

Creating a 'Blockchain for Good' Nation

White Paper from StartupDelta, DutchChain, APG and Brightlands Smart Services Campus ¹

Introduction

Like AI, blockchain is a transformational and foundational technology. It has the potential for profound societal and economic impact and could be the basis for many (revolutionary) new developments. It can help us decentralize our energy system. It can help us make our labour force more flexible, without giving in on social security. It is proving itself in making supply chains more transparent and responsible. It can provide companies and governments with a new trust framework, and offers new opportunities to fund startups, and projects through ICOs. These applications are merely scratching the surface of the future potential of this technology and the role it could play in the future of our networks.

More importantly, it can help us build new public-private infrastructure, usable for everyone and at the same time owned by everyone or even no-one, to upgrade the internet to meet the needs of our 21st century digital society. This infrastructure enables collaboration between many different stakeholders with different interests in interconnected context, so that complex problems can be solved by complete ecosystems. Decentralized interconnected solutions can enable global collaboration networks (ecosystems) in a trusted way: We can collaborate safely without knowing each other.

At the same time blockchain seems to be reaching the top of the hype-cycle, with many 'bubbles' like developments and many concerns that need serious consideration. How it will develop, we do not know, but it is seeming to enable a logical next step in the digitization of society and the economy. As such, it is highly probable that it will – in some way or another – establish itself as a dominant technology in the years ahead.

Therefore it is an important development to be very closely involved in as a nation. As is the case for the development of AI, the frontrunners are going to reap the most benefits and it will be very hard if not impossible to close the gap once the technology takes off.

This is important as the frontrunners get to influence *how* blockchain is deployed. If the Netherlands wishes to be able to help shape this development, if it wants to make sure that

¹ in cooperation with the Dutch Blockchain Coalition

blockchain will change the world for the better, the Netherlands must dare to take a place in the driver seat.

State of play

The Netherlands has a good starting position to be among the leading nations in blockchain development. There are several consortia (Dutch Blockchain Coalition, Blockchaingers, Brightlands Smart Services Campus) working on use-cases for blockchain for corporates and government and there is an ecosystem of startups forming. The yearly Blockchaingers Hackathon is drawing international attention from blockchain enthusiasts all over the world. Dutch universities are leading in quality scientific output regarding blockchain. Dutch culture is highly supportive of innovation and decentralization and its thriving startup ecosystem is well positioned to produce ground breaking blockchain ventures.

The Challenge

However, to lead and be able to help set the standard of how blockchain is used 'for good' we need to step up our game. It is time for a more coherent approach as a nation. We need to connect the dots, invest in the foundation infrastructure and in talent development and have a regulatory framework, along with supervision, that stimulate responsible blockchain development. The Netherlands should strive towards a balanced, ethically resonant public-private model where the needs of humans and their biosphere are at the centre. As such it is distinguishing itself from the Chinese model (state control, ownership) and the US model (corporate control, ownership).

We believe that blockchain has enormous potential for innovative new business models, which is why we present this White Paper. This whitepaper provides building blocks for a national blockchain strategy.

What is Happening Elsewhere?

The most thriving blockchain communities, can be found in San Francisco, Toronto, Zurich/Zug, Singapore, UK, Berlin, Tel Aviv, Shanghai, Estonia. Since early blockchain applications are associated with crypto currencies, Bitcoin in particular, countries with strong FinTech clusters seem to have taken the lead. We also see those geographies with strong programming and digital skills being actively involved. Thus many developers can be found in Russia, China, and the Ukraine.

Switzerland and Singapore have done ground-breaking work in providing an enabling regulatory framework, through a proactive and pro-innovation regulator.² Malta and Dubai have also set up ambitious government programs. France has just launched PACTE empowering the French regulator AFM to give licenses to companies that want to raise funds through ICOs.³

In the EU the ministers of Finance have recently announced to come with legislation on ICO's. The Austrian minister of Finance, Löger said the following:

“Currently, this market is largely unregulated, particularly in comparison with other sectors. For us, it is a question of clear rules of the game for companies, customers and consumers in order to make crypto assets usable as financial instruments, and not a question of excessive regulation.

With a vision for Europe, we want to make the location more attractive for crypto assets and develop a European plan to position ourselves more strongly in this emerging segment”

National programs and legislation also serve a marketing function to attract talent. In that vein Canton Zug positioned itself as Crypto Valley. In the state of Wyoming bill 111 was passed; a measure that exempts digital currencies from property taxation state-wide. They also passed bills to exempt utility tokens from security laws and make digital currencies exchanges exempt from the Money Transmitter Act. All aimed at actively attracting cryptocurrency and blockchain businesses to their state. China is likely to be the most aggressive driver of blockchain, even though initial coin offerings and crypto currencies have been forbidden.

Most investors in blockchain are in the US, UK and Singapore, which correlates with the traditional VC hubs. However, as blockchain companies tend to use ICO's to attract funding a shift is happening to those jurisdictions that have embraced crypto currencies like Dubai. Compared to the leading blockchain communities, the Netherlands is doing well in linking blockchain technology to existing corporate companies and government. Since blockchain can be used for almost everything where trust and value are key ingredients, there is an opportunity for the Netherlands to lead the way in finding good use-cases for blockchain in sectors of the economy where the Netherlands is already firmly positioned in the world, like logistics, pensions, food and energy.

²

https://www.swissbanking.org/en/media/positions-and-press-releases/opening-corporate-accounts-for-blockchain-companies-guidelines?set_language=en

³ <https://cointelegraph.com/news/france-finalizes-new-ico-framework-to-attract-innovators-globally>

A SWOT of the Dutch Blockchain Development

While the Dutch are famous for belittling our own achievements, we had to conclude that there is no reason to do so when it comes to blockchain. There is a very good base to build on. However, doing good is not good enough, if we want to set the standard and attract blockchain talent and businesses to the Netherlands. We have to be great, to achieve that.

Strengths

- Cooperation between government, corporates, and startups is organized and strong
- National government is pragmatic, reliable, flexible, and highly involved and willing to do pilots
- Blockchain can contribute to sectors of the Dutch economy in which we are traditionally strong (ex. logistics, food, financial services, pensions, healthcare)
- There are regular meetups, hackathons, field labs, and conferences where the ecosystem comes together and that attract international talent to the Netherlands
- Blockchain in the Netherlands is not associated with negative ICO-experiences
- Several Dutch universities have a strong research groups on blockchain and related technologies.
- We have a dynamic startup ecosystem and tech clusters that support the commercialization of new technologies.
- We have solid financial institutions with a healthy Fintech cluster.
- We have high speed internet infrastructure and one of the world's busiest internet exchanges, AMS-IX.
- In terms of access to a variety of markets, the Netherlands is well positioned as a launching platform for decentralized technology as the comprehension of many languages, in different parts of the country, are pervasive.
- New partners in the Dutch Blockchain Ecosystem, especially Chinese companies, are interested in providing inroads for European and American blockchain companies to enter Asian and other markets.

Weaknesses

- Pilots are not scaling up fast enough, due to lack of serious investments and 'vested interest' of corporates and governmental organizations. (current business and jobs)
- Funding vehicles for fast-moving tech startups are not pervasive in the Dutch startup scene
- Sense of urgency is limited to a few pioneers in government and corporate world
- Government funds are limited and fragmented
- The collaboration between different communities within the Netherlands working on blockchain is sometimes difficult
- Blockchain is not yet incorporated in the curriculum at universities

- Universities, in general, could be more up-to-speed with incubation, acceleration, and providing content on the latest tech developments.
- There is no unified development process or set of services for fast moving tech startups.
- Banks hesitate to accommodate innovative blockchain startups and ICO initiatives, whilst working on blockchain based services themselves.
- Banks often position themselves as 'anti-crypto currencies'.

Opportunities

- Organizing moon-shot initiatives on 'blockchain for good' to attract international talent
- National branding on 'blockchain for good' (energy transition, flexible workforce, identity for refugees, privacy, etc.)
- Development of cross border infrastructure
- Solid regulatory framework for tokenization / ICO's
- Scaling pilots into full blown projects
- Development of a National Blockchain Agenda

Threats

- Top of hype-cycle. Fall out on use-cases and pilots that don't deliver
- Regulatory framework that is not 'up dated' fast enough and a regulator that is overly-cautious
- Shortage in 'home grown' talent
- Regulatory enforcement from abroad / EU that might not resonate with our ambitions.

Strategic Building Blocks for a National Blockchain Agenda

1) Regulatory Framework:

The Netherlands (and the EU) needs a framework and regulators that embrace the prudent, responsible and controlled development of tokens/coins and ICOs, by setting the highest standards globally to establish and ensure trust in this new economic infrastructure and these instruments and facilitate innovation while protecting investors and the financial system. Regulatory uncertainty on the status of instruments on offer is identified as one of the largest impediments to make this type of financing successful.

As a first step in the right direction, we believe the sector could be aided by introducing an ICO market guide and having regulators issuing no action letters to those parties for which, *inter alia*, tokenization is genuinely required, investors are properly informed and the tokens/coins on offer do not qualify as securities (*effecten*).

Although certain jurisdictions intend to regulate tokens and coins in the same manner as ordinary shares or bonds (like in the UAE), we question whether this one-size-fits-all approach would be justified given the different characteristics and drivers of securities and non-securities.

One of the other major practical issues currently with an ICO is getting a bank account as new blockchain startup, but also maintaining a bank account when already doing business. An ICO is usually qualified by banks as 'new business' that needs to be reported to the bank, and then most banks in the Netherlands will not cooperate with the ICO as a matter of category.

Neither most banks, nor the Dutch Banking Association have published a public statement on this yet and it would be helpful to get clarity on the conditions for acceptance. If we as a jurisdiction would like to enable a new type of economy, we should collectively explore how we, including the traditional players, can make this possible.

That it is possible to create good standards for this new industry to protect investors and society while promoting innovation can be shown by the steps undertaken in Switzerland and France. Firstly, the Swiss Financial Market Supervisory Authority FINMA already has experience in supervising ICOs and providing insights how it applies financial market legislation in handling enquiries from ICO organizers. Secondly, the Swiss Bankers Association is currently working on recommendations with the help of the government how Swiss banks can accept FinTech clients to enable them to open bank accounts and conduct ICOs. France has also published an ICO guideline, to attract investments for startups through ICO's. These initiatives are, in our view, good examples on how ICOs can be prudently approached in the Netherlands as well.

2) Talent:

NL needs many more (and better) programmers and developers trained in BC technology. These can be attracted from abroad (and have to be retained after having received their education), but also need to be educated at home. To achieve this, we need to engage higher education institutions and develop specific training programs. The speed of development implies that formal education will not be able to adapt rapidly enough and will not produce enough graduates to supply the full demand for these skills. Thus extra efforts and reskilling programs will be necessary.

3) Ecosystem:

To further strengthen the growing blockchain ecosystem in the Netherlands, we need dedicated incubator and accelerator tracks, to follow up on the numerous events that are organized. The Brightlands Smart Services Campus is already offering support to startups. Tracks in other blockchain-cities (Delft, Amsterdam, Groningen) should be added (and are being connected) to gain scale.

Furthermore, the blockchain ecosystem should be stronger connected to the other startup ecosystems, since blockchain is an enabling technology for many sectors. By organizing deep dives (blockchain for healthcare, blockchain for the energy transition, blockchain for food etc) crossovers can be accomplished.

Financials/corporates can play an important role in activating this ecosystem. Some basic core processes of the financials/corporates are one of the most likely to be disrupted by blockchain, requires them to build relevant consortia from the ecosystem around certain use cases. Startups with their solutions and development capability are essential to the success of the different use cases. Thus Financials/corporates should play a double role in building and activating the ecosystem: activate the relevant players and act as an early investor and launching customer for the startups.

4) International Connections:

Blockchain development is a global phenomenon with local specializations, where talent, knowledge, and capital accrue. Therefore, it is highly important for any aspiring blockchain ecosystem to be well connected to the world leading centres of blockchain development and deployment. The Netherlands have good connections to international centres like Zug, Singapore, China, San Francisco, London, Berlin, and with international institutions like Worldbank, World Food Program, International Red Cross, etc... which should be strengthened and deepened further. The Dutch international focus (“handelsgeest”) is a good enabler for international connections.

5) European Collaboration:

For certain activities, scale is required beyond the geography and jurisdiction of The Netherlands, especially in developing prototypes and use cases, standards, and setting norms for, and ensuring, interoperability in IDs for people, smart contracts, etc. Therefore, any Netherlands based initiative to develop standards, protocols, and norms should at least be aware and tolerant of - if not be fully aligned with – EU initiatives in these areas. As leading BC nation in Europe, the Netherlands should initiate a blockchain working group or task force with likeminded EU member states to influence, shape, and/or develop the EU BC strategy and regulatory agenda. As an example, Brightlands is currently preparing a European blockchain consortium under the name Blockstart that will connect SME's throughout Europe to the new business opportunities blockchain is enabling, especially in the areas of health, food and logistics. Blockchaingers have organised a 'Blockathon' in Brussels in collaboration with the European Commission.

6) Specialisation:

The Netherlands should build on its strengths, like energy, logistics, supply chains, ID, financial services, HR, AgriFood, Pensions. Strong initiatives in a number of these areas exist already (Enexis on energy, APG on pensions, Min. BZK on ID, etc). Further use cases should be developed within these sectors through coalitions of the willing. The Hackathon based approach is a good model for initiation and the DBC is well positioned to take these innovations and scale them through its network of corporate members.

7) Branding:

A recognizable and differentiating positioning of the Dutch Blockchain ecosystem would help attract talent and funding. We see the Swiss, and more specifically Canton Zug, as an example of the importance of effective branding, embedded in the actual ambitions of the country and aligned with its policies. Dubai, Singapore, and Estonia also offer examples worth studying. Any positioning of the Netherlands as a Blockchain Nation should be fully aligned with Dutch qualities and strengths and be supported bottom up as well as coordinated top-down. Possible propositions could be: Blockchain for Good, Blockchain for real: Trust & quality, 'Togetherness' with government, business, science, startups, etc. - all collaborating.

8) Investment:

Besides creating the right regulatory and supporting conditions for ICOs to fund promising blockchain projects, there's also a need for public funding in blockchain education, infrastructure, pilots, etc. Real strategic positioning requires private and public investment. What international funds are willing to invest here and how can they be attracted? InvestNL should develop a specific capability for the supporting the commercialisation of breakthrough and transformational technologies like Blockchain.

9) Active Government:

Governments have been leading actors in the hottest Blockchain hubs globally and in some places have also been the greatest obstacle. Typically, a government can provide massive political, regulatory, and policy support, and can deploy its procurement, communication, and convening power. As an active user (use case definition, pilots, and full implementation) it can be the launching customer for many foundational applications like in ID, financial transactions, certification & authentication services, etc. Developing security frameworks, protocols, and expertise should be a primary goal of government in active collaboration with industry and academia.

Furthermore, the government is an active player in the different consortia for use cases. The different governmental organisations should play an active role in these co-creations.

10) Integration:

Key to the 4th technological revolution is the integration of new technologies, like robotics, AI and internet of things. Blockchain can be added to that list if we facilitate the integration of blockchain with these other enabling technologies. By emphasizing challenges rather than technologies, we can discover how blockchain can add value to possible solutions. It is therefore time for the blockchain community to not only invest in their own technology and ecosystem, but actively seek connections with other tech communities.

Conclusion & Recommendations

The time is ripe for a coordinated national Blockchain strategy. There are great opportunities and a direct urgency to engage and lead in a measured and pragmatic way - aware of the existing risks of being too late or too uninformed. The Netherlands is very well positioned to play this role if it manages to focus, prioritize, connect, and scale various existing bottom up and top down initiatives.

Recommendations:

1. Develop a National Blockchain Agenda
2. Ask the Ministry of Justice and Security to consider changes to the existing legal framework to allow for blockchain based solutions to flourish, such as the introduction of decentralised autonomous organisations and tokenization.
3. Ask the competent regulators, the AFM and ACM with the help of DNB to develop a strong but inviting regulatory framework for tokens and coins in general and procedures for ICO's
4. Combine government funds to create an investment base for scaling up pilots
5. Incorporate blockchain in the curriculum at universities
6. Develop co-finance instruments to incentivize corporate and public funding in startups and tokenized ecosystems
7. Develop a clear PR strategy with mission driven global perspective both national and international to tell our stories in a great way and bring people along.
8. Support/ co-finance consortia that aim to create infrastructure for ecosystems with societal goals.

Annex

What is Blockchain Exactly and How does it Work?

Text copied from <https://blockgeeks.com/guides/what-is-blockchain-technology/>

Picture a spreadsheet that is duplicated thousands of times across a network of computers. Then imagine that this network is designed to regularly update this spreadsheet and you have a basic understanding of the blockchain.

Information held on a blockchain exists as a shared — and continually reconciled — database. This is a way of using the network that has obvious benefits. The blockchain database isn't stored in any single location, meaning the records it keeps are truly public and easily verifiable. No centralized version of this information exists for a hacker to corrupt. Hosted by millions of computers simultaneously, its data is accessible to anyone on the internet.

“The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value.”
Don & Alex Tapscott, authors Blockchain Revolution (2016)

“As revolutionary as it sounds, Blockchain truly is a mechanism to bring everyone to the highest degree of accountability. No more missed transactions, human or machine errors, or even an exchange that was not done with the consent of the parties involved. Above anything else, the most critical area where Blockchain helps is to guarantee the validity of a transaction by recording it not only on a main register but a connected distributed system of registers, all of which are connected through a secure validation mechanism.”

– [Ian Khan, TEDx Speaker](#) | Author | Technology Futurist