



# Innovating Through Blockchain

## White Paper

Emerging Technologies

Monstarlab ::

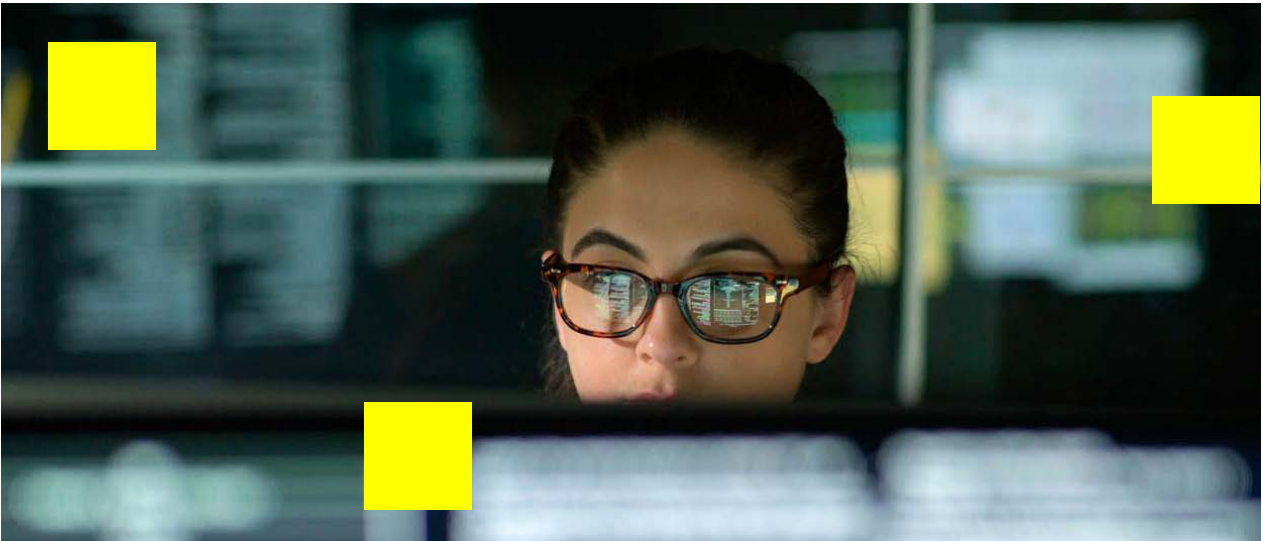
# 1. Executive Summary

In today's world, Blockchain technology is very much a trending topic. This technology has evolved to solve an array of real-world problems and offer a better business model and economic structure for all of us. Almost every industrial section is looking to adopt Blockchain technology and reap its benefits. Unsurprisingly, the global Blockchain distribution ledger market is forecasted to touch \$5,430 million by 2023.

Blockchain has the potential to transform business models and procedures by enabling processes that are not only faster and more efficient but also more transparent and protected – all while improving information access and data integrity. Therefore it's no wonder that financial institutions are at the forefront of exploring the potential to improve service, lower costs, increase efficiency and reduce risk by utilising the technology.

Educational institutions are now turning to Blockchain as a way to avoid fraudulent certifications. This White Paper explores how the introduction of Blockchain can overcome the UAE-specific problem. It further highlights the challenges of introducing such a system and how important participants (Trusted parties = Tertiary Institutions globally) are in the process. This is not a technical document; this paper aims to provide insight and direction as to what will be required (the effort) to eliminate fraudulent qualifications slipping through the system.

## 1. Executive Summary



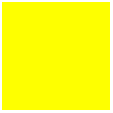
### “Don’t trust, verify”

The slogan of the University of Nicosia, the first University to provide student qualifications on the bitcoin Blockchain.

With the introduction of bitcoin, the world was quickly promised solutions that remove intermediaries and provide immutable verification on a superior technology underpinned by cryptography. 13 years on and as the technology starts to mature, we now realise that trust will “always” be part of the process. The secret is to select trustworthy sources and eliminate the rest. These trusted parties can come in the form of IoT devices, software, and/or people (organisations). In the world of Blockchain, they are best described as Oracles – trusted data feeds from the real world to the blockchain. In the above example, the University is that trusted source – the oracle.

The UAE has a very large expat community from countries across the world. When accepting employment, expats must present their attested qualifications. This is a slow, expensive, and paper-based process requiring several intermediaries that must be trusted. In a country that aims to be the first nation to truly go digital, and eliminate paper for all government processes, this is a process that needs to evolve.





## 2. Introduction



### A paperless government

When an employer receives a future employee's qualification, they trust the institution that issues it. Unfortunately, they never receive it directly from the institution, and it is, therefore, prone to fraud which seems to be a significant problem, especially in the UAE. With Blockchain, we can now receive it from anyone and just verify it against the true, immutable version recorded on the Blockchain. Any change, irrespective of how small it is, will void the verification. It is important to note that the Blockchain is an append-only ledger – once on the Blockchain, it is there forever, and **no one can amend or remove it.**

Where a tertiary institution is already issuing their qualifications on the Blockchain, they will not have to be part of this solution; they already have a solution. Although it has already started happening, we still have some way to go before this is a global standard.

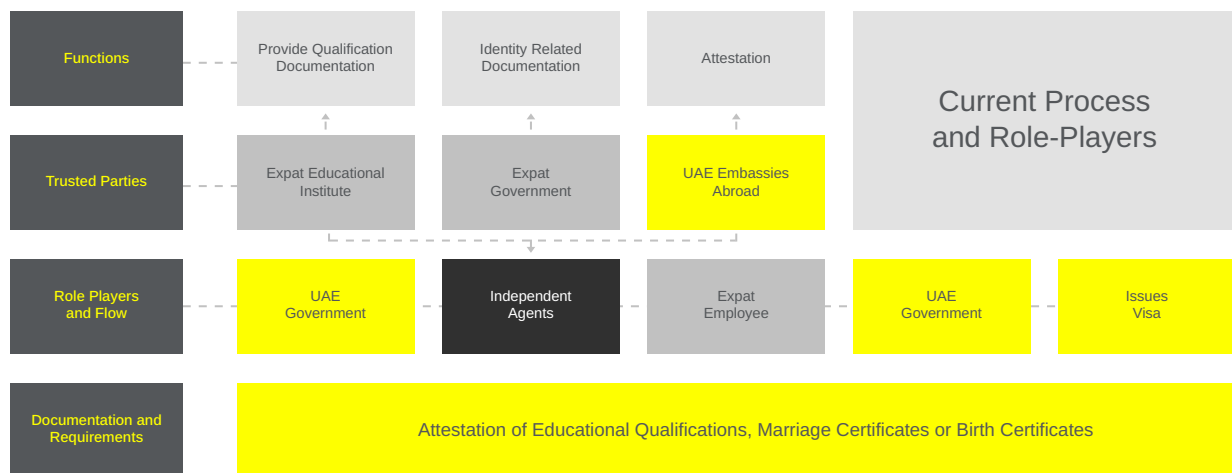


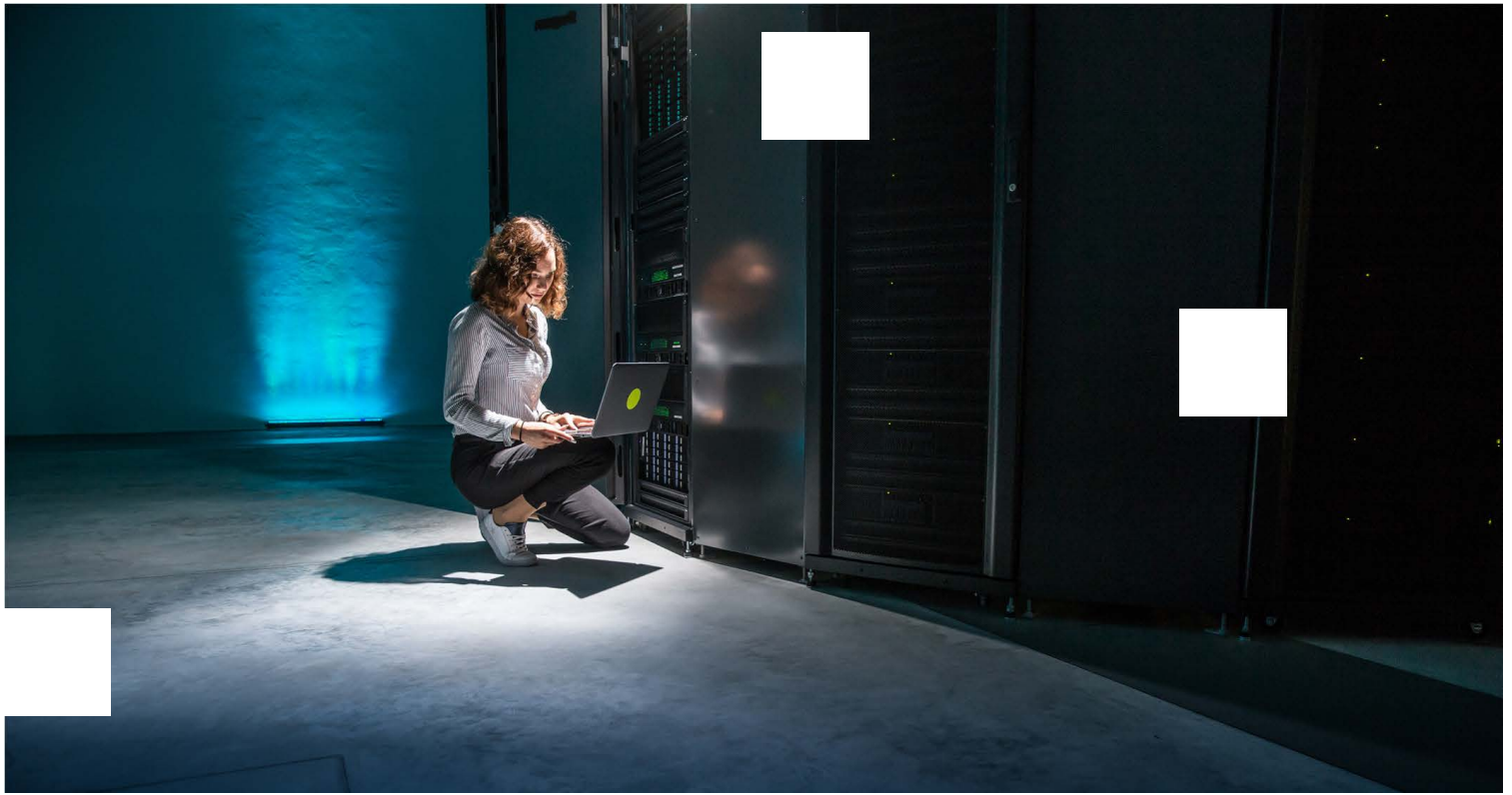
**Multiple governments have published reports on the potential implications of Blockchain, and the past two years alone have seen more than half a million new publications on and 3.7 million google search results for Blockchain.**



# 3. The Problem We Want To Solve

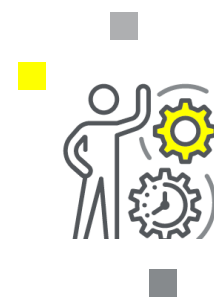
The current system (a government requirement) in the UAE is cumbersome, time-consuming (expensive), paper-based, and does not solve the problem of trust and verification. Expats must obtain their qualifications from the institution they studied (sometimes many years ago). This often takes a lot of time and, in many cases, requires the involvement of agents and other intermediaries. Once the expat's identity has been established, forms have been completed, and payments made, qualifications are requested and may take weeks to extract. These documents are then delivered to a UAE embassy (in the specific country of origin) for attestation. The delivery is either by an agent of the employee or the employee in person. This Embassy has no way of verifying if these documents are original or fake, except if they go to the university to verify them. The attested documents (fake or not) are eventually presented to the UAE government / employer as proof of qualifications. The diagram below depicts one version of the process.



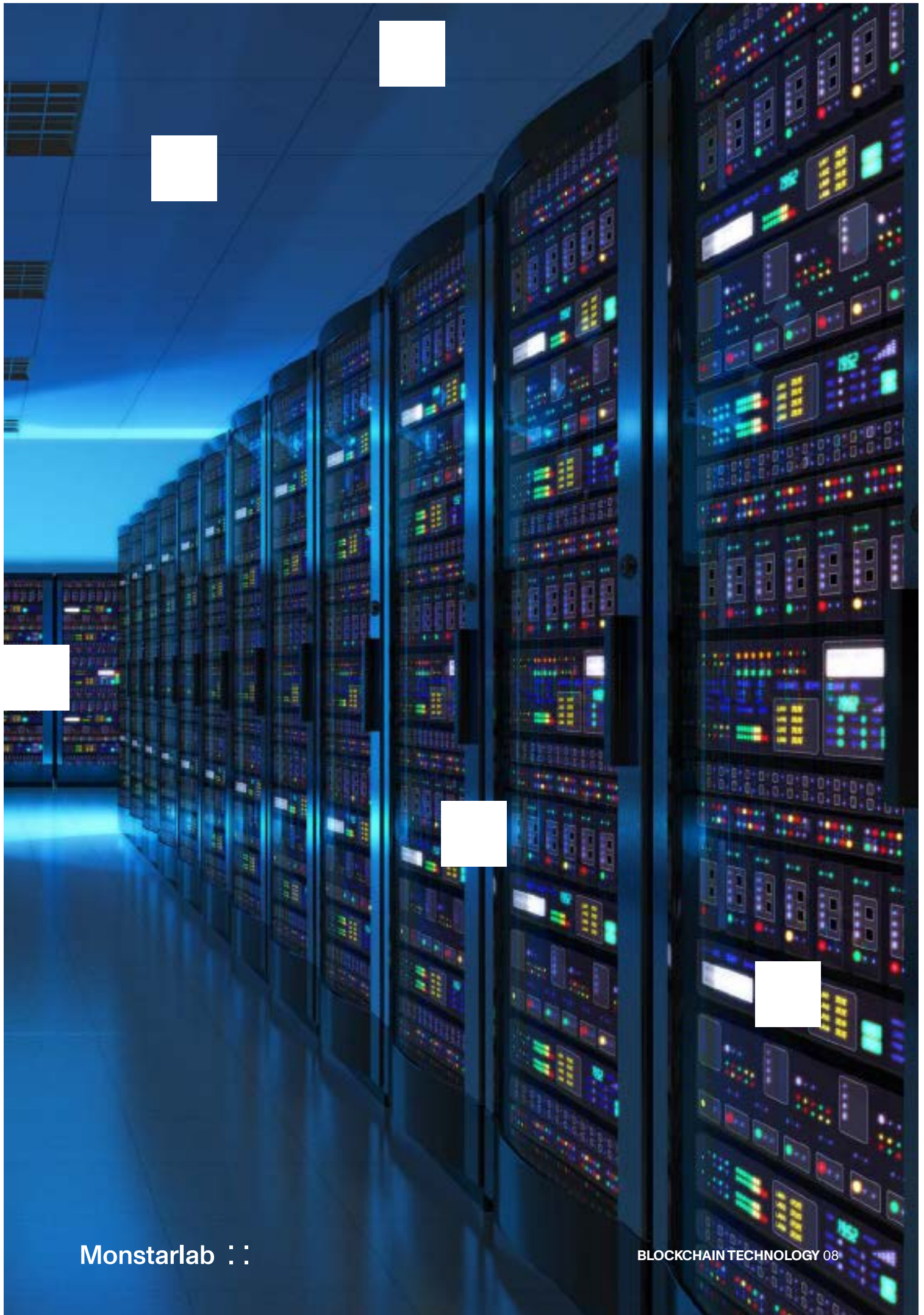


### 3. The problem we want to solve

Although we are looking specifically at employee qualifications, there are a host of other documents that may also require attestation/verification, such as birth certificates, marriage certificates, death certificates. The same principles apply.



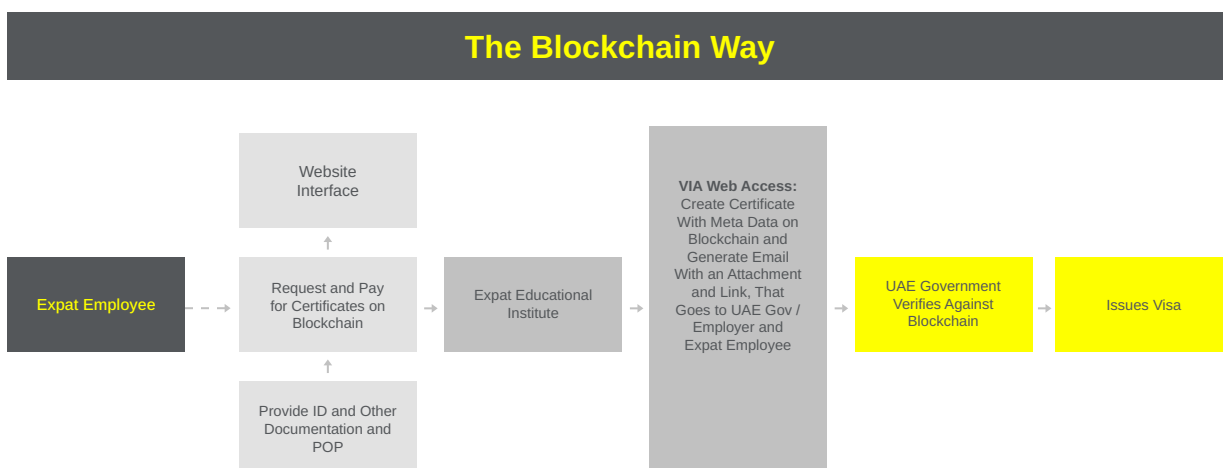




# 4. The Solution: A High Level Overview

The trusted party with qualifications is the relevant Tertiary Institute (The Oracle we are willing to trust). In order for this to successfully work, all other intermediaries must be removed.

In the diagram below, we depict the process where a Tertiary Institute (on request of a student who has been verified by the Institute) can create a certificate with its meta-data on the Blockchain. The process is straightforward (via a simple personalised web portal), fast and intuitive. An email with the attachment and link will go to the employee/employer and the UAE government (and any other interested party). There are different ways to verify the authenticity of a qualification. Still, it takes seconds, and if ANY change (irrespective of its importance) to a documents' metadata were made, it would reject the document.



## 4. The Solution: A High Level Overview

### Benefits:

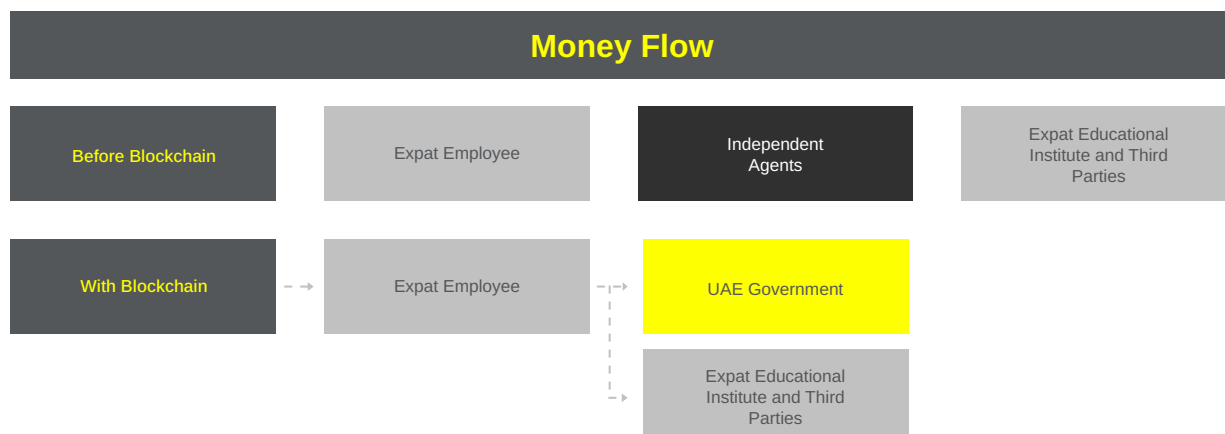
Blockchain promises many benefits. In this 'solution', the benefits are easy to grasp and immediately see and includes:

- Removing all intermediaries that can tamper with a document.
- Reduces time and cost substantially
- Removes paperwork (paper-"less" achieved)
- Substantially reduces the administrative burden on the tertiary institute. They do it once and never again
- The embassy can now focus on international relationships rather than stamping and attesting documents)

The biggest risk is if trust in the Oracle fails in which case the entire process fails. This would be the case with or without the Blockchain.

This process does not only give the UAE government and the employer comfort but enables the UAE government to potentially profit from the process (rather than the intermediary). It will however require a lot of input from the government to convince tertiary institutions to participate in this process.

## 4. The Solution: A High Level Overview



## Non-Fungible Tokens (NFTs) and Qualifications

No White Paper on Blockchain will be complete without touching on NFTs. Your qualification is unique and can be minted as an NFT and kept in your crypto wallet, something you own that is non-fungible. The University of Nicosia has already started issuing these NFTs, and graduates now have ownership of their qualifications to submit at any time to anyone for verification.

## Conclusion

The answer is simple; Implementation of the solution is a logistical challenge and will require the UAE government to request the participation of Tertiary institutions across the world. Once achieved, this could become a **global standard**.

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## About Monstarlab

Monstarlab is a digital experience partner focused on accelerating client's journeys to becoming market leaders, providing the unique competitive advantage of world-class experiences. Specialising in end-to-end enterprise-level digital solutions, the company has successfully delivered hundreds of projects, including for companies such as Mashreq Bank, Careem, Kerzner International, Emirates NBD, and ADQ.

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