

10 Core Pillars of DLT or Blockchain Process Design

In the middle of 2015, research was undertaken on a phenomenon known as blockchain. Bitcoin was well established and growing but the banks were more interested in the ledger that supported that network. There was the nascent Ethereum network and many announcements of new initiatives, companies, and consortia such as Digital Asset Holdings, R3 and Hyperledger.

Despite the hype about the potential, our research showed the current designs still had ten challenges, which needed to be resolved before there would be a successful, commercially viable implementation in the Financial Services. Without the resolution of the challenges, the solutions risked not having the necessary performance characteristics, flexible functionality, or logistical capability to support the industry's requirements. The solutions would be doomed to supporting niche, low volume, and high latency processes, which would then not offer anywhere close to the benefits and full potential of a distributed ledger technology(DLT) solution.

The challenges became the necessary core design pillars of a workable, viable process design. Unfortunately, many of the implementations did not identify the challenges and are now trying to fix the unresolvable performance issues of their sub-optimal designs. Any current DLT/Blockchain solution should objectively review its capabilities vs the core process design pillars.

The TapestryX™ platform by L4S Corp. is Next Gen Distributed Ledger Technology for Advanced Digital Ecosystems.

The ten core pillars are as follows:

Flexibility for Coding and Control: One of the major strengths of the Bitcoin Network is its Turing-Incomplete code i.e., it does not have any vulnerable loops. However, the blockchain world has sacrificed that property for the sake of flexible "Smart Contracts". So, while there is flexibility, each solution is customized and still vulnerable. TapestryX™ offers a generic, interdependent, investment life cycle (rather than use-case) driven mechanism to create complex, multi-leg, dependent transactions' process logic, which can be created within Turing-Incomplete code.

Performance: For any solution to work in the financial services, it must be able to scale, handle high-capacity processes and have a low latency capability to cope with working markets. TapestryX™ innovative blockchain ledger design and approach handles the



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significant memory, capacity and volume requirements of a high capacity, low latency continuous record.

Confidentiality: This challenge has been solved in many different forms throughout the industry. TapestryX™ retains client and trade confidentiality, even on a shared ledger using advanced algorithms.

Optimal Ledger Validation Methodology: Any distributed ledger must be able to validate its ledger at the same rate at which it generates transactions. TapestryX™ maintains ledger integrity through a new, self-synchronizing, high capacity, low latency processing design with novel data structure/linkages.

The first four pillars are purely DLT/Blockchain related and, apart from the performance requirements are not unique to the financial services. Yet, many of the publicized solutions struggle with flexibility, overall performance, and ledger validation equal to transaction generation for anything but specialized, limited implementations.

The other pillars, which are more related to the requirements of the financial services are:



Contingent, transaction legs: While a great deal of the focus for DLT/Blockchains had been on payments, much of the financial services relies on Contingent Transfers i.e., Bi-directional simultaneous settlement of two different assets. Examples include DVP/RVP, FX Transactions and Collateral Substitutions. Within a working market for these types of transactions there also must be the capability of fulfilling sell-side fills and buy-side allocations. TapestryX™ secures the settlement of all types of contingent transfers.



Financing & liability-driven assets: The lubrication of the financial services and even the monetary system relies on borrowing. Any DLT/Blockchain implementation will need to accommodate borrowing/lending and any of the collateral and credit event consequences including default. TapestryX™ accommodates Cash Loans, Securities Lending, Margin Finance, Broker Financing, and even fractional reserve accounting for commercial banks.



Future Dated Obligations: An area of financial transactions which is often overlooked is the concept of an obligation, rather than a distinct settlement. A Broker can sell you something he or she does not own that he or she will pay for with borrowed funds collateralized with an asset he or she has not acquired yet. A DLT solution must be able to record this chain of obligations and then their ultimate settlement.

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Obligations will also take the form of future dated loan payments which then may be defined (fixed rate) or undefined (floating rate) until the day of settlement. Within Market Making, a Broker can hit a Bid before he or she commits to the subsequent Offer. TapestryX™, within the standardized life cycles of its solution, allows for recording all these types of obligations and their subsequent settlement.

Interface with Current Markets: Any DLT/Blockchain solution cannot be implemented to monopolize any one asset or market, so it will be required to allow settlement between current market practices and the DLT/Blockchain solution. Currency or cash settlements will always require a mechanism as a bridge between DLT/Blockchain settlement and current market practice. For exchange traded or OTC products, the solution must allow trading, financing, and borrowing securities to settle seamlessly between the current market and DLT/Blockchain solution. TapestryX™ addresses these requirements as, without them, DLT/Blockchains can only be used for niche implementations.



Interoperability & Flexible Adoption: From a practicable standpoint, there will be multiple implementations of various DLT/Blockchain solutions to support different functions, products, or markets. Any solution will have to be able to operate with multiple implementations of its design and where required, interact with other DLT/Blockchain solutions. TapestryX™ is also product, process and functionally agnostic distributed ledger network, so can easily be adapted for different requirements.



Current Regulatory, Risk, Credit, Custody, Performance & Accounting Reporting: Beyond the secure recording and transfer of value through a DLT/Blockchain Ledger, any participant still has responsibilities for downstream reporting. Unless this data can be overlaid at the creation of a transaction and kept confidentially by the transacting party, there will need to be API's and reconciliation controls to all downstream reporting systems covering regulatory, risk, credit, custody, performance, valuation, among others. Without the direct update, the transacting parties will not be able to disintermediate many of their enterprise systems or remove the need for reconciliation and control. TapestryX™ allows the distributed records to have expanded data acquisition, interpretation and recording as transactions are created. This benefit and the subsequent savings are a significant value proposition. Any distributed ledger needs to include double-entry accounting a trial balance can be run; balance monitoring can be reviewed; GAAP configurable data is available and reconciliations to downstream systems will be simple and processed in real time.

TapestryX™ was designed with all ten pillars in mind. We saw the limitations of the current DLT/Blockchain designs years ago and warned about the performance and functional limitations that would become apparent.

Any solution or service provider should be validated against these pillars to ensure the requirements of the market are met by the performance of the solution. DLT/Blockchain still has a huge potential to disrupt the industry - just not with the current preferred designs.



The TapestryX™ by L4S Corp. is emerging from its stealth mode. TapestryX™ is the Next Gen Distributed Ledger Technology for Advanced Digital Ecosystems that can structure and share digital asset records of all forms in secure, confidential networks. TapestryX™ defines a system and method to create a holistic, flexible, scalable, confidential, low latency and high capacity, immutable, is functionally, product, service, and business agnostic. The patented solution builds transaction life cycles in terms of variable sets of the same four, simple, sequential components. The distributed network design obviates the need for independent transaction validation techniques such as 'mining' or 'network consensus' by generating a self-synchronizing, variable-n-dimensional, multi-hash-linked, interdependent distributed ledger that allows the individual network nodes to create and recreate the ledger by the generation, broadcast, receipt, validation, posting and reconciliation of transaction and transaction summary messages alone in real-time.

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