Implementing Blockchain in Public Sector – the Governance Challenge.
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It is almost impossible to believe that Blockchain Technology or Distributed Ledger Technology (DLT) has been around for ten years now – courtesy of its most famous and first use-case known as Bitcoin crypto currency.

There are many online resources that break down and define what Blockchain is but this site from the Center for International Governance provides an easy introduction and appreciation for the newcomers.

However, one key Blockchain property that is has transformative promise within the context of public sector is its irreversibility or tamper-proof property. Once transactions or records are validated and entered into the blockchain database, they remain permanently inscribed and cannot be altered thereafter.

This provides obvious Blockchain application in diverse sectors including but not limited to lands, health, elections, customs and others where notorious officials are known to tweak records in order to facilitate fraudulent activities.

Imagine a situation where a land transaction or a title deed cannot be falsified or simultaneously sold to multiple parties as is common in many jurisdictions across Africa.

Health insurance is another use-case begging to be 'Blockchained'. Many a times, health providers and insurers have conspired and manipulated a single claim form in order to have it fraudulently paid several times

All these corrupt activities can be greatly minimized if the current systems can be moved onto the Blockchain platforms.

In the education sector, we have instances where candidates for political office or professional practice claim to have graduated from various universities and it becomes difficult to ascertain their credentials.

Blockchain technology can make it easy for employers or recruitment agencies to easily ascertain the validity of educational credentials of candidates without violating the privacy of the candidates.

Willing universities, graduates and prospective employees would simply be signed onto a secure Blockchain platform that allows graduates to share their credentials to whoever they so wish while at the same time restricting access to the rest.

We cannot fail to cite the famous 'Farm-to-Fork' Blockchain applications in Agriculture where the origin or source of particular food items can be traced with accuracy all the way back to a particular farm – courtesy of a Blockchain Supply Chain Ecosystem.

In the event of a food related epidemic like the mad-cow disease in UK several years ago, one can quickly trace and arrest the spread within minutes rather than several weeks, as was previously the case.

Unfortunately, despite all these opportunities, Blockchain use in both the private and the public sector remains quite limited. The reasons are many and varied but one key one is about the governance of the Blockchain ecosystem.

Distributed control is what gives Blockchain the much-celebrated tamper-proof property. However, this property is precisely its the biggest challenge for traditional organizations that are by design, practice and law very centralized and hierarchical.

For example, for an effective Blockchain implementation in the ministry of lands, the lands processes must be re-engineered to allow for additional actors to operate independent Blockchain Nodes that would participate in the validation process.

Typically, beyond the ministry Node, one would expect other key stakeholders such as the Lands commission, the Law society of Kenya, the County Governments and others to own and run a Node as part of the validation process.

In other words, the 100% **Operational Control** that is currently held by the Ministry would need to be de-constructed and shared across all the above players in an effort to make lands transactions more transparent and less vulnerable to abuse.

Operational control would therefore move from one centralized actor to multiple decentralized actors as prescribed within the rules of the Blockchain technology.

The role of the Ministry will therefore have to radically shift in order to accommodate this new governance paradigm that looks at the two layers of Governance – the **Strategic Governance of** the Blockchain and the **Operational Governance by** the Blockchain as shown below.

Governance of blockchain

ledger ledger

ledger

ledger

ledger

ledger

ledger

Governance by blockchain
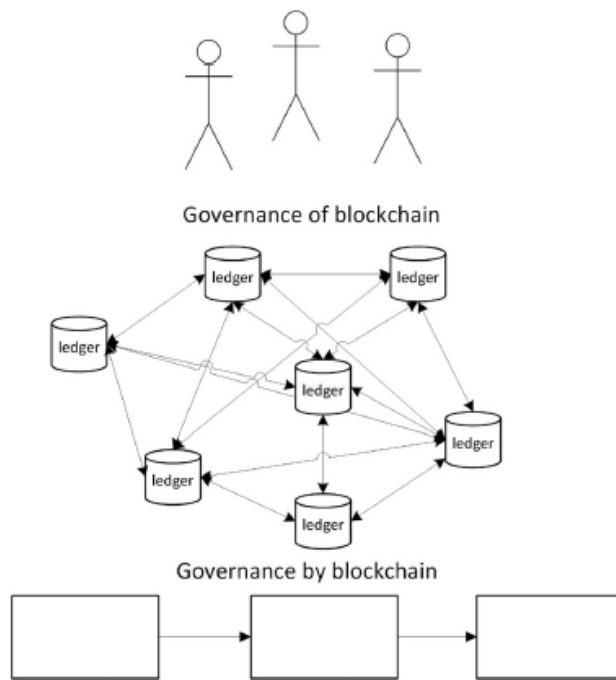
Source: (Ølnes, Ubacht, & Janssen, 2017)

It would require massive political will and capacity building for ministry officials to appreciate their new role as being in the Strategic development of the rules that govern the Blockchain ecosystem, while simultaneously ceding or delegating their Operation control to the Blockchain technology.

This challenge is not limited to the public sector but would also apply to any private sector players coming together as a consortium to implement Blockchain systems.

Blockchain technology is therefore a disruptive technology at both the process as well as at the governance layers.

The economies that will be quick to adapt to this new mode of engagement will reap the benefit, while those that grapple and resist the new governance models and technology will continue to hold onto a past that is likely to be overtaken by the new paradigm.

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