



How web3 will drive the future of digital transformations

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Adopting blockchain-enabled web3 technologies offers a massive opportunity for all industries to upgrade their security and productivity dramatically

Technologies associated with web3 have had a turbulent time of late. From major declines in cryptocurrency prices to what some see as a cooling in enthusiasm for the metaverse, talk about the decentralised future of the internet has diminished somewhat.

According to research by Bain & Company only 20% of organisations have a well-defined strategy in place for web3, with the report suggesting businesses “lack confidence” in their abilities to deploy the new technology.

This month Technology Magazine speaks with three experts in the field of web3 - Daniel Field (DF), Director of Innovation & Global Head of Blockchain at UST, Simon Bain (SB), CEO of OmniIndex and Alex Leventer (AL), Web3 Development Lead, DataStax - to gather their thoughts into how the technology will accelerate digital transformations in future and how web3 is shaping business models.

In what ways can web3 technologies accelerate digital transformations?

DF: Users will eventually curate collections of digital objects reflecting their past achievements, evolving interests and tastes and most memorable experiences, much as they do with photos, souvenirs and memorabilia today. Only these digital objects can also provide utility, such as access rights or service privileges. This will give new incentive mechanisms to retailers, employers, educators and the entertainment sector, such as new approaches to loyalty and reward.

SB: Web3's blockchain storage and enhanced encryption technology offer a massive opportunity for all industries to upgrade their security and productivity dramatically. This is because web3 can make all encrypted data accessible to analytics and collaboration while simultaneously eliminating the risk of exposure and attack with its immutable and decentralised storage.

AL: Web3 is about decentralising data, so you can have a distributed set of data spread across multiple locations and owners. This approach is commonly associated with cryptocurrencies, but this distributed ledger can be used in other industries. The most important element is that this data can be trusted by all the organisations that are participating in that market, without any one organisation owning that data.

From a business perspective, this data can support new ways to manage supply chains and collaborate around services. For established companies, it can make those supply chains more effective, and for new market entrants, it can provide a different approach to solving business problems.

How are web3 technologies reshaping traditional business models and creating new opportunities for innovation and collaboration?

SB: All industries can benefit from Web3. However, the areas that can immediately see the most significant boost are those dealing with the most sensitive data.

These organisations and industries face the most significant battle in data management and use today; because they need to keep their data safe at all times while also needing to share and analyse that same data.

One example at the top of this list is education. By swapping to blockchain data storage, external parties needing access to sensitive student and educational data can do so securely without any confidential and regulated PII or other private information being visible. This is crucial because educational data is at the top of hackers' lists in 2023. Indeed, over three-quarters (78%) of UK schools have experienced at least one type of cyber-incident, according to a recent National Cyber Security Centre (NCSC) and National Grid for Learning (LGfL) audit.

Some real examples of how Web3 is helping educational institutions today include analytics on encrypted student data, and the distribution of certificates and other official documents. In both cases the data is fully protected from accidental or malicious exposure, and all personally identifiable information and other sensitive and confidential data is automatically redacted.

AL: The supply chain for sensitive items like medicine is ripe for digital transformation. You might want to prevent fraud and improve traceability throughout a supply chain, but can you trust all the third party companies or providers that might carry those products?

With blockchain, you can track those individual packages from initial manufacture through distribution and supply chain partners, and prove that the goods are what they say they are. In practice, this kind of project can deliver more trust for consumers that they are getting what they pay for.

What are the potential challenges or barriers to businesses adopting web3 technologies, and how can they be overcome?

SB: One of the most prominent perceived barriers organisations face in adopting Web3 technologies is the upheaval caused by upgrading their existing infrastructure and workflows. Whilst I understand the inconveniences, the companies resisting the transition to Web3 are exposing themselves to ransomware attacks which are continually plaguing the industry today.

It's worth it; trust me, securing your data and upgrading your security is significantly less painful than dealing with a ransomware attack. It's more ethical, too.

However, this upheaval does not need to be as substantial as people fear. This is because a considerable part of Web3 is the use of AI and other technologies to ensure a more efficient and user-friendly online environment. For example, Web3 connectors can automatically and securely transfer data from an existing data store to a user's new blockchain storage. This process can be fully automated with an AI engine producing the unique encryption keys for the user, encrypting the data, and then uploading it to the blockchain ready to be accessed. Similar Web3 connectors can then be used to securely access this encrypted data in the organisation's existing workflow - for example, Google Workspace or Microsoft Power BI.

AL: The biggest challenge here is where companies try to apply blockchain and web3 technologies to situations that don't require it. It's great to provide that distributed ledger where trust across multiple companies is necessary, but it is not suitable when you need analytics. Blockchains can't be used for analytics, so you may have to use other distributed data methods to handle your information.

The challenge with web3 technologies is that they are often associated with cryptocurrency projects, with all the negative connotations that those projects could have, or where the company's whole approach is based on providing an existing service 'but on the blockchain.' These approaches are not the right way to carry out digital transformation.

When you apply web3 in the right way to decentralise data, you can build new and innovative services. The challenge is to break out of that reductionist mindset and apply web3 when it is the best approach to fulfil a business need in combination with other innovations in real-time data and real-time AI.

DF: There is a predominant undercurrent in much of web3 on driving adoption through financial speculation. We advise our clients against this: it appeals only to a minority and is anathema to community engagement, reward, intimacy and loyalty. We suggest taking a broader view, focusing on sentiment. Web3 objects should be treasured, not valued, collected not traded. This requires mechanisms to showcase them, peer recognition, and a long term commitment to communities and initiatives.

Video of The Week

Explore some related information to above article at following link.

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News of The Week

A roadmap to help AI technologies speak African languages

From text-generating ChatGPT to voice-activated Siri, artificial intelligence-powered tools are designed to aid our everyday life -- as long as you speak a language they support. These technologies are out of reach for billions of people who don't use English, French, Spanish or other mainstream languages, but researchers in Africa are looking to change that. In a study published August 11 in the journal *Patterns*, scientists draw a roadmap to develop better AI-driven tools for African languages.

"It doesn't make sense to me that there are limited AI tools for African languages," says first author and AI researcher Kathleen Siminyu of the Masakhane Research Foundation, a grassroots network of African scientists who aim to spur accessible AI tools for those who speak African languages. "Inclusion and representation in the advancement of language technology is not a patch you put at the end -- it's something you think about up front."

Many of these tools rely on a field of AI called natural language processing, a technology that enables computers to understand human languages. Computers can master a language through training, where they pick up on patterns in speech and text data. However, they fail when data in a particular language is scarce, as seen in African languages. To fill the gap, the research team first identified key players involved in developing African language tools and explored their experience, motivation, focuses, and challenges. These people include writers and editors who create and curate content, as well as linguists, software engineers, and entrepreneurs who are crucial in establishing the infrastructure for language tools.

Interviews with the key players revealed four central themes to consider in designing African language tools:

- First, bearing the impact of colonization, Africa is a multilingual society where African language is central to people's cultural identities and is key to societal participation in education, politics, economy, and more.
- Second, there is a need to support African content creation. This includes building basic tools such as dictionaries, spell checkers, and keyboards for African languages and removing financial and administrative barriers for translating government communications to multiple national languages, which includes African languages.
- Third, the creation of African language technologies will benefit from collaborations between linguistics and computer science. Also, there should be focus on creating tools that are human centered, which help individuals unlock greater potential.
- Fourth, developers should be mindful of communities and ethical practices during the collection, curation, and use of data.

"There's a growing number of organizations working in this space, and this study allows us to coordinate efforts in building impactful language tools," says Siminyu. "The findings highlight and articulate what the priorities are, in terms of time and financial investments."

Next, the team plans to expand the study and include more participants to understand the communities that AI language technologies may impact. They will also address barriers that may hinder people's access to the technology. The team hopes their study could serve as a roadmap to help develop a wide range of language tools, from translation services to misinformation-catching content moderators. The findings may also pave the way to preserve indigenous African languages.

"I would love for us to live in a world where Africans can have as good quality of life and access to information and opportunities as somebody fluent in English, French, Mandarin, or other languages," says Siminyu.

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