Building FinTech Ecosystems: Emerging Trends & Policy Implications

Insights from the 5th Annual Oxford Entrepreneurship Policy Roundtable (OXEPR)

Summary

How do you build a FinTech[1] ecosystem? Is it different from building a general Tech ecosystem? Who are the key players in a FinTech ecosystem? What kind of initiatives foster the development of an ecosystem? And what is the role of government in the development of a FinTech ecosystem? The 5th Annual Oxford Entrepreneurship Policy Roundtable (OXEPR) addressed these questions and came to the following key insights:

- While start-ups initially drive innovation by challenging incumbent financial institutions and existing models of financial intermediation, FinTech only reaches its true potential when it changes incumbent financial institutions.
- Collaboration between start-ups and incumbents is key, yet fraught with implementation difficulties.
- Governments face the unusual challenge of being both the promoter and regulator of FinTech innovations, generating a wide variety of approaches. Sandboxes offer a novel regulatory instrument to balance these competing tensions.
- Successful FinTech ecosystems benefit from initiatives that involve the cooperation of policymakers with private market actors.
- Strategies for developing a FinTech ecosystem need to be adapted to the local context, taking into account not only the availability of local tech talent but also the strength of the incumbent financial institutions.

The challenges of developing FinTech ecosystems: an overview

Fintech ecosystems are complex networks of interacting FinTech start-ups and scale-ups, financial institutions, regulators, governments, investors, and talent institutions who share an interest in advancing the financial services industry through technological innovation. Today circa 30 FinTech ecosystems of heterogeneous origins and dynamics exist worldwide[2]. Across these ecosystems, FinTech attracted $39bn worth of investment in 2018, with early-stage deals accounting for 54%, mid-stage for 21% and late-stage, bridge and pre-IPO deals for 22% respectively[3]. 2018 saw notable increases in the average deal sizes with both the mid- and late-stage median pre-money valuation roughly doubling in size, mid-stage from $18m to $30m and late-stage from $100m to £207m[4]. At the same time, both corporate participation and cross-border deals are on the rise, with

[1] FinTech: using technology to offer financial services in new and better ways. Cambridge English Dictionary 2019.
[2] Academy of Internet Finance et al. (2018), Start-up Genome (2018)
[3] CB Insights (2019)
[4] Pollari and Ruddenklau (2019)

corporate venture capital involved in 33% of the FinTech deals worldwide[5] and the capital invested in cross-border deals rising from $18.9m in 2017 to $53.5m in 2018[6].

Within the roundtable, different views were expressed relating to the most fruitful origins of FinTech ecosystems. Some participants observed that the formation of FinTech ecosystems can be triggered both through market pull and through government or technology push. Others proposed that FinTech ecosystems need an incumbent population due to the incumbents controlling access to the target customer base. All in all, the participants recognised that FinTech innovators can originate anywhere and do not necessarily need to come from the financial sector. Broadly speaking, FinTech ecosystems can be divided into four main categories: ecosystems in international financial centres, regional financial centres, emerging financial centres, and non-financial Tech centres[7]. Ecosystems in international financial centres, such as New York, London, Frankfurt, Paris, or Toronto, benefit from the notable scale of the centres and commonly enjoy superior access to talent and capital. Policymakers in these centres tend to prioritize consumer protection regulation[8]. Ecosystems in regional financial centres, such as Amsterdam or Stockholm, commonly benefit from strong government support for FinTech developments but can suffer from talent shortages and remain dependent on international connections for growth[9]. Ecosystems in emerging financial centres, such as Abu Dhabi, suffer from severe shortages of talent and internal connections. While these ecosystems commonly benefit from strong government support, their policymakers are usually largely trained to focus on regulation[10]. Finally, some FinTech ecosystems have emerged around cities that are not really financial centres, but main Tech centres, for example Silicon Valley (incl. San Francisco), Tel Aviv, Berlin, and Hangzhou. These centres benefit from considerable access to both technical talent and capital, though they may lack depth in understanding financial institutions. These ecosystems tend to focus on business-to-consumer (B2C) products and services, which are less dependent on access to incumbent financial institutions than business-to-business (B2B) opportunities[11].

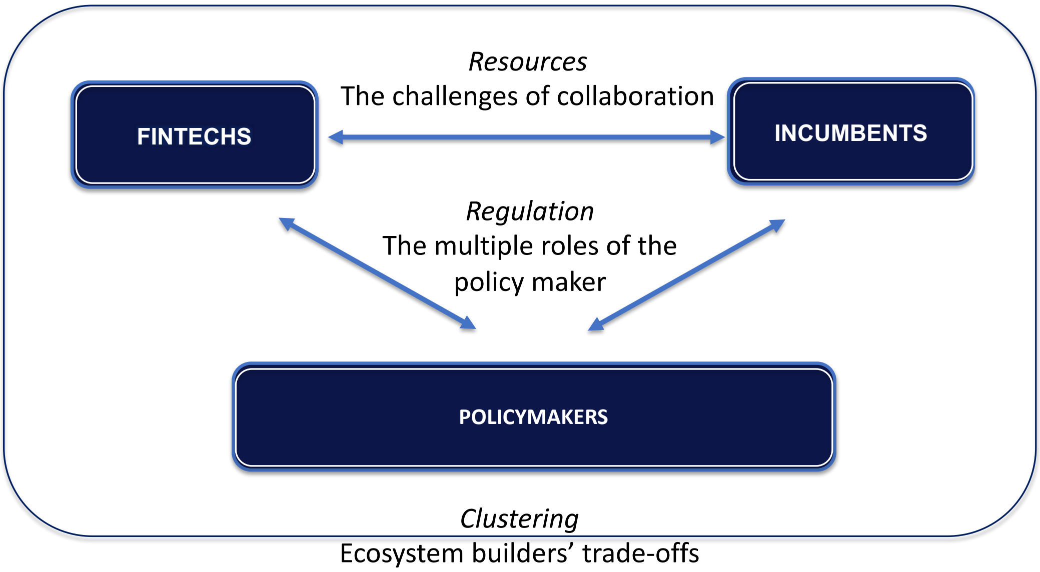
The development of FinTech ecosystems depends on a set of common factors that often rely on the region having a generally vibrant entrepreneurship ecosystem[12]. First, the availability of strong founding teams and talent directly contribute to ecosystems' success. Strong ecosystems benefit from policies that support the development of a talent pipeline, reduce brain drain, and enable acquisition of international talent. In FinTech ecosystems, some of the most sought-after technical talents include not only computer programmers and data scientists, but also financial engineers and financial service marketers[13]. Second, availability of different forms of capital is critical for the dynamism of ecosystems as ecosystems rely on each seed, growth and strategic capital. This includes a financing chain that supports ventures from the early seed stages, through the later growth stages, all the way to exit. Third, the development of a FinTech ecosystem depends on the strength of demand in the form of customer pull for new financial services, both locally and internationally.

Beyond the generic success factors of entrepreneurial ecosystems, FinTech ecosystems face additional, unique challenges relating to (i) resources, (ii) regulation, and (iii) geographic clustering[14]. In financial services, key operational resources, such as customer relationships, financial data, technical infrastructure, and regulator relationships are commonly controlled by incumbents. As

[5] CB Insights (2019)
[6] Pollari and Ruddenklau (2019), Vandenreydt and Wintermeyer (2017)
[7] EY (2018)
[8] Gach and Gotsch (2016), Gulamhuseinwala and Kotecha (2016), Hobbes, Scavone, and Shreedhar (2017).
[9] Invest Stockholm (2018)
[10] Diemers et al. (2015)
[11] Nechushtan (2019)
[12] Autio, Dahlander, and Frederiksen (2013), EY (2018), Start-up Genome (2018)
[13] EY (2018)
[14] Ibid.

such, the success of FinTech ecosystems relies on how incumbent financial institutions support start-ups and scale-ups in terms of providing access to these critical resources. Next, financial services are subject to considerable regulatory oversight. Laws, the regulatory environment, competition policies, and access to the regulator, have considerable influence on the success of FinTech ecosystems. Finally, financial services tend to be geographically clustered. Successful FinTech ecosystems maintain strong international linkages and attract talent from the broader region they are located within. Figure 1 provides a simple graphical representation of these three challenges that matter greatly in the development of FinTech ecosystems and the respective roles of the key ecosystem players. The remainder of this note takes a closer look at these three key challenges.

FIGURE 1. Challenges and the role of key players in FinTech ecosystems



Unique challenge #1: Collaboration between start-ups and incumbent financial institutions

In FinTech ecosystems, start-ups face the challenge of relying on resources, such as technical infrastructure or customer data, that are controlled by incumbents[15]. To get access requires some collaboration with incumbents[16]. Incumbents face a set of strategic trade-offs. While the benefits of collaborating with start-ups may be substantial, they are not immediately apparent, do not occur in the short-run, and may be resisted by those parts of the organization that are likely to be displaced. Furthermore, FinTech start-ups and incumbents frequently report that collaborations suffer from numerous operational issues. Examples include missing standards for due diligence and onboarding practices, as well as challenges with technical interfaces and legacy IT systems. Another subtle issue is that the benefits of cooperation typically accrue within tightly defined partnership agreements that explicitly contain the information and learnings, thus limiting the spill-over effects to the broader ecosystem. This is in contrast with learning effects in ecosystems such as Silicon Valley, which have not only strong collaboration among key stakeholder groups but also fast adoption of best practices across the entire ecosystem. Moreover, collaboration frequently suffers from differences in the

[15] Accenture (2018), Oxford Entrepreneurship Policy Roundtable (2019)
[16] Deloitte (2018)

objectives of incumbents and FinTech start-ups. For incumbents, regulatory compliance and security are key concerns. At FinTechs the awareness of these issues can be low. FinTechs can, instead, find the competition with incumbents' internal products problematic. One of the roundtable participants specifically highlighted these issues and outlined how a venture acceleration program had succeeded by only taking on ventures that had clearly identified their stakeholders, specifically their customers. Beyond a good founding team, the ventures joining this accelerator program were specifically expected to be able to spell out how their solutions impact their customers. The roundtable participants observed how new ventures often need to be educated in these aspects of their business proposal.

While collaboration ultimately relies on the alignment of the cooperating parties' strategic interests and operational practices, ecosystem builders can assume a supporting role, both among policymakers and private interest organizations. They can, for example, act as brokers of new connections and new collaborations within the ecosystem. For example, Frankfurt's TechQuartier successfully brokered connections between FinTechs and industry partners in need of improved financial solutions. Equally, ecosystem builders can support the development of standard practices and speed up the diffusion of best practices. Innovate Finance in the UK, for example, has worked with a range of financial services industry partners to come up with voluntary standards for onboarding practices. At the roundtable, some of the participants noted how ecosystem builders are matchmakers. For example, sandboxes that involve incumbents in addition to FinTechs can provide quicker access to the market for the FinTechs. Collaboration within a sandbox can also help incumbent teams by giving them a sense of ownership of the new innovations. Others highlighted how other industries utilise modular solutions that integrate technical elements from a number of separate providers into a single, superior product or service, and observed that modular solutions could be equally beneficial for FinTech. Adoption of modular product and service offers does call for strong coordination across the ecosystem, further highlighting the importance of ecosystem builders' role.

Unique challenge #2: The dual role of policymakers as promoters and regulators

Financial innovations can fundamentally influence basic societal and economic infrastructures. Thus, the role of policymakers in FinTech ecosystems becomes more multifaceted than in other Tech ecosystems. Specifically, policymakers have a role as regulators seeking to secure financial stability, consumer protection, and fair competitive practices. At the same time, policymakers may want to act as promoters of innovation, seeking to encourage new solutions and competitive market entry. Moreover, in FinTech, policymakers sometimes assume a role as market participants or consumers of new solutions, such as in subsegment of FinTech sometimes referred to as "RegTech" and "GovTech". The roundtable discussion touched on several aspects of policymakers' role in FinTech ecosystems. The participants, for example, highlighted how in the USA the many recent FinTech IPOs have not led to increased angel investor activity in the ecosystem. Another participant recollected how in Sweden, banks collaborated to develop a single bank ID that became the standard within the country but struggled to secure international adoption of the ID, due to the limited contacts and influence that the ecosystem members had with external parties. The roundtable participants observed how policymakers can make a notable difference to ecosystems' development by facilitating contacts and resource flows both among the ecosystem members and with external parties. In a demonstration of policymakers' influence, one of the participants explained how in Israel the local FinTech ecosystem arose from the government-facilitated search for international customers for the sophisticated local tech solution.

Entrepreneurs traditionally consider regulation as an impediment to innovation. However, thoughtful FinTech entrepreneurs have a more nuanced perspective on the role of regulation. First, what matters is the clarity of regulation, to reduce the uncertainty faced by the FinTech ventures. Second, regulatory approval can act as an important signal of legitimacy for fledgling start-ups. Third, all market participants, and particularly young ventures with limited resources benefit from the stability of the financial system.

Policymakers can engage in a wide range of facilitation, collaboration, communication, and education activities that are directed at supporting entry and growth of new ventures, the collaboration of ecosystem participants, piloting of new solutions and education of consumers. The tools utilized by policymakers in their promoter roles fall into several categories. First, tools of facilitation include technical enablers for innovation, such as standard application-programming-interfaces (APIs), and policy enablers, such as requirements for incumbents to share customer data with FinTechs. Prominent examples of open banking initiatives include the EU's revised Payment Service Directive (PSD2) and UK's Open Banking Initiative[17]. Second, tools for collaboration include, among others, the provision of innovation spaces, multi-party coordination and international collaboration. Innovation spaces, such as regulatory sandboxes and economic zones, enable experimentation and piloting of new solutions in a contained environment of reduced regulatory requirements. Several countries, including, for example, the UK, the Netherlands, and Switzerland operate regulatory sandboxes[18]. Sandboxes typically operate a cohort of start-ups who are accepted to join the sandbox to test their product or services. By 2018 the sandboxes implemented by the UK Financial Conduct Authority involved 89 start-ups[19]. These start-ups reported to benefit from the sandbox through the guidance they received relating to the regulation of their innovative propositions, and through their increased credibility with both investors and customers. Multiparty coordination can include policymaker facilitated industry forums, such as the Financial Conduct Authority's Project Innovate in the UK or central bank facilitated FinTech accelerators, such as the Bank of England's accelerator[20]. International collaboration can include both two-party arrangements, such as the collaboration agreements between Switzerland and Singapore (2016) or France and Canada (2018) or multi-party networks, such as the Global Financial Innovation Network that includes among others Canada, Hong Kong, UK, and the USA. Third, tools for communication and education include among others issuance of principles and frameworks instead of rules. Regulators in the USA have, for example, adopted practices of 'soft guidance' in the form of issuance of principles and frameworks to open up regulatory space for innovation and to reduce the regulatory uncertainty of innovators. Policymakers in the USA have also set up regulator roadshows to improve access to the regulator. Table 1 provides some examples of the different types of policy initiatives across countries.

A recurring theme among FinTech entrepreneurs stresses how important it is for them to be able to informally meet with regulators to clarify existing regulations and triangulate the likely impact of new regulations. The interactions of policymakers with the FinTech community helps to address several potential pitfalls of new regulations. First, policymakers' active engagement in the practitioner community can improve their understanding of the possibilities and limitations of new technologies, enabling new regulations to be designed to better reflect the technological opportunities. Second, a closer exchange between the policymakers and industry can clarify the objectives of the respective parties and help to avoid misunderstandings both in policymakers' interpretation of the intents of the industry and in industry's interpretation of new regulations. Finally, the implementation of new regulations can be complex and costly for incumbents and start-ups alike. While incumbents' implementation of regulatory changes is often complicated by the need to update legacy systems, for FinTech start-ups regulatory changes can signify a change of their

[17] CB Insights (2017), Gulamhuseinwala and Kotecha (2016)
[18] Vandenreydt and Wintermeyer (2017)
[19] Deloitte (2018)
[20] Bank of England (2017)

whole business model. Early visibility and close collaboration in the introduction of new regulations can reduce the costs and ease the practical difficulties of compliance following a regulatory change.

Overall, we note that given the multiplicity of policymakers' roles and the fast pace of technological advances, the FinTech challenge presents policymakers with a steep learning curve. This applies in particular to the transition from focusing mostly on consumer protection-based to adopting more collaborative approaches.

TABLE 1. Policy tools.

Alternative policy makers 'tools' with select examples		
Open banking		
UK	Open Banking Implementation Entity	2016
EU	Revised Payment Service Directive (PSD2)	2018
Hong Kong	Draft open-API framework	2018
Singapore	Non-mandatory open API	2018
Innovation spaces		
Several	National regulator sandboxes: To enable launch of products without regulatory licences. Among others in the UK, the Netherland, Russia, Switzerland, and Norway.	
	Economic zones	
Multi-party coordination		
UK	Financial Conduct Authority Project Innovate: Regulatory feedback and direct support including a sandbox.	2014
UK	Bank of England Accelerator: To encourage fintech learning at the Bank.	2016
UK	Payment systems regulator: Promote competition and effective infrastructure development.	2015
International collaboration		
Several	Regulatory co-operation agreements: For example, the UK with Australia (2016) and Singapore (2016), France with Canada (2018) and Switzerland with Singapore (2016).	
Several	Global Financial Innovation Network (GFIN): A forum for joint policy work and discussions; an environment in which to trial cross-border solutions. Signatories include policymakers from Abu Dhabi, Australia, Bahrain, Canada, Dubai, Hong Kong, Singapore, UK, and USA.	2018
Principles and frameworks instead of rules		
USA	Opening up space for innovation by 'soft' guidance instead of hard rules.	
Industry engagement		
Several	Regulator roadshows (for example, USA) and coffee catch-ups (for example, Sweden).	

Bank of England (2017), CB Insights (2017), Deloitte (2018), Gulamhuseinwala and Kotecha (2016), HM Treasury (2018), Pollari and Ruddenklau (2019), The Office of the Comptroller of the Currency (OCC) (2018), Vandenreydt and Wintermeyer (2017)

Unique challenge #3: The benefits and costs of geographic clustering

Financial services tend to cluster into ecosystems, both at a national level (Frankfurt is the financial capital of Germany) and regional level (Hong Kong is the financial centre for South-East

Asia). This clustering might also apply to the development of a FinTech sector, generating some challenges of geographic clustering. Geographic clustering introduces both benefits and costs relating to resource availability as highlighted by the roundtable discussions. Participants, for example, observed how FinTech ecosystems are often taken as positive developments by default. Policymakers, however, need to think more holistically and recognise both the economic drives and the societal costs of ecosystems. By acknowledging both the benefits and the costs, policymakers can ensure that ecosystems enable dynamic talent and capital recycling for the benefit of the broader economy.

In general, ecosystems thrive on talent and capital. Dynamic ecosystems facilitate efficient balance and circulation of these resources. Ecosystems dynamism depends, for example, on both start-ups and scale-ups having a fair share of the available resources. In thriving ecosystems, both talent and capital recycle from start-ups to scale-ups and ultimately back to start-ups, as successful entrepreneurs return to the market as investors and founders of new start-ups. Incumbents are often important contributors to the provision of talent and capital in ecosystems. They can, however, also pose a risk to the recycling of talent and capital through acquisition of a number of the new ventures. Strong ecosystems maintain their resources by securing multiplicity of resource sources. While the multiplicity of the sources of capital is commonly recognised among ecosystem builders, this is not always the case with talent. FinTech ecosystems can be severely affected by the brain drain of their talent pool, as well as start-ups relocating to other jurisdictions. There might also be a concern about the lack of diversity.

Thriving FinTech clusters benefit from ensuring the balance of resources not only within the ecosystem but also within the national economy. Ecosystems deliver many benefits to their economies in way of employment, innovation and tax contributions. They can, however, also impose high costs of concentration on their geographies. Successful ecosystems do, for example, commonly drive the cost of living up and can deprive other geographies and industries within the national economy of talent and capital. Given that many international and regional financial centres are by default large conurbations of dynamic local economies in which financial services already enjoy prominence, the development of FinTech ecosystems in these centres can further contribute to inequality of national geographies and industries. Collaboration and coordination not only within the ecosystem but beyond it, with different regions and industries, can ensure a better national balance of talent and capital.

Conclusion

Based on the discussions of the Oxford Entrepreneurship Policy Roundtable, as well as related industry interviews and archival research, we identified three challenges that matter to the development of FinTech clusters: collaboration of FinTech starts-up with incumbents, the dual role of policymakers as regulators and promoters, and the strength of geographic clustering. We propose that the solutions that support dynamism in FinTech ecosystems differ based on the local conditions. Policymakers across the board can, however, benefit from

- Ensuring an open dialogue between policymakers and industry participants
- Facilitating collaboration within the ecosystem
- Supporting the development of external connections to other geographic clusters

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