

Why Swedes won't see blockchain-based smart contracts anytime soon

Few general-purpose technologies are as hyped as blockchain. Within insurance, blockchain-based smart contracts have received much attention, promising both more efficiency and fairness. But how real is it?

The insurance industry is notoriously old-fashioned and has seen little change in the last fifty years. But new consumer expectations and technology are driving change. This has led to the rise of insurance fintechs, or *insurtechs*, intently focused on creating digital and convenient user experiences. Insurtechs seek to leverage high technology to scale their customer base without linear increases in operative costs. One such hyped technology is *blockchain-based smart contracts* – digital and self-executing versions of paper contracts that could both increase operative efficacy and contractual fairness, through transparently codified terms.

Our study – building on an extensive literature review and expert interviews – identifies the strengths and weaknesses of blockchain-based smart contracts within Swedish insurance. The result? Our findings suggest that business value is limited, and more importantly, overshadowed by some significant downsides.

Consider immutability, a unique strength in blockchain systems. It prevents insurers from manipulating contract terms and empowers an egalitarian market less dependent on trust. However, substantial costs follow. First, in negotiations, the whole eventuality space of a particular insurance event needs to be considered and codified. Regular contracts, on the other hand, rely on implicit legal standards or business praxes that allow flexibility. Ironically, this makes *human* rather than *computerized* contract-making more resource efficient. Second, once launched on a

blockchain platform, hackers are well-positioned to exploit contract bugs or loopholes, since they cannot be fixed post-launch. Finally, the blockchain's performance is limited at scale, due to high computational and storage costs.

Moreover, some of the identified strengths are not really value-adding in digitally mature and institutionally democratic markets like Sweden. Consider transparency. The marginal value is low since consumers already have a basic trust in insurers – grounded in the rule of law and norms. As such, third-party-absence might not create enough value to prompt blockchain investments.

The list goes on. Our overall conclusion is that Swedish insurers should not invest in blockchain-based smart contracts at this development stage. But... do smart contracts have to be blockchain-dependent? Not really.

An unexpected contribution of this project is the development of a smart contract taxonomy, which makes clear the distinction between blockchain-based and other smart contracts – seemingly overlooked in the mainstream literature. Contract smartness comes from self-execution, not third-party-absence. Thus, two definitions are given: *soft smart contracts* (third-party-present) and *strict smart contracts* (third-party-absent).

The soft case is more promising for insurers. It delivers the essential business value of smart contracts without the fuss: enabling self-execution through clear and consistent rules. In claims handling, this could improve operative efficiency, user convenience and perceived fairness.

Soft smart contracts are already the cornerstone of some firms, e.g. Swedish *Woilá*, and a feature of others, e.g. recurrent bank payments. Insurers just have to overcome two things: (1) codifying contract terms, and (2) finding *oracles* that provide relevant event information.

The business community would profit from a greater focus on this concept, rather than the hype-driven chase after blockchain.