



Distributed Ledgers for Decentralized Financial Services: On the architecture of our dreams and their Black Swans

How could I refuse the invitation by De Actuaris to share a few thoughts on Black Swans in the emerging uses of distributed ledger technology? Since 2015 I explored this with other insurance companies, notably the viability of adopting the architecture benefits of distributed ledger technologies (DLTs), promising more effective, more automated and smarter global data exchanges. For our sector this culminated in several projects, amongst which the formation of the R3 initiative clearly stands out, offering decentralized services for insurance and reinsurance processes in their end-to-end use of data.

Likewise, a range of solutions scattered adjacent markets in which we as insurers engage, including insurance solutions for high-value items, warranties, KYC solutions, AML procedures, parametric (index-based) products, as well as generalized practices for insurance, reinsurance, claims handling, P2P models and the distribution of product and services. Personally, I experience the recent years as if awaking from dreaming: Though I am convinced that the pure technological advantage of using decentralized ledgers across industries is a fundamental game changer and accelerator, this dream did not materialize at scale or speed, yet changed often at intermittent speeds, yielding few changes when awakening, at least for my insurance industry so far.

That explains how I focused on supporting industry events, collaborating for industry advice, informing our CRO Forum paper in 2019 titled "Insurance and Distributed Ledger Technology – a risk manager's perspective". Since 2015, I keep moderating a forum called "Insurance Blockchain, Decentralized Finance & Risk Transfers", tracking some of these dreams, ambitions, efforts and projects. After some early dreams burst following the hype curve, many ventures pivoted and areas beyond core insurance were explored.

Yet, the fundamental dream of distributed financial services with an underlying effective market infrastructure remains valid with many DLTs and blockchain projects having delivered on their use cases. Thus, I accepted the challenge to express some thoughts on distributed ledgers: Like the Australian dream chasers, I am follow our initial hopes, expectations and their ongoing realizations, capturing where we can expect Black Swans in bringing our dreams to reality. With this I hope to trigger suggestions for reviewing the unthinkable as part of emerging risk processes, as we evaluate the emergence of distributed ledger technologies, processes and governance.

THE FIRST DREAM: ON EXPERIENCING GLOBAL DISRUPTION

2015 the conventional paradigm was, innovate or be disrupted. Full stop. Since, some industries delivered effective proof for their innovation capacity. The pharma sector just delivered global vaccines from scratch, at record development times. The insurance sector was amongst the beneficiaries. Employees of many insurance companies might refer to working from home as their greatest digital advancement lately. Right? Which factors though held back a deeper, faster and more fundamental progress on updating the globally digital data exchange for financial markets? Surely, witnessing a reverse trend on globalization is hardly sufficient explanation, maybe more so the initial expectation: If there once was an anticipation that change comes quickly, that itself was proven wrong. That implies other risk management questions. How would you know that you'd be disrupted? Is insurance the frog being boiled slowly? And is that a choice? And when is the right time for change, ever?

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Reviewing the unthinkable requires hard questions on how we experience and contextualize change. DLTs may be more efficient, resilient and scalable. Yet, adoption strategies may be postponed by risk averse industries as long as perceptions of threat, doubt and uncertainty remain. While faster adopting industries may be conquering technology and business advantages, EIOPA puts it in their July discussion paper on blockchain and smart contracts, explaining "a harmonized approach could promote and facilitate the sound scaling". Hence, our first dream on disruption suggests the need to act on evolution, not revolution.

THE SECOND DREAM: ON BUILDING NEW BUSINESS ARCHITECTURE

Since 2015 we were lead to believe that new systems are simpler, better, more efficient, more connected, augmented and even intelligent. Much of that builds on algorithms becoming mainstream that were built over the last 30 years, and that now thrive on the global mass availability of internet distributed data. Artificial intelligence, image interpretation, speech, facial and pattern recognition are all providing many example. Standardization and regulation of such data usage naturally trails behind the development and adoption curve.

Yet to think the unthinkable requires us to explore the boundaries of efficiency, in order to avoid trapping into a circularity, such as from on premise to cloud and back. That includes acting on warning statements such as Joe Biden's comment that "cyber-attacks could escalate into a full-blown war as tensions with Russia mounted over a series of hacking incidents targeting US agencies, companies and infrastructure". Hence this second dream suggests that we shouldn't assume a linear and smooth transition into new, more effective business architectures, without anticipating some external shocks or exploits.

THE THIRD DREAM: ON CONQUERING THE FUTURE

Suppose there are a bunch of superior DLT architectures, developed and readily available to choose from, perfectly catering to all insurance risk carriers and ecosystem participants and facilitating all future risk transfer solutions. Who will have developed this? Who will license this? To whom and under which conditions? What will be open source? And what will be our future limits for exploiting data usage and access? Which regulatory preferences will we maintain for sound and fair data access and usage?

Can national regulators or central bank models oversee decentral-finance-infrastructures? From Europe, US or Asian perspectives? And who exerts influence, insurance platforms, small and larger carriers alike? Will conquering the future of distributed financial services invariably be stifled by RegTech standards and regulatory arbitrage? And which crypto-tech could ultimately unify a plethora of paths into this future, shaping trusted architectures of decentral finance? As large operators of AI, deep-learning and search engine platforms daringly postulate to evolve themselves into all immersive customer platforms, would they be poised and positioned to host the financial architectures, operating distributed financial services on-the-side?

THE FOURTH DREAM: ON WAITING FOR NORMALITY TO RE-ESTABLISH

After awaking from the third dream, a natural conclusion for risk conscious industries may seem to postpone engagement and await some more clarity to emerge. That clarity will eventually emerge, courtesy of competing players, tech providers and potential partnership models. The automotive industry provides examples. For years we observed the accent of electric driving. As late-tech-adopters catch-up, they do not fully recapture market shares lost. A new equilibrium of mobility solution providers emerges. Where some even reach for the stars. That's hardly part of the incumbent's dreams though. Meanwhile, back to finance, where even the most established wealth managers

commented in August on how football club Paris Saint Germain announced that their new top player Lionel Messi will receive some of his salary in their cryptocurrency \$PSG fan tokens. A new reality is already here.

THE LAST DREAM: ON ENGAGING THE UNKNOWN AND UNCERTAINTY

This last dream is a daring one. For risk conscious industries such as insurance, the 21st century provides a wealth of data and information. Quite the opposite to the early days of insurance, when insuring ships travelling into the unknown had anything but certainty. Today's reporting requires us to calibrate our risk allocations, communicate our expectations, estimate our unknowns and share our notions of control. That sometimes may seem elusive. The pandemic and climate change are reminders. Our industry though can manage both, within well-set limits. To that extent, investing now into decentralized technologies may for some still seem far-fetched. Uncontrollable and complex risk return choices and new dependencies with unclear governance.

Yet, isn't this possibly the Black Swan we ought to anticipate now? What is our price for ignorance? Could the future of insurance now require commitments for running our own a digital market infrastructure? Is now the time to ensure how we will distribute and service the carry of risk transfers into our digital future? Or could we, just for a moment, before awaking, entertain the thought that our current business architectures are ageing suitably well to be admired in the future, as beautiful testimonies of time, that withstood these Black Swans and the 21st century talk of digital disruption? ■

