them.

One such actor that needs a greater appreciation in EEs is the accelerator, which has also seen a resurgence in popularity and are vital components in facilitating the growth of new startups and creating EEs (Florida, 2016). The accelerator literature has a strong understanding of not just the basic model of this new wave of accelerators, but also at documenting variations in their behaviours; however, their relationship with the broader EE has gone largely ignored. A core feature of accelerators is their relations with other actors, notably entrepreneurs, and would benefit from relational and dynamic explanations that situate them within EEs (Blieemel et al, 2019). This paper does just that. By tracing the co-evolution of FinTech startups, large financial firms (LFFs), and a FinTech accelerator in the creation of a novel FinTech network, this paper identifies how a specific accelerator has played a major role in creating the unique characteristics of a FinTech-specific EE that is present in both London and Singapore. Furthermore, this FinTech EE cannot be seen in isolation but has emerged from, and has a dynamic relationship with, the older, broader EE also present in both London and Singapore.

Accelerators typically take very early-stage but promising startups, provide them with a small amount of cash in exchange for around 10–15% of their equity, and then provide an intense 3–6-month training and development regime so that the startup grows rapidly and receives investment at a higher valuation (Clarysse et al, 2015; Feld, 2012). An accelerator banks on its ability to spot potentially successful startups and to nurture their growth so that they generate them a return on their investment. This is the established role of the accelerator in EEs (Hochberg, 2015). However, in the novel network identified here, the StartupBootCamp (SBC) accelerator has taken an additional role. Over time, the co-evolutionary dynamics of FinTech startups, accelerators, and LFFs meant that the SBC accelerator identified a new type of service that brings these actors together for mutual gain. While many startups use a Business-to-Consumer (B2C) model, FinTech's increasingly prefer the ease with which a Business-to-Business (B2B) or Business-to-Business-to-Consumer (B2B2C) model and partnership with a LFF may provide them with access to new customers and success, rather than competing directly with them. Others find the regulatory environment incredibly hard to navigate and seek to circumvent it through partnerships with LFFs who are already licensed. These are problems that are not typically found in other startup industries such as AdTech (advertising) or robotics.

As FinTech startups are disrupting the traditional finance industry,

LFFs who are innovation-shy are increasingly looking to partner or acquire startups as it is generally more financially prudent to invest in a well-developed product than attempting to develop it themselves. However, even identifying potential startups to collaborate with is difficult for LFFs for whom this is likely a new process. Because of this, the SBC FinTech accelerator has assumed an additional role in the FinTech industry, becoming the intermediaries who link startups and LFFs together. By doing so, it adds value to all three actors: startups get partnerships that will enable them to scale, LFFs get access to the right startups to help them innovate, and accelerators increase the chance of their investments securing follow-on funding and a later return on investment. Consequently, the creation of this type of network and the inclusion of LFFs has played an important role in the emergence of a distinct FinTech EE, which has characteristics not found in the broader EE.

The next section reviews the current literature on EEs, accelerators and CAS, arguing for the mutual benefits of closer alignment. The case studies will then be briefly introduced before a detailed empirical section explores the emergence of not just this SBC FinTech accelerator network but also its role in the emergence of FinTech EEs in London and Singapore. The discussion argues for a better integration of systemic and actor properties in EEs, through CAS, and for understanding the role of accelerators in EEs, before finishing with some concluding comments.

2. Using a complex adaptive systems approach to connect entrepreneurial ecosystems and their constituent actors

2.1. Entrepreneurial ecosystems

Early research on EEs has defined and delimited them, identifying the various actors involved and the factors generally responsible for strong EE performance (Alvedalen and Boschma, 2017; Isenberg, 2010; Stam, 2015). This literature has produced many definitions (for a comprehensive overview, see Malecki, 2018), which roughly agree that:

‘Entrepreneurial ecosystems are combinations of social, political, economic, and cultural elements within a region that support the development and growth of innovative start-ups and encourage nascent entrepreneurs and other actors to take the risks of starting, funding, and otherwise assisting high-risk ventures’ (Spigel, 2017a, p.50).

However, this appreciation of EEs is quite generalised and tends to see the systems as singular entities with incomplete knowledge of their inner-workings and variations, instead focusing on the systemic properties. As Spigel (2019) notes, definitions of EEs tend to take a ‘unified’ perspective that groups all startups together, regardless of sector. The idea of industry-specific EEs and their relationships with other EEs has gone largely unexplored in the literature thus far. Brown and Mason (2017, p.16) are an exception to this and note that some EEs may be ‘nested’, in that they are located within other, larger, EEs, each with their own actors, interactions, and factors for development. They point to a ‘pervasive heterogeneity’ across EEs that cannot be understood or encouraged through ‘one-size fits all’ conceptualisations and policy recommendations (Brown and Mason, 2017, p.26).

As well as the inner workings of the ecosystems, questions on how to delimit EEs remain. As Malecki (2018) points out, very little research has analysed variations in the scalar properties of EEs. Some studies discuss EEs at the national level (for example, Isenberg, 2010), others focus on the regional or local scales (for example, Spigel, 2017b), but none look across scales. Additionally, evolutionary approaches are needed. Brown and Mason (2017) have conceptualised potential differences in EEs depending on the quality of the ecosystem dynamics, suggesting that EEs can be categorised as either embryonic or scale-up ecosystems, with the former ideally evolving into the latter over time, but offer little to understand the process by which this happens.

Recently, work has begun to explore the relationships and connections between actors within EEs, which may lead to a better evolutionary understanding. For instance, [Motoyama and Knowlton \(2017\)](#) mapped out the various connections between actors in St Louis' EE, highlighting the benefits of having entrepreneurs' networks overlapping with other entrepreneurs and organisations for performance over time. The work by [Spigel \(2017a\)](#) highlights the need to understand the various attributes of the ecosystem and the connections between them, finding that the Waterloo and Calgary EEs have emerged with different characteristics due to the local contexts. However, more research is required. Additionally, while it is increasingly acknowledged that there are a variety of actors in EEs and their connections must be understood, empirical studies still focus on the entrepreneur or startup, privileging them. The benefit of a co-evolutionary approach is that it does not privilege one actor but takes into account the rationales of multiple. As the various definitions of EEs agree ([Malecki, 2018](#)), they are composed of various component parts, such as co-working spaces, accelerators, venture capitalists, and policy makers, each of which must be considered equally to generate the holistic view necessary to fully understand EEs.

2.2. Accelerators

The accelerator literature has focused on identifying what exactly this new iteration of accelerators are, consequently, their differences with the previous iterations of business incubators ([Carayannis and von Zedwitz, 2005](#)) and with similar organizational structures like co-working spaces have become succinct and well defined ([Cohen and Hochberg, 2014](#)). However, the literature has not yet put accelerators into proper conversation with their broader ecosystems, so that accelerators are viewed as passively providing support to entrepreneurs and startups, rather than having the agency to make significant changes to EEs.

[Bliemel et al \(2019, pp. 135-136\)](#) offer perhaps the best outline of what business accelerators are through five key points: '(1) Standardized seed funding packages; (2) Cohort-based entry and exit; (3) A structured capacity development programme; (4) Mentoring; and (5) Physical colocation'. Seed funding in exchange for a proportion of equity has become standardised over the years as accelerators have become increasingly popular and competitive, and this cost model is what differentiates them from co-working spaces who charge ongoing rent for space and do not take equity, thus are not investors and do not have a vested interest in the startup succeeding. Cohorts of typically ten startups are selected from potentially thousands of applicants to ensure a competitive selection, that then proceed together through the programme until graduating together at a demo-day where they take turns to present their hopefully improved product to potential follow-on investors ([Dempwolf et al, 2014](#)). The programmes offered can vary in their structure with some preferring a very heavily structured educational component while others prefer to offer a more elective approach. What does remain consistent across all approaches is the importance of mentors to do the coaching, both to groups and in one-on-one sessions. These mentors are experienced entrepreneurs, often alumni from previous cohorts, which pass on their experience. The final component is physical co-location in a shared office space. They are not dissimilar to co-working spaces in this regard and often find themselves based in co-working spaces for cost-savings. This co-location enables the easy spillover of knowledge between mentors and startups and is always highly encouraged.

It is through these five characteristics that accelerators pursue their business model of providing intensive coaching to early-stage startups, accelerating and increasing their chances of growth, so that they can capture follow-on funding after the demo-day. This follow-on funding comes at a heightened valuation, so that the 10% stake in the startup that the accelerator acquired for roughly \$15,000 at a valuation of \$150,000, could potentially become worth \$100,000 at a valuation of \$1 million. However, the literature has recognised some variations in the

identities of these accelerators. Some have begun to look at recently emerging industry-specific accelerators ([Hochberg, 2015](#)), while other accelerators are aimed at particular demographics such as female founders ([Bliemel et al, 2019](#)). While accelerators first emerged as private business accelerators aimed at providing heightened returns for private investors, there are now a range of government subsidised or supported accelerators ([Bliemel et al, 2019](#)). These often crossover with so called ecosystem accelerators, who instead of trying to generate returns on their investment, attempt to boost entrepreneurial activity in an ecosystem, which means often forgoing their stake and simply providing as much support to entrepreneurs as possible ([Clarysse et al, 2015](#); [Gonzalez-Uribe and Leatherbee, 2017](#)). These ecosystem accelerators hint at the role that accelerators can have in EEs more broadly ([Bliemel et al, 2019](#); [Gonzalez-Uribe and Leatherbee, 2017](#)), but further attention is required.

Importantly, this section demonstrates that the literature's understanding does not include the additional function that SBC have begun to offer - bridging the gap between startups and large firms. There has been increased diversity in the specialisms of accelerators but the model of selecting and training the best startups in the hope of external follow-on investment has remained. In adding its additional function, SBC has produced a new model of an accelerator, and have become a service provider that aims to facilitate the creation of networks between these two sets of actors.

2.3. Complex adaptive systems

The EE and accelerator literatures are central in understanding the growth of startups and the ecosystems they congregate in, yet they have had little conversation. A critique of the former can be its focus on understanding the system-wide effects without considering internal actor variation and agency, while the latter for its focus on the behaviour of individual actors without any consideration for the system that they are embedded within and how they may drive changes within it. Moving forwards, then, a framework is needed that can incorporate insights from these actor- and system-focused literatures, in a cohesive manner. The CAS approach offers the potential to do just this; indeed, it has been previously argued for in understanding EEs ([Roundy et al, 2018](#)), as well as with related concepts such as clusters ([Martin and Sunley, 2015](#)) and regions ([Bristow and Healy, 2014](#)). However, empirical studies using this framework are yet to emerge in the EE literature.

CAS theory stems from General Systems and Cybernetic approaches to understanding system dynamics ([Holland, 1995](#)). However, while General Systems Theory is concerned with system interactions, it looks at closed systems seeking optimized equilibriums, and while Cybernetics does look at open systems, its focus remains on stabilized systems generated by negative feedback. CAS systems, on the other hand, are porously bound systems that through internal and external interactions can evolve into new states over time.

CAS consist of numerous inter-related components that provide an identity and connectedness to the system as a whole. Through emergence and self-organisation, these components and their interactions produce ecosystem-wide structures and dynamics, which in turn influence the constituent components ([Martin and Sunley, 2015](#)). Together, the components and the system are able to adapt to internal changes and external shocks, co-evolving through the process of self-organisation to dynamically change the system. The unique mixes of components, driven by non-linear dynamics due to feedbacks and self-reinforcing interactions, means that CAS evolve in path dependent but unique ways ([Bristow and Healy, 2014](#)). Furthermore, these systems have permeable and obscure boundaries with external environments, making them subject to interactions with various other systems and hard to delineate, which hints at why the EE literatures has struggled in doing so. Evidently, then, EEs can be seen through a CAS lens as

‘a self-organized, adaptive, and geographically bounded community of complex agents operating at multiple, aggregated levels, whose non-linear interactions result in the patterns of activities through which new ventures form and dissolve over time’ (Roundy et al, 2018, p.5).

This approach provides a definition of EEs that closely follows that provided at the start of this section, yet offers the potential to tackle some of the issues identified across the EE and accelerator literatures. It enables an opportunity to explore the reflexive relationship between the system and its constituent parts, understanding the effects that the systemic properties can have on actor behaviour and vice versa.

However, this paper argues that an issue with CAS is that it lends towards reproductive change, rather than transformative change (Grillitsch and Sotarauta, 2020). Roundy et al (2018, p.5) describe EEs through the CAS lens as having ‘sensitivity to starting conditions [so that] small changes in the initial configuration of an EE can, over time, have large and unexpected effects on its later development, [becoming] locked-in to a narrow trajectory because of historical experiences’, and having ‘adaptability: the actions of individual agents produce continuous modifications to the ecosystem that allow it to adapt to changing conditions’. This conceptualisation of evolution in CAS suggests that EEs will evolve incrementally over time through many small changes as actors interpret and respond to internal and external prompts, that will ‘lock-in’ the EE to a particular evolutionary pathway.

In evolutionary economic geography, this ‘lock-in’ perspective to path dependence has been criticised for focusing on ‘the reproduction of what exists, to yet more of the same, but not to evolution’ (Martin, 2010, p.22). Rather, there must be some consideration that actors have the potential agency to enact moments of transformative change at times, that would significantly change the evolutionary trajectories of the systems they are embedded within and break free from lock-in’s (Harris, 2020). It can be hypothesised that these significant moments of transformative change may act as drivers of the evolutionary trajectories of EEs; that new EEs will emerge, that certain specialisms may arise in EEs, or that other EEs may begin a downwards trend of decline, due to decisions made by certain actors (Martin and Sunley, 2015).

This paper documents how the creation of a novel accelerator network by SBC restructured the core actors involved in the startup process by incorporating LFFs, and then changed the behaviours of startups and LFFs so that a novel FinTech EE emerged in London and Singapore out of the limitations of the existing EEs. In that regard, it aims to tackle the closely shared limitations of both the accelerator and EE literatures, providing an understanding of how the two interact through using the CAS framework. The next section will provide an overview of the methods and cases used to provide this example.

3. Methods and case study background

The data used in this research was collected during a research project on the evolution of the London and Singapore EEs since approximately 2006, the primary data collection for which took place largely between September 2017 and September 2018 (Harris, 2021a). As well as drawing upon secondary data, the overall project captured 100 formal and informal interviews with actors, evenly split, within the London and Singapore EEs (Table 1). Respondents represented the range of actors found in EEs, with policy makers, venture capitalists, accelerators, angel investors, startups, and scaleups all represented in the interviews

Table 1
Breakdown of primary interviews undertaken by actor type (FinTech).

Case	Software entrepreneurs	Accelerator and community actors	Investors	Government actors
London	32 (10)	12 (2)	7 (2)	7
Singapore	35 (15)	10 (2)	9 (4)	3

(Tables 2 and 3). FinTech is a considerable part of both of these EEs with industry reports often citing them as some of the top FinTech EEs in the world (StartupGenome, 2020b), and the number of interviews with FinTech respondents reflects that. SBC was just one of multiple accelerator programmes interviewed and their model was found to be unique in comparison, which encouraged the pursuit of further interviews with them. Interviews were conducted with directors, mentors, and the startups themselves. Ten interviews were conducted within the SBC organisations in London and Singapore, while a total 35 interviews were undertaken with actors in the FinTech ecosystem.

The London and Singapore case studies were selected because of their position as top ten software EEs globally (StartupGenome 2018) and which offered potentially interesting findings in terms of the composition of their EEs. London’s Tech City had emerged organically as Silicon Roundabout around 2006 as entrepreneurs found themselves co-locating in Shoreditch, East London (Nathan and Vandore, 2014). In comparison, while Singapore’s EE, centred on Launchpad and Blk71, can also be traced back to 2006, it has had a much stronger government presence (Harris, 2021b). This offered the opportunity to analyse the varied relations between government actors and other EE actors and the effect it had on EE evolution. However, upon further investigation into the EEs it became clear that there were sizeable FinTech populations, and after interviews it was confirmed that a FinTech EE could be identified in relation to the broader EE.

Continued research into both the FinTech and broader software EEs produced the novel empirical contribution offered in the following section, which details the emergence of a new type of accelerator programme through the co-evolutionary dynamics of various actors within the FinTech EE, and the effects it had on producing a FinTech EE.

4. StartupBootcamp, its FinTech network, and the emergence of a FinTech entrepreneurial ecosystem

4.1. StartupBootcamp and the emergence of a new FinTech network

SBC initially launched as an accelerator in Copenhagen, 2010 (Startupbootcamp, 2019), where it followed the ‘traditional’ industry-agnostic accelerator model. During this time, while actors in leading EEs in Europe and North America were aware of sectoral variations in startups, the focus in EEs was instead on the commonalities of entrepreneurs utilising novel software technologies to launch startups rather than the differences (Entrepreneurs 4; 6; 8). The biggest accelerators at the time, Y Combinator, TechStars, 500 Startups, Founders Institute, and Seedcamp, were all industry-agnostic. Indeed, it was not until mid-2011 that the world’s first FinTech accelerator was launched in New York (TechCrunch, 2010), until late 2012 that London’s first FinTech accelerator was announced at L39 (TechCrunch, 2012), and not until March 2014 that SBC launched their London FinTech programme.

Then, in London, there was an awareness that FinTech existed, but early pioneers co-existed in the broader EE of Silicon Roundabout seamlessly with other startups (Nathan and Vandore, 2014). For example, FinTechs were found in early programmes of Seedcamp, the first accelerator to emerge in London. At this point, they largely shared the same issues as other startups, such as how to define a minimum viable product, gain investment, hire employees, and get to the next stage of the startup life-cycle (Entrepreneur 9); the startup industry outside of Silicon Valley in general was less established and specialised than it is today. Furthermore, some FinTechs even sought to distance themselves from the finance industry, blaming it for the then recent

Table 2
Breakdown of all interviews by startup stage (FinTech).

Case	Total interviews	Early-stage	Mid-stage	Late-stage
London	32 (10)	10 (6)	15 (3)	7 (1)
Singapore	35 (15)	20 (8)	11 (6)	4 (1)

Table 3
Breakdown of all interviews by investor type (FinTech).

Case	Total interviews	Early-stage	Mid-stage	Late-stage
London	7 (2)	5 (2)	1	1
Singapore	9 (4)	5 (3)	3 (1)	1

2008 GFC, and entered entrepreneurship with a desire to disrupt the industry (Entrepreneur 10).

However, in launching their first cohort of a FinTech specific accelerator in London, it was recognised that a different model was needed to cater for FinTech startups that utilised B2B or B2B2C models. The

‘ambition was to get people to understand how the [traditional accelerator model] doesn’t work in regulated industries like FinTech that are mostly B2B or B2B2C. What’s changed in the last few years are the metrics for success. We now think about industry pilots because that’s what [FinTech] startups need in their journey for validation, as opposed to the amount of follow-on funding or number of startups in existence. Most startups we see need to get regulated so that elongates the runway to launch. It fundamentally changes the way accelerators work. Normally startups would raise the first seed round and get customers but now we partner them with banks’ (SBC Director 2).

When selling financial services to customers there is a high degree of regulatory approval required. While software startups can typically launch an app or website and immediately start securing customers, FinTech startups often have additional difficulties because of the sensitivity of financial products. For those B2C FinTech startups, they must procure a license in order to sell financial products to consumers. However, these licenses are costly to procure, as they can often require millions of dollars in capital, amongst other restrictive criteria (Entrepreneur 4).

This regulatory issue is a FinTech specific problem that SBC felt was not well catered for in the existing EE and mandated a diversion from the traditional accelerator model (Mentor 1). In fact, SBC are not the only actors attempting to remedy this issue and in recent years, governments have tried to ease these difficulties by introducing policy sandboxes in places such as the UK, Singapore, and Australia, which facilitate the experimentation of new products in a safe and controlled environment for the customer; something that has not been necessary in EEs outside of FinTech. However, even after the introduction of a policy sandbox in Singapore in 2016 (MAS, 2016), FinTech startups still found the regulatory challenges considerable: ‘even with the sandbox it’s time-consuming. And then on top of that we still need to have millions in capital and so that means complicating issues with our investors, it’s just not worth it’ (Entrepreneur 3).

Evidently, regulation is a significant obstacle to FinTech startups and while policy sandboxes may help in proving regulatory compliance, they do not help with the financial requirements of the license. Because of this, a solution of partnering with established, license-equipped LFFs, has become an increasingly preferred business model for startups (Entrepreneur 3). Pursuing this B2B2C model means that FinTech startups ‘would have to find one large financial firm to partner with and use both their license and their customer base, so it’s just much easier all round’ (Entrepreneur 7). In a technology industry with a high market imperative, bringing a product to market and securing market share quickly is vitally important. Additionally, while the startup will lose a portion of their profits to the LFF, the relationship can also be financially prudent:

‘partnering with a big firm means that we don’t have to employ so many people in marketing and sales... so while we lose some overall profit, of course, we also keep costs down and just greatly streamline the process’ (Entrepreneur 4).

Thus, for many FinTech startups it has become ideal to partner with LFFs.

Startups are not the sole beneficiaries of such partnerships, however. While it may be harder for FinTech startups to go it alone, it is not impossible, and the success of firms like TransferWise demonstrates the potential that can be extracted from the finance industry. Under the emerging threat of FinTech startups, LFFs are increasingly recognising the need for co-operation with FinTech startups to maintain their market dominance:

‘the smarter banks realise [FinTech] is a tool to reinvent themselves and find something new... What banks are trying to do is figure out how to position themselves and deal with new stuff. Do they buy it out, do they invest in it? The smarter banks recognise that there’s an element of startups providing R&D for industry. This is what we see and do for the industry, give them a space for experimentation that they don’t have in their organisation and should have. But finance industry doesn’t do R&D, they are very naive, but tech is changing so fast on [the] outside that they are waking up to the need for it’ (SBC Director 2).

Previously, when the initial threat of FinTech began to emerge, those corporate actors that had identified the significance sought to tackle the issue by procuring their own in-house development teams. However, this proved problematic: ‘Banks initially thought that they could just hire a load of software guys and stick them in a dark room somewhere, but for obvious reasons that didn’t work as they were so isolated from the bank and from the tech scene’ (Entrepreneur 1). These obvious reasons were that these workers were isolated from the EE and did not benefit from advantages the system offered. Another problem was that banks did not want to open their systems or provide any data, expecting their new hires to produce technological solutions without having any access to the data they were designing solutions for (Entrepreneur 10).

Following these failures, some banks sought to launch their own accelerators, such as DBS HotSpot and Barclays Accelerator in Singapore and London, respectively. In these instances, a cohort of new startups were provided with capital in exchange for an equity percentage, and there would be the usual mentoring and class-based system. However, respondents from DBS HotSpot’s early cohort found it underwhelming. In-house inexperienced staff were unaware of how to run the programmes, the educational component was not of a high level, and the bank still kept its data and systems closed (FinTech entrepreneur 5). DBS have since cancelled this accelerator. Barclay’s Accelerator, in contrast, has fared better because they hired TechStars, one of the world’s leading accelerator programmes, to run it for them. They have gone on to make 115 investments, with 113 startups still active, and produced five exits thus far (Crunchbase, 2019).

Evidently, these LFF-backed accelerators can have some benefits. However, they also engender costs to the LFF, both in finance and in labour. Another option, rather than investing in these accelerators for potentially little gain, is to simply acquire promising startups who have already done the innovation (SBC Director 1). Finding the correct startups to acquire is still an important consideration, however, and any deal is not a guaranteed success. It requires LFFs to be acutely aware of technologies and other trends in startups, correctly assessing the potential of the entrepreneurs involved, something they struggle with due to the myopia generated by their rigid internal structure and sheer size (Mentor 2). Similarly, for FinTech startups:

‘it is not easy to gain access to banks and other big firms. [Banks] must get thousands of proposals, all looking good on paper, and they just can’t pay attention to them all, even if they did properly understand the proposals’ (Entrepreneur 12).

Thus, while both FinTech startups and LFFs would like to engage in partnerships having gradually realised the mutual benefits, there exist significant roadblocks in bridging the gap; LFFs were struggling to

integrate into existing EEs. SBC realised this and sought to develop a new accelerator model by acting as an intermediary between startups and LFFs, providing startups with an entry-point to LFFs, and hand-picking the startups that match the needs of the LFFs, removing the search costs for both (SBC Director 1).

Accelerators themselves have evolved over time, with experimentations in the funding model and the value added producing a now largely standardised methodology. This has forced accelerators to find value in more specific solutions such as sector-specific programmes, and now SBC have decided that even within the FinTech industry there is a unique demand for startup-LFF partnerships. The early success of accelerators meant that accelerators had a ‘hype-phase where many entrepreneurs saw launching their own accelerator as a shortcut to success’ (Mentor 3). This meant that EEs were often over-saturated with accelerators, which in turn performed poorly. By taking on these additional capabilities, SBC positioned themselves uniquely, in the process securing immediate funding sources and useful mentors from the LFFs, integrating them further in the EE, and increasing the chances of startups securing follow-on funding through their relationships with the LFFs (SBC Director 1).

To facilitate this change from focusing solely on startups to servicing cooperation between startups and LFFs meant the introduction of SBCs ‘3 + 3’ model. This model sees as much emphasis put on the three months of coaching the startups as it does the prior three spent on the application process, to ensure that chosen startups fit the LFFs’ needs.

The corporate actors are heavily involved in the process of choosing the startups. They get

‘a vote per partner and they meet the startups... if we put in a company the partners didn’t see a use for they wouldn’t benefit because that’s the point of the programme. So, it doesn’t matter how great the company is. If you do financial inclusion but have a bank who doesn’t care about that, then it’s not going to work, it has to be mutual excitement’ (SBC Director 1).

This represents another break from the traditional accelerator model that aims to pick the best startups possible as they logically offer the best chance of securing follow-on funding. Instead, SBC consider the best chance of securing follow-on funding is by partnering them with a LFF that will do that future funding, so a startup that fits that need is optimal (Entrepreneur 11).

However, that is not to diminish the importance of the three-month coaching period as even once SBC have secured the approximately ten startups that their LFF partners wish to work with there can remain potential problems. Sometimes, LFFs are reluctant to actually work with the startups and are hesitant to make their data available or to run pilot programmes with them:

‘The hardest part is finding the right people and sponsors who don’t see through a narrow lens. We need open mindedness, an allowance for failure; a compliance team that understands [the startup] won’t fit immediately but needs work’ (SBC Director 1).

It can be the case that LFFs get involved with accelerators or other similar programmes because it makes them look progressive and innovative, but in reality, do not want to open up to innovation, or expect things to happen without contributing much on their side (SBC Director 2). Relatedly, a large role for SBC is to ensure that they pick not simply the biggest LFF partners but those that are willing to work with startups. Following this, they must ensure that they manage the relationship between the startups and LFFs throughout the three-month period of development, so that knowledge and data is shared, and pilot programmes can run. This served the purpose of properly integrating LFFs with the startups and SBC, within the FinTech EE.

SBC, then, has developed a new role as a mediator between startups and LFFs, which ensures a mutually beneficial relationship for all three parties. This new type of network between three distinct EE actors has

had important ramifications on the London and Singapore EEs, as the next section will explore.

4.2. The role of the SBC network in the emergence of London and Singapore FinTech EEs

It is not enough to view the SBC network in isolation if we want to build a dynamic understanding of EEs. To understand the value of accelerators like SBC in EEs, one must situate the network within a broader developmental context and not simply focus on the firms in question (Martin and Sunley, 2015). This section will briefly explore the role SBC and its new strategy for the FinTech industry had on the emergence of FinTech EEs in both London and Singapore.

SBC launched in London in 2014 at a time when the EE was growing rapidly. The EE had a growing FinTech community within it; however, at this time there were few FinTech specific resources or institutions, and LFFs were seldom involved. Up until 2014, FinTech startups had participated in general accelerator programmes, looked for investments from industry-agnostic investors, and struggled to foster relationships with the finance industry (Entrepreneur 1; 3). Some FinTechs found success from the general EE but a distinct FinTech EE did not exist. Indeed, successful FinTechs cited the community of startups, the relationships they formed with them and the lessons they learnt, as key in their success (Entrepreneur 1; 3). At this point, the general EE provided the resources necessary for early-stage startups, regardless of their sub-sector, to grow and become successful.

While SBC London was not solely responsible for the emergence of a FinTech specific EE as there were other FinTech organisations like L39 present, they were central in galvanising these FinTech actors. The accelerator at L39, for instance, predates SBC, but they did not incorporate LFFs in the same way. SBC incorporated LFFs and sought to expand the networks of mentors and contacts that FinTech startups could rely upon, became a FinTech specific investor, and provided a space for FinTech specific events and networking to occur (Entrepreneur 8). This helped to establish FinTech-specific networks, shared behaviours and norms that enabled existing FinTech actors to interact, grow and develop ideas. Importantly, they facilitated the integration of FinTech startups and LFFs in networks, something that the general EE did not.

This meant that the FinTech EE that had emerged was structurally different to the existing broader EE that it had emerged from. LFFs were integrated in ways previously unheard of, startups were more likely to pursue different business models (B2B and B2B2C) than before, and the everyday behaviours and routines of actors differed. Since then, the London FinTech community has developed immensely, with FinTech-specific events, accelerators, organisations, and community spaces such as Innovate Finance launching. London is now often considered the leading city for FinTech in the world and SBC has undoubtedly played a key role (StartupGenome, 2020b).

It was not until 2015 that SBC launched in Singapore and by that time SBC had developed a large network of mentors and coaches, which are vital for promoting startups (Klofsten and Öberg, 2011), as well as a plethora of knowledge from running other programmes, that they could leverage on in Singapore (SBC director 1). It was not just knowledgeable networks of mentors that SBC brought with it from its other FinTech programmes, but also an understanding of the social practices and norms that were valuable in London. Singapore at this time was a small but dense EE that had little FinTech presence (Economist, 2014). Indeed, when talking about the emergence of FinTech in Singapore, some respondents went as far as to suggest that

‘SBCs introduction was key. Before that [FinTech] was like the Wild West where there was no hub to the ecosystem, just people running around trying to make a quick profit no matter what’ (Entrepreneur 8).

SBC came to Singapore at a time when there were no other FinTech organisations, unlike in London, thus their pioneering reputation. They galvanised LFFs into working with them and the startups, in the process bolstering the funding available, and showed FinTech startups and LFFs alike the behaviours and norms that had been successful in London. Introducing this knowledge created a distinct FinTech EE, separate from the existing EE.

However, SBCs introduction to Singapore was problematic. While it brought over mentors and created a FinTech ecosystem, it also sought to hire some of the top talent from within the existing EE, taking away from local accelerators:

‘it was particularly galling to see European accelerators come over who then poached our mentors, everyone who we had built up in the ecosystem’ (Accelerator Director 1)

This created a brain drain from local accelerators towards SBC, which was damaging to the EE. Thus, while SBC was clearly beneficial for bringing in new mentors and for making their extensive networks available to the ecosystem, particularly at a time when institutions were not established and FinTech organisations were not present, it must be acknowledged that they took some of the top talent from local accelerators, doing harm as well as good.

5. Discussion

The previous section presented an empirical story of how SBC, dissatisfied with the current EE in London for supporting the changing demands of FinTech, set about creating a new accelerator model and network that led to the emergence of a distinctive FinTech EE. This FinTech EE incorporated LFFs in ways that the existing EE did not, through building relationships with startups for mutual benefit, and developed a set of norms and behaviours that helped FinTech startups grow. Then, having learned lessons from this process, SBC took their networks and institutions with them to Singapore, proving pivotal in creating a FinTech EE at a time when FinTech was considered like the ‘Wild west’.

By conceptualising EEs as CAS, it enables an understanding of EEs as complex overlapping and interrelated systems, with interactions between micro-level actors and structure-level systemic properties driving change, so that when the individual actors are dissatisfied with the broader structural offerings of the system, they can make changes to satisfy their needs. However, this paper has argued that understandings of CAS lend towards lock-in through incremental change. While these incremental, path dependent changes are the norm, this study demonstrates how moments of actor-led transformative change occurred that led to the creation of new CAS or significant changes within existing CAS’.

This has important implications for the EE literature. While appealing, EEs cannot be seen purely through ecological metaphors where they gradually evolve over time. Nor can their emergence be considered serendipitous. Moments of transformative actor-led path creation and path change are possible, and a better understanding is necessary. This is important moving forwards; as the startup industry becomes more diversified there are likely to be more potential variations in EEs.

In identifying varieties in EEs, it is important to understand the fundamental benefits that EEs provide. In the EE literature their value is general as they provide benefits to all startups in a geographical area (Malecki, 2018). The existing London and Singapore EEs provided systemic benefits to early-stage entrepreneurs and startups who were developing a minimum viable product, attracting investment, and bringing a product to market (Harris, 2021b). Early FinTech startups in London and Singapore existed within those EEs, typically operating in areas that required less stringent regulations, had products aimed at disrupting banks’ business, or were successful enough to secure the

necessary investment needed to secure regulatory approval, but they rarely worked with LFFs. Indeed, the earliest FinTech accelerator in London operated under the typical model of picking and coaching winners so that they could procure follow-on investment afterwards but did not operate partnerships with LFFs like SBC.

However, as the FinTech industry evolved, with LFFs realising that they needed to embrace FinTech and with increasingly more FinTech startups emerging and understanding that B2B or B2B2C business models were viable, the existing EEs did not provide the systemic benefits needed to cater for these firms. These needs are not present amongst the vast majority of software startups, they are a sectoral variation specific to FinTech, and thus were not present in the existing EE which instead focused on bringing products to market as soon as possible through a B2C business model.

The system-level properties of the existing EEs were reinforcing the current properties of the EE, for whom most actors were satisfied, locking it into the existing early-stage evolutionary pathway. A moment of actor-led transformative change was necessary for the FinTech EE to emerge. SBC intentionally sought to bring together startups and LFFs for mutual gain through coherent entrepreneurial activities, in the process injecting investments into each of the startups, both from themselves and the LFFs. However, it is important to note that SBC were able to enact this network because of the agency of other startups and the LFFs; they were not heroic actors capable of creating these networks out of force. It is unlikely that any actor is capable of creating the change necessary for EE emergence individually but will require careful coordination with other actors (Grillitsch and Sotarauta, 2020). For instance, startups and LFFs both wanted to bridge the gap between the two previously but had found it an insurmountable task before SBC facilitated it. Thus, when understanding ecosystem emergence, or continued evolution, it is important not just to understand the actions of individual actors but to situate them in relation to existing pre-conditions and other actors both within and outside of EEs (Harris, 2020).

SBC offered a service distinctly different to the existing accelerators in the general EE and created a new, system-wide, property, of bringing diverse FinTech startups and LFFs together for mutual gain. This was a significant diversion from the existing EE as large firms, financial or otherwise, are not typically considered a part of EEs (Malecki, 2018). It means that the FinTech EEs identified here are significantly different because they provided benefits that at the time were unattainable in the general EE. FinTech EEs can consequently be seen as those systems that provide benefits to FinTech specific startups and related actors that cannot be readily and reliably found in general EEs.

Importantly, however, these are not discrete and isolated EEs; rather, the boundaries are porous and the systems are heavily interlinked. FinTech startups benefit from access to both systems; while the general EE provides broad benefits to early-stage startups, access to the FinTech EE provides the networks and knowledge needed to work specifically with LFFs in some capacity, as well as more industry-specific knowledge. FinTech startups can therefore be active in both systems and ensures that they are supported no matter what their business model is, which helps to explain the success of the London and Singapore FinTech EEs (StartupGenome, 2020b). This has important ramifications for financial geographers, who must continue to integrate understandings of ‘tech’ with their understandings of ‘fin’; the emergence and ongoing evolution of these new FinTech ecosystems are rooted in and just as closely linked to the ‘tech’ ecosystems that they emerged from as the ‘fin’ ecosystems they see to disrupt. Indeed, respondents frequently mentioned that finance was increasingly relying on the ‘tech’ community to be the driver of innovation in the finance industry. This means that actors like seemingly ‘tech-y’ accelerators are going to play a significant role in shaping finance moving forwards, and their impact should be considered by financial geographers.

However, the presence of SBC in Singapore highlights some of the competitive dynamics that may happen across systems as they attracted mentors and other employees from other accelerators in the broader

ecosystem to a detrimental effect. Therefore, understanding the emergence and continued evolution of EEs, particularly as the startup industry matures and more sub-sectors emerge and develop, requires an appreciation of the varied relationships between systems and their constituent actors across porous borders. Furthermore, it highlights the utility of a CAS approach which sees these systems as overlapping at various scales, similar to Brown and Mason’s (2027) ‘nested’ conceptualisation of EEs, and not as standalone systems.

While this study has demonstrated the basic difference between a general and a sector-specific FinTech EE, ecosystems could vary in other ways. For instance, by comparing SBCs five main FinTech accelerators around the world we can identify potential geographical variations, such as the actors involved and the specialisms of the ecosystems. Firstly, while SBC does partner with some LFFs that are present across all programmes, they also have some that are more place-specific. Partners like Amazon web services, PwC, and Cisco tend to be found across all programmes; however, each programme tends to have a network of local banks and financial partners. For example, Latinia is an investment partner in Mexico that works almost exclusively with Spanish-speaking companies (StartupBootcamp, 2018). In the Amsterdam accelerator, it has the addition of many local Dutch banks such as Rabobank, ABN Amro, De Volksbank, and Van Lanschot, while London has Lloyds, and Singapore has DBS and Malaysian bank RHB (StartupBootcamp, 2019). These distinctions are important since these LFFs play a vital role in selecting the startups that are accepted onto the programmes, and so the strategies of the LFFs in certain areas may shape the type of startups that are picked and thus the effects on the broader EE.

Table 4 details where the startups of these SBC FinTech accelerators originate. The geography of these networks is important for defining what flows of knowledge will enter into the EE (Bathelt et al, 2004). It is unsurprising that London has consolidated itself as perhaps the globally leading FinTech EE when it has such a global supply of knowledge, while more fledgling FinTech EEs like Mumbai and Mexico City are regionally focused. The FinTech accelerators also have slight differences in the specialisms they offer, and this affects the startups that can be found. For example, Singapore has a focus on wealth management startups such as Robo advisors, while Mumbai and Mexico City have a higher proportion of startups involved in financial inclusion. This goes a long way to explaining why Mumbai and Mexico City have more regionalised networks, because the FinTech EE is geared towards solving problems within the region. It is also important for understanding the evolution of the broader EEs as the geography of these networks will affect the knowledge spillovers and internal networking that occurs across the ecosystem (Bathelt et al, 2004).

Evidently, this FinTech phenomenon that is imposing itself on the traditional finance sector is geographically varied. Financial

Table 4
Countries represented by startups in SBC networks.

London	Singapore	Mumbai	Mexico City	Amsterdam
UK x9	India x5	India x12	Mexico x11	USA x5
USA x3	Taiwan x4		Ecuador x3	UK x3
South Africa x2	South Korea x 3		Chile x2	Germany x2
Sweden x2	Cambodia x 2		Colombia	Spain x2
Israel x2	Singapore x2		Peru	Portugal x2
Germany x2	Thailand		Uruguay	Italy x2
Poland	Malaysia		Spain	Netherlands x2
Estonia	Japan			Turkey
Netherlands	Australia			South Korea
Kenya	Lithuania			Russia
Switzerland	UK			Israel
India				Denmark
Denmark				Ireland
Croatia				
Finland				
Ireland				
Singapore				

geographers should be aware that these restructuring forces are not happening ubiquitously across finance, but are rooted in different geographical areas, conditioned by the existing finance landscape. In that sense they influence, and are influenced by, the traditional finance CAS’ that are located in cities around the world. Thus, while academics are still trying to discern the variations across FinTech in terms of the technology involved and the impact on existing finance (Milian et al, 2019), financial geographers are in an ideal situation to investigate the geographical dimensions of this change.

The role of the constituent actors is vital for understanding variations in the broader EE and its emergent properties, and there is a need for better integration between the system-focused EE literature, and other literatures focused on the micro-level aspects, such as the accelerator literature. This study has shown that there is another type of accelerator model in addition to the accepted model of accelerator programmes outlined in Section 2. There remain many similarities between SBC and that model in that they provide seed investment to startups and then coach them through an educational programme with the hope of securing large follow-on investment, but several key differences are present. Firstly, they work with large firms with the aim of partnering the startups after the programme is over, which contrasts with hoping they secure follow-on investment from any random investor. Secondly, and because of this, they no longer pick the best startups but instead pick those that best fit the needs of the LFF. This makes the programme much more strategic in terms of the actors involved and what the educational components are. Thirdly, because of the need to foster partnerships between startups and LFFs, SBC have the additional task of building and maintaining the relationship between them across the programme. It is not simply educating the startup, but the LFF also, and ensuring that they handle the relationship correctly. These additional SBC functions are compatible with other accelerator programmes, however, it works best when there are large firms that benefit from this kind of relationship, which is most prevalent in the FinTech subsector.

This study has also highlighted the influence that accelerators can have on EEs. The accelerator literature has suggested that this may be the case and encouraged research into this possibility (Clarysse et al, 2015), but little has been done. With EE emergence and evolution influenced by the interlinking of various actors around shared goals and behaviours that lead to emergent system-wide benefits, it is clear that this type of accelerator model can have a significant influence. While normally accelerators bridge the gap between themselves and various startups, with this additional role they also incorporate a variety of LFFs. Thus, it can be suggested that the impact that accelerators may have on EEs is proportional to the amount of different actors they have relationships with and that may share similar goals of encouraging the growth of startups. At the same time, it must be considered that accelerators can have negative effects. There is a competitive dynamic amongst accelerator programmes in what has become a saturated market, and so one accelerator’s success may come at the detriment of another’s.

6. Conclusion

As the global startup ecosystem matures its constituent actors and systems are co-evolving in interrelated ways. The focus of this paper, the SBC network, has been successful in bridging the gap between tech-oriented FinTech startups and market-dominating LFFs, helping to build a more integrated ecosystem. Such a network is necessary for FinTechs to bypass regulatory demands and market imperatives, for LFFs to innovate and remain competitive, and for accelerators to stand out in saturated markets. Consequently, we can see how the different industry conditions have led to new and unique practices, and how the co-evolution of different actors has formed a FinTech EE in response. Neither the type of accelerator network that SBC has produced nor a discernible FinTech ecosystem were apparent when EEs and accelerators began to emerge in places like London over a decade ago. This means

that our understanding of EEs and their constituent parts must have an awareness of such changing circumstances, and our definitions and typologies must reflect that. Furthermore, we must understand that the emergence of any new actors, networks, or systems, is not a solitary endeavour but that they are the product of a reflexive relationship between various overlapping EEs and their constituent parts, as well as actors considered external to these ecosystems (Martin and Sunley, 2015). Thus, understanding EEs as complex systems of constituent parts that produce emergent system-wide effects, enables us to break from only identifying the general EE identified in the literature, to discern variations that are of significant importance.

While the extant EE literature has done well to identify the general characteristics of them, moving forward greater focus needs to be on the variations in sectors, geography, and evolutionary trajectories of such ecosystems. Particularly, actors, their agency, and their potential for moments of transformative change must be considered when investigating EEs, even with a CAS approach. As this paper has demonstrated, there is scope for more types of EE to emerge, whether it is industry specific or otherwise. Importantly, when investigating such EEs, it is vital to see them in relation to other existing EEs as one the most interesting aspects of the FinTech EEs identified here is the degree to which they overlap with the broader startup EEs. The same applies to the accelerator literature, as accelerators are evolving and adopting new roles and functions, some with significant importance to the broader EE.

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