

From left: Patrick Maeder, PwC FS leader; Pauline Adam Kalfon, PwC France; Michael Cook, PwC blockchain leader; Arthur Wightman, PwC Bermuda; Gerhard Lohmann, chairman of B3i; and Steve O'Hearn, PwC global insurance leader



# The evolution of blockchain

*PwC has unveiled its second report examining the importance of blockchain to the insurance sector. Bermuda:Re+ILS examines some of the main findings of that report.*

PwC's third annual Global Blockchain Survey published in August found that of 600 executives from 15 countries and territories, 84 percent reported that blockchain initiatives were under way.

The accountancy firm suggested that as blockchain rewrites business and commerce, the research provides one of the clearest signals yet of organisations' fear of being left behind as blockchain developments accelerate globally, opening up opportunities including reduced cost, greater speed and more transparency and traceability.

It found that a quarter of executives report a blockchain implementation pilot in progress (10 percent) or fully live (15 percent). Almost a third (32 percent) have projects in development, and 20 percent are in research mode.

PwC said the survey reflects the early dominance of financial services developments in blockchain, with 46 percent identifying it as the leading sector currently, and 41 percent foreseeing its pre-eminence over the near term (three to five years).

Arthur Wightman, PwC Bermuda leader, said: "Everyone is talking about blockchain—no-one wants to be left behind, and it's easy to see why. Our new report shows that blockchain is revolutionising the claims settlement process, dramatically reducing transaction costs, and opening up opportunities for more transparency and traceability and a potential for new products and services."

"Rarely, if ever, has a technology attracted so much interest and industry commentary."

## Analysing the market

"In September we launched *Blockchain, a catalyst for new approaches in insurance: part 2, Market launches and changes in 2019*, which reveals the wide level of interest and investment in this technology over the last year," Wightman continued.

This report analysed market launches carried out over the 2017–2018 period (first half), and offers different perspectives that highlight a number of issues.

These included the first business use cases covered—relating primarily to traceability/know your customer and the automation of smart contracts; and how these solutions were implemented by major market players or newcomers—technologies, project organisation, governance and interaction with the blockchain ecosystem; and the initial takeaways, as well as the upcoming challenges foreseen by market players, and approaches to reduce risks related to deploying blockchain technology, including operational, legal, regulatory, cybersecurity and reputational risks.

PwC launched the report at the Monte Carlo *Rendez-Vous* where Dr Gerhard Lohmann, chairman of the B3i initiative, also discussed some of the reality of how blockchain is being used and the potential for it to be the catalyst and enabler to transform the global insurance and reinsurance industry.

Lohmann explained that B3i is the largest reinsurance industry initiative currently under way and how blockchain technology has the potential to help generate insurance protection where it doesn't exist today.

The report details how, aside from market launches, 2018 has undeniably been shaped by the emerging phenomenon of initial coin offerings (ICOs), which raised around \$4 billion in capital in 2017 and \$16 billion in the first half of 2018 alone.

"ICOs allow users to raise capital via blockchain technology to finance an innovative project, as investors receive a token entitling them to voting rights, a licence or the right to participate in the project," the report states.

"The question is whether ICOs should be viewed solely as a way of securing funding and partners to launch insurance products on the market using blockchain technology or whether they should be seen as a new transactional product that itself requires specific insurance cover."

## A game-changer

The report states that the history-making blockchain technology, Bitcoin, has been attracting unprecedented media and investor attention. Bitcoin was trading at \$950 on January 1, 2017, at almost \$20,000 in December 2017 and at \$6,400 on July 1, 2018.

The Bitcoin project was first introduced in the white paper, *A Peer-to-Peer Electronic Cash System*, on October 31, 2008, just a few weeks after

the fall of Lehman Brothers and the rejection of the Paulson plan by the US House of Representatives, events that marked the beginning of a global financial crisis.

"The product of several decades of cryptography research, Bitcoin culminated the search for a value exchange system free of any supervisory body. Bitcoin is the first decentralised, virtual cryptocurrency; instead of being created by commercial banks, bitcoins are created by users of the network, who run a public algorithm," says the PwC report.

"There is a limit to the total number of tokens that will ultimately be released. Capped at 21 million, bitcoins will be put into circulation at a decreasing pace. Any computer can freely access the network and be involved in the process of approving new transactions. The Bitcoin community updates the ledger securely and transparently."

The report also gives details of the Ethereum project, and how it was launched in 2015 with the aim of becoming "the world computer".

Like Bitcoin, Ethereum is a public blockchain. Unlike Bitcoin, which was specifically designed as a currency exchange platform, its goal is to become the first decentralised data exchange platform (decentralised internet) hosting the largest number of blockchain apps. In the long term, the Ethereum Foundation seeks to become a 'web 3.0' or a 'decentralised app (Dapp) store' as the first blockchain-as-a-service provider for the general public, using a cloud-based infrastructure, the report explains.

"In practical terms, Ethereum wants to give everyone the opportunity to build complex, fully autonomous applications. Ethereum's blockchain uses its own programming language, Solidity.

"Ethereum is also unique for having introduced the idea of smart contracts, which are programs that run automatically based on the conditions built into the code, and the information they contain cannot be modified."

The report goes on to explain how smart contracts correspond to the first level of Dapps: if several smart contracts interact with one another, they are referred to as an open network enterprise; if they interact with an autonomous agent (programs that make decisions without human input), they are referred to as a distributed autonomous enterprise.

PwC explains in the report how Ethereum makes its secured blockchain available using a public consensus protocol and enables the deployment of smart contracts managing other digital assets, ie, tokens.

## A transition period

The report covers in great detail different developments in the blockchain and cryptocurrency space looking at how ICOs have fared, and what all this means for insurers.

In conclusion, the report notes how 2017–2018 marked the transition from proofs of concept to the actual market launch of products. Early adopters have already learned that blockchain technology can offer a transparent, real-time customer experience by optimising processes.



PwC Bermuda leader  
Arthur Wightman, with  
PwC insurance and  
blockchain leaders  
in Monte Carlo

***“Early adopters have already learned that blockchain technology can offer a transparent, real-time customer experience by optimising processes.”***

It stresses that a large proportion of the ecosystem has yet to assimilate the topic. Blockchain technologies, currently overabundant as is the case for any emerging market, are not understood by a sufficient number of players.

“Therefore, challenges persist regarding how to best approach technical and functional governance, and above all, how to determine the right use cases. The first hurdle has been cleared, as evidenced by the first market launches of insurance solutions (parametric insurance products, expert appraisal solutions, etc) via smart contracts,” the report states.

“These solutions have demonstrated the reliability of decentralised protocols, particularly for ensuring the integrity of exchanged data, contributing a starter level of automation and offering a high quality user experience.

“Do they show the extent of the potential gains introduced by blockchain technology? Probably not, especially since blockchain is not (yet) advanced enough to offer insurers a true transformation/automation of intra-insurer processes.”

### A new hurdle

The report stresses that the market launches have above all served to educate people, particularly executives and executive committee members in the insurance industry, but the industry is now approaching the second hurdle. The B3i initiative, in particular, shows

the benefits to be gained by insurers by pooling data to facilitate reinsurance processes.

Interest in blockchain protocols is effectively higher when use cases encompass transactions involving exchanges with multiple third parties, which requires a real change of direction in such a data-centric industry.

“The gains will be greatest if insurers focus their experimentations on increasingly complex use cases, from the secured registration of user data to the issue of smart contracts on the blockchain, not to mention interconnectivity with the internet of things and decentralised peer-to-peer insurance.

“ICOs offer startups and insurers genuine flexibility when it comes to raising capital, hiring talent and forming captive bases of future users of the insurance products and services that fit with these use cases,” the report states.

“ICOs should be viewed in the wider context of the tokenisation of the economy, where tokens representing assets are exchanged, with traditional assets being converted into tokens or assets being created for the specific purpose of tokenisation.

“This new paradigm opens the door to a higher level of fluidity in economic exchange and investments. A more complex ecosystem is emerging and with it comes additional risks, but insurers have the opportunity to help customers face them.

“Beyond being an enabler, blockchain technology may represent a new business sector for the insurance market with the potential for new products and services tailored to the needs of the blockchain community, such as insurance cover for cryptocurrency and ICOs.” ■

*The full report summarised here can be found at:*

*<https://www.pwc.com/gx/en/insurance/assets/blockchain-a-catalyst-part-two.pdf>*