January - April 2019

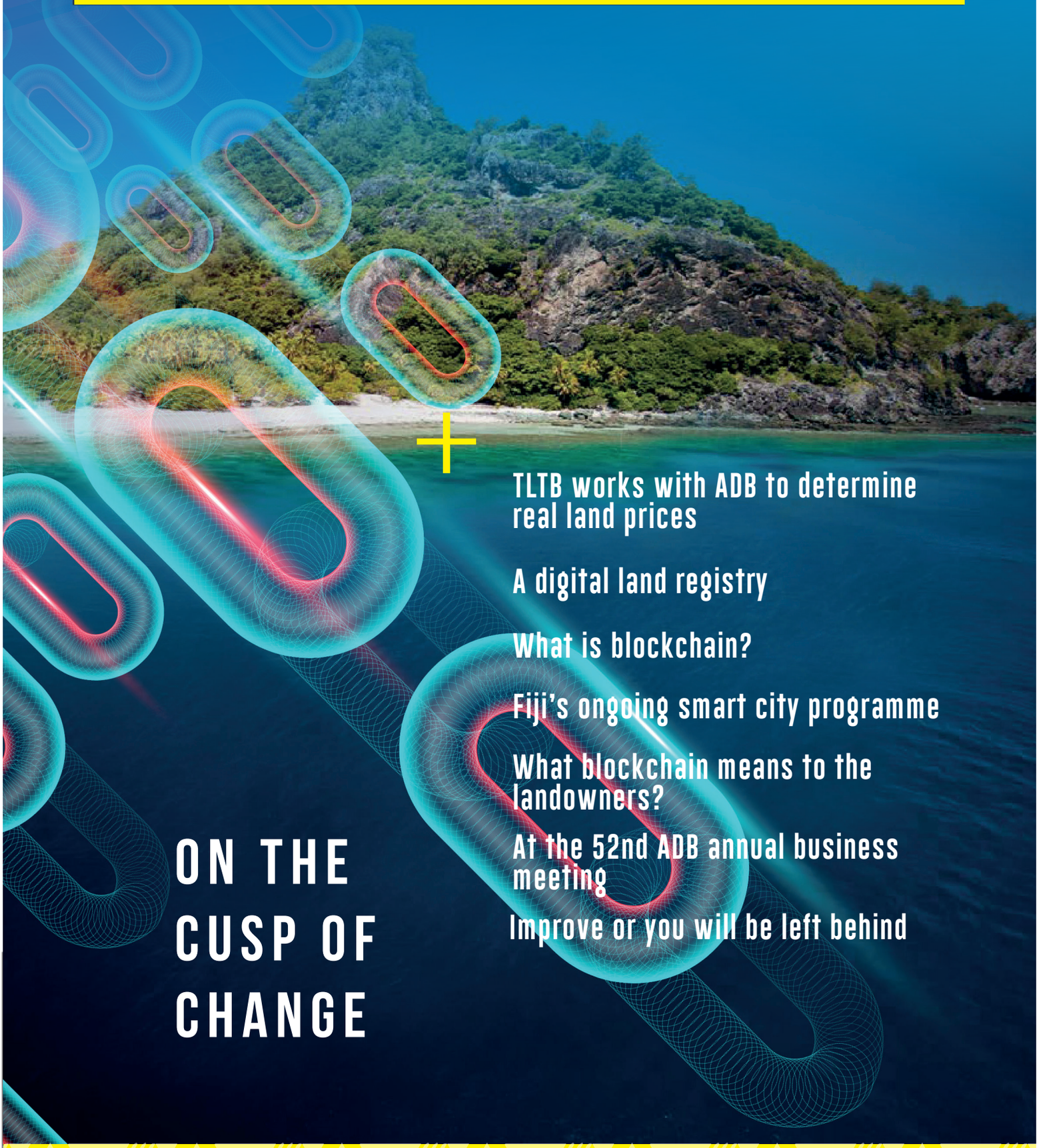
Our DigitaLand

iTaukei Land Trust Board

Catalyzing Innovations Towards Digital Land Management

iTaukei Land Trust Board

iTaukei Land, Our Heritage, Our Future



ON THE CUSP OF CHANGE

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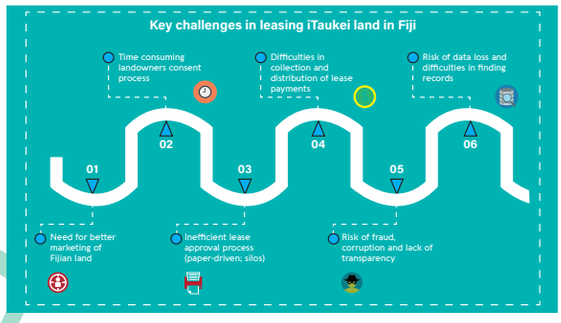
Our DigiLand is an iTaukei Land Trust Board (TLTB) information and communication medium that we published on a tri-annual basis to educate and create awareness on TLTB's digital transformation journey. In this inaugural issue we are going to focus on the Asian Development Bank-funded TLTB blockchain prototype platform by KPMG Singapore's innovation arm Digital Village and the land price index project in Fiji and in relation to our National Development Plan.



On the cusp of change

New technologies, changing demographics and evolving work models have upended the status quo and left many feeling confused.

Worldwide, people are polarized by these trends. At one end of the spectrum, some are leaning toward these changes, championing them as steps in the right direction.

At the other end, some others feel disillusioned and discontented, with pervasive feelings of restlessness and uncertainty.

Amid the chaos and conflict, however, emerging trends are evident:

Big data is allowing meaningful insights and trend analysis; new supermaterials will be created which will forever change the way we live and work; disruptive financial-tech trends will transform the way trade is processed and bank transactions are conducted; and interfaces with AI will pave the way to hybrid production models between men and machines."

The iTaukei Land Trust Board (TLTB) is also on the cusp of change. Navigating this complex and ambiguous environment era of digital transformation that led to its participation at the 52nd Asian Development Bank's Annual Meeting in June. To put things into perspective TLTB's engagement in this Technical Assistance programme is part of ADB's offer for the region and the greater linkage it has to the Smart Cities Program.

This newsletter is just the beginning of a regular coverage of events to address vital questions like:

- What does the whole programme entails?
- What benefits it has for TLTB and landowners and the wider Fijian community and stakeholders and other linkages it has with other programs under Governments land reform program?
- How the LPI and Blockchain project once fully realised will make life easier for everyone?
- How transparent it is in monitoring land rates so that it does not encourage malpractices and cuts out corruptible land dealings?
- How it can bring out efficiencies in the way serves its wider stakeholders and cutting down the lengthy lease processing timelines?
- What is blockchain, it's benefits and the linkages it has with other government related services, a good tracking system and audit trails that addresses missing physical files and documents?

This is a unique project that addresses data integrity, and land governance that adds value to TLTB land systems and processes. It is part of the innovative thinking as digital systems and processes are now the way forward to bring out efficiencies in services for the benefit of all TLTB stakeholders including landowners and tenant.

This project does not have to do with land ownership or TLTB's mandate under the Act, but on business reengineering and improving TLTB processes to standardize land rates, fast track lease processes and have better governance on data and efficiency of processes. ■

"This project does not have to do with land ownership or TLTB's mandate under the Act, but on business reengineering and improving TLTB processes to standardize land rates, fast track lease processes and have better governance on data and efficiency of processes,"

Tevita Kuruvakadua
Chief Executive Officer

TLTB works with ADB to determine real land price index

The iTaukei Land Trust Board (TLTB) is working closely with the Asian Development Bank (ADB) in a project to determine real land prices through land price index (LPI).

The project known as the ADB-TLTB Technical Assistance (TA) on Smart Systems and Smart Cities - (ADB REG TA 9170) will provide a unified land price information for a variety of administrative purposes and also offer more convenient processes for tenants and probable tenants.

CEO Tevita Kuruvakadua says the platform intends to address the TLTB strategic vision in terms of supporting Fiji's economic progress and for the landowners this will mean:

- Managing iTaukei Lands prudently to grow the economy,
- Provide accessibility to iTaukei land and assist alleviate poverty for all Fijians,
- Generate more wealth and value from the 91% of land it manages,
- Adopt modern practices and use land resources wisely as per the needs of its beneficiaries,
- Introduce programs and initiatives that encourages and assist landowners to lease mataqali lands and become landlords,
- Perform at the highest level to meet the expectations of all its stakeholders.

TLTB's mission is to deliver competent, smart, sustainable and resilient real estate land management services, TLTB has endeavored to seek assistance from the ADB in the development of a Land Price Index (LPI). The LPI is to provide a unified land price information for a variety of administrative purposes.

ADB Vice President Bambang Susantono (sitting third from right) with CEO Mr Tevita Kuruvakadua (sitting second from right) pictured here with TLTB senior managers and senior executives from ADB

In 2017, through the ADB –Country Partnership Strategy for Fiji, upon endorsement by the Ministry of Economy, a TA was signed between ADB and the TLTB to create a Digitized Land Registry and explore a Blockchain pilot for the records management and online service. (i.e., ADB REG TA 9170: Promoting Smart Systems in the Greater Suva).

The KPMG Singapore team were taken on as the expert development partners and the TLTB team as a local counterpart. The project is currently in progress and pilot studies undertaken in the first two phases. It's major objectives:

i. Construct a Land Price Index (LPI) for the TLTB (Include Land Price and Land Rent Index).

ii. Create a digitized land register for all the 43,000+ itaukei land leases in Fiji,

iii. Build a dashboard for retrieving and comparing rent and land prices within surrounding localities,

iv. Construct a blockchain prototype for TLTB that will have an online service platform. ■

A digital land registry

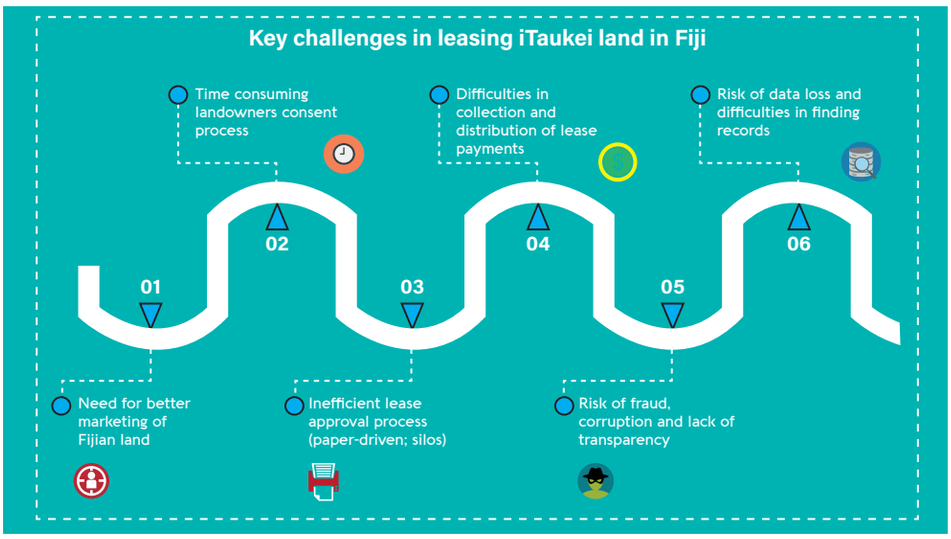
A major component of the Land Price Index (LPI) exercise is the data cleaning and digitizing processes. Ensuring correct data is captured through cleaning and validation and restricting of a data base. This also includes constructing the land price and land rent indexes and the visualization and implementation through the construction of dashboards.

The LPI is then integrated into the blockchain prototype platform to provide an online application lease process for TLTB. This platform is proposed to proactively promote iTaukei Land, assure landowners and investors of their investments and speed up land leasing processes.

Major features of the Blockchain technology are transparency, trust, efficiency and governance platforms which are principles of the Blockchain concept.

Some of the key features that the digitized platform will bring include:

- TLTB users have a friendly, intuitive web-based interface to verify and approve leases.
- Triggers auto-notification and arrange for consultation and de-reservation easily.
- Lease documentation processes and registration are applied online, thus the opportunity to include all relevant authorities onto the platform (sharing information and transparency).
- Promotes governance and transparency as it provides an immutable audit trail.
- Minimizes risk while maximizing viability and saves time and resources.



The digital Blockchain platform is anticipated to provide a clear digital transformation as envisioned by the TLTB's Strategic Corporate Plan. For the landowners, some of the positive outcomes include:

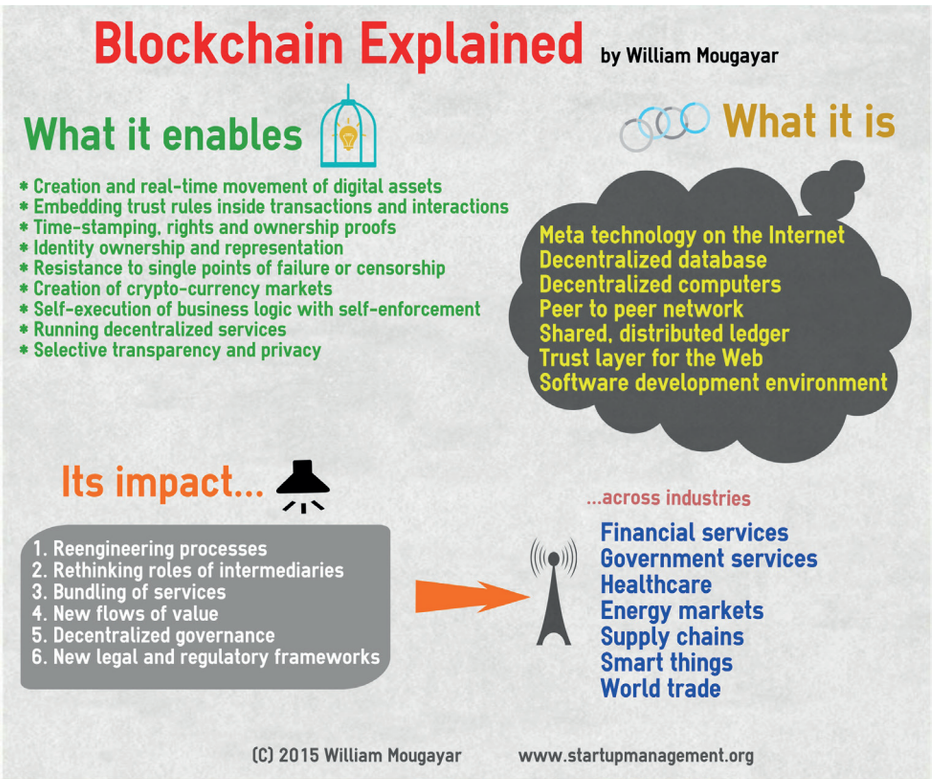
- Unlock iTaukei land capital by building in forecasting capabilities, linking historical, current and future master plans, whilst automating processes by linking existing Landsoft databases. Landowners will have the ability to check on available land and forecast potential land availability and land values through the integrated platforms (Mapping and Land Index integration).
- It should attract new investments, provide secure lease records and ensure full transparency on lease ownership whilst stimulating growth;
- In terms of processing timelines: It should increase TLTB's productivity by shortening processing timelines, thus landowners will be able to have quick turnaround time in terms of land lease processes.
- It would also reduce Operational risk, through a platform that is more transparent (Blockchain). Opportunities of sharing of data between landowning units and the TLTB including other approving agencies. Provides them a business platform through the TLTB as Trustee. E.g., approvals between Department of Town and Country Planning, Ministry of Lands and the Registrar of Titles.
- One of the feature currently designed is the LOU 51% majority consent and Free Prior Informed Consent (FPIC) processes. Ability to have a transparent consent process by LOU members above the age of 18 whose name are in the VKB, consultation processes and voting systems, including being informed of the status of consultation and the assessment of cases.
- The integration of information through mapping systems (spatial mapping) – land, lease boundaries, LOU information/ profiling/ approval platforms /existing features are made available online, thus landowners become better informed and are able to make good decisions about their land and assets.
- Promotes governance and transparency as well as an audit platform for TLTB to check and verify cases and processes undertaken (which are often issues/challenges raised to the LOU's). ■

What is blockchain and how it will change the way we do business?

The 21st century is all about technology. With the increasing need for modernization in our day-to-day lives, people are open to accepting new technologies. From using a remote for controlling devices to using voice notes for giving commands; modern technology has made space in our regular lives. Technologies like augmented reality and IoT that have gained pace in the past decade and now there's a new addition to the pack i.e. Blockchain Technology.

Blockchain – The revolutionary technology impacting different industries miraculously was introduced in the markets with its very first modern application Bitcoin. Bitcoin is nothing but a form of digital currency (cryptocurrency) which can be used in the place of fiat money for trading. And the underlying technology behind the success of cryptocurrencies is termed as Blockchain.

There's a common misconception among people that Bitcoin and Blockchain are one and the same, however, that is not the case. Creating cryptocurrencies is one of the applications of Blockchain technology and other than Bitcoin, there are numerous applications that are being developed on the basis of the blockchain technology.



Bitcoin - Each Bitcoin is basically a computer file which is stored in a 'digital wallet' app on a smartphone or computer. People can send Bitcoins (or part of one) to your digital wallet, and you can send Bitcoins to other people. Every single transaction is recorded in a public list called the blockchain.

Distributed Ledger Technology - Blockchain Technology is an implementation of Distributed Ledger Technology (DLT). Ok, what is DLT and how does it work? Let us picture a whatsapp group.

This whatsapp group is for a group of individuals who are performing various transactions among themselves. Now, whenever a transaction happens it is announced in the group chat for everyone to see and for those interested to record in their notebooks. The transaction is therefore public and can be verified by every participant. The group will be able to keep track of transactions and will also know every members balances at any given time. In this scenario, the chat history is the ledger which is distributed on every member's phone (node). Each node keeps an exact copy of the chat history (ledger) in such a way that it cannot be lost even if one member (node) left the group or if their phone crashed. In addition, the information in the chat history cannot be easily modified without other members knowing or consenting to the change. This is gives it the property of being immutable and consensus-driven. In simple terms this is what blockchain is and how it works.

In order to understand blockchain better, consider an example where you are looking for an option to send some money to your friend who lives in a different location. A general option that you can normally use can be a bank or via a payment transfer application like PayPal or Paytm. This option involves third parties in order to process the transaction due to which an extra amount of your money is deducted as transferring fee. Moreover, in cases like these, you cannot ensure the security of your money as it is highly possible that a hacker might disrupt the network and steal your money. In both the cases, it is the customer who suffers. This is where Blockchain comes in.

Instead of using a bank for transferring money, if we use a blockchain in such cases, the process becomes much easier and secure. There is no extra fee involved as the funds are directly processed by you thus, eliminating the need for a third party. Moreover, the blockchain database is decentralized and is not limited to any single location meaning that all the information and records kept on the blockchain are public and decentralized. Since the information is not stored in a single place, there's no chance of corruption of the information by any hacker. ■

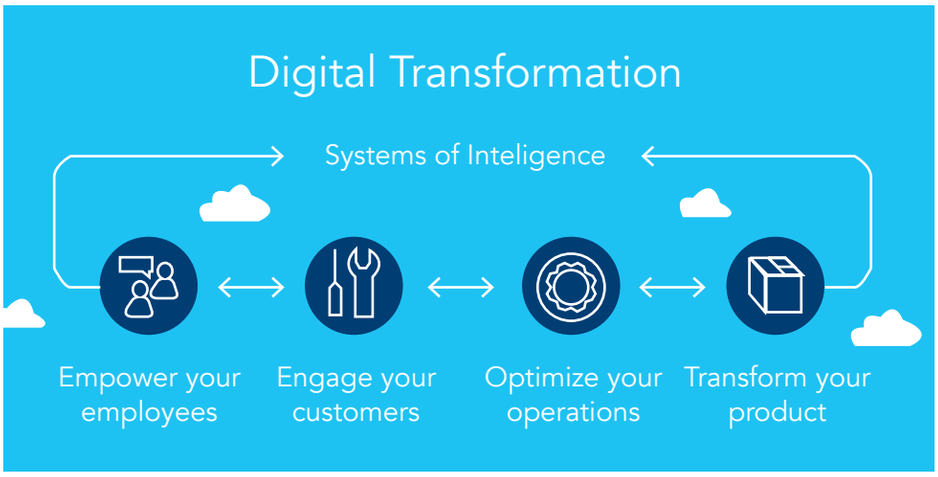
Digital transformation in Fiji

Information Technology (IT) innovation has evolved from e-business and e-government services to Internet of Things (IoT), FinTechs, Blockchains, Artificial Intelligence, use of APIs (application programming interfaces), Open Innovation and Open Organisations.

Speaking at the Conference on Digital Transformation Towards a Smarter Fiji, Professor Mohini Singh, Pro Vice Chancellor Research with Fiji National University, a Professor of Information Systems prior to this appointment, said due to these technological developments, petabytes and terabytes of data (Big Data) are emanating for which addressing issues of data velocity, volume, veracity and variety are required before Data Analytics.

Data analytics according to Prof Singh is a critical requirement for timely insights and for informed decisions. She explained that IoT's are now being used in smart homes and buildings, smart offices and smart infrastructure which help reduce carbon enhancing greenhouse gas emission, manage water and energy consumption, and reduce operational costs.

She explained that FinTech is a new wave of companies (startups) that support peer to peer borrowing and lending which are transparent, cut middlemen costs, and shift control over money to end users.



This innovation she said has a social impact that is shifting power to the people who need banking and not banks. Will Fintechs disrupt the banking sector in the same way that Air BNB is disrupting the hotel industry and Uber disrupting the taxi business she said is yet to be determined. Disruptive innovation she said is an outcome ofapplying new technology or technological processes to the current market.

Professor Singh said that Artificial Intelligence (AI) on the other hand is transiting from just a research topic to the early stages of enterprise adoption. While vertical artificial intelligence can easily automate repetitive work such as scheduling meetings, horizontal artificial intelligence are able to handle multiple tasks for example Cortana, Siri and Alexa.

An Alexa she said has the potential to replace the position of receptionists in the near future. Open innovation and open organisations stem from Open Source, and promote transparency, inclusivity, adaptability, collaboration and community.

Although the opportunities of technology are vast, she emphasized on the need to manage the challenges of cybercrime, data breach and hacking. She said organisations need to focus on the importance of integrated systems for 'one stop shop' customer service, and have the foresight for shifts in jobs initiated by technologies which will require re-training on new ways of doing things.

Implications of technological developments in Fiji she emphasized by stating that in Fiji 82% of our population are educated in English, almost 75 percent of the population have access to mobile phones, and almost 50 percent of our population are social media users. Professor Singh said that Fiji needs to capitalise on the knowledge of 'English' and 'level of education' to embrace technology for delivering improved and integrated services, on becoming a networked and smarter society, and to service the Pacific as a Technology Hub. ■

Fiji's ongoing smart cities programme

TA, Land Pricing Index, Blockchain

The iTaukei Land Trust Board [TLTB] is a statutory authority, established in 1940 and is mandated under the iTaukei Land Trust Act 1940, to control and administer indigenous land on behalf of the landowners. The board has a fiduciary role as Trustee to act in the best interest of the Indigenous landowners and is the largest land corporate entity in Fiji.

Administration of 91 percent of land is carried out through de-reservation and reservation of land processes with lease/ license terms provided from 1 to 99 years. Currently the board has a lease profile of 44,490 as of April this year located across the 300+ islands. The balance 9 percent of land in Fiji is made up of crown and freehold land tenure and managed by the Fiji Government through the Department of Lands. Land administration is executed in accordance to the customary land owning unit structure, which is a unique land administration structure world over & only existing in Fiji. TLTB's current land leasing systems is undertaken both manually and through an IT platform, and the reliance on data is based on hard and soft data that is available. The need to deliver land management services through a digitized platform is even more important today, given the "urgent" urbanization crisis that exists in our rural and urban regions.

Fiji is faced with complex and diverse challenges as it seeks to implement its National Development Plan [NDP]. This creates an important role for TLTB to support policy reforms, provide innovative knowledge –based solutions on land related products & services and smart land management processes to ensure alignment and synergies.

TLTBs core mandate and contribution to the Fiji Government's bigger role of transforming the lives of individuals and families through accessibility and development of indigenous lands, and in turn contributing to the UN Sustainable Development Goals. ■

At the 52nd ADB Annual Business Meeting

CEO Mr Tevita Kuruvakadua with participants at the 52nd ADB annual business meeting in Nadi on May 5

TLTB confirms that the invitation for the TLTB CEO to be part of the distinguished panel at the ADB 52nd Annual Meeting Business sessions on "Digital Solutions for a More Livable Future in Asia and the Pacific Region" was an invitation from the ADB Manila Office through the ADB office of the Secretary.

The invitation was also based on ADB's recognition of TLTB and the work the Board has delivered over the Phases 1 and 2 of the project since 2017.

TLTB with the support of ADB is committed to ensure best land management practices and new initiatives for landowners.

The objectives is for all to to understand the whole concept of a digital solution through smart systems and the objectives of creating a digital land registry for Fiji through the LPI and Blockchain platform is important.

The project is bigger than what is being discussed. TLTB envisions that this will be a smart system that can be adopted by our Pacific Island neighbors and other Asian countries who are also faced with similar land management issues.

In view of the comments implicating TLTB as a puppet to the Government and being invited on behalf of government undermines TLTB's credibility as an organization and important trusteeship role to the indigenous landowners. ■

What blockchain means to the landowners?

TLTB is currently working with the Asian Development Bank in a project to determine real land prices through land price index.
What does this mean to the landowners?

Land Price Index:

A major component of the LPI exercise is the data cleaning and digitizing processes. Ensuring correct data is captured through cleaning and validation and restricting of a data base. This also includes constructing the land price and land rent indexes and the visualization and implementation through the construction of dashboards. The LPI is then integrated into the Blockchain prototype platform to provide an online application lease process for TLTB.

Blockchain:

This platform is proposed to proactively promote iTaukei Land, assure landowners and investors of their investments and speed up land leasing processes. A major feature of the blockchain are the transparency, trust, efficiency and governance platforms which are principles of the Blockchain concept.

[A] Key Features of the Digitised Land Registry & Blockchain
Some of the key features that the digitized platform will bring include:

i) TLTB users have a friendly, intuitive web user interface to verify and approve leases.

ii) Triggers auto-notification and arrange for consultation and de-reservation easily

iii) Lease documentation processes and registration are applied online, thus the opportunity to include all relevant authorities onto the platform (sharing information and transparency).

TLTB staff with Digital Village reps from Singapore during the Land Pricing Index Workshop at the Suva Business Center

iv) Promotes governance and transparency as it provides an immutable audit trail.

v) Minimizes risk while maximizing viability & saves time and resources.

[B] Digital Transformation & What this Will Bring to Landowners:

The digital blockchain platform is anticipated to provide a clear digital transformation as envisioned by the Boards Strategic Corporate Plan. For the landowners, some of the positive outcomes include:

- Unlock itaukei land capital by building in forecasting capabilities, linking historical, current and future master plans, whilst automating processes by linking existing land soft data bases. Landowners, will have the ability to check on available land and forecast potential land availability and land values through the integrated platforms (Mapping and Land Index integration).

- It should attract new investments, provide secure lease records and ensure full transparency on lease ownership whilst stimulating growth;

- In terms of processing timelines: It should increase TLTB's productivity by shortening processing timelines, thus landowners will be able to have quick turnaround in terms of land lease processes.

- It will also Reduce Operational RISK, through a platform that is more transparent (Blockchain). Opportunities of sharing of data between landowning units and the TLTB including other approving agencies. Provides them a business platform through the TLTB as Trustee. E.g., approvals between Department of Town and Country Planning, Ministry of Lands and the Registrar of Titles.

- One of the feature currently designed is the landowning unit (LOU) 51% Majority Consent and Free-Prior-Informed-Consent processes. Ability to have the consent process be transparent to all LOU members under the Vola ni Kawa Bula (VKB) (above 18 years), consultation processes and voting systems, including being informed of the status of consultation and the assessment of cases.

- The integration of information through mapping systems (spatial mapping) – Land, lease boundaries, LOU information/ profiling/ approval platforms / existing features are made available online, thus Landowners become better informed and ability to make good decisions about their land and assets.

- Promotes Governance and Transparency as it also provides an audit platform for TLTB to check and verify cases and processes undertaken (which are often issues/ challenges raised to the board by LOU's). ■

Smart systems and digitisation

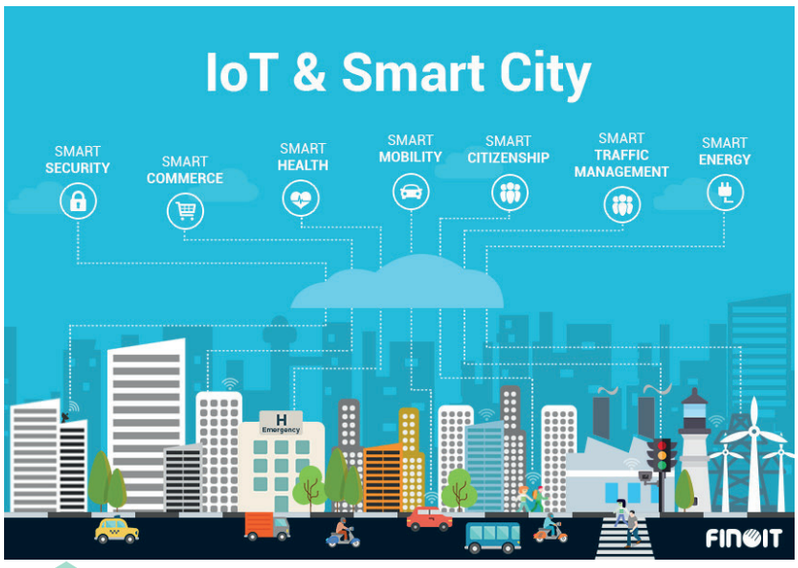
TA, Land Pricing Index, Blockchain

Smart technologies can help cities meet the challenges of rapid urbanisation, and the paradigm shift in terms of technologies and digital interfaces from a technology–centric base to people–centric focus.

Studies have also shown that urban areas around the world becoming not just the dominant form of habitat for humankind, but also engine-rooms of human development as a whole. Urbanisation has now become a positive force for transformation. Cities are now measured through people's behaviour, how people have advanced and the services provided through civic engagement platforms. Where residents have a common set of conditions that enable citizens to flourish, be happy, feel secure, be healthy, and in which business can thrive, institutions develop and physical spaces become more integrated and diverse.

"Smartness" is not just installing digital interfaces on traditional infrastructure or streamlining city operations, it is about using technology and data purposefully to make better decisions and deliver a better quality of life.

Communities are becoming more intelligent and connected, opening doors to intensive integration with increasingly advanced public safety solutions.



The digital transition is currently revolutionising developed countries/ cities, and ideally we in the SIDS hope that we can also have the same opportunities across the islands in the Pacific.

Digitisation is transforming service delivery locally with the potential of creating better and more accessible services at lower operating costs to the benefit of citizens.

The addition of digital intelligence to existing urban systems makes it possible to do more with less; hence, the importance of data development, data gathering and data sharing.

The tools and connected applications put real–time and transparent information to the users and will enable them to make better choices. Address climate change issues and enhance disaster warning systems. These tools can save lives, prevent crime, and reduce the disease burden. They can save time, reduce waste, and even help boost social connectedness. When cities function more efficiently, they also become more productive places to do business.

Land management capabilities – satellite imageries, geospatial mappings and land price indexes (enables digital land registers, building permits and forecasting to identify opportune development areas through 3D and 4D master land use planning). Information will be at our fingertips as compared to the manual laborious processes. With the appropriate data and technology apps, digital solutions can bridge the gap and the urban divide between communities and empower civil societies and individuals to make better decisions for themselves. Service delivery is our number one objective.

Smart systems provide multiple aspects to a quality of life for the citizen, as a result providing a more efficient, responsive and sustainable city. ■

Improve or you will be left behind

The Attorney General and Minister for Economy Hon. Aiyaz Sayed-Khaiyum has called for the improvement of ICT capacity being left behind by the rest of the world.

Speaking at the Inaugural National Conference on Information Technology at the Pearl Resort, Pacific Harbour, Sayed-Khaiyum said, "If we want to position ourselves in the 21st century, it's not only about getting your roads, bridges and airports built, it is also about building your ICT capacity because otherwise we will get left behind." He focussed on ICT as whole differentiating from just IT, placing emphasis on its role in the infrastructure in a country like Fiji and more specifically its current capacity pointing out the difference between then and now.

"And to be frank when we did an assessment of this, we were quite astounded as to how there was very little planning, ten, fifteen, twenty years ago. These things need to be planned out."

The current administration has made a lot of necessary changes like reallocating frequencies which is important for the introduction of technologies such as 4G. He also brought up the Southern Cross Cable being landed at Savusavu and how Vanua Levu would have access to high speed internet without having to draw it from Viti Levu using the old microwave technology which was less than optimal over open oceans.

Digital Fiji, the Government digital transformation programme which aims to implement government applications that provide government-based services on a digital platform was used as an example of current efforts to modernise our existing systems.

Since its launch last year, 70 percent of issues that users had, were no resolved with easy access to apps like the government directory, he said.

The AG also spoke about companies like Vodafone and TFL and their respective roles in Fiji's ICT infrastructure.

Participants at the National Conference on IT at the Pearl Resort in Deuba with the Attorney General and Minister for Economy Mr Aiyaz Sayed-Khaiyum

Vodafone is undergoing a 200 million dollar expansion to alleviate current connectivity issues that according to a discussion with their CEO this should be completed by June or July of this year. This would be very important in ensuring currently underserved areas would have equal access to the internet, he said.

As for TFL, the AG said that they need to restructure and reorient to match the current landscape. While at their start they used to be about landline communication, now they provide access to Fiji's main source of internet. As such they need to open up to the service providers and behave like a landlord of the internet and not compete with Vodafone and Digicel. This delineation would better serve the consumers and general infrastructure.

Another topic was the fact that while ICT was wonderful, it does not come without its share of issues, especially with cases of pornography or violations of privacy citing examples on Facebook of people livestreaming from inside bedrooms without knowledge of the occupants. "These are hardcore realities. We have, of course, cyber-crime. We have had cyber-attacks, generally in the financial systems."

Our own people needed to be better trained and educated in this capacity so we could deal with these issues, he said.

"We have drafted Fiji's first national cyber security strategy after various consultations." He said, adding that Fiji was also making its way into the Budapest Convention, an international treaty seeking to address Internet and computer crime by harmonizing national laws, improving investigative techniques, and increasing cooperation among nations.

These are the growing pains that come with new innovations and change in society.
"It is a wonderful opportunity for all of us. Whenever there is an introduction of new technology, there will always be a transitional phase. People need to look at the bigger picture, they need to look at the end goal," he said.

He also referenced the e-ticketing for buses scheme as an example that had initial pushback but is now in general use. "Even Australia had issues for two years."

The new generation coming up had a greater capacity for technology and it would become a part of everyday life more and more so it stands to reason that we need to move with the times. ICT provided easier access for business and entertainment.

"People forget what it was like a few years ago." He added, pointing out how far we had come in terms of ICT accessibility.

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