INTRODUCTION TO INFRACHAIN A.S.B.L

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INFRACHAIN has its origin in a Luxembourgish non-profit organization supported by the Luxembourg government but created by the emerging Blockchain-industry and now strives to become a European non-profit organization putting in place community driven governance for operational Blockchain use.

Infrachain

From the beginning, several Luxembourgish actors have been convinced that the impending changes brought by Blockchain are more than just process streamlining. They envisioned a potential beyond the automation of processes associated with a specific sector: "*Blockchain will allow the development of new business models and new practices in the public and the private sector as a whole.*"

To unleash this potential, Luxembourgish actors have launched in November 2016 the Infrachain initiative, with the objective to address existing roadblocks for enterprise-grade applications. The Blockchain framework landscape is broad and no turnkey solution exists yet to run the day-to-day operations of a business. While the technical solutions evolve with great speed, less thought is spent on assuring a credible integration in the existing corporate framework and, last but not least, the existing legal framework.

Based on those simple observations, Infrachain has been created in order to facilitate and speed-up the adoption of Blockchain-technology in Europe. The primary aim of our initiative is to leapfrog the adoption curve of Blockchain by creating a community-driven and community-hosted infrastructure for private Blockchain instances. Our aim is that the Infrachain community will expand to create a European cross-industry effort in order to foster the growth and the sustainability of the Blockchain ecosystem. Therefore, Infrachain positions itself as community-driven initiative where the community governs the permissioned infrastructure hosting Blockchain applications. To do so, a strong and transparent governance is set within the community in order to distribute the power among members. The role of our governance rules is to guarantee the independence of actors involved in the operation of Blockchain instances. That is one of the main differentiators when compared to a cloud alternative offered on the market.

The approach proposed presents key advantages to provider of Blockchain applications. By proposing a permissioned infrastructure to host their applications, Infrachain is geared towards the creation of an enterprise grade environment. Besides, our permissioned infrastructure is one of the outcomes of our community and it has been possible thanks to host-operators within Infrachain. Our host operator network is a virtual layer intended to host private Blockchain instances.

In order to achieve our objectives, Infrachain brings an answer at the following identified factors that still hinder the adoption and deployment of Blockchain applications in common industry practices:

- Sustainable operational environment and Interoperability with legacy systems
- Regulatory certainty and so accountability for Blockchain applications

Based on the identified factors that still hinder the adoption and deployment of Blockchain application, Infrachain proposes answers to the following points:

I. Trust and accountability in a Blockchain network

For many, trust in the inner algorithms of Blockchain is mainly because they do not rely on any centralized authority that could bias or mask its behavior. For instance, one algorithm can be created by few people but changed by many because, generally, the code source is open for review and reusable. However, the trust-less aspect refers to the automated verification of transactions, which does not rely on a trusted third party, meaning that the third party is, in that case, a set of algorithms.

Since those public Blockchain instances are exposed to constant and sophisticated attacks, their resilience and constant bug fixing demonstrates that those are networks with a respectable level of resilience. However, this technology-based trust in a tried-and-tested technology is not easily shared in enterprise environments. As with every technology, the adoption curve of Blockchain is slow, especially in industries where high regulatory constraints apply. And knowing that Blockchain instances over Internet are not regulated per se. Furthermore, those industries, financial services for example, apply risk-based approaches. This means that businesses have to know their counterparties. As by design, public members of a public chain are anonymous entities compare to governmental identity, a "know your counterparty" approach is impossible in a public chain today. This underlines the need for a permissioned infrastructure.

II. Sustainable operational environment

Another challenge the corporate environment faces with a public chain is the fact that there are no formalized service level agreements available to describe the technology-specific metrics in which the Blockchain instance is operating and/or hosted. However, this is also an element lacking even in public cloud markets. A second element missing for now is a sufficient assurance of continuity of public chains. Although the previously described technology-based trust is intact, there is no guarantee for network stability or performance, especially not in the long run. The protocols might remain sound but it might be that state actors or sufficiently big

mining pools (or alliances thereof) take decisions which lead to abrupt changes in a public network. This is not a judgement and could be a good thing at a certain moment in time, but it will be difficult for corporations that need predictable and sustainable technical platforms to build their Blockchain applications on. Therefore, The independence of host operator with no capitalistic interest for the services running on their platform is paramount. The financial incentive for them is at another level, not discussed here.

III.   Regulatory certainty

Even if Blockchain allows for different business models and different organizational architectures or disintermediation in business networks, on a more operational level, privacy protection, cyber-security, law enforcement and business continuity have to be taken into account in the same way non-Blockchain applications do. Even if the Blockchain ecosystem often seems to uphold the Wild West myth or the principle that "Blockchain is different", regulation will soon step in, simply because it is in the general interest of society in general and of the further development of the ecosystem itself.

It should be borne in mind that security mainly results from the fact that Infrachain promotes a permissioned (i.e. controlled) environment with known and independent Host Operators running certified Hosts, that allows the enforcement of the governance rules. Such an approach will lower the risks by requiring Infrachain Network actors to comply with the regulatory framework in place and providing a high degree of regulatory certainty.

The General Data Protection Regulation (GDPR) applying as of May 2018, for example, did not specifically foresee the role of Blockchain. Nonetheless, Blockchain application providers will have to comply to it, which, inter alia, means putting in place the right processes, making sure certain data are correctly manage within the Blockchain. Then they should assign clear roles to every actor involved to deliver the services relying on Blockchain (i.e. processor, controller) in order to have clear responsibilities and procedures in case of breaches. Public chains lack answers to these topics. This is reflected in the fact that organizations like the Ethereum Foundation have launched the Ethereum Enterprise Alliance which should answer corporate-oriented problems.

IV.   Interoperability

While the supporting protocols have been proven to be resistant to cyber-attacks, the applications and tools that are built on top are still nascent and evolving, which result in many vendor offerings that satisfy some specific corporate needs but lock the customer with the vendor and prevent interoperability between applications, further limiting the scale. We are not referring here to the interoperability between Blockchain protocols.