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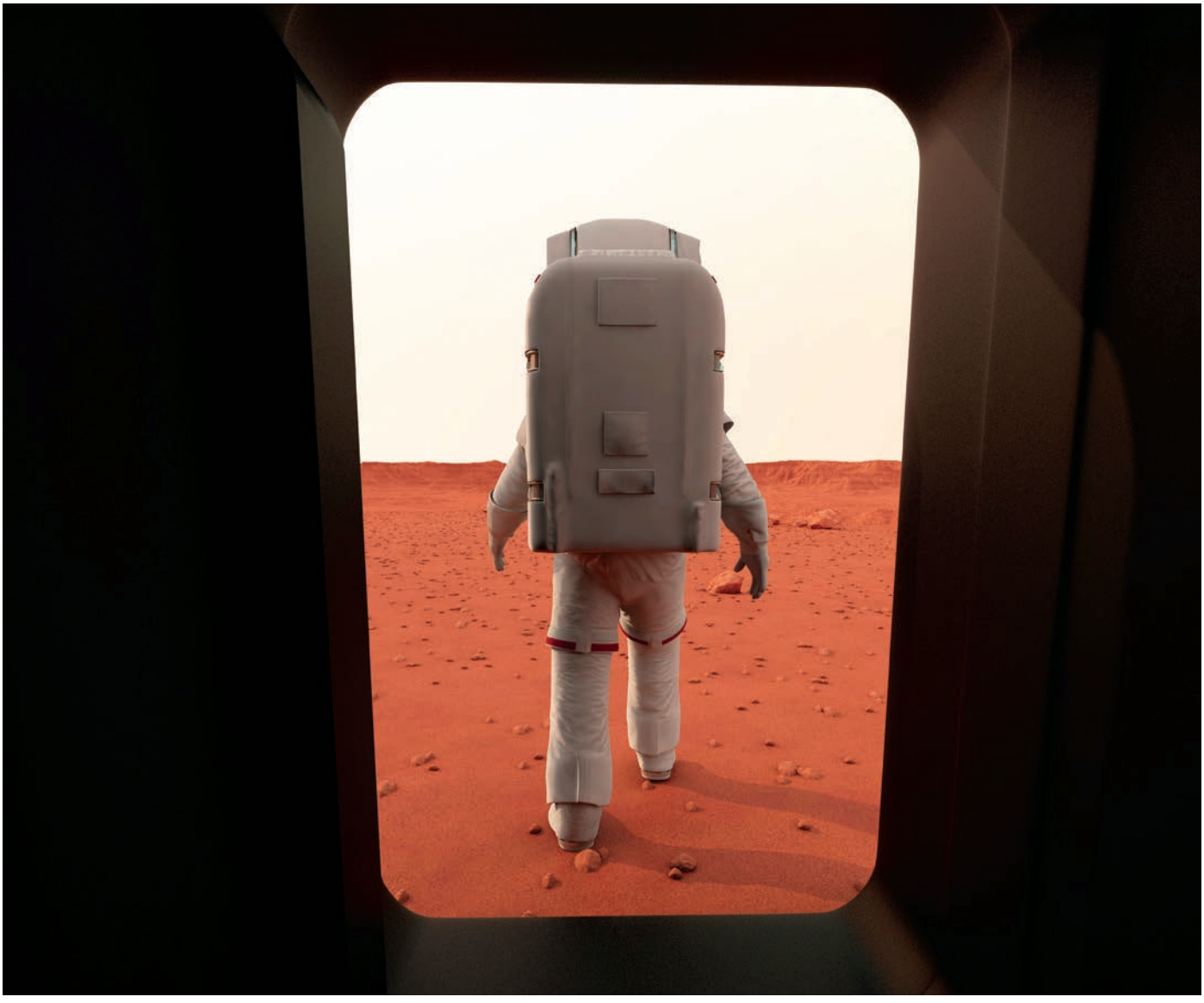
Blockchain—Next Steps on a Journey

Distributed ledger technologies—universally known as blockchain—idled on the fintech sideline for several years, steadily gaining traction and impetus among the industry's largest institutions and tech startups. But, as institutional adoption grows, another question has arisen: how will today's market infrastructure and data processing providers react to ledgers—the very innovation that, some evangelists say, could ultimately subsume them? Tim Bourgaize Murray explores the latest developments.



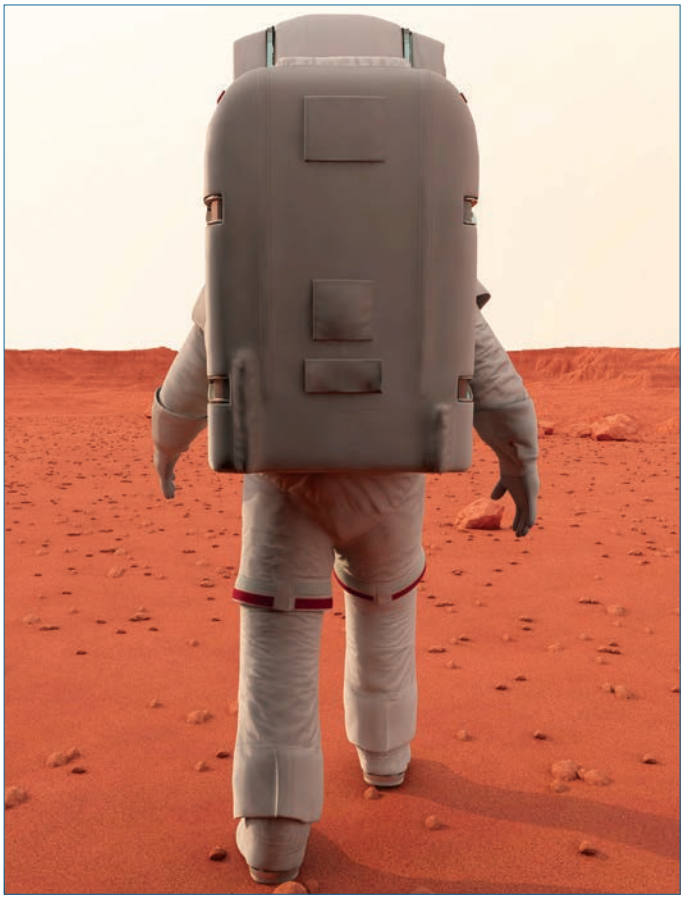
Last fall, several public, small-cap technology companies began seeing their shares rapidly gain value—seemingly out of nowhere. One case saw a nearly 400 percent spike in just a few hours, according to Bloomberg. How did they do it? Simply by rebranding—specifically, by adding 'blockchain' to their names. Indeed, more extensive studies have shown the mere mention of these ledgers can bump market value and attract substantial attention—even when the blockchain angle is tertiary, or the product is barely off the ground and far from ready to go to market. A similar story has persisted in financial technology, or 'fintech' as it is becoming known. Since it first gained attention in 2014, no one can avoid the chatter around ledgers and their potential to remake post-trade activities in their image. Occasionally, the rhetoric has escalated to near-messianic levels. Most of the results, however, have been slower to materialize.

To seasoned observers, that paradox is neither problematic nor surprising. There are several reasons for this. First, financial services came to distributed ledgers late. For many, it took a year or two to define, disentangle and comprehend the concept from its crypto-currency past, make the business case and build up the requisite talent. Second, deploying blockchain is a strategic play swapping IT costs and current operational pain for long-term benefits; therefore, not every firm has prioritized ledger adoption in an era of capital constraints and margin compression. Promising though the technology may be, some are content to let it play out or, at most, lightly engage in an occasional consortial pilot project. Meanwhile, a smaller cadre of incumbent investment banks and market infrastructures sensed an opportunity and were aggressive first-movers on distributed ledgers—whether developing their own, buying up intellectual property, or both. Therefore, for different reasons—equal parts reasonable caution, protecting their flank from startup disruptors and stirring up the market for their own proprietary chains—they, too, have been content to research, test and incrementally implement distributed ledger technologies (DLTs) at a deliberate pace.

Tumultuous fits and starts were probably inevitable but, four years on, it's a reasonable point to take stock of progress. Things are gelling, and early teething issues are giving way to growing collaboration and an acceptance that ledgers are not merely the stuff of dreams or conference fodder; rather, an operational paradigm is slowly and steadily shifting underfoot. Most surprisingly, the greatest indication of the reasons for this has come from fresh enthusiasm in some unexpected quarters: the market machinery and companies that, it was once thought, stand to lose the most, and yet may prove vital to DLT adoption.

Ledger "Launchpads"

Though once something of a mystery, the principles and benefits of blockchain are now at least conceivable for capital markets application. Append-only databases such as DLTs are immutable, decentralized and more transparent than the processes in place today. They are structurally and functionally "trustless." Logging trade and transaction data on these ledgers can remove the need for settlement, custody and—some argue, in the extreme, even data validation and reconciliation. Of course, financial services firms spend billions on these



functions every year; they are the province of some of the industry's largest firms.

What is often missed about DLTs, however, is their more conceptual potential. Among operations and data managers especially, there is a sense that blockchain can serve as a transformative vehicle solving for stubborn, expensive and age-old problems. For many in this group, it is more about establishing that end state and less about the technology's specific intricacies or capitalizing on DLTs' hype cycle—more brass tacks and less holy grail. As Dr Darryl Twiggs, SmartStream senior vice president for strategic initiatives, suggests, ledgers offer the ability to finally "streamline segregated data processes, which currently jump from system and system and among externalized services, into one single channel."

Twiggs points to smart contracts as a particular area of emphasis—sophisticated ledger products that take advantage of blockchain to trigger ancillary activities such as corporate actions, collateral moves and margin payments, relying on time factors, receipts and conditions on the chain to drive automation. The continued growth and maturity of these contracts represents a "launchpad" for the new paradigm, Twiggs argues. "We process hundreds of millions of those data points a year," he says, "and this would alleviate requirements to validate that data, a process most clients see as wasting time and money."

From Micro to Macro

Of course, that is far easier said than done—and the shape of early blockchain implementation reflects the limits of going alone—or at least in small groups.

The first ledger projects have typically tackled slow-moving, lightly trading instruments and activities such as trade finance, syndicated loans, securitized debt, weather derivatives and private equity deals. On one hand, this experimental and isolated approach makes sense for the risk-averse: the stability and behavior of the ledger can be closely monitored; secondary trading can be handled delicately; and porting assets off the ledger is a reasonably contained task. On the other hand, it has done little to quell blockchain skeptics' concerns that DLTs lack robustness and sufficient efficiency to handle faster, publicly traded markets.

It also encourages the handful of different ledger options out there—R3 Corda, Digital Asset, Quorum, Ripple and other Ethereum-based offerings—to remain in their own, separate lanes. Meanwhile, as larger, specific and more complex business cases are examined, expectations have raised from "can DLTs work?" to "you say we can push these things; you say they can be interoperable—prove it."

Something has to give. Indeed today, answering the call requires patience, standardization, more meeting of the minds and—inevitably—finally making choices about winners and losers. In short, it's bringing institutionalization to an ecosystem that has clung to an open, startup mentality.

"Groups of banks have partnered with fintech companies that bring both novel technologies and more dynamic ways of working," Lee Braine, a blockchain expert in the Investment Bank CTO office at Barclays, explains. "Collaboration has been a hallmark, with peers exploring potential common utility technologies. The goals [today] include simplifying existing processes, rationalising infrastructure and ultimately reducing cost. With trade associations such as the International Swaps and Derivatives Association looking to provide blockchain standards for derivatives and market infrastructures such as the Depository Trust & Clearing Corporation and CLS looking to deploy industry blockchain solutions, we may soon witness blockchain's coming of age in financial markets."

The same can be said of DLT-fueled stack reinvention inside the firm's own walls. "We're examining all the different microprocesses that our asset management clients touch today," another global bank's blockchain lead says, citing fund services and treasury specifically. "We talk about blockchain on a protocol level to advance it, but really it's about streamlining workflow and working towards shared infrastructure—separate back-offices aren't value-added or creating edge. And, in the development of those mutualized services and processes, we also see cases while promulgating our own blockchain and analyzing feasibility and appropriateness, where 'no' is a fine answer. Even then, we still view it as a win: blockchain conversation is a good excuse to get energized, and renew focus on business problems we can fix."

Sage Advice

As market participants make more strides and consider ledgers in a live-production environment, attuning these projects—developing the most effective spots, methods and operational structure—requires assistance. First and foremost, it takes pragmatism. In order to gain traction, someone will have to step in and provide the necessary technical linkages to cross ledger types and tie the old to the new, temporarily or otherwise. And this is where the industry groups that Braine mentions—and legacy infrastructural powerhouses—have a critical part to play, far beyond the sage advice gained by managing the markets' piping for several decades.

Twiggs points to one Swiss bank's recent blockchain gambit, which ran aground when ledger users determined they couldn't safely take money off the chain without clearing. "You still need these clearers, custodians and central settlement depositories to participate because there is no way institutions will give up their back-office ledgers into the DLT cloud. What they are doing is essentially making a copy of that record today," he says. For that reason, he also says the idea of reconciliation no longer being required is a "fallacy." "In the short term, banks will still be reconciling the blockchain to that copy," Twiggs continues. "But reconciliation does evolve, in that the process of core data validation comes further upfront, before it is broadcast on the DLT network, rather than after the fact as in traditional settlement."

Because of the append-only nature of DLTs, positional data validation must be undertaken correctly in the first instance, and proper assurance processes must be introduced around the download of ledger data to the book of record. That gets trickier, Twiggs adds, because the datasets coming from the chain or contract will be much wider than in traditional settlement. "In a traditional cash model, the data contains economic attributes only, whereas in the block you have more identifying information about counterparties and know-your-client information built in. It creates the possibility—perhaps the necessity—of applying big data principles and artificial intelligence for further efficiencies."

What firms must aim for today is not a zeroing-out of the back office, but an effective estate of systems that can effectively adapt to and integrate with developments in DLT. For instance, SmartStream's Transaction Lifecycle Management architecture and single-message bus was recently tested in a proof of concept, taking cash payment positional data from a Ripple block and successfully uploading it within the cash and liquidity management solution as a replacement for a Swift message.

Old-Fashioned Hard Work

Even if wider adoption of ledgers is still several years away, the time to prepare and evaluate those capabilities is now. Many firms and tech providers have launched innovation labs to do just that, and greater collaboration should aid in the collective understanding of what is fair game for ledgers, how to make it work operationally, and what makes less (or no) sense. Above all, many will surely be happy to see the DLT phenomenon travel on from initial hysteria into a more mature and more promising second phase.

What follows now isn't new: hard work.

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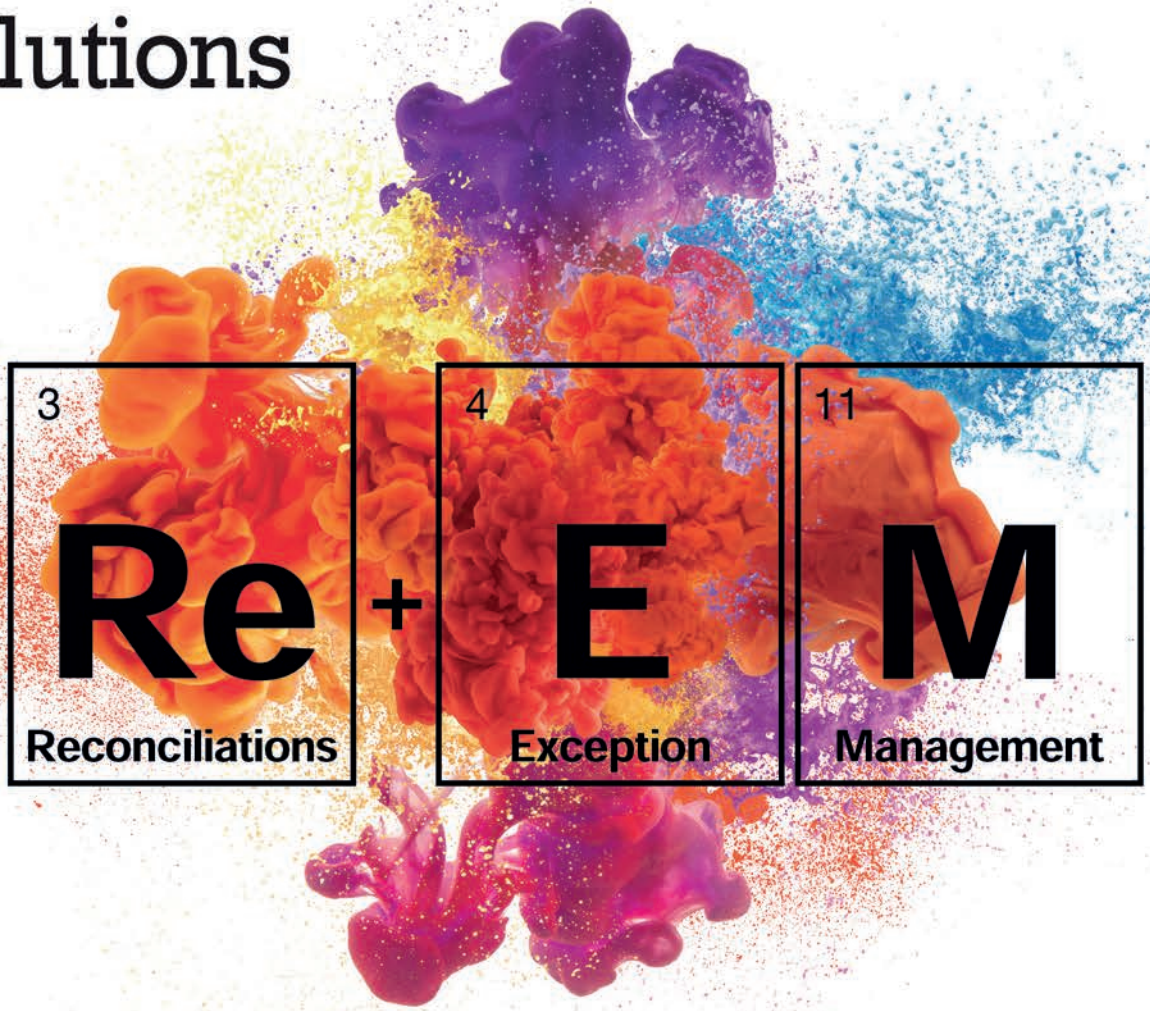
SmartStream-STP

Combining the elements for highly responsive solutions



At SmartStream we believe that starting with a solid foundation of elements is vital when creating new operating models. As a result, it's never been easier for firms to access highly responsive, tailored solutions which can be deployed at speed and with immediate impact.

Our innovative technology delivers an unparalleled range of reconciliation and exception management options to monitor and manage all transaction types; lowering cost, reducing risk and creating more agile operations.

So, whether you are looking to replace legacy systems, build an internal processing utility, utilise the cloud or outsource your entire operation, partnering with SmartStream is the perfect chemistry.