Most aspects of our lives are somehow connected to the digital world – some of which are safety-critical, could affect an individual's rights, or even society at large. It is crucial therefore to ensure that technologies used in such cases are adequate and robust against failure to minimise any potential negative consequences.

Blockchain, smart contracts and other Distributed Ledger Technologies (DLT) brought forth a paradigm which guarantees that (smart contract) code cannot be changed – it is immutable. When it is impossible or infeasible to update code, it becomes crucial to ensure that code is correct before deploying – this problem is exacerbated when considering that such systems are often used to manage millions of euros of cryptocurrency.

Artificial Intelligence (AI), whilst a technology that finds its roots in the 1950s, has seen an exponential increase in progress and use in the past decades. We do not yet have the type of AI that is often portrayed in movies that can take over the world (which is referred to as Artificial General Intelligence – AGI), however AI is being used increasingly to automate decisions for specific tasks (Artificial Narrow Intelligence – ANI). AI based software often uses historical data to predict future events when making decisions. Whilst, software developers understand exactly what the AI algorithm is doing, it is often hard to understand what decision an AI algorithm will make. When decisions are being made for processes that are safety-critical or for decisions that could have detrimental effects, it is crucial to ensure that they work correctly.

The Malta Digital Innovation Authority's (MDIA) Innovative Technology Arrangement (ITA) regulatory framework was established to provide higher levels of assurances that such systems are adequate by requiring independent system audits. However, a mandatory system audit on all types of systems (even if only for Blockchain or AI systems) would stifle innovation. Therefore, the regulatory framework is primarily voluntary. Yet, other lead authorities, regulatory frameworks and laws could mandate such system audits or associated technology assurances (e.g. the Malta Financial Services Authority had mandated that certain classes of Virtual Financial Asset operators require system audits).

System audits can be onerous – and when used for such safety-critical systems that is to be expected considering a risk-based approach. Yet, the vision for the MDIA was always to provide a framework that would allow for start-ups and operations involving lower risks to also acquire recognition of technology assurances – and this is why the Technology Assurance Sandbox (TAS) was launched. The TAS puts in place a framework that scales down requirements according to risks (which can also be scaled down by applying agreed upon restrictions).

Whilst the TAS focuses on technology assurances, without a doubt other forms of support and facilitation for start-ups and operations involving less risks should be provided. The MDIA should continue to investigate other forms of regulatory sandboxes that facilitate and support technological innovation – especially where newer technologies face challenges in existing regulation.

MDIA needs to also be ready to support and have in place frameworks that are aligned with EU requirements (including the AI Act, the Digital Services and related acts, the Cybersecurity Act amongst others). The EU proposed a draft AI Act within which an AI-focused regulatory sandbox is required to be put in place, for which the MDIA already has in place the TAS. A regulatory sandbox is an environment that allows the regulator, regulated entity and other stakeholders to test initial regulatory policies and design which may be in a collaborative manner – whilst providing consumer protection, market integrity and also importantly a framework that allows for organisations to operate their innovative arrangements for which they may not have been able to operate otherwise. The MDIA should continue towards providing such a regulatory sandbox that will empower Malta to test out different ways of regulating technology – and also to be able to propose regulatory frameworks that are evidence based.

The right techno-regulatory balance is important to find – it should neither stifle innovation nor allow for bad or negligent actors to harm consumers or the market in general. The MDIA should continue to strive to find that balance (a sandbox is well suited for this) and be a voice of reason when techno-regulatory proposals are being discussed at national and EU levels. Systems such as platforms that make use of social media persuasive technology and the Metaverse are changing and have the potential to change the fabric of society. Therefore, it is crucial that the MDIA plays a guiding role in directing related legal and regulatory frameworks in a manner that protects and instils the values that we would like to see in our society, whilst at the same time promote innovation.

The MDIA is not only about regulation – though it is its primary function as an authority. Having put in place the required regulatory structures, in 2021 the MDIA with the Ministry for the Economy and Industry launched initiatives to support: (i) the uptake of blockchain technology within the public sector to promote good governance and transparency; and (ii) AI scholarships and academic research. It is only by immersing the country in the technology and supporting the advancement of the state-of-the-art that Malta can become a leader. Therefore, the MDIA should support such initiatives to keep Malta at the forefront of innovative technologies and their (balanced) regulation.

Beyond my tenure as Chairman, I see the MDIA in future having an ever increasing role – in collaboration with other national authorities. Beyond ensuring that the regulatory frameworks keep up to date with EU and global harmonisation directions, the MDIA should continue to work towards supporting Malta in embracing emerging technology and to reduce regulatory burdens. Future avenues that should be investigated include: (i) regulatory tools that provide various lower levels of assurances with associated lower costs including technology registers, certified peer review processes, and self-certification amongst other regulatory tools.; (ii) investigate innovative solutions towards reducing regulatory burdens (both associated with MDIA's remit as well as other regulators') through automated compliance systems and through decentralisation (e.g. use of DLT); and (iii) solutions for regulating decentralised organisations.

I had decided quite a while back that I would not renew my term as Chairman so that I could focus on research and other activities. I wanted to release this statement prior to elections so

as to make it clear that it has nothing to do with politics, however I feel it would not be prudent to release such a statement prior to being released of Chairmanship responsibilities. You might be faced with a situation like this, and I would like to use this situation as an educational experience.

Using a blockchain, I can “notarise” this document to create a “proof” in a manner that guarantees: (i) that it was uploaded onto a blockchain at a particular time (in this case it’ll be uploaded on the 22nd March); (ii) that this document I am making public now has not changed since I uploaded the proof into the blockchain (and subsequently making the proof public); and (iii) that I and no one else uploaded the proof.

Blockchain is a useful tool that can help guarantee verifiability, transparency, auditability, and ensuring data cannot be tampered with. It is a tool that could help instil good governance into various processes used within the governmental, public and private sectors. I hope to see more usage of blockchain to support good governance.

Dr Joshua Ellul
Outgoing Chairman
Malta Digital Innovation Authority

Public Key: 0x49d5E490B7fE1DDF5EcB3695f57c10E2c2055de5