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Developing cross-continental blockchain collaborations

- The mission of the Partners in International Business (PIB) to Singapore, a blockchain driven public private consortium of government, knowledge institutes and companies
- Connecting the NL and SG Blockchain ecosystems
- Exchange knowledge to mutual benefit
- Explore setting up joint blockchain collaborations on shared topics of interest
- The mission is not a hackathon, but a first step in co-creating blockchain solutions and developing cross-border use cases



Partners for International Business

Blockchain Solutions Netherlands – Singapore

New Business models with Blockchain for Good

Following an innovation mission on blockchain in Singapore in 2018, a Dutch public-private consortium named Blockchain Solutions Netherlands - Singapore has been set up to connect the blockchain ecosystems of both countries and to explore opportunities on worldwide blockchain applications and services together.

This Partners for International Business

(PIB) programme, an initiative of the Netherlands Enterprise Agency, allows Dutch businesses to enter into a public-private partnership to realise their international ambitions.

Joining forces with other businesses in your industry and with the Dutch government puts you in a better position. Together with clusters of Dutch businesses and knowledge institutions in a specific field, the Dutch government is developing a 3-year action plan.

This will provide a list of strategic activities that give the best possible platform abroad for a Dutch industry or sub-industry in general, and specific clusters like blockchain.

The Partners for Business Blockchain Solutions, set up in June 2019, consists of Ledger Leopard, Kryha, Unchain.io, Dusk Network, Rabobank, ABN Amro, TNO, The Hague Security Delta and Port of Rotterdam. Cooperation partners are ICTU and Deltares. The Ministries of Foreign Affairs, Economic Affairs and Climate, Justice, Infrastructure and Water were also involved.

The **Dutch Blockchain Coalition** (DBC)

is a joint venture from the government, knowledge institutions and industry. DBC's mission is to advance a reliable, robust and socially accepted block chain application and utilise blockchain as a source of trust, welfare and prosperity and security for citizens, companies, institutions and government bodies. For this mission, the DBC mainly acts as a catalyst and facilitator that activates and connects within to create the best possible conditions.

The goal of the high level **trade mission**, led by Dutch minister Raymond Knops, who is responsible for the Government Digital Service, in November last year, was to visit during the Fintech festival / Switch, and to learn from digitization strategies and developments in Singapore. Furthermore, the participants aimed to explore opportunities and to build on the existing connections and bring the relevant communities of both countries together.

The trade mission was organized by the Dutch Blockchain Coalition and coordinated by Partners for International Business.

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Results of mission for Port of Rotterdam

This system has not changed since mediaeval times, but, in conjunction with Singapore, we can set a new standard

The lack of mutual trust has always been a major challenge for world trade. Up to now, agreements about the ownership of cargo such as shipping containers have been recorded by means of a paper title deed. In conjunction with the Port of Singapore, the Port of Rotterdam wants to automate this "system of trust" by means of blockchain technology.

Martijn Thijsen is responsible for the Port of Rotterdam's digital strategy. The partnership with the Port of Singapore to work on the pilot concerning the title deeds to shipping containers, the Bills of Lading, was established during the trade mission from 11 to 15 November 2019.

A mediaeval system with a high-tech successor

'It is actually quite extraordinary that we haven't found another system to guarantee trust between two parties since mediaeval times', says Thijsen about the Bill of Lading pilot. 'In this case, it's about the ownership of shipping containers. Ownership is transferred by means of an actual paper document, with stamps and hallmarks to guarantee its authenticity.' Systems do exist in which ownership is registered digitally. 'But, from a legal standpoint, the paper Bill of Lading is still the underlying document for this registration. No other method has been found to guarantee it without paper. Until now, that is, because we and the Port of Singapore are working hard to find a solution', says Thijsen.

We'll now first test its feasibilities in practice

Working in partnership with a port outside the EU is essential in this project, according to Thijsen. 'We still have no guarantee that it will work in practice. The only way to investigate that is to put it into practice in what is known as a sandbox environment. Because it's not only about digitising the agreements, the system also needs to be accepted in the various legal systems; amendments will be needed for that.'

Singapore feels like a stable partner for this project, in Thijsen's view. 'They are already very advanced when it comes to digitising public service tasks by means of blockchain and other methods. Added to that, history has shown that we can work together well. By definition, that increases our trust.'

Unique in the world, but if it works, it will become the standard

'We received a wonderful recommendation during the trade mission from Raymond Knops, the Dutch Minister of the Interior and Kingdom Relations. That certainly helped when formalising the partnership with Singapore,' thinks Thijsen.

The project concerning the Bills of Lading for shipping containers is unique in the world. 'If this also turns out to work in practice, we can set the global standard. We will finally be able to digitise a system we have been using since the middle ages,' says Thijsen enthusiastically. 'We'll first investigate it on a small scale with other important parties such as the UN/CEFACT. Whatever the results are, this study will certainly give us more information about what is needed to set the new paperless standard.'

Pilot: Collaboration between Rabobank, the Government of the Netherlands and Singapore on the Career Wallet

Your own digital environment where you are in charge of all your diploma and work data: Rabobank and the Government of the Netherlands are exploring the possibilities of a "Blockchain Career Wallet" – and they are now doing so with counterparts in Singapore.

Anne Doeser is an innovator at Rabobank.
Together with Rob Brand of the Government
of the Netherlands, she talks about the
partnership that arose with Singapore
during the trade mission from 11 to 15
November 2019.

This is a challenge for the entire ecosystem

Life-long learning is now a priority for every employee. Besides that, flexible forms of labour, such as shorter employment contracts or self-employment constructions are no longer an exception in today's world. 'How we verify and validate degree programmes and work experience is a challenge for the entire ecosystem involved', says Doeser. 'That is why we are working on this blockchain pilot – which is still in its exploratory phase – in conjunction with as many parties as possible. From employers such as KLM to flexible working companies such as Randstad: they are all involved. For now, Rabobank has accepted the challenge to run this first pilot with these parties using blockchain technology.'

The Career Wallet is not just a nice-to-have

'One thing is certain, a Career Wallet is essential in this day and age', believes Brand too.



'Employees can manage all the information which is useful for their careers in a Career Wallet. Just as your digital debit card is stored in your Apple Wallet, your validated diploma will soon be stored in your Career Wallet.'

This blockchain-driven wallet saves employees and employers a huge amount of time and is extremely reliable, says Brand. 'A diploma or work experience stored in the wallet has been validated making it an official digital document that the employee can share whenever necessary.'

It is important to take a cross-border approach to this topic, in Brand's view. 'In the EU, we are already working together to validate diplomas by means of blockchain. This pilot complements this nicely.'

Intensive partnership with Singapore

During the mission, Brand and Doeser were able to see how the blockchain application developed in Singapore works. 'They are already able to exchange diplomas and accreditations via a blockchain.' A very useful solution, believes Brand. 'Especially when a student temporarily changes university, for instance, or takes an additional study programme.'

The project in the Netherlands is broader than this, however, says Doeser. 'Here, we are going to look for a solution for everything concerning one's career. So not just diplomas, but also the validation of work experience, courses and training sessions.'

This will help "the Netherlands plc"

Doeser is very enthusiastic about the partnership with Singapore which came about during the mission. 'There are already an enormous number of good initiatives in the Netherlands for all sorts of topics related to this innovation, but the mission has given momentum to the technology so that we can now actually work together. Part of this vision has already been defined in Singapore, and we can learn from it. We are now working hard on a solution that will serve all parties. An added advantage is that the nature of blockchain means that parties have to work together no matter what.'



ABN AMRO and Singapore join forces in search of blockchain solution for KYC challenges

How can Singapore's experience help a Dutch bank to get to know its clients better and to discover possibilities to collaborate with other banks in this grea?

Ivich Hoffman is product owner at ABN AMRO where she works on projects related to crime detection. Her department "Connect" is responsible for collaborations with other banks in this area. She took part in a trade mission to Singapore from 11 to 15 November 2019 to gain inspiration from banks and other public and private parties.

Collaboration was already one of our priorities

One of the subjects that Hoffman is involved in is the "Know Your Customer" (KYC) utility. Banks realise a "know the client" policy in the context of legislation concerning the detection of money laundering and terrorism. This requires as much knowledge as possible about the client's identity and the expenditure and origin of the funds. Banks want to collaborate so clients only have to submit the documentation once if the KYC questions are the same. A joint model for this is currently under development. At the same time, privacy may not be put at stake. A technical solution like blockchain would appear to be able to play a role in the exchange of data between banks. With such an approach, version management and the audit trail can be safeguarded.

According to Hoffman, the possibilities offered by blockchain in this use case are very interesting.

Learning from Singapore and vice versa

The aim of ABN AMRO's participation in this trade mission was to gain inspiration for the different types of collaboration, and for the KYC utility in particular, which worked out very well, according to Hoffman. 'We can clearly learn from the experiences of the first pilot that Singapore set up in this area. Based on the lessons learned from this, a second pilot model is now being set up in Singapore. Of course, we would also like to follow this development.'

Conversely, Hoffman had the opportunity to talk in Singapore about her other project concerning the joint transaction monitoring with the five Dutch D-SIBs (Domestic systemically important banks). 'For the time being, this is still a globally unique initiative, and the trade mission to Singapore provided a superb opportunity to say something about it.'

Useful and well-planned programme

Hoffman was also pleased with the outcomes from the concrete collaboration during the mission. 'Public parties and regulators are also involved in our role of detecting financial crime. As representatives from various ministries were also present, including the Minister for the Interior and Kingdom Relations Raymond Knops, we were able to talk with all these parties during the network events. This mission - with its superbly planned programme - was therefore really useful.'

'Perhaps we can use this to establish a global standard'

The partnership between the Netherlands and Singapore on blockchain has gained momentum due to a trade mission with extremely concrete results.

Onno Coenen performs the liaison role in Singapore for this PIB. In conjunction with PIB coordinator, Marloes Pomp, he talks about the added value of the trade mission to Singapore from 11 to 15 November 2019.

An intensive and practical partnership

Open Nodes is the Singaporean counterpart to the Dutch Blockchain Coalition. 'Collaboration between these two parties has gained momentum due to the trade mission', Coenen believes. 'We have achieved an enormous amount.'

Some of the projects were clinched at the Deals over Dinner event during the trade mission. 'We don't know what will emerge from such sessions in advance, so it's obviously quite nerve-wracking', acknowledges Coenen. 'But it actually worked very well in practice. People started talking to each other and made concrete agreements.'

Boundaries and distance disappeared, literally and metaphorically

'We'd obviously already been in touch with the people in Singapore before the mission', recounts Pomp. 'So we'd got to know each other a bit. But as soon as we arrived in Singapore and started working together, the whole gap between "us and them" disappeared. We collaborated on concrete blockchain projects as a coherent team.'

The cultural differences turned out to be tremendously useful in practical terms, believes Pomp. 'It certainly makes you think. For example,

people in Singapore have quite a different view of GDPR. It's good to be able to see how others do things differently and to learn from that.'

Pomp believes that the fact that Singapore and the Netherlands are quite similar in a number of ways is also a reason why this partnership is so successful. 'Singapore and the Netherlands are comparable in terms of size and ambitions. And even though the countries are far apart in terms of distance, we are well-matched. We find common ground especially in our focus on results: we want to get going purposefully and without too much fuss.'

Open Nodes and the Dutch Blockchain Coalition are both at roughly the same stage. Both parties are frontrunners, and both ecosystems consist of a solid public-private partnership.

Common goals

The public-private partnerships Open Nodes and Dutch Blockchain Coalition have drawn up common goals:

- We will test how the two countries' blockchain solutions can complement each other in practice.
- We will exchange our blockchain knowledge, experience and content between the two blockchain communities.
- 3. If solutions can be demonstrated to work between the Netherlands and Singapore, these solutions can function as the international standard not just in terms of technology, but also in terms of all the relevant legislation and regulations. For that reason, the solutions will be shared through international organisations such as the WEF, WTO, WCO, OECD, the World Bank and the UN.

The next step: who will take the lead?

Coenen says that there is one important aspect that is clearly emerging in this phase: 'Ownership is the solution. Just as in other projects, it is also important for blockchain to decide who will be the owner of the project. It is precisely the nature of blockchain that so many parties work together. However, when implementing these use cases, we will only achieve results if it is clear whose role it is to say that the next step can be taken.'

Pomp is convinced that, above all, the partnership between Singapore and the Netherlands presents sustainable solutions. 'Singapore's rather more hierarchical structure combined with the Netherlands' looser enterprising spirit offers incredible potential, because we appreciate and trust each other. I hope that more topics will follow and that we can build a continuous stream of joint projects. And in the end, of course, that we can establish the global standard.'



Pilot: Singapore and the Netherlands investigate sealing digital evidence using blockchain

Singapore and the Netherlands will jointly search for a solution to a highly topical issue: sealing digital evidence using blockchain.

But Klaasen is head of innovation at the Ministry of Justice and Security. Together with Patrick Hermans from the directorate Strategy and Innovation at the Dutch Police, he participated in the trade mission to Singapore that took place from 11 to 15 November 2019.

Searching for a possibility to seal digital evidence

During this mission, Klaasen and Hermans shared a common goal: a new collaboration with Singapore to investigate how blockchain can contribute to sealing digital evidence.

'Although digital evidence is collected in almost every police investigation, we still lack a uniform way of sealing it', says Patrick Hermans. 'Together with representatives from the Dutch government and the government of Singapore, we will investigate whether we can use blockchain to guarantee that digital evidence is not tampered with after its seizure. If our efforts are successful, then we can establish an international standard.'

Different legal systems and cultures

One of the reasons that this "Chain of Evidence" pilot is being carried out together with Singapore is that both countries want to learn from each other in the area of innovation. There are considerable differences between the legal systems, rules and cultures of both countries, but they share high ambitions in the area of innovation. 'Those

are ideal conditions to conduct tests', Klaasen believes. 'Despite the differences in culture and the legal systems, the outcome must be the same: digital evidence that is demonstrably sealed and can therefore be used as irrefutable evidence wherever it is needed.' The aim of this pilot is to realise a proof of concept in June 2020.

Trade mission is a good starting point

The first contacts were established with Singapore before the trade mission. However, this cannot be formalised "just like that". During the trade mission, a joint starting point for this pilot was agreed upon. That is a very important step on the road to a solution that could become the international standard for sealing digital evidence. 'With the innovative drive that Singapore seems to possess and the entrepreneurship of the Dutch, we have the perfect combination to realise this pilot', Hermans says.



Why "joining others for dinner" can sometimes result in the best business deals

The nature of blockchain means that parties have to work together no matter what.

That doesn't happen spontaneously, but occasionally, something as simple as "joining others for dinner" can mark the start of a worthwhile partnership.

Ruud van Dijk is Innovation Program lead at The Next Web (TNW). During the trade mission to Singapore, from 11 to 15 November 2019, TNW moderated a number of work sessions and the Deals over Dinner event. The overriding aim was to introduce parties to each other and then actually get them to work together.

The best things happen when you least expect it

'The idea behind *Deals over Dinner* and the various work sessions was principally to bring people together in a non-standard setting', explains van Dijk. 'Sometimes, we even put parties together who were not obvious allies. Because, even though some organisations have little in common, they often have much to gain from each other. The best things happen when you least expect it.' TNW tried this in Singapore too, and the initial results have been enthusiastically received.

Deals over Dinner - a practical tool

The idea behind *Deals over Dinner* is that results are definitely achieved, but in more pleasurable, more relaxed surroundings. 'We facilitate this by getting people to change tables after every course. That creates a new setting each time',

explains van Dijk. 'Deal cards are ready on the table to note down the result of each introduction. That result might be that a deal has been done, or that those involved will meet again for coffee, but it might also be that a valuable referral is made to someone else in the person's network. Results can always be achieved, even if the parties don't yet have a specific opportunity to work together.' This method actually produced concrete partnerships during the mission in Singapore as well as expanding networks. 'Quite special', believes van Dijk, 'because it isn't always easy for foreign parties to establish a foothold in Singapore. This accessible setting makes that possible in an informal way.'

It was enthusiastically received; we'll do it again, but differently

The results the participants in the trade mission achieved with the work sessions and Deals over Dinner were enthusiastically received. 'And luckily, we can follow up on this', van Dijk believes. 'A delegation from the Singaporean blockchain public-private partnership will visit the Netherlands from 15 to 19 June. The visit will be combined with participation in the TNW conference in Amsterdam. The initial results of the partnership between the Netherlands and Singapore will be presented at the conference. In particular, the Ecosystems - Digital cities and nations and Neural - The new Algorithm tracks will offer various opportunities which will connect blockchain ecosystems in the Netherlands, Singapore and the rest of the world."

Innovation crosses all boundaries: a trade mission is also very useful for start-ups

Trade missions are often helpful for startups as they get to know a different market. But during this trade mission to Singapore, work was also done on a use case that may eventually lead to a concrete partnership.

Alexander Enthoven (Kryha) and Jeske Eenink (DUSK Network) took part in the trade mission to Singapore from 11 to 15 November 2019. They recount their experience of the mission as "newcomers".

Technologies such as blockchain break through cultural barriers

Kryha is a product/service studio that helps companies and public sector authorities with blockchain technology from idea to implementation. Alexander Enthoven is used to working in an international setting with Kryha, partly because Kryha works for and with multinationals. 'But this mission involved far more than just exploring the market, which is usually the useful aspect of such missions for start-ups. This time, we were able to put our knowledge and expertise into practice very specifically in the Chain of Evidence project and work with the parties in Singapore.'

Technologies such as blockchain force parties to collaborate, according to Enthoven. 'Technologies such as blockchain only have value if they can cross organisational barriers. It is nice to see that, in a mission such as this, the collaboration crossed not only these organisational barriers but also cultural ones.'



It is good to have an objective in mind when you take part in a mission

Jeske Eenink and her colleagues want to use their company Dusk Network to channel companies' funding and other securities through the blockchain. The trade mission was a resounding success, in Eenink's view. 'But you need to know what your objective is before you take part in something like this. It is an intensive programme in which you come into contact with a huge number of different parties. It is important, certainly as a start-up, to find your way through the jumble of opportunities and forge the contacts that will help you achieve your objective.'

As far as Eenink is concerned, she is not only referring to contacts in Singapore. 'It's funny to see how Dutch parties connect with each other during a mission like this. We got to know each other very well, especially because we were working together very specifically. If you add in the efforts of the Minister and the liaison, you get a week that was not only very full but also very useful.'

Not closed groups, but a government that acts as a single entity and is outward-looking

In Singapore, the Dutch Ministry of the Interior and Kingdom Relations gained a lot of inspiration regarding digital inclusion and digital identity. However, far more happened: under the leadership of Minister Knops, valuable contracts were concluded and warm relations were established.

Fianne Smith is coordinating policy officer at the Ministry of the Interior and Kingdom Relations. Together with director-general Marieke Wallenburg and Minister Raymond Knops, she participated in the trade mission to Singapore from 11 to 15 November 2019.

Digital inclusion instead of closed groups

One of the aspects that Smith immediately noticed in Singapore was the Whole-of-Government approach. 'I found that fascinating, because it means you can completely let go of the closed groups that we know in the Netherlands. That is both useful and clear with respect to communicating with citizens.'

Clarity can also be seen in the digitalisation pathways of the Singaporean government, Smith thinks. 'Digital identity solutions, including those with blockchain, are already well advanced in Singapore.' An often asked question associated with digitalisation is whether all citizens can cope with it. In that respect too, the Singaporean government is making significant steps, according to Smith. 'The digital strategy in Singapore covers

all residents. A training budget of 500 dollars has been made available for every citizen so they can participate in digital government solutions.'

Thorough training

In any case, education in the area of technological solutions is a high priority in Singapore, Smith states. 'Not only with regard to dealing with technological solutions but also for the realisation of the digital government. Director-general Wallenburg was particularly impressed by the training system for Singaporean civil servants. The training trajectory for civil servants is a continuous programme. An app is used to track all lessons and to register which subjects have been tested. That means the civil servants are always well-informed and the government can perform to the best of its ability.'

Collaboration with other Dutch ministries was valuable

Minister Knops also felt the mission was a considerable success, says Smith. 'It's fantastic to see what has been achieved in Singapore. Contracts have been concluded and valuable relationships established. Minster Knops also highly valued the collaboration with the other Dutch government ministries during this mission (Economic Affairs and Climate Policy; Justice and Security; Foreign Affairs). Digitalisation, such as blockchain, is something that we need to do together, and that was definitely the case here.'

'Going on a trade mission to Singapore is hard work'

Members of the Dutch Blockchain Coalition were warmly welcomed at the Dutch embassy in Singapore. They then got down to serious business.

Hajo Provó Kluit is head of the economic department and embassy council in Singapore. Together with ambassador Margriet Vonno, he welcomed the trade mission, from 11 to 15 November 2019, to Singapore. The mission arrived during one of the busiest moments of the year with the Singapore Tech Week and the FinTech Festival on their programme.

Working hard on concrete use cases

'What made this mission so interesting was that some of the participants from Singapore and the Netherlands already knew each other', says Provó Kluit. 'It therefore went further than just exploring the possibilities. Participants worked on specific projects and use cases.' A well-filled programme was drawn up to help realise that. That is usually the case during a trade mission, says ambassador Vonno. 'Going on a trade mission to Singapore is hard work.'

A growing number of people took part

The fact that this trade mission fell exactly in the FinTech week was an advantage for many participants, according to Provó Kluit. 'I was particularly pleased that people were genuinely enthusiastic. The participants from Singapore Enterprise ensured that, despite their busy programme, they could also join the events we

had organised. We consider such a high turnout to be a sign that they genuinely experienced this mission to be both interesting and useful.' On Wednesday 13 November, HRH Queen Máxima was also in Singapore where, in her role as UN Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA), she held a speech during the FinTech Festival. Her speech covered the importance of technological innovations to improve access to financial services and consequently to increase people's development opportunities. The mission followed the speech from within the room. 'It was a particularly beautiful cherry on the cake for the participants', states Provó Kluit. At the end of the day, they also briefly spoke with the Queen about the latest technological developments during an informal reception. 'Here, they also worked hard: the Queen is very well informed about what is happening and listened to the status of the various projects with considerable interest.'

The success factor: willingness to collaborate - also with competitors

'All of my enthusiastic stories clearly convey that this mission was highly successful. However, the success of this mission and the Partners for International Business (PIB) programme is mainly due to the participants, of course', says Provó Kluit. 'The willingness of Dutch companies to work together in a partnership such as the Dutch Blockchain Coalition is considerable.' And according to Provó Kluit, that is not only unusual compared to other countries but also the key to success.

Government partners from the Netherlands







Knowledge partners from the Netherlands







Corporate partners from the Netherlands











Startups from the Netherlands













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