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## Demystifying Permissioned vs. Permission-Less Distributed Ledgers

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*A hot topic of discussion of late in the fintech world is whether implementing a permissioned distributed ledger rather than a permission-less network minimizes the inherent value and benefits of the technology. DTCC's Rob Palatnick debunks three myths that must be addressed when evaluating a permissioned vs. permission-less approach to blockchain.*

In the debate over permissioned vs. permission-less distributed ledgers, a hot topic of discussion is whether implementing a permissioned network minimizes the inherent value and benefits of the technology. This issue has been discussed at many conferences and industry events, in publications and online forums, including TabbFORUM, and in meetings on potential future applications of distributed ledgers.

*[Related: “[Does the ASX’s Blockchain Initiative Ignore the Best Aspects of the Technology?](#)”]*

While the public, permission-less network popularized by Bitcoin provides real-time, low-cost, frictionless transactions and can eliminate the need for intermediaries for transactions in a public, digitally created and issued asset, this is not necessarily true for more complex financial transactions that occur across global financial markets.

To evaluate this topic more closely, let’s assume broad support for the common values of a secure, sharable, standardized version of the truth that is part of distributed ledger technology. Given this assumption, there are three considerations, or myths, that must be addressed when evaluating a permissioned vs. permission-less approach.

### **Myth 1: Permission-less implementations produce more efficient results.**

The laws of physics and all general engineering, communications and computer science theories, excluding quantum computing, tell us that the latency associated with distance between connected computing resources will negatively impact performance. Furthermore, the public version of a distributed ledger also includes the requirement for a consensus transaction approval. As a result, a distributed public network based on decentralized consensus will always be slower than a centralized network. The performance advantage of permission-less networks is false.

### **Myth 2: Permission-less implementations cost less.**

Distributing data and computing costs money – and usually a lot of it. Network bandwidth, storage and computing resources for validation are all necessary expenses to powering the financial markets. The public, permission-less approach requires computing resources, and there is no math formula which demonstrates that a distributed, decentralized, consensus model is cheaper than a centralized model. There are very few, if any, validated business cases showing the costs of this model, and the emergence of cloud resources for centralized models will make establishing those alternative business cases even more challenging. There are many discussions about the costs associated with intermediaries, but these are market structure issues – not computing ones. The cost advantage of permission-less networks is false.

*[Related: “[Blockchain Makes for a Risky Business Case](#)”]*

### **Myth 3: Permission-less networks lack of governance is acceptable.**

No formal model of governance for public, permission-less networks currently exists. The Ethereum hard fork, which has resulted in two co-existing and conflicting networks, and the long-running Bitcoin block size saga, are just the beginnings of a governance challenge. The reality

is that contract challenges do occur decades after a contract is written. Furthermore, people will be writing the code of these “Smart” contracts and DAOs, which will inevitably create problems and unforeseen bugs that will eventually need to be corrected.

In a permission-less model, who will you call when mistakes are found and errors need to be fixed? While the governance model of permission-less networks is a work in progress, the reality is that governance is wholly incompatible with permission-less applications.

So what is left when considering a permission or permissioned-less distributed approach?

Trust.

Does the public and investing community want regulated and governed institutions to manage their financial transactions and assets or an ungoverned and permission-less network? The answer to this question will likely play an important role in shaping the use of distributed ledgers and their impact on the post-trade ecosystem.

*[Related: “[The Paucity of Plausible Arguments for Private Blockchains in Banking](#)”]*