

# The Coming of Age of Digital Payments as a Field

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This paper has three objectives. It lays out the key differences between a banking and a payments mindset, within the historical context in which these fields have developed. It initiates a discussion on whether it is useful to articulate the digital payments space as an emerging profession distinct from banking, and if so, what might be the core elements of its identity and how might a sense of a profession emerge. Finally, it looks at the main vision, information and human capacity gaps that are at present limiting the pace of development of the digital payments space.

## Part 1: Digital payments coming from under the shadow of banking

### *The essence of banking vs. payments*

The essence of banking is taking calculated risks. These calculated risks may be idiosyncratic to individual bank customers as when banks give loans to entrepreneurs, betting that they will succeed. Calculated risks may involve broader economic or market conditions as when banks give mortgages, betting that homeowners will not face a protracted unemployment spell and that property values will not drop precipitously. Finally, calculated risks may relate to banks' own balance sheet, as when they assume a timing and liquidity mismatch between their liabilities (a large chunk of which are immediately refundable deposits) and their assets (many of which are fixed term loans).<sup>3</sup> In this case, banks are betting that they will be able to meet depositor's probable requests for return of funds on a timely basis.<sup>4</sup>

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<sup>3</sup> Anthony Saunders and Marcia Millon Cornet, *Financial Institutions Management: A Risk Management Approach* (McGraw Hill, 8<sup>th</sup> ed, 2014); 'Assessing Risk in Digital Payments: Special Report, Financial Services for the Poor, February 2015' (December 2014) Bill & Melinda Gates Foundation

<<https://docs.gatesfoundation.org/documents/Assessing%20risk%20in%20digital%20payments%20FSP.pdf>>: this report finds that digital financial services do not introduce major new risks to existing financial and payments systems. However, new participants in the payments value chain do need to understand and manage risks.

<sup>4</sup> Basel III encourages institutions to engage in frequent assessment of maturity mismatches. See Basel Committee on Banking Supervision, 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems' (revised, June 2011) Bank for International Settlements <<http://www.bis.org/publ/bcbs189.pdf>>.

Traditionally the essence of banks' profitability has come from taking such risks. That is not to say that bankers are inherently risk-loving; they often display a strong conservative bias.<sup>5</sup> This bias is a natural form of self-protection against excessive risk-taking.<sup>6</sup>

Calculating risks appropriately requires getting as complete an information base as possible on the underlying sources of risk. This includes information on clients' present circumstances, future prospects, past track records, and who they work for and with. Bankers therefore seek to establish ongoing relationships with their customers as a path to capture further information. Customers, in turn, welcome the sense of relationship as they seek to establish a reputation with their bankers.<sup>7</sup>

On the other hand, the essence of payments is offering transactional services with the minimum amount of risk. Profitability comes from customer service and convenience, not taking risks on behalf of customers.<sup>8</sup> So payment systems are designed to offer customers maximum functionality, speed and convenience, at adequate levels of security and certainty for all parties.<sup>9</sup>

Modern payment systems use two basic mechanisms to minimize risk.<sup>10</sup> One is to conduct transactions on a funded basis. Customers can only do stuff with money they have, rather than on credit. At the wholesale level, real time gross settlement (RTGS) systems require participating banks to have an adequate balance in their settlement account. At the retail level, payment schemes like PayPal and M-PESA work on a pre-paid basis, and do not generally offer automatic overdrafts.<sup>11</sup> The second way to minimize risk is to operate as close as possible to real time. Transactions that are accounted for and settled immediately are less likely to become unfunded or give rise to disputes.

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<sup>5</sup> See Joël Bessis, *Risk Management in Banking* (Wiley, 4<sup>th</sup> ed, 2015) for an overview of how banks traditionally approach risk.

<sup>6</sup> As the Global Financial Crisis attests, this self-protection is not always attained.

<sup>7</sup> See Bill & Melinda Gates Foundation, above n 3, for a description of what digital financial inclusion looks like.

<sup>8</sup> A combination of low incomes and poor penetration of enabling devices such as mobile phones can limit attempts to establish profitable business models in some markets. See Ross Buckley, Jonathan Greenacre and Louise Malady, 'The Regulation of Mobile Money in Malawi' (2014) CIFR Paper No. RP001 <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2491995](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2491995)> for a discussion of strategic challenges.

<sup>9</sup> In the conclusion to the Malawi study, recommendations for establishing an appropriate legal and regulatory environment paid attention to seven key themes, including coordination between regulators and industry, an understanding by the regulator of consumer demand and sufficient regulatory freedom to nurture early development of a mobile money sector.

<sup>10</sup> Policy makers should increasingly focus on regulatory systems that promote financial inclusion in addition to traditional emphasis on safety and efficiency. See Ross Buckley and Louise Malady, 'Building Consumer Demand for Digital Financial Services – The New Regulatory Frontier' (2014) CIFR Paper No. 035/2014 <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2478482](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2478482)>.

<sup>11</sup> Alsi Demirgüç-Kunt and Leora Klapper, 'Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries' in *Brookings Papers on Economic Activity* (Brookings Institution Press 2013) 279.

For providers, being able to handle transactions on a funded basis and in real-time is enormously liberating because it enables transactions with less well-known parties. It makes it possible to opt for mass-marketing channels, without having to worry as much about screening customers. It also makes it possible to engage indirect service channels, for instance offering cash in/cash out through a network of thousands of retail outlets.

This is not to say digital payments don't carry risks, but the aspiration is always to limit them. The only trade-off is with cost, not with other business opportunities.<sup>12</sup>

Technology lies at the heart of transaction speed and certainty, so it is not surprising that specialist payments companies have tended to emerge more from technology than banking backgrounds. That was as true for Western Union, which was founded in 1851 as the New-York and Mississippi Valley Printing Telegraph Company, as for PayPal and M-PESA a century and a half later. While payments companies view technology as a core enabler, banks tend to look at it as a business support function, a customer value add, something that is supposed to help but not impede their core business. For banks, the core enabler is access to information and their capacity to manage risk, which may or may not come with better transactional platforms.<sup>13</sup>

Because payments are inherently less dependent on customer credit evaluations, the business tends to be much more transactional and less relationship-based than banking. This is not to say that customer relationships are unimportant: as in any other business, retaining existing customers is generally cheaper than acquiring new ones, so there is a strong business compulsion to forge good customer relationships. But the strength of customer relationships doesn't in itself create the possibility of better service, in the way that a strong banking relationship can enable a customer to get more credit.<sup>14</sup>

In payments the quality or depth of individual customer relationships matters less. Their number and breadth matters more. This is because payments can only be understood in the

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<sup>12</sup> See Daniel Radcliffe and Rodger Voorhies, 'A Digital Pathway to Financial Inclusion' (December 2012) Bill & Melinda Gates Foundation <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2186926](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2186926)>. The authors note that connecting poor people to DFS will not remove all cost barriers to extending financial, utility and other services to the poor but will strip substantial cost out of the system, clearing the way for more robust commercial efforts to serve the poor.

<sup>13</sup> A McKinsey paper acknowledges banks' need to become digitally proficient or "risk entering a decline similar to laggards in other industries". "Revenues and profits will migrate at scale toward banks that successfully use technologies to automate processes, create new products, improve regulatory compliance, transform the experiences of their customers and disrupt key components of the value chain. Institutions that resist digital innovation will be punished by customers, financial markets and – sometimes – regulators." See Henk Broeders and Somesh Khanna, 'Strategic Choices for Banks in the Digital Age' (January 2015) McKinsey&Company <<http://www.inseit.nl/ziw/wp-content/uploads/2015/01/20150130-McKinsey-Strategic-choices-for-banks-in-the-digital-age.pdf>>.

<sup>14</sup> See Aditi Patanjali, 'Road Map for Financial Inclusion in India' (2014) 25(26) *Journal of Banking and Financial Law and Practice*, for a discussion of the positive relationship of credit and development.

context of a network, and the size and breadth of the user base are defining characteristics of the network itself. Payment systems are subject to strong network effects (the more users on it the more valuable is the service to any given user) and operate in a multitude of two-sided markets (there need to be buyers and merchants, bill payers and billing companies, wage earners and employers).<sup>15</sup>

That's not necessarily the case with banking: there may be scale effects because serving more customers is cheaper than serving few, but one customer doesn't directly benefit from there being a large number of other bank customers.<sup>16</sup> Banking is fundamentally about the functioning of institutions (how they manage risks and build enduring customer relationships), whereas payments is more about the functioning of ecosystems (who is in it and how big it is).<sup>17</sup>

These differences in mindset between banking and payments carry over as differences in their terminology. In banking (and general usage) you do a credit transaction when you pay for something with borrowed funds (i.e. credit as a trust that an external party is placing in you). In payments, confusingly, a credit transaction is one which is coming off the balance in your account (i.e. credit as an entry on the asset side of your own balance sheet). Also, bankers refer generically to *credit risk* as the sum of all risks that bear on someone else's ability and willingness to repay. Payments people refer to this as *counterparty risk*.<sup>18</sup>

### ***Bankers doing payments***

The risk-minimization mechanisms mentioned earlier for payments do not apply very well in the case of the check, the prototypical payment instrument of yesteryear: checks may be unfunded at the moment in which they are written and exchanged, and they do not clear in anywhere near real time. But this proves the argument: checks were payment instruments invented and promoted by bankers. Checks are a feature of bank accounts rather than a self-standing payment service. The long clearing time on checks generates greater settlement risk, but may enhance profitability in the form of the free float. As a result, bankers have been slow to reduce check-clearing times. For bankers, again, risk is something to be managed and profited from, not necessarily minimized.

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<sup>15</sup> Buckley and Malady note that a low uptake and inactive users are common in the roll out of mobile money in some emerging countries and that understanding consumer demand may be a complex challenge. See Buckley and Malady, above n 10.

<sup>16</sup> There is a perverse way in which the total number of bank customers might affect the value of the banking relationship for individual bank customers: if the bank becomes too-big-to-fail the bank's size leads to an implicit guarantee of a government bail-out.

<sup>17</sup> For example, it has been suggested that for most banks or telcos, digital payments represents only a small part of their business and does not meaningfully increase solvency or liquidity risk. Consequently, in a capital or liquidity shortage, their focus will be on larger parts of the business. See *Assessing Risk in Digital Payments*, above n 3.

<sup>18</sup> It has been argued that lack of common terminology and frameworks for identifying risk associated with successful digital financial services is a complicating factor, see *Assessing Risk in Digital Payments*, above n 3.

Another prime retail payment instrument, the credit card, incorporates clear roles for banking and payment organizations along the above lines. Issuing banks underwrite their customers' credit balances; and payment processors take those balances and settle them against the accounts of merchants and other payees. From a payments perspective, credit card transactions are funded because a bank is ready to supply the funds to the payer.

These two cases, that of the check and the credit card, show the ambivalent attitudes banks have traditionally shown to payment service innovation.<sup>19</sup> Banks subsumed the checkbook within their broader account offering and managed the payment risks that arose (bounced checks) using traditional credit management techniques. When a visionary among them invented the credit card (originally as BankAmericard, by Bank of America), the sponsoring bank failed to grasp the potential and turned it over to an industry association.

This is not to say that bankers do not see payments as their business, as they do, but they have the banking ethos of managed risks, and the idea that acceptance of risks entitles them to profit.<sup>20</sup> This logic started shifting in the run-up to the recent global financial crisis, when banks started a booming business in credit origination without keeping the corresponding risk on their books; and especially in the wake of the crisis, when they became pathologically cautious about risks. As a result, banks have been more eager to embrace transactions, and the fees they generate, as a source of profitability.

Nowadays it is not unusual to find banks with more than a third of their total income derived from fees. Some fees are meant to be punitive (e.g. for insufficient funds or bounced checks), some are associated with the sale of new financial services to their customers (e.g. mortgage or insurance brokerage fees), but many have to do with broadening the transactional services—and in particular the payment services—they offer to their customers. Banks are not ready to concede the payment business to payment specialists.<sup>21</sup>

### ***Breaking the payment innovation floodgates***

Given bankers' traditional reticence to develop stand-alone payment services with the levels of convenience and certainty that customers demand, a host of players have entered the space in the last decade. They come from diverse backgrounds—from large mobile

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<sup>19</sup> See Ignacio Mas, 'Shifting Branchless Banking Regulation from Enabling to Fostering Competition' (2015) 30(2) *Banking & Finance Law Review* 179.

<sup>20</sup> Mas has noted the ongoing domination of branchless banking by mobile operators whereas "few banks in the world seem to have made sizable bets to develop agent networks, and most of those who have built agent networks have tended to see them as an add-on for specific services" such as bill payment. See *ibid.*

<sup>21</sup> Buckley and Malady consider the possibility of partnerships between banks and non-banks and benefits that may emerge from such a combination. In addition to financial inclusion, these include strengthening of existing products and services, improved access for banks to technological expertise and a reduction in regulatory concerns. See Buckley and Malady, above n 10.

operators and retailers to tiny specialist internet start-ups— but they all share the technology focus that enables transactions to happen fast, with as few clicks as possible, anytime and anywhere. The digital payments sector has grown beyond all recognition and continues to evolve fast.<sup>22</sup>

The innovation floodgates are being torn asunder by two main forces. From a technology standpoint, the internet and smartphones make it possible to design rich and scalable solutions at a fraction of the cost it would have taken a decade earlier. From a regulatory standpoint, there is a growing trend for regulators to allow new specialist payment service providers or e-money issuers the opportunity to get into the business without having to acquire a banking license or partner with a sponsor bank.<sup>23</sup>

Banking is centuries old, but the field of digital payments is only fifty years old. With hindsight, we can identify at least four waves of innovation around digital payments. The first wave of payment innovators sought to ride on top of, rather than displacing, banking services. Such was the case with the VISA and MasterCard credit associations that emerged in the 1950s, and with internet payment service providers such as PayPal that emerged in the late 1990s. These systems rely on banks to conduct all customer due diligence and provide cash in and cash out services. If you don't have a bank account, you simply cannot have a credit card or a PayPal account.<sup>24</sup>

A second wave of payment innovators sought to stand alongside banks, and even became a direct competitor to them. Their innovation was to go beyond the purely digital and establish a brick-and-mortar network of stores where customers could complete their registration and conduct cash in/cash out transactions. These were the mobile money systems that emerged in a number of developing countries following the launch of Smart Money in the Philippines and is epitomized by M-PESA in Kenya. Now you can be part of a digital payment network even if you don't have a bank account.<sup>25</sup>

A third wave of payment innovators has been making headlines in the last five years, mainly in developed countries and the US in particular. They are seeking to unbundle the payments landscape and entrench themselves in particular stages of the payments value chain. They depend on other players in the ecosystem to do the rest, but through their bottleneck control of their stage they seek to exert a major control over their partners and have

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<sup>22</sup> Among the 10 action areas of the Global Partnership for Financial Inclusion is a commitment to expand opportunities for innovative technologies to expand financial inclusion further. See Global Partnership for Financial Inclusion (2015) <<http://www.gpfi.org>>.

<sup>23</sup> See Buckley and Malady, above n 10.

<sup>24</sup> World Bank data used by Radcliffe and Vorhies, above n 12, shows the extent of the so-called cash-digital divide, with only 24 per cent of adults in sub-Saharan Africa and 33 per cent of adults in South Asia having an account at a formal financial institution, compared to 89 per cent of adults in high-income economies.

<sup>25</sup> See Ignacio Mas and Daniel Radcliffe, 'Mobile Payments Go Viral: M-PESA in Kenya' (2011) 32 *Capco Institute Journal of Financial Transformation* 169; Ignacio Mas and Olga Morawczynski, 'Designing Mobile Money Services: Lessons from M-PESA' (2009) 4(2) *Innovations* 77.

substantial influence on the development of the market. Examples are Square, for low cost merchant payments; Google Wallet and Apple Pay for payment applications; and Stripe, as an integrated suite of application programming interfaces (APIs) or *hooks* into a host of payment options for businesses.<sup>26</sup>

A fourth wave of payment innovators is now emerging, with a much more disruptive agenda: they seek to lay an entirely new foundation for financial transactions that is based on decentralized trust, peer-to-peer networks running on standard internet infrastructure, and open source protocols managed by the community of users. This is the promise of the new cryptocurrency platforms, such as Bitcoin and Ripple. These platforms may enable the creation of a host of new players that will not be content just to rival banks, but in fact will seek to displace banks altogether.<sup>27</sup>

### ***Is there an emerging digital payments profession?***

The defining characteristics of a profession are:<sup>28</sup>

1. an identified public good that justifies the profession and the privileges it seeks to gain and preserve;
2. a body of skills and knowledge developed in order to serve that public good; and
3. a code of ethics and a professional body that seek to ensure those skills and knowledge are applied to the public good.

The hallmark of a professional is that they owe their first duty to the public good (in the case of doctors the health of their patients, or for lawyers their duty to the courts and the administration of justice), their second duty to their clients and only their third duty to their employer or themselves.<sup>29</sup>

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<sup>26</sup> Such payment applications testify to the existing and growing presence of data powerhouses and set the stage for transition to the fourth wave of innovation.

<sup>27</sup> See Rhys Bollen, 'The Legal Status of Online Currencies: Are Bitcoins the Future?' (2013) 24(4) *Journal of Banking and Financial Law and Practice* 250. Ignacio Mas and David Porteous, 'Pathways to Smarter Digital Financial Inclusion' (22 November 2014) <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1858377](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1858377)>, show how the rising power of data is opening up the financial services space to a new breed of innovative players able to collect and distil data into actionable credit information.

<sup>28</sup> A broad perspective on the nature of professions can be found in Everett Hughes, 'Professions' (1963) 92(4) *Daedalus* 655. **On the importance of professionalism in banking and financial services generally, see Sir William Blair, 'Reconceptualizing the Role of Standards in Supporting Financial Regulation'** in Ross P Buckley, Emiliios Avgouleas and Douglas W Arner (eds), *Reconceptualising Global Finance and Its Regulation* (Cambridge University Press, forthcoming).

<sup>29</sup> C S Bellis, 'Professions in Society' (2000) 6(2) *British Actuarial Journal* 317: the paper argues that defining professions is not a simple task and notes that "many varied occupational groups aspire to the label and the definition therefore tends to be tailored to fit the characteristics of the group doing the defining". See also David Sciulli, 'Professions before Professionalism' (2007) 48(1) *European Journal of Sociology* 121, who argues that "professionals provide a place and purpose for themselves in civil society by elevating the discernment of lay patrons and supporters of their field of expertise".

Banks are highly professional organisations in the sense of being highly complex and typically having high standards of service delivery, but individual bankers usually don't identify as being members of a profession. This makes sense because banking usually doesn't satisfy the three criteria of a profession set out above. Banking doesn't have an identified public good that justifies the industry and the high remuneration levels bankers are typically paid. There is no specific body of skills and knowledge common to most bankers. People enter the business with a broad range of educational backgrounds and skill sets. And, finally, while individual banks typically have codes of conduct, the industry is not united and governed by a mandatory and binding ethical code.

In England in the 1980s, there were about 150,000 members of the Chartered Institute of Bankers, but this had fallen to no more than 22,000 by 2010<sup>30</sup>. So it seems the movement there has been away from bankers as professionals, although today there are initiatives afoot in the UK to reverse this trend. In 2011, leading banks in the UK launched a Chartered Banker Professional Standard Board, with the intention of pursuing professional standards. However, it notes that "the proportion of practitioners meeting professional standards is relatively low" and that there are currently only some 17,000 individuals holder a professional banking qualification from the institute.<sup>31</sup>

That bankers are not professionals (unless they happen to also be accountants or lawyers or whatever) is, upon reflection, odd. Why should those entrusted with managing others money not be a profession, subscribe to a code of conduct and be subject to a disciplinary body with the ability to strip them of their licence to practice? But we digress. Any analysis of whether digital payments can be a new profession has to start with the recognition that banking is not a profession and neither are IT experts. So given that payments is an outgrowth of these two industries, establishing a profession is probably not the place to start.<sup>32</sup>

What seem to be required in the payments space today are some broadly recognised educational pathways into payments. Professionalism may well be the desirable longer-term goal for DFS experts, but the starting point should be proper education and training in digital payments.

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<sup>30</sup> *Banking Standards: Written evidence from Chartered Banker Institute* (28 August 2012) UK Parliament <<http://www.publications.parliament.uk/pa/jt201314/jtselect/jtpcbcs/27/27iv36.htm>>: The evidence documents a fall in the number of banking professionals in the UK as a result of banking not being seen as a profession; little encouragement for individuals to become members of a professional body and "a general change in banking culture from stewardship to sales".

<sup>31</sup> *Ibid.*

<sup>32</sup> A study into perceptions of paralegals as a profession shows how groups of non-professionals construct their own understanding of what it means to be professional and to demonstrate professionalism. See Kathryn J Lively, 'Occupational Claims to Professionalism: The Case of Paralegals' (2001) 24(3) *Symbolic Interaction* 343.



There are degree courses in universities that equip people to become bankers, but such degrees typically don't address payments. There is a need for courses on payments generally and DFS specifically in our universities, probably situated in business schools and directed to both business and IT students.

As formal education develops to equip people for careers in payments, a logical next step would be a voluntary code of conduct to which payments experts subscribe. There are a number of good reasons for such a code, ranging from its potential formative influence over a rapidly developing specialism, through to the capacity of self-regulation to head off and render unnecessary more intrusive formal government regulation.<sup>33</sup>

The core elements of payments as an area of expertise is that the focus of payments is on delivery of services to as wide a network of users and in as close to real time as is possible. Payments providers seek to minimise risk and render highly affordable convenient services principally electronically. Banks in contrast assume risks in order to be able to profit from managing them effectively. Payments differs from banking principally in the perspective of their practitioners – each is a mindset, and the two mindsets differ markedly.

## **Part 2: Is there a glass ceiling for digital payments?**

In this section we review some key gaps that may be limiting the development of digital payments as a field, with a particular focus on inclusive solutions for the poor in developing countries. We distinguish between: *(i)* vision gaps, which limit the field's aspirations; *(ii)* information gaps, which limit the field's potential to learn and explore new ideas; and *(iii)* capacity gaps, which limits the ability to successfully implement and grow new deployments in the field. These gaps tend to limit the impact of innovations at the individual level, the organizational level, and the sector level.

We frame this discussion around some hypotheses we developed on the nature of these gaps. We conducted an extensive set of interviews with key industry participants and observers in three emerging countries, to discuss these hypotheses in terms of their validity as well as what might be done to address them. We chose three countries —Pakistan, Peru and Rwanda— where digital payments are receiving substantial policy attention and there are serious initiatives underway to implement digital payment platforms. These countries also represent a geographic distribution across the three main continents in the developing world.<sup>34</sup>

### ***Vision gaps in digital payments***

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<sup>33</sup> See Sir William Blair's consideration of the role of codes of conduct in Blair, above n 35.

<sup>34</sup> See Demirgüç-Kunt and Klapper, above n 11. The paper finds only half of all adults in the world have bank accounts, with cost, documentation and documentation requirements among key barriers to use of bank accounts.

*From push to pull approaches*

Many approaches today are still predicated on *pushing* consumers to adopt digital payment platforms, instead of pulling consumers through meeting real demand. This tends to lead to wasted resources and disappointed consumers. Experience shows us it is not enough to lower the cost of service by employing scalable technologies and to enhance customer convenience by rolling out ubiquitous agent networks. There need to be complementary *pull* approaches that attract excluded or under-served customers to seek out digital financial services and become known by financial service providers. Financial services are rarely if ever desired for their own sake, so these pull propositions will likely be oriented towards solving daily problems which people experience as consumers, as members of communities and social networks, or as they conduct their business.<sup>35</sup>

*From digitizing payments to digitizing money*

While low-income people in some leading developing countries have demonstrated a strong interest in using digital payment platforms to send money remotely, buy airtime and pay utility bills, in reality most digital accounts remain substantially empty. The practice the world over is for low-income recipients to withdraw any digital money they receive immediately and in full.<sup>36</sup> Most digital payments in fact start and end in cash, so for these customers digital payment service providers make cash more efficient, rather than displacing cash. We are much further ahead in *digitizing payments* than we are in *digitizing money*. This matters because while digital money accounts remain empty people are not likely to begin paying digitally in their daily lives. The volumes of merchant payments will remain lackluster as long as digital money only addresses the means-of-payment function and ignores the storage of value function of money.<sup>37</sup>

*From walled gardens to integrated systems*

Most digital finance systems are still conceived as walled gardens, so total market-level networks effects are untapped and many providers remain sub-scale. Most established digital finance players are comfortable competing on the basis of their network scale and reach (more customers, more agents), and are reluctant to interconnect or share infrastructure with smaller players, for fear of losing their scale advantage. The result is that network effects are fragmented, with no player benefiting from the total scale in the market; and customers and agents are forced to seek multiple accounts with multiple providers if

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<sup>35</sup> This point is further developed in Mas and Porteous, above n 27.

<sup>36</sup> Demirgüç-Kunt and Klapper, above n 11, analyse the range of motives and degree of activity by individuals in relation to their bank accounts.

<sup>37</sup> This point is further developed in Ignacio Mas, 'You Can't Go Cash-Lite on Empty Accounts: E-money vs. Cash' on *CGAP Blog* (30 July 2012) <<http://www.cgap.org/blog/you-can%E2%80%99t-go-cash-lite-empty-accounts-e-money-vs-cash>>.

they want to work across the market, which is inconvenient and costly. This particularly limits business payment solutions (bill and bulk payments), as businesses generally seek universal solutions that meet the needs of all their customers.<sup>38</sup>

*Payments  
separate from  
banking*

Payment systems are the lifeblood of an economy, serving functions analogous to our bodies' arteries and veins, and banks have traditionally been heavily involved in delivering payment services. However, we regulate banks heavily because for banks risk and profit are typically directly correlated, so banks have a strong incentive to keep taking on ever higher levels of risk in the quest for ever larger profits. As we have seen, this correlation doesn't hold for payments.

Payments providers make higher profits by expanding their network, by charging higher fees, or by operating more efficiently; not by assuming greater risks. So we regulate payments systems to ensure that they operate effectively and don't overcharge. The regulation of payments providers can be much lighter touch than that of deposit-taking banks, as the incentives facing the provider are to deliver an efficient, reliable service and the regulator simply needs to limit fees if competition in the relevant market is inadequate to do so.

So while banks are typically heavily regulated, for good reason, in their deposit-taking and lending functions, these reasons should not extend automatically to the regulation of payments systems. The involvement of banks in both lending and payments often serves to muddy the regulatory waters, as regulators can see a bank engaged in payments and reflexively apply most of the full panoply of prudential regulation to these activities, or they can see a telco providing the same service and instinctively tend to regulate it further than is necessary.

### ***Information gaps in digital payments***

*There are few  
sources of  
business model &*

Comparable data across deployments on customer usage, costs of build and operation, or financial performance is mostly lacking. As a result, most organizations have trouble justifying business cases to justify new

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<sup>38</sup> Action area 4 of the G20's 2014 Financial Inclusion Action Plan specifically addresses interoperability, requiring mainstream financial inclusion in the work of standard setting bodies and other relevant global bodies and increase understanding of the interdependence of financial inclusion, stability, integrity and consumer protection. See Global Partnership for Financial Inclusion, '2014 Financial Inclusion Action Plan' (2 September 2014) G20 <[https://g20.org/wp-content/uploads/2014/12/2014\\_g20\\_financial\\_inclusion\\_action\\_plan.pdf](https://g20.org/wp-content/uploads/2014/12/2014_g20_financial_inclusion_action_plan.pdf)> 2.

*financial data* investments in services or platforms.

*It is hard to track effectively what is going on globally in the sector* Credible, easily accessible information which makes sense of rapidly unfolding events is likewise in short supply and this leads to a failure to learn from experience. Much gets written on payments on the internet, but most reports are not vetted for accuracy and most sites do not curate the information. There is a clear bias in online blogs and social networks to towards reporting success cases, leading to many instances of unfounded hype.<sup>39</sup>

### ***Capacity gaps in digital payments***

*Most providers face an endemic shortage of skills* In most places, there is a shortage of the skills and experience necessary to design, deliver and offer digital financial services, leading to delay and risk in project implementations.<sup>40</sup>

*There are no formal training options for aspiring professionals* Unlike banking, digital payments are not taught in universities. Unlike professional fields like project management and financial analysis, there are no certified intensive training programs in digital payments. Therefore, it is hard for new graduates to signal to employers that they have acquired the basic knowledge they need to function in a digital payments environment. Moreover, there are no structured ongoing training programs for more established digital payments professionals, that allow them to remain current on the latest industry trends and ideas, or to develop more specific specialisms.

*Most digital payments organizations are not truly client-centric* Digital payments are often still seen largely as an offshoot of IT or technology departments; as only they have the industry knowledge to operate in what is seen as a technical field. Senior marketing and product development positions are often filled with people with technology backgrounds. As a result, most digital financial service providers are not built as customer-centric organizations. Their perceptions of customers' desires, attitudes and needs is ill-informed, or at most informed by some quantitative market research which conveys little nuance of the realities that people face and live in. They often

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<sup>39</sup> As stated previously, there have been calls for regulators to assume a role in understanding demand for DFS to help address the lack of such credible information.

<sup>40</sup> "Many financial services providers lack the technical knowledge or skills needed to successfully implement alternative delivery channels. This includes not only the skills to manage the detailed implementation of ADC projects, but also the skills needed to navigate a competitive and crowded marketplace and build a relevant ADC strategy." See 'Handbook: Alternative Delivery Channels and Technology', International Finance Corporation <<http://www.ifc.org/wps/wcm/connect/5d99c500477262e89844fd299ede9589/ADC+Handbook+-+2014.pdf?MOD=AJPERES>> 10.

ignore what people do today and what would make them comfortable to switch to digital, and fail to see the opportunity from promoting digital financial services primarily as a mechanism for empowering people.

## **Conclusion**

We have sought to analyze the ways in which digital payments is emerging as its own field of expertise and how and why it differs from banking. The principal differences between the two fields are that banks prosper greatly from managing risk and little from network effects, whereas payments providers typically seek to avoid risk and prosper greatly from network effects. This leads to fundamentally different outlooks between the practitioners in each field.

As payments becomes more deeply researched and its practitioners more specifically educated in it, the regulation of payments should begin to diverge increasingly from that of banking. Traditional banking regulation seeks to limit the risks banks assume, because when banks fail the money they lose is of ordinary people, who vote, and the broader economic consequences of bank failure can be severe, so for both these reasons, politicians feel the need to bail out failing banks. Payments are traditionally regulated as part of banking regulation, and often by the same regulatory institutions, but the imperatives which drive banking regulation, should not drive payments regulation. A failure of a payments provider should not necessitate a bailout with public funds, and while it may prove highly inconvenient to many people, it is difficult to imagine the failure of a payments provider causing financial market contagion as did the collapse of Lehmann Brothers, for instance.

Payments are their own industry, and they deserve their own regulatory regime, finely attuned to the relatively minor risks that payments generate. Changes in banking in the past 20 years have been substantial, but it is in payments where the greatest changes and opportunities are likely to arise in the next 20 years.