BUILDING THE INTERNET OF PAYMENTS FOR BUSINESS

By Richard Urban (President, IFX Forum, Inc.) and Roger Bass (CEO, Traxiant)

In the US and around the globe, inefficient, paper-based processes persist in Business Payments and related Trade Finance services. This is largely due to the complexity of these many-to-many interactions, involving not only banks, but software and service providers too. The Internet, however, provides a model for solving such problems. Its rapid emergence as a mass phenomenon was due, first of all, to a change where a few leading providers came to see interoperability using standards-based Internet technology as the solution to a business need. So too now do some leading providers see the potential value of an emerging Internet of Payments (IoP). This paper proposes a way for today's thought leaders to build competitive advantage by both shaping and leveraging the IoP as it emerges - perhaps even as explosively as did the Internet. This phased approach will enable them to act, both separately and collaboratively, leveraging both standards efforts and tactical pilots. Small, focused, initial steps can achieve the all-important goal of building early momentum around a scalable, open model and ecosystem. Over time, this growing IoP ecosystem will be able to address ever more varied and complex cases. One potential step in gaining buy-in could be the joint announcement of an IoP Framework and Pilot initiative.

In the United States today over 50% of US business payments are still made by check – to the tune of over 8 billion checks/year. Meanwhile, check use by consumers has dropped dramatically over the past several years.

What accounts for this difference? And what can be done to bring the benefits of electronic payments to the business community – most particularly, small business.

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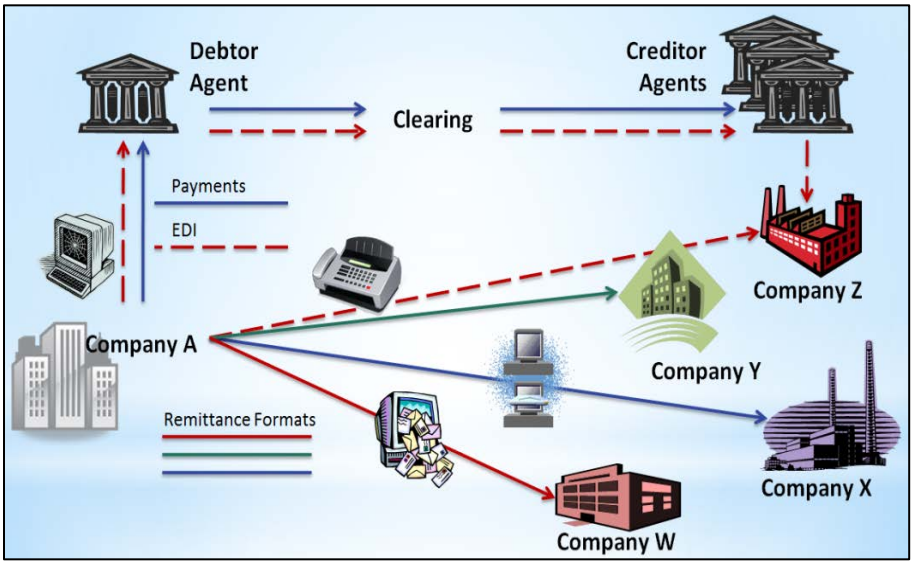
Unlike consumer payments, business payments are tightly coupled with those businesses' processes and software systems and, to a certain extent, those of their banks and payments providers. Electronic payments' lack of integration with core business processes, on the receivables side especially, undermines the business case for change. There is considerable variability in how payees electronically receive payments and, importantly, remittance detail. That makes automation hard.

FIGURE 1



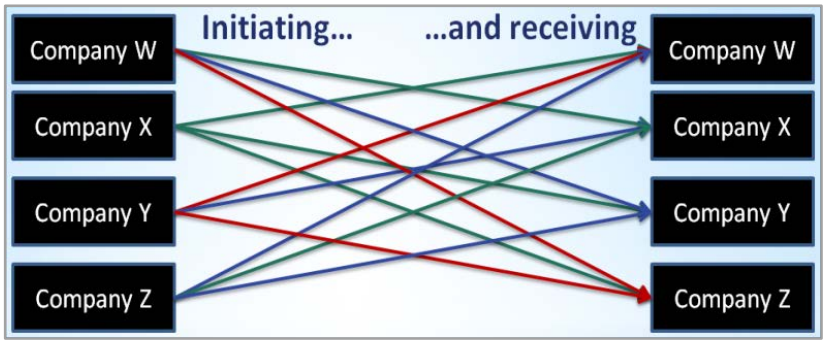
Compare the diagram in Figure 1 to the check writing process. Whereas that process is completely uniform and no more complicated than printing a report on paper, moving to an electronic process means matching one's own capabilities and preferences to those of many partners.

Across the many millions of payers and payees, with their myriad financial and software solutions, this many-to-many problem presents even the smallest businesses with dozens or hundreds of combinations.

At an industry, or global level, the problem can seem impossibly complex. But we've been here before. Electronic communications and data sharing were once similarly beset with many-to-many challenges. With the arrival of the Internet, and its layered standards for data networking, directory services and message routing, the challenges were met.

FIGURE 2

The technology and skills needed to automate this cat's cradle are prohibitive for small businesses, even those with relatively few partners. The expense for any size business is likely to be unacceptable.



In payments, analogous customer needs point to a standards-based, global network platform as the only realistic long-term solution, connecting any payer to any payee via any set of systems. It's therefore reasonable to talk about such a universal network as the "Internet of Payments".

Historical Parallels

So what conditions were both necessary and sufficient for the Internet to emerge as a mass phenomenon – with interoperable email as its initial "killer app"? And how close are we today to having similar conditions apply for the emergence of the Internet of Payments? In our analysis, it was these five conditions:

1. Valuable: leading players saw business value and competitive advantage in connecting;
2. Pluggable: technology to do so was available and easily plugged into existing systems;
3. Easy: end-user behavior change was minimal – simply adding "@..." when sending;
4. Addressable: users could easily address messages, leveraging underlying routing tech;
5. Interoperable: enabled by layered standards for the physical and software infrastructure.

To what extent do these conditions apply now, in segments of the Business Payments market? Or to be more precise: can we identify segments where they do apply, or very nearly? If we can, igniting an Internet-like network effect in payments may be within reach.

Valuable. In business payments, higher value payables solutions are driving the business alignment that makes interoperability valuable. Those solutions' value depends mostly on supplier acceptance and adoption. Integration with suppliers' receivables solutions is key. Those providers, especially in the small business space, want to increase adoption of their payment accepting solutions – notably, for card-based or other solutions with a financing component. Goals are thus increasingly aligned between providers on the payables and receivables sides.

Pluggable. New interoperability solutions can be plugged into financial software solutions ever more easily, thanks to changes providers have made to receivables and payables offerings in recent years. Internet portals came first. More recently, they started exposing Cloud APIs into those portal processes, thereby enabling third party solution "pluggability". While most banks do not yet offer APIs allowing third party access to their data, in some cases they leverage third

party platforms that do. Such cases, including supplier network, card and global payment scenarios, may support near-term pluggability with zero change for banks or platform providers.

Easy. Both buyers and suppliers have increasingly adopted new Internet portal solutions for payables and receivables, enabling customers to pay, and suppliers to view payment status or submit e-invoices. For such businesses, when an additional buyer or supplier uses that electronic channel instead of paper, it's no change at all. It's simply a switch of their payment mix from an inefficient to an efficient channel. Provided that the switch is also easy or automatic for the other party – no small consideration – the behavior change can be small or even zero.

Addressable. For payment-related partner interactions today, most solutions rely on email for notifications, and then Internet portals for secure interactions – possibly with additional identity validation processes. Until well-populated directory services exist, leveraging those email and portal interactions will remain critical in switching partners to electronic payment channels. Great care will be needed, however, in associating Internet and payment identities, to protect against fraud. Over time, increasing bank API availability may help enhance security.

Interoperable. McKinsey and others have noted that the ISO 20022 set of standards holds out the promise of greater payments interoperability. And so it does. But it is not widely adopted in the US today and its potential is only part of the overall solution. That said, in the early stages of building a new network, it is interoperability between the different systems end-to-end that matters, not standards per se. Standardization is a means to that end of interoperability – a cost reducer and enabler of mass scaling. ISO 20022 standards today, however, have typically been for narrow use cases: for specific content types or links in the end-to-end chain. They still fall short of what a framework for standards-based, end-to-end interoperability requires.

LOOKING FORWARD

Like the Internet itself, a truly universal Internet of Payments (IoP) must eventually support interoperability for all the myriad applications and use cases that arise in the real world. These include payments via different methods; cross-border as well domestic payments; payments with different financing modalities; payments over different settlement networks; and payments based on different currencies or even digital assets.

The complexity of all these potential permutations is dizzying. And yet, as the evolution of the Internet has demonstrated, simplicity of core standards is key to their broad adoption. We can best square this circle by thinking about how a "killer app" can start a network effect. Standard-based "layers" in that network can each be relatively simple. But combined, over time, they can support arbitrarily complex scenarios. Different layers will evolve and reach wide adoption at different speeds. How, then, to think about sequencing and priorities – finding the "killer app"?

Simpler cases or "apps" tend to come first, though they may not be the highest value. But any network app adopted at large-scale tends to become a platform layer and channel for others. For example, Paypal reached broad adoption on top of eBay's platform, itself later becoming a platform for others. Hotmail invented viral adoption, leveraging Internet email. The Mosaic and Netscape browsers were new killer apps for the Web, adding a new layer of value to the Internet.

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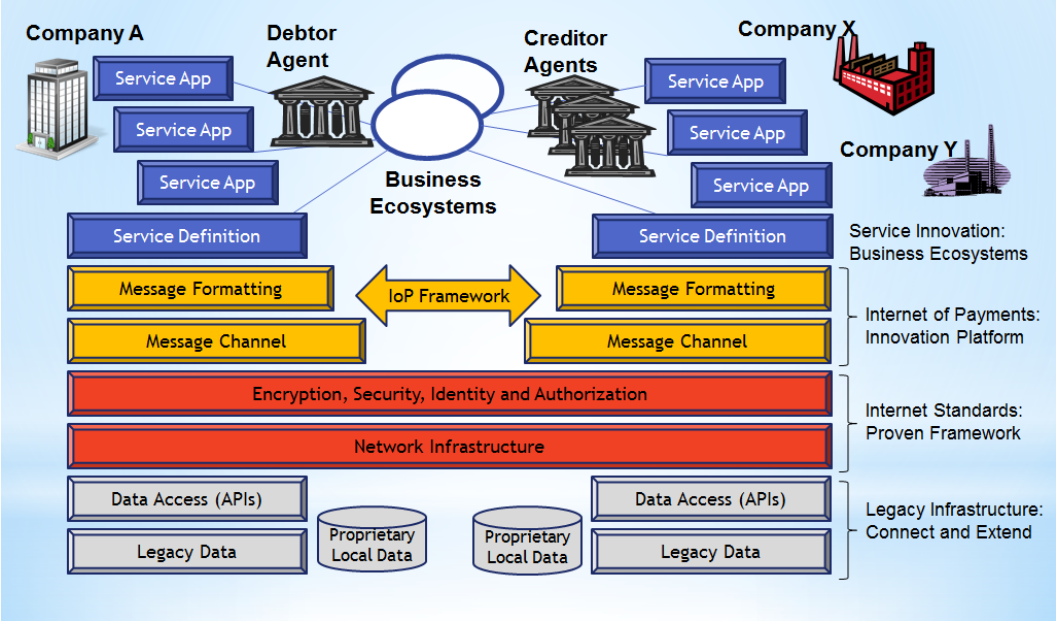
The IoP will no doubt give rise to entirely new "killer apps" that, like the Web, are characterized by entirely new solutions and behaviors. These are hard to predict in detail. Before that however, for payments, as we saw with email for the Internet, we argue that the likeliest "killer app" for driving mass IoP adoption is interoperability of basic payments across existing networks and processes. To be sure, trade financing and global payments are important to making the IoP "valuable". In general, however, their complexity makes them more promising as "apps" that will run on top of a basic payments layer. Still, it may be possible to identify simple, early payments scenarios that also combine a financing element – by leveraging card networks, for example.

Such global network platforms can be proprietary, or based on open standards, like the Internet and the Web. The latter, however, tend to do best at creating a single, global platform, rather than leaving multiple, competing networks. A truly universal Internet of Payments based on a proprietary platform is thus extremely unlikely. An open, standards-based framework, like the Internet itself, is the only plausible long-term outcome.

FIGURE 3 – INTERNET OF PAYMENTS LAYERS



For leading industry actors, this has significant near-term strategic implications. It implies that commercial actors will achieve their best competitive outcomes by engaging early to shape and leverage a standards-based network platform, rather than by investing in proprietary efforts that risk obsolescence. A key point, however, is that such standardization should not mean a loss of competitive advantage. On the contrary: standardized technology layers can become platforms – enabling faster growth and lower cost in building proprietary business ecosystems, and even network effects. Banks built card businesses faster by leveraging card network platforms. Some built competitive advantage by doing so, albeit somewhat limited by the association model, connecting everyone at once. In the IoP context, B2B payments' viral potential creates a unique opportunity for early movers to build enduring competitive advantage.

In a fully-scaled IoP, for most of the layers that would be needed, relevant standards already exist. Existing network infrastructure may also be leveraged, such as DNS and national payment networks. Some standards are already robust and globally scalable, including some from the ISO 20022 set of standards. Others require more work to address gaps, create simplified profiles, or define bindings between them within a broader framework. At this early stage, however, focus is critical, and an answer to the question: which use case(s) to solve for first? The question arises, in different ways, for standardization efforts on the one hand, and tactical solution efforts on the other. Ideally, both should move forward roughly in tandem. We conclude this discussion below with a proposed initial approach and set of deliverables. Some further work-streams listed might proceed later, or in parallel.

Mapping payment messages onto *existing* processes between payers and payees is an equivalent [to email] early standards enabler – and key remaining standards gap

To answer the use case prioritization question, we need to go back to our key criteria: valuable, pluggable, easy, addressable and interoperable. To build early momentum, these criteria must be satisfied even for a very early stage pilot solution. (The "interoperability" focus for early pilots must be on the end-to-end process. Interoperability via still-fluid standards can come later, after pilots prove a value proposition). Making email interoperable, addressable and easy came from mapping Internet standards directly onto existing email processes. Here too in payments, we suggest: mapping payment messages onto **existing** processes between payers and payees is an equivalent early standards enabler – and key remaining standards gap. Use cases exist in check, ACH and card domains; perhaps global payments too.

One key gap we see is in mapping existing payment processes using ISO 20022: unlike existing check or virtual card processes, an ISO 20022 message cannot be sent by the payer **directly** to the payee to convey both payment and remittance details. Another is that existing card payment messages aren't designed for virtual card payments.

The last criterion, pluggability, depends on cloud-based APIs existing today into payee solutions and banking/payments platforms. Proprietary network implementations may be expedient for early pilots. However, for such efforts to scale to many connected solutions, they need to align with a standards-based framework – the sooner the better. By doing so, they would "seed" a standards-based IoP ecosystem, enabling permission-less growth as new providers connect.

CONCLUSIONS

For banks, networks and software providers today, early participation in creating such a standards-based IoP Framework can serve multiple business purposes. It can:

1. Build and demonstrate early alignment with key ecosystem partners;
2. Improve the risk/reward of tactical efforts, with interoperability and a path to scale;
3. Accelerate support from additional solution providers, and thus adoption;
4. Increase value/yield with a given supplier base, and thus to buyers and their providers;
5. Facilitate proprietary business relationships (e.g. cross-selling) with ecosystem partners;
6. Help develop proprietary ecosystems, network effects and competitive advantage.

Early adopters will have the best opportunities to build competitive advantage by creating their own proprietary network effects on top of the open platform. For each new supplier, the need to "get connected" is potentially a unique, one-time opportunity to affect the set of solutions they

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adopt to do so. For Payables solutions can thus become a viral channel, driving adoption of providers' preferred solutions among the suppliers they touch. This has the potential to create a "land grab" effect for early movers, enabling them able to shape the IoP landscape. Most importantly of all perhaps: with their early learning, those providers will be well positioned to recognize and capitalize on the next wave of opportunities, as an expanding IoP "vortex" draws in adjacent payments and financial services businesses.

PROPOSAL

To address the simplest use cases first and start an IoP network effect, we propose initially:

- a focused project effort within IFX, as part of its Open Banking API effort
- a payer-to-payee standard message in support of both e-check and card payables cases (say, as a variant of ISO 20022 Standalone Remittance messages)
- alignment with pilots at interested banks, corporates, networks and solution providers
- appropriate publicity to drive decisions, promote IoP ecosystem benefits, and build momentum and awareness

Market traction from such an initial effort could also drive stakeholder interest in doing more. Eventually, that could mean aligning with other architectural layers or components (e.g. Business Payments Directory), and standards or pilot initiatives elsewhere. A broadened effort could lead to additional collaborative work-streams or initiatives to:

- Identify adjacent businesses, use cases and architectural layers to prioritize, such as
  - Trade Services: e.g. a simplified Bank Payment Obligation (BPO) model for both Approved Payable and Pre-Shipment Financing scenarios
  - Settlement / Trust: e.g. blockchain, digital asset/ currency, real-time settlement
  - Directory / Discovery / Identity: standards and infrastructure e.g. US Business Payments Directory, DNS/ blockchain models, W3C / IETF Payments
  - Messaging: channel standards (ebMS, AS4, AMQP) and setup scenarios (CPPA)
  - E-invoicing: alignment with existing standards and national/regional infrastructure
- Identify other standards and standard development organizations (SDOs) with
  - ongoing efforts aligned with this project
  - existing standards that may be leverageable
- Collaborate with stakeholders, associations and other SDOs to:
  - prioritize and address standards gaps
  - plan how to operationalize infrastructure implementing or supporting the IoP Framework (e.g. Business Payments Directory).

THE FINAL WORD

Neither Rome nor the Internet was built in a day. Each grew organically once the necessary foundations were built. Our analysis concludes that the necessary conditions for an Internet of Payments are in place and – with the foundations built right – that it could emerge and grow faster than most suppose. Our recommendation and proposal is for leaders to take these next steps to catalyze and profit from its emergence.

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