



The role of government authorities in facilitating technology driven solutions to improve security of inland freight routes & inclusive ecosystems

Gilbert REVEILLON, CEO Mobile LOOV
President ICT Digital Economy CNCCEF

How AI/blockchain can help to more effectively secure supply chains / inland transport systems

- **Objective** : protection from cyber threats, tracking and tracing of cargo flows etc.

Definition of Artificial Intelligence ?

- so many to deal with...

- but converging towards the ALGORITHM empowerment !

- since Mathematician Muhammad Ibn Musa al-Kharezmi

850 *at the Royal Court in Bagdad from Year 780 to*

"A technology process or a formula allowing to solve a problem"

- What is done by local governments
 - US, FR, Estonia, Russia, China (ShenZhen, active autonomous trucks/bus)
- What is done by private corporations
 - IBM & Maersk, Accenture, GAFAMI vs BATHX
- What is done by NGOs & Associations
 - Public vs Private BC
 - BC consortia e.g. BITA
- Domestic vs International Corporate Networks
 - Priority is given to national vs international traffic (OBOR/BRI etc.)
 - Interoperability (logistic infrastructure, GPS, 4/5G & new road marks)
 - EU rules (RGPD, regulatory rules etc.)

The Problems in the Freight Transport

impacting rail freight efficiency

The value of freight rates was USD 380 Billion in 2017 (UNCTAD)

- Rail Freight relies partly on shipping industry efficiency and not just within the multimodal approach
- Shipping industry is one of the largest economic sectors BUT it is the least technologically advanced one
- Today paper documents are issued for all shipped cargo no matter of the transport means.
- All original documents are being sent by couriers, taking time and money.

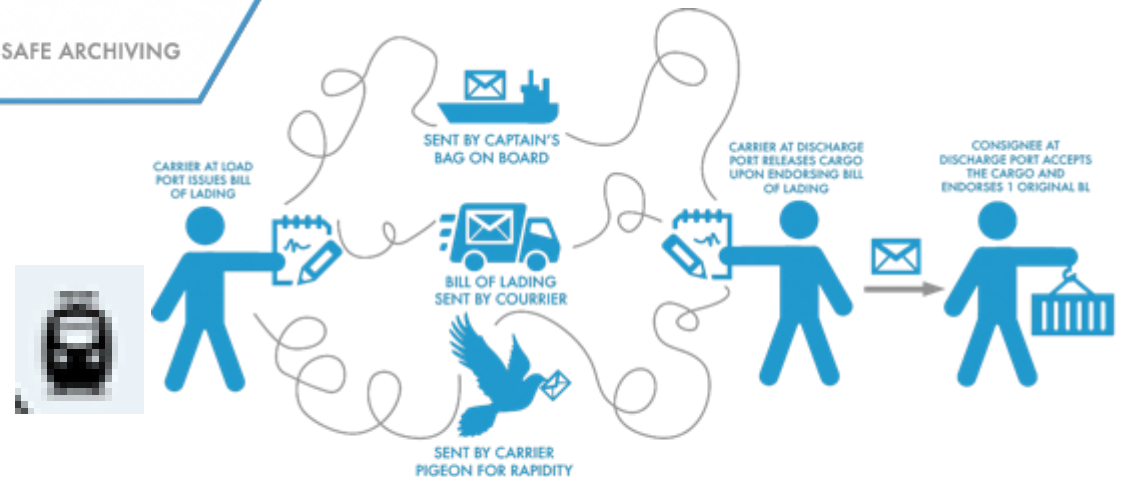
All cargoes and freights are being paid for in traditional ways – via bank wire transfers or letter of credit

- Both are expensive, slow and non-confidential methods.
- Increasingly more often USD and EUR transactions are being blocked for weeks by US correspondent banks.
- Original documents delivery delays and money transfer delays cause unaccounted extra costs, opportunity cost & depreciation of assets, while disturbing a long supply chain ecosystem.

1. BLOCKCHAIN VALUE PROPOSITIONS FOR INLAND FREIGHT TRANSPORT



VALUABLE OPPORTUNITIES
IN EDUCATING NUMEROUS ECOSYSTEMS



Blockchain is implemented by countries in order to avoid

- imported fraudulent products
- products not matching the quality standards
- products not matching proof of origin...

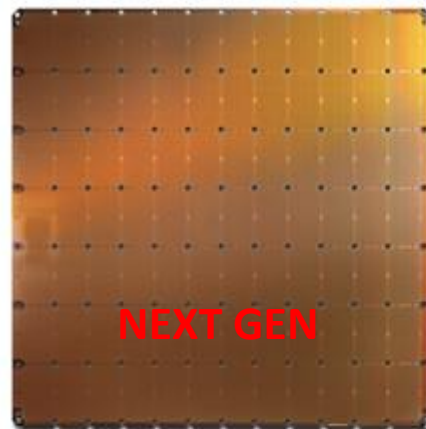
It's a better answer than blocking borders...

- USA
- France
- China
- Canada
- Estonia
- Russia
- Japan
- Germany
- Swiss

What has also been done by governments...

- technology infrastructures
- R&D investments
- Cyber Security leverages

What technology is leading AI chipset...

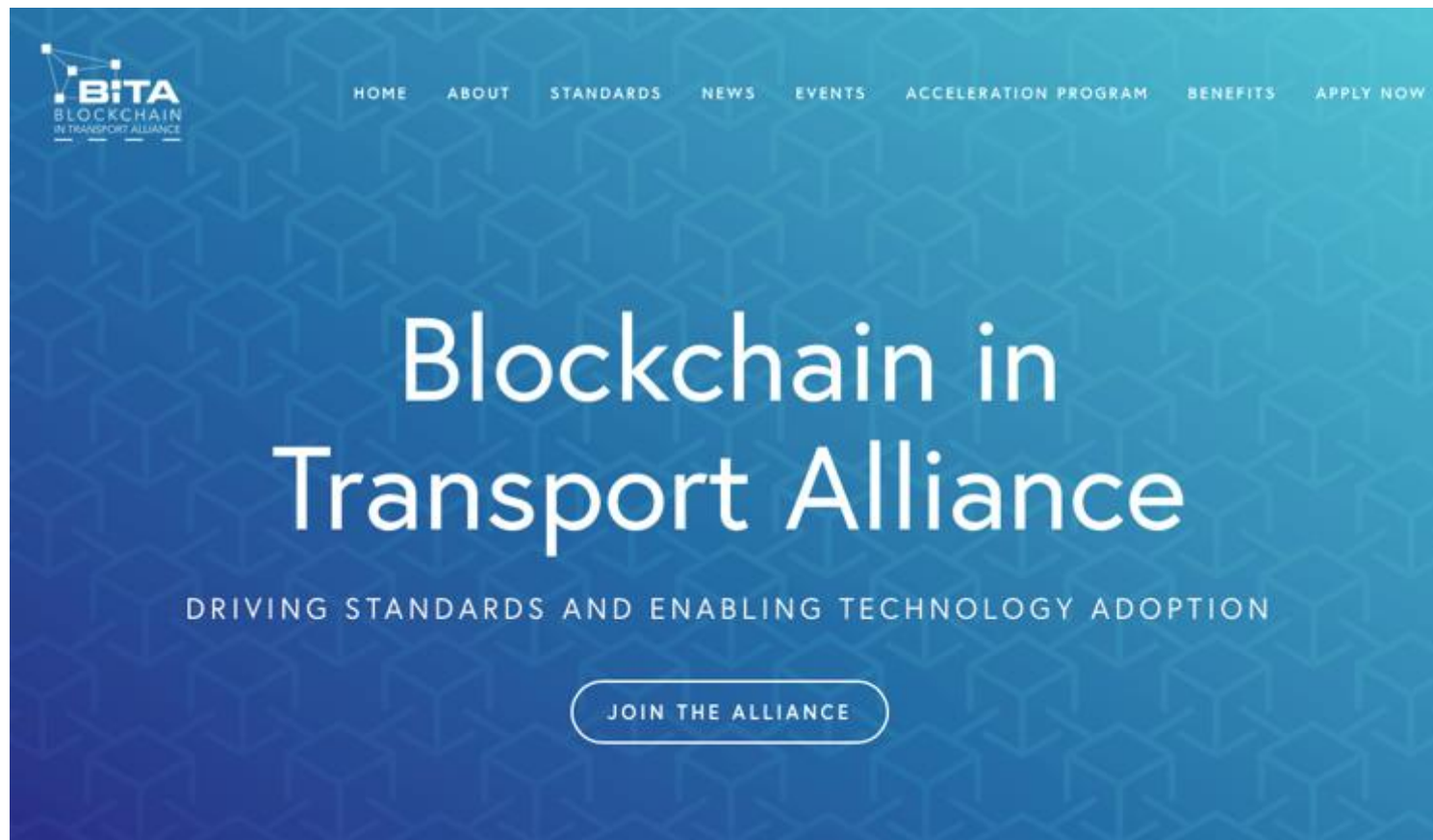


Cerebras WSE
1.2 Trillion transistors
46,225 mm² silicon



Largest GPU
21.1 Billion transistors
815 mm² silicon

WORLD LEADING
GPU **Nvidia** V100 with 21Bn transistors
Graved in technology 12 nm.
Launched in 2017, using 640 tensors.
Chipsets RAM of 32 Go at 900 Go/s



Founded in August 2017, the Blockchain In Transport Alliance (BiTA), has quickly grown into the largest commercial blockchain alliance in the world, with nearly 500 members in over 25 countries that collectively generate over \$1 trillion in revenue annually.

HQ USA and much **asset management** oriented... vs Europe more social responsibility & sustainable investments etc...

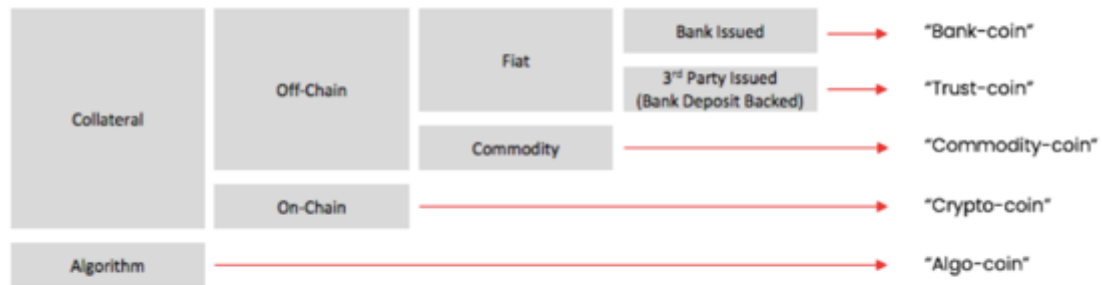
Crypto-currency landscape

to control further the exchanges / CARGOCOIN

3 The Stablecoin Landscape

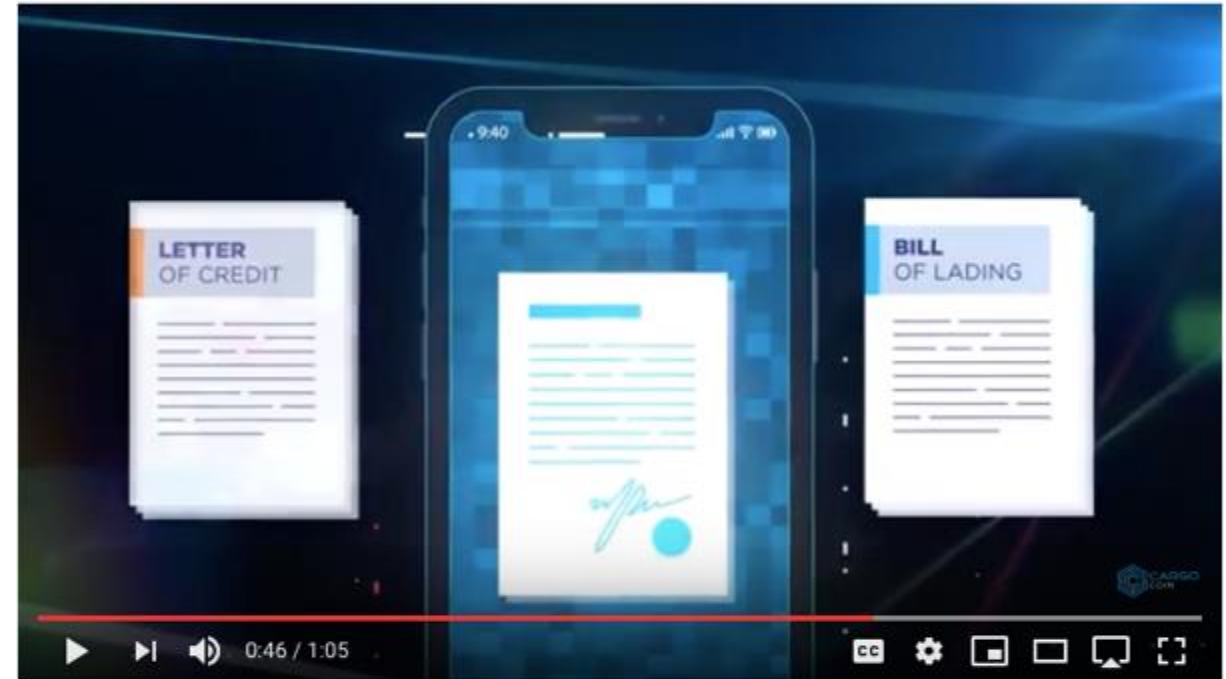
This section walks through the several methods that stablecoin issuers use to attempt to achieve relative price stability, and how they have evolved over time. Figure 1 outlines the five types of stablecoins that will be expanded on throughout the remainder of this section.

Figure 1: Categorization of Stablecoins



Source: Author

Stablecoins backed by fiat money have captured the vast majority of volumes. There are three types of fiat money: physical cash, central bank reserves, and commercial bank money. Currently, commercial bank money is the most likely to be used as collateral for stablecoins.



CargoCoin Explainer Video

3,969 views

👍 263 🗨️ 5 ➔ SHARE 📌 SAVE ⋮

https://www.youtube.com/watch?time_continue=4&v=ys0_ZB3uBU

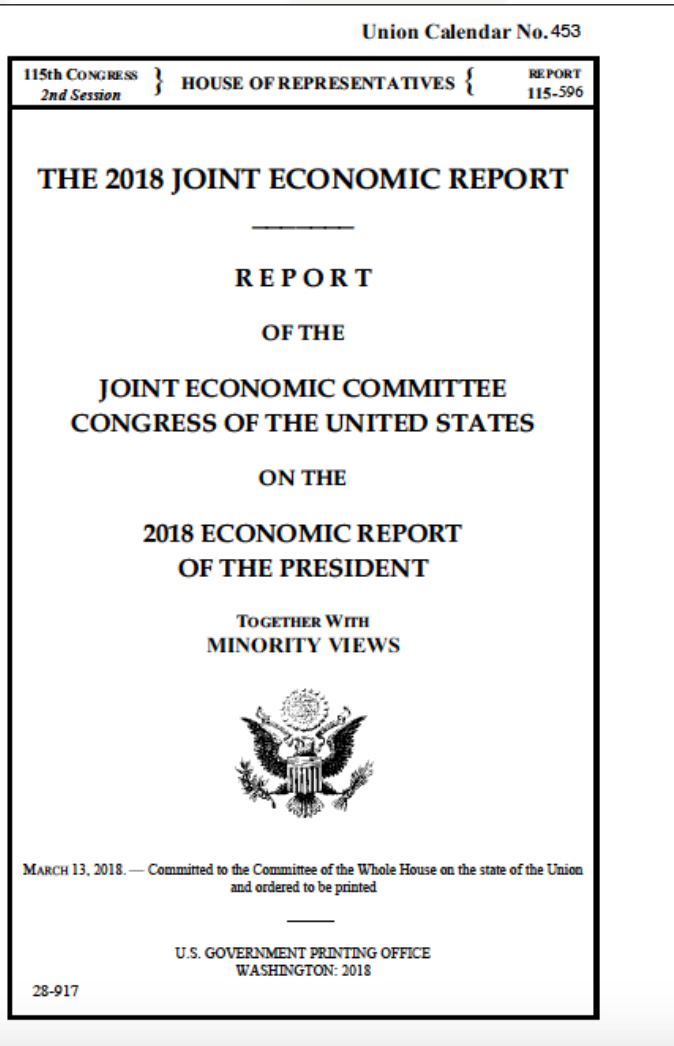
CRYPTO ASSETS

September 4th 2019, Geneva

COUNTRIES quick OUTLOOK

September 4th 2019, Geneva

THE US CONGRESS & BLOCKCHAIN CYBER SECURITY



201

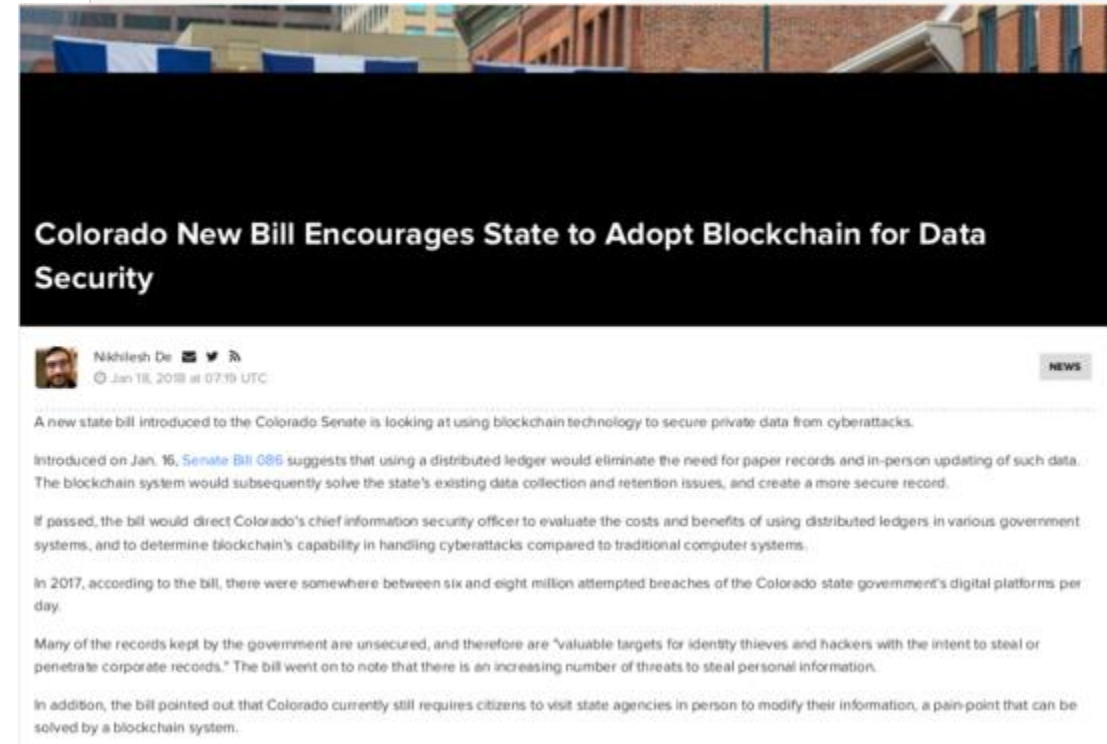
**CHAPTER 9: BUILDING A SECURE FUTURE, ONE
BLOCKCHAIN AT A TIME**

- The *Report* estimates the substantial direct costs and longer-term indirect loss incurred to the economy and critical infrastructure from cyberattacks and threats. The *Report* suggests blockchain as a potential tool for securing America's digital infrastructure.
- Blockchain technology—providing cybersecurity and many other potential benefits—broke into the mainstream in 2017 driven by widespread interest and surging valuations in digital currencies such as Bitcoin and Ethereum.
- These new innovations and markets presented America's regulatory and legislative institutions with unique challenges as well as technology that could revolutionize the world's digital landscape and economy.

INTRODUCTION

The *Report* reviews the new digital threats facing America today. Ensuring the security of computers, the internet, networks, and infrastructure is an enormous task, and the *Report* estimates the costs incurred from cyberattacks. As methods of theft, espionage, and vandalism shift from physical toward virtual—including data and intellectual property—law enforcement's role in fighting property crime remains vital. The economy benefits from protecting private property and contract integrity.

This chapter of the *Response* discusses a particular technology—blockchain—that is not only nearly invulnerable to cyberattack but





LES CONSEILLERS DU COMMERCE
EXTÉRIEUR DE LA FRANCE

STRONG WILL TO BENEFIT FROM NEW FRENCH TECH EDUCATING OUR POLITICAL & GOVERNMENT STAFF

FR

COMITÉ NATIONAL DES CONSEILLERS DU COMMERCE EXTÉRIEUR DE LA FRANCE

Flux RSS | Espace Presse | Contact

QUI SOMMES-NOUS? | NOS MISSIONS | NOS TRAVAUX | NOS PARTENAIRES

Accueil

Un réseau exemplaire de 4000 chefs d'entreprise et experts de l'international présents dans toutes les régions et dans plus de 140 pays à l'étranger.

En 2018, les CCE célèbrent 120 ans de passion pour la France

MONDIALISSIME!

Pour l'occasion, ils organiseront leur 5^e Mondial des CCE les 4 et 5 octobre à Paris

Programme : accéder au site | Voir le film de lancement

MONDIAL DES CCE

4 et 5 octobre 2018

EN UN CLIC

- Agenda
- Documents et publications
- Accès à la boutique membre
- Espace presse
- Emploi/Stage/V.I.E
- Partail des sites CCE
- Efficace vos règlements
- Partagez vos idées

A LA UNE

ACTUALITÉS

ACCELERATE YOUR FUTURE ABROAD

VIVA TECH

Rendez-vous le 25 mai 2018 à 10 heures au salon VIVA TECH (Booth D38) pour assister à la conférence "Blockchain, ICO et export : l'expertise française" animée par Gilbert Réveillon, président du groupe d'expertise TIC et Économie numérique des CCE.

Les startups Chainium et Money By Design seront présentes à cette conférence.

* Pour s'inscrire...

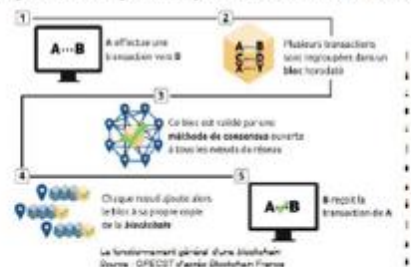


Evènements

En France

Dejeuner de travail avec M. Gilbert Réveillon, Président du groupe d'expertise TIC et Economie numérique du Comité National des Conseillers du Commerce extérieur de la France (CNCCEF), est venu m'entretenir d'un sujet dont il est un des meilleurs experts européens : le blockchain.

Son objectif est de promouvoir l'expertise française dans ce domaine à l'international.



Je l'ai mis en contact avec mon collègue et ami, le Sénateur Roman Le Gieut, rapporteur récent de l'Office parlementaire d'évaluation des choix scientifiques et technologiques (OPESET) sur le thème : « Comprendre les blockchains ».

CRYPTOS.NET On en parle français

CEXIO BUY BITCOINS

NEWS

500 millions d'euros pour faire de la France une 'blockchain nation'

Par Fred le 18/12/2018 (technologie)

EXMO CRYPTOCURRENCY EXCHANGE BUY BITCOIN

CÉDRIC VILLANI
Mathématicien et député de l'Essonne

QU'EST-CE QUE L'INTELLIGENCE ARTIFICIELLE ?

Mission Villani sur l'intelligence artificielle

Mars 2018

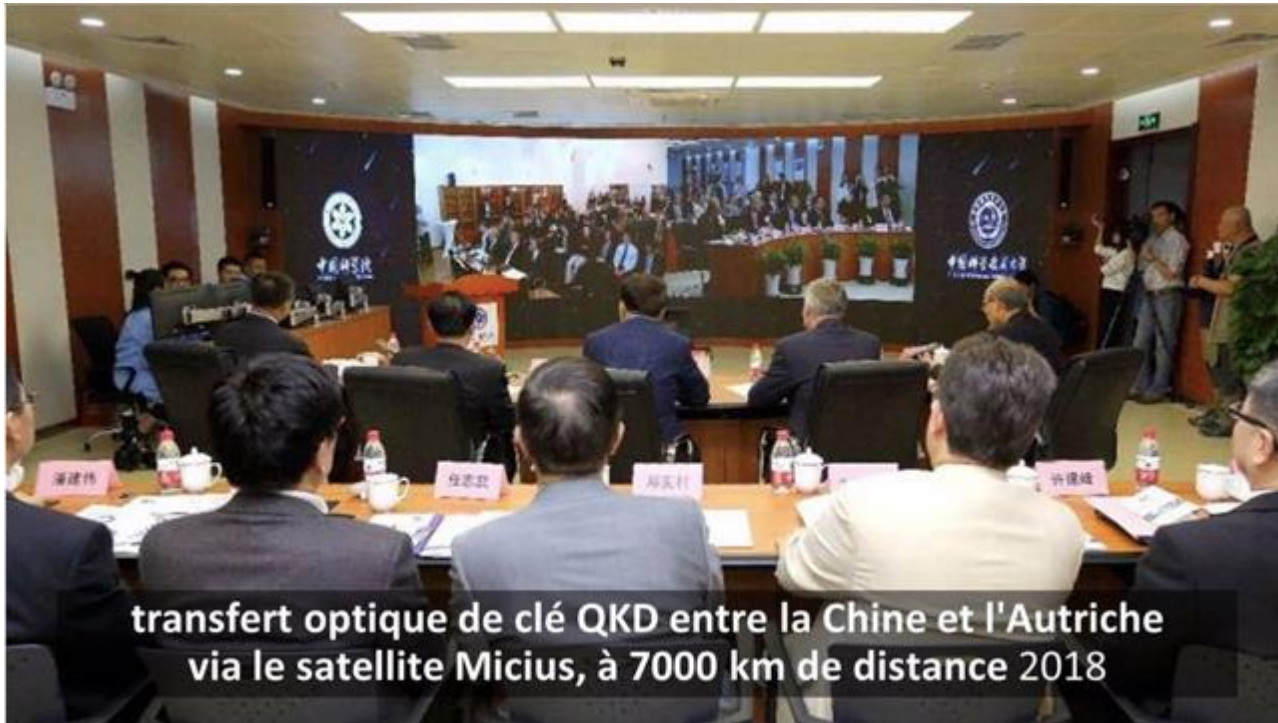
DONNER UN SENS À L'INTELLIGENCE ARTIFICIELLE

POUR UNE STRATÉGIE NATIONALE ET EUROPÉENNE

Article 26 : Amendement de la loi PACTE
Deep Tech strategy too

The Chinese Market

Very early investments in BC, QC & AI



The Shanghai city case for AI : a nation leader but soon a world leader...

- Shanghai' AI ambition first outlined with municipal plan Nov 2017
- City authorities pledged to expand the scale of the industry to \$14Bn by 2020
- dedicated industrial fund of 60 emerging AI technologies from local companies
- hosting six demonstration zones and 60 AI applications in the same period

It was also the result of the central government to build the Nation's first pilot zone for the innovation and application of AI.

=> a comprehensive industrial chain, growing startup culture & strong human capital

=> Aisland located in Zhangjiang Science City in Shanghai

To compare with the French White Paper Strategy for AI sovereignty produced in 2018

Under China's 13th five-year plan, introduced in 2016, Beijing launched a "megaproject" for quantum communications and computing which is aimed at achieving breakthroughs by 2030.

The Chinese Market

A new scope of management due to new connectivity

The Promise of 5G is Already Visible in China

5G is enabling real-world applications in healthcare services, autonomous driving and smart cities.



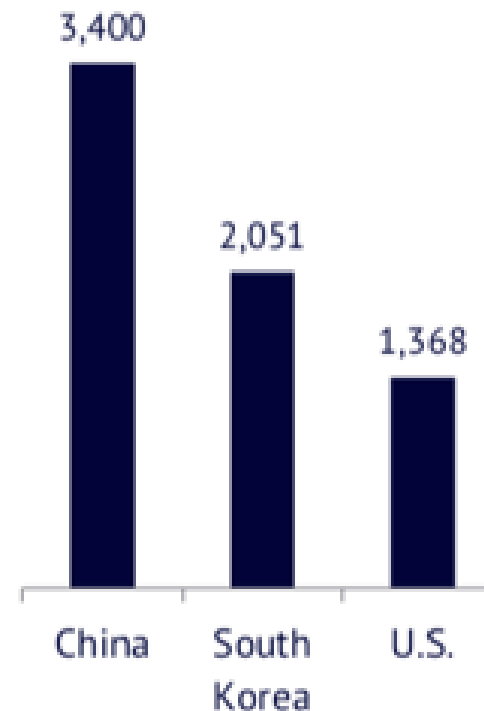
Click to view full video

At Shanghai's 2019 Auto Show, China Mobile showcased its autonomous vehicle technology – which allowed a driver at the Shanghai show to take the wheel and control a car more than 1,000km (620 miles) away in Beijing. It used a 5G network that had only a 10-millisecond delay.



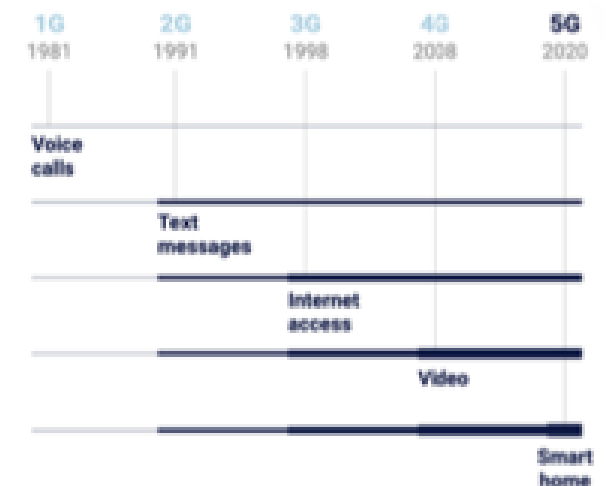
Hangzhou's City Brain project, a cloud computing and artificial intelligence-driven urban traffic-management system, covers a total area of 420 km² (162 miles²) – that's seven times the size of New York's Manhattan island. With 5G networks, Hangzhou's City Brain will be able to process greater amounts of data gathered from a range of IoT units, including lamp posts, manhole covers and electricity meters. The advanced mobile infrastructure would enable sensors to be deployed in underground pipes to find water leakage.

China also leads the world in 5G patents



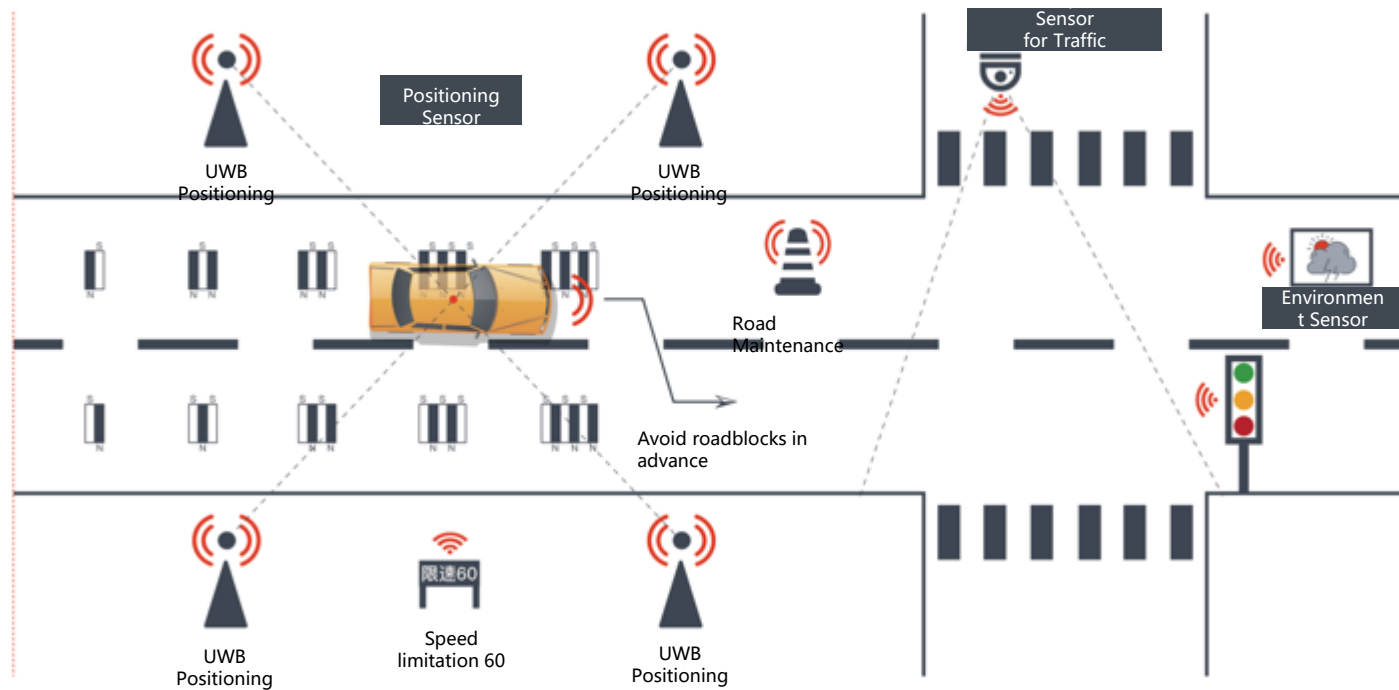
What is 5G?

The fifth generation of mobile technology means more than just faster data speeds and greater network capacity. It also provides a foundation for connecting an unlimited number of machines to one another for day-to-day communication. A 5G network will support: a million connected devices per square kilometre; transmitting a package of data with a delay of just 1 millisecond and peak data download speeds of up to 20 gigabits per second.



Autonomous Vehicles Trucks / Car / Bus in real live conditions

Application Diagram of IVICS



Connectivity

- 5G
- GPS
- Road marks

CBEC e-commerce: government policy

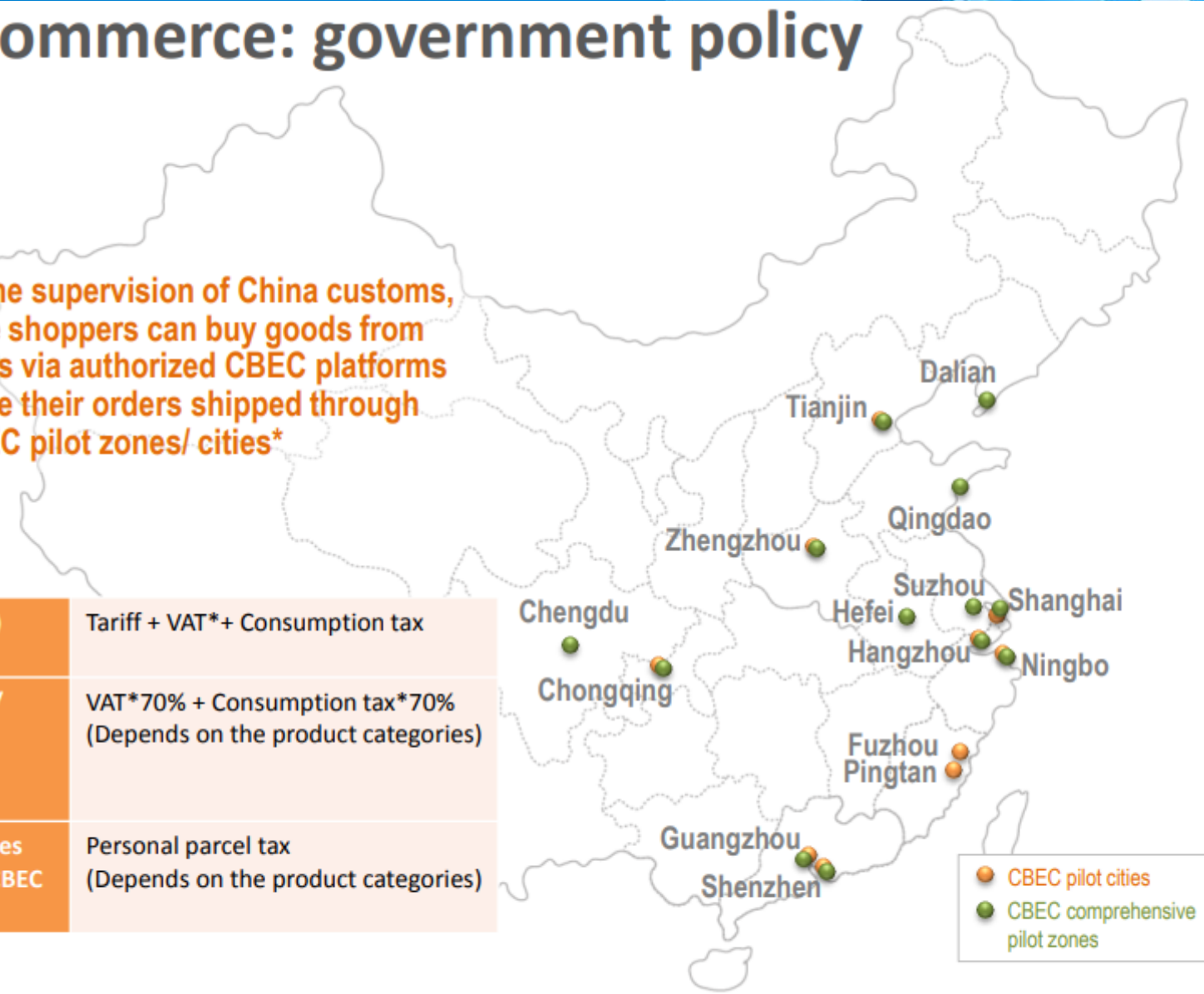


Under the supervision of China customs, Chinese shoppers can buy goods from overseas via authorized CBEC platforms and have their orders shipped through the CBEC pilot zones/ cities*

Different tax policies

General import (B2B)	Tariff + VAT*+ Consumption tax
Bonded-area import/ Direct mail (Via authorized CBEC platform)	VAT*70% + Consumption tax*70% (Depends on the product categories)
Personal postal articles (not via authorized CBEC platform)	Personal parcel tax (Depends on the product categories)

*VAT=Value-added Tax



● CBEC pilot cities
● CBEC comprehensive pilot zones

Note: Functions and implementations of regulations on CBEC imports in CBEC pilot zones and cities are slightly different. Stakeholders should keep track with the government's policy announcement

Irrespectively, technology will increase supply chain efficiency and security

Autonomous container trucks serve in logistics parks. Drones delivery in tough terrains.

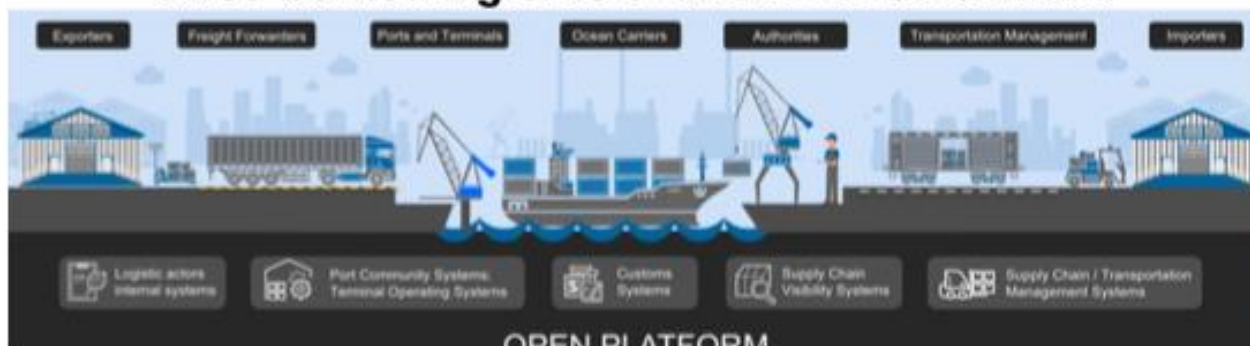


Sharing Economy
Using various platforms, the Sharing Economy can match demand and supply at a fraction of the cost that confronts traditional brokers.

Connected autonomous truck fleets provide warehouse-to-warehouse transport.



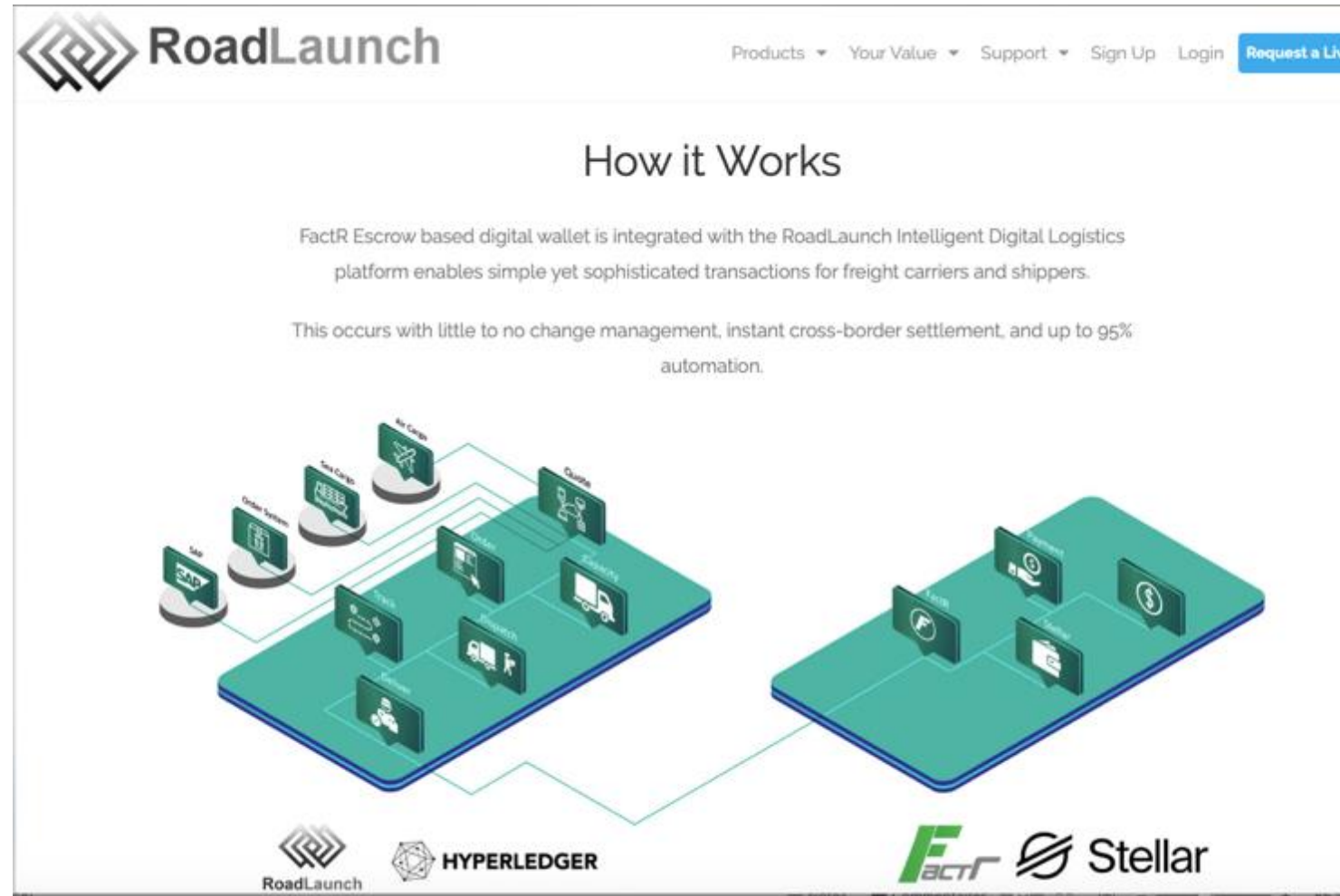
Maersk and IBM launches the first cross-border logistics solution on blockchain



CANADA

- Hyperledger & Stellar are platforms you can find in the USA too...

- L'Agence des services frontaliers du Canada et le **port de Montréal** font l'essai d'une **blockchain** visant à optimiser le transport de marchandises. Cela consiste en un « grand livre distribué », partageant et synchronisant les données des transporteurs maritimes, des ports et des grossistes du monde entier.
- **L'Agence** applique aussi plus de **90 lois et règlements** qui assurent la sécurité du pays et des Canadiens.



ESTONIA

- *Blockchain* leader **Guardtime** make *Estonia a leading player part of FIATA*
- International Federation of Freight Forwarders Associations (FIATA) **Blockchain** solution called **Silsal** in June 2018.

SLOVANIA

CargoX

Menu

Reshaping the Future of Global Trade with the World's First Blockchain Bill of Lading

CargoX is the independent supplier of blockchain-based Smart Bill of Lading (Smart B/L™) solutions that provide an extremely fast, safe, reliable, and cost-effective way to process Bills of Lading anywhere in the world. CargoX has developed a decentralised platform based on the Ethereum network, and has a pipeline of future products for the supply chain industry.

Smart B/L™ LIVE
A Blockchain-based Bill of Lading solution for the global supply chain.
[Open Smart B/L™ App](#)

API integrations
Seamlessly integrate the Smart B/L™ solution into your current business software to avoid disruptive changes to your work processes.

Partnerships
Join the CargoX ecosystem. Become a partner or supporter. Let's reshape logistics together.

RUSSIA

First Quantum-Secured Blockchain Technology Tested in Moscow

Quantum computers pose a significant security threat to cryptocurrencies such as Bitcoin. Now a team of Russian scientists has worked out how to secure blockchains using quantum mechanics.

by Emerging Technology from the arXiv June 6, 2017



Interest in cryptocurrencies is currently at fever pitch with banks, businesses, and governments racing to understand the technology and how they can exploit it. As a result, the cryptocurrency market has begun to rise exponentially, and last month reached an astonishing \$90 billion in market capitalization. Whatever happens next, cryptocurrencies look certain to play an increasingly influential role in the global financial system.

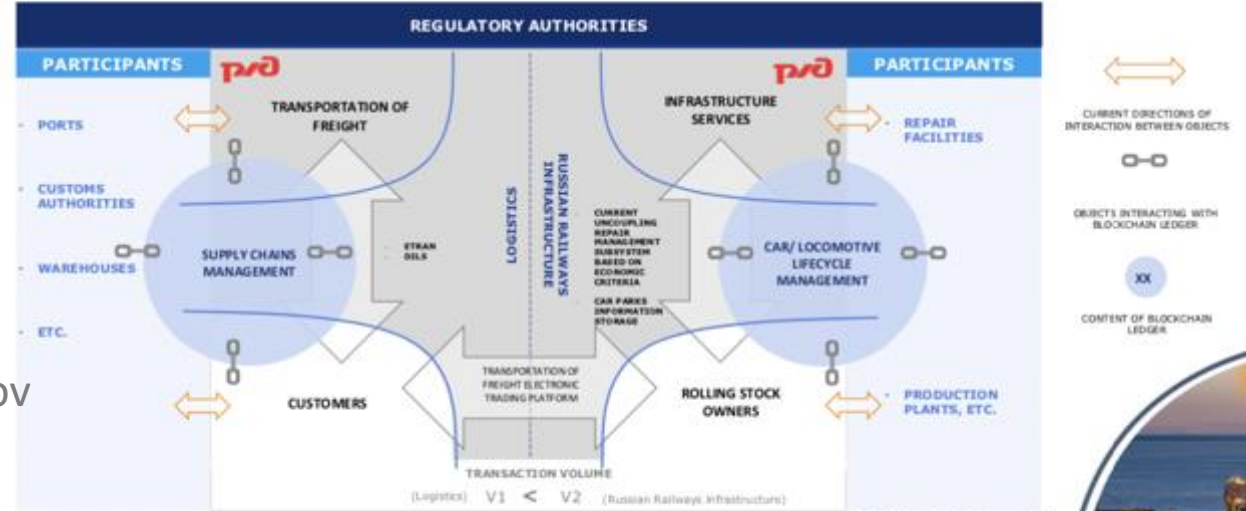
But there is a problem on the horizon. The big challenge with digital cash is to ensure that everyone uses it honestly. And there seems to be a pretty good solution in the form of blockchain technology. This guarantees honesty using cryptographic techniques that are widely thought to be unbreakable, except by brute force attacks.

And therein lies the problem. Brute force attacks are difficult for classical computers but will be easy for the next generation of quantum computers. The vast number-crunching power of these devices mean that as soon as they are available, cryptocurrencies will be suddenly more vulnerable to attack.

German Sukonnikov
Deputy Head
Corporate IT
Department
RZD



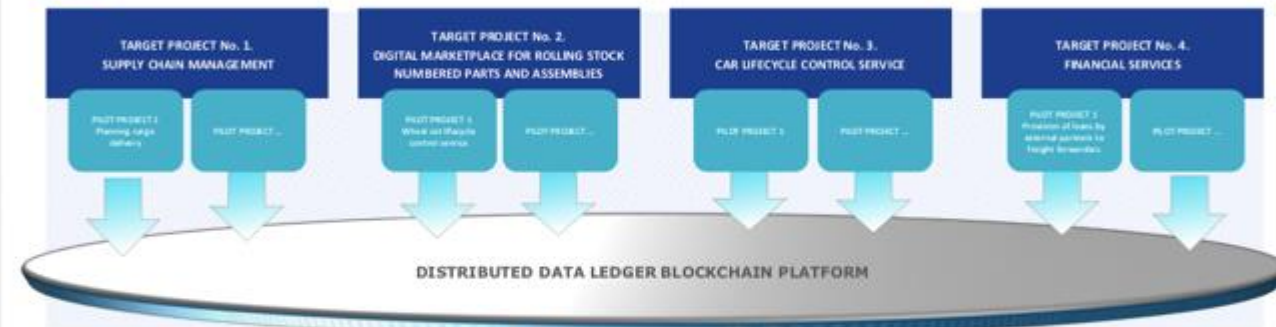
PLACE OF BLOCKCHAIN TECHNOLOGY IN THE INFORMATION ENVIRONMENT OF RUSSIAN RAILWAYS



26-28 June 2018, Genoa, Italy



DISTRIBUTED DATA LEDGER SINGLE PLATFORM BASED ON BLOCKCHAIN TECHNOLOGY



DDR BLOCKCHAIN PLATFORM is:

- ✓ a trusted environment for storing and exchanging correct data (with audit as one of Russian Railways functions) for all business process participants;
- ✓ unified principles and approaches to implementing solutions based on blockchain technology;
- ✓ unified principles of information exchange with automated systems of the process participants.

Creation of a single platform ensures unchanged and trusted data storage

The functions of target and pilot business cases are deployed using a single DDR platform

26-28 June 2018, Genoa, Italy

Germany

Germany: Digital logistics chains – smart wagon upgrade meets the half-way point



DB Cargo to fit its entire wagon fleet with smart sensors and telematics by 2020

DB Cargo is powering ahead with the digitalisation of its freight wagon fleet: the 34,000th wagon with state-of-the-art telematics and smart sensors rolled out of the refitting facility in Seelze near Hanover on 27 August. By 2020, the approximately 68,000 wagons in the company's German fleet will all have the digital technology on board – the result of investing a high seven-figure sum.

The GPS and sensor technology bring a range of benefits for DB Cargo's customers. A telematics module, GPS and the use of RFID and NFC tags help the analogue freight wagons join the fully connected digital world. The modernised wagons use mobile telephony to transmit signals during the journey, such as when the wagon starts and stops or sensors detect an impact. This data can help to produce useful information about the load condition, temperature and humidity and about the movement of sensitive cargo inside the wagon.

"The smart freight wagons are modernising rail freight transport and making it fit for the future. Our customers are benefiting from more manageable logistics chains, higher-quality transport and predictable arrival times. With these advantages, we want to achieve a lasting shift in traffic onto the environmentally-friendly rail freight network and to make our contribution to 'Strong Rail' in Germany and Europe," said



Marek Staszek, Member of the Management Board for Production at DB Cargo (left) and Jürgen Harland, Head of Logistics and SCM at Salzgitter Flachstahl GmbH activate the telematics module (DB AG/Max Lautenschläger)

- VS France TRAXEN ...

Start-up spécialisée dans le suivi de conteneurs maritimes et de wagons alliant boîtiers connectés et plateforme cloud de collecte, Traxens a bouclé cet été une levée de fonds de 20 M€ auprès du conglomérat japonais d'import-export Itochu, de la banque publique d'investissement Bpifrance et du fonds Supernova Invest du Crédit Agricole.

Ces trois nouveaux investisseurs rejoignent les armateurs CMA-CGM, MSC et A.P. Møller-Maersk ([voir NL n°2935](#)) dans son capital. Traxens compte ainsi accélérer son développement à l'international avec un focus sur l'Asie. « *C'est une solution innovante pour l'industrie logistique, a déclaré à ce titre Shunsuke Noda, chief digital and information officer du groupe Itochu.*

En plus de notre investissement, nous sommes donc impatients de travailler avec Traxens en tant que partenaire afin de développer les ventes de ses produits et services en Asie, région où le trafic terre-mer est en plein essor. »

Traxens table sur **100 000 conteneurs** équipés - reefer et secs - à la fin 2020, mais ils devraient être plus nombreux car A.P. Møller-Maersk a fait savoir lors de son entrée au capital qu'il allait passer une première commande susceptible d'atteindre les 50 000 boîtiers.

Traxens a par ailleurs lancé récemment un **projet pilote IoT dans le port espagnol de Valence** afin d'y améliorer l'efficacité opérationnelle des mouvements de conteneurs et est partenaire de l'équipementier/logisticien Daher dans le cadre de son offre de traçabilité lancée fin 2018 ([voir NL n°2804](#)). AD

September 4th 2019, Geneve

L'UE met un milliard d'euros pour la recherche quantique

Investissements Quantum Flagship, troisième plus grand programme de recherche européen, appuiera des projets de L'EPFZ, des universités de Genève, Bâle et Neuchâtel ainsi



Image: Keystone

Vous avez repéré une erreur?

L'Union européenne (UE) va investir un milliard d'euros ces dix prochaines années pour la recherche sur les technologies quantiques. Lancé lundi à

ACTUALITÉS

SWISS

L'AVENIR DE LA BLOCKCHAIN PASSE PAR LA SUISSE

Particulièrement attachée au respect de la vie privée et de la protection de la Confédération Helvétique a pris très tôt le virage de la Blockchain comme la technologie peer to peer et indépendante permettant de garantir la sécurité des transactions et échanges en ligne. La culture de l'innovation dans son cadre légal encourageant les initiatives ont permis au pays de devenir l'un des moteurs de la Blockchain à l'échelle mondiale.



ID Quantique, SK Telecom & Nokia Secure Optical Transport System Using Quantum Key Distribution (QKD)

> Learn More

ID Quantique (IDQ) is the world leader in quantum-safe crypto solutions, designed to protect data for the long-term. The company provides quantum-safe network encryption, secure quantum key generation and quantum key distribution services to the financial industry, enterprises and government organisations globally.

IDQ also commercializes a quantum random number generator, which is the reference in the security, simulation and gaming industries.

Additionally, IDQ is a leading provider of optical instrumentation products, most notably photon counters and related electronics. The company's innovative photonic solutions are used in both commercial and research applications.

Blockchain et supply chain

Le géant suisse de la logistique Panalpina se met à la blockchain sans céder à ses sirènes

Jeu 27.06.2019 - 13:16
par **Yannick Chavanne**

Partenaire du récent Swiss Blockchain Hackathon, Panalpina met en avant une approche rationnelle et réaliste en matière de blockchain. Le groupe suisse de logistique mise sur des projets pilotes apportant des avantages tangibles.

Regional / Global Competitive advantages

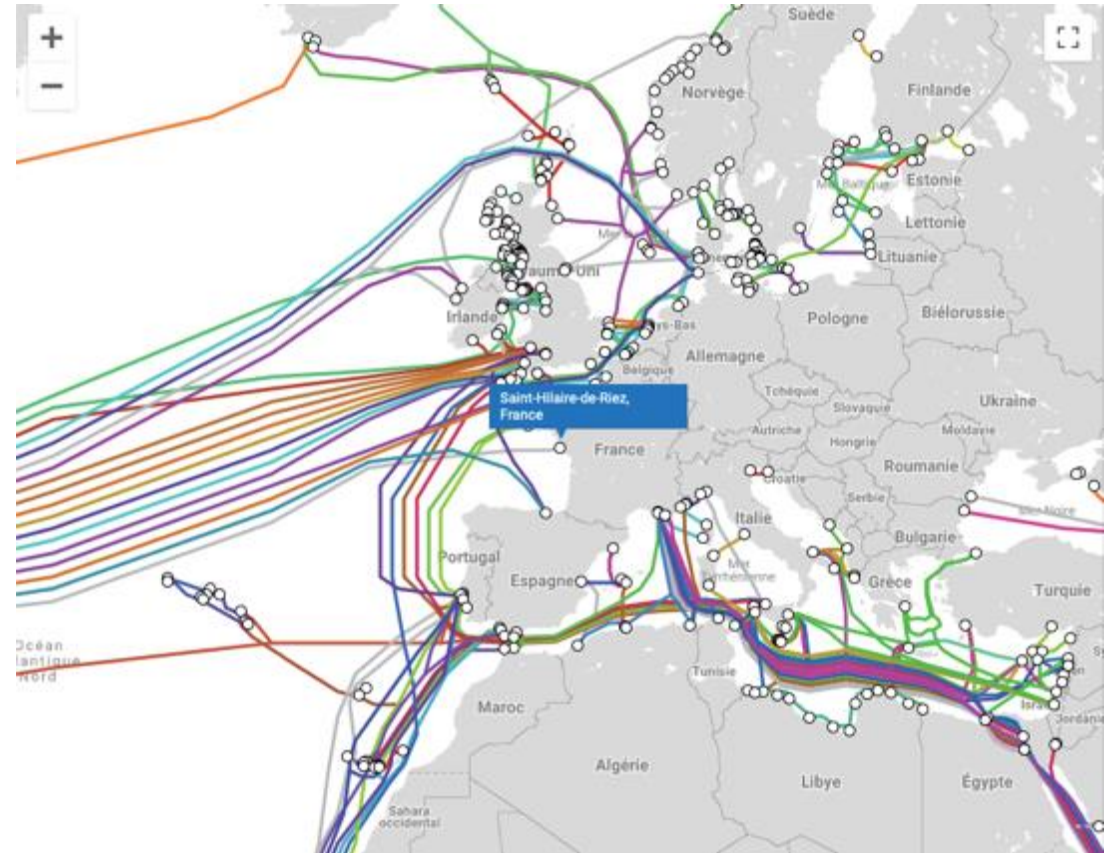
Cable vs Satellite Internet

1. USA needs to invest 130bn\$ for 5G infrastructure 5G to catch up its delays *

2. CHINA's « GPS » BEIDOU has already more satellites than USA's GPS
(satellite positioning systems used from mobile gaming to emergency location)

3. CHINA Quantum Satellite Communication with QKD since 2017
(e.g. MICIUS, corridor between Shanghai & Beijing vs Corridor Boston & New York)

<https://www2.deloitte.com/us/en/pages/consulting/articles/communications-infrastructure-upgrade-deep-fiber-imperative.html>



2. How much is needed to compet in IoT

1. growing popularity of IoT, sensor networks, and other telemetry applications leads to the collection of vast amounts of time series data... *e.g. France and geospatial time series on 3 Axis.*
2. A single connected car has over **200 sensors** and generates 4 TB per day per car.
3. An airline has over **6000 sensors** capturing 2.5TB per day per aircraft.
4. Weather forecasting requires close to 5PB of data every day.

The challenge has been to automate a historically manual process of analyzing a single data series of a few data points to large-scale processing of thousands of time series and millions of data points.

Moreover, the wider that IoT solutions scale the larger the risks to consider, including increased opportunities for data breaches as well as greater compliance and regulatory changes to manage.

This is compounded by struggles with inflexible infrastructures, complex supply chains, and the need to work with global partners to help address a range of operational issues e.g. 5G global connectivity

How to choose the right future-proof infrastructure that allows for change over time.

How to increase the number of IoT devices you have deployed and manage them at scale.

*How to increase the efficiency of your existing devices, including streamlining maintenance.
Real-world use cases, from application performance optimization to workload anomaly detection.*

Where is the value potential of the Internet of Things?



D'ici à 2025, McKinsey estime le marché annuel entre 3.9 et 11.1 trilliards de dollar. Sur les 44 000 Go de données collectées par ces objets connectés, moins de 1% sont exploitées.

SAVINGS POTENTIAL Increased Margin From Cost Efficiencies In Different Sectors



e.g. **A.I. Predictive Modeling for Assets Management in manufacturing**

- predictive maintenance
- predictive occurrence

IoT Global Vision

Rationalization of costs -
Increased Businesses +

IoT \$10 Trns \$ STAKE

DATA 40 Trn octets

WHEREAS 63 Bn\$
potential savings identified

BUT also new revenues
Cf ETCS +20% trains/H

DEEP TECH DEFINITION : SCIENTIFIC DISRUPTING DISCOVERIES IMPACTING
environment, health, smart & sustainable city, manufacturing & work



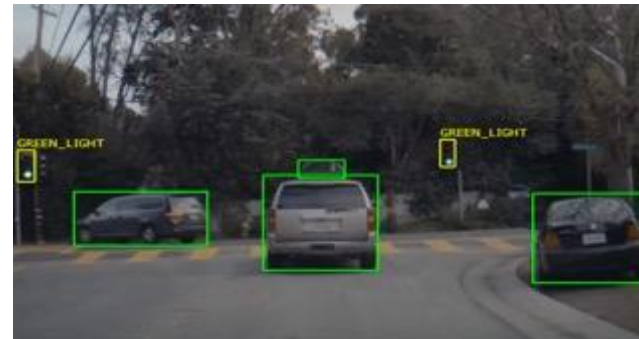
Face recognition



Fingerprints
3D veins network



Activities
detection



assisted and autonomous drive



images search

MUTUAL BENEFITS AI vs BC

- **HOW AI WILL BENEFIT BLOCKCHAIN**

1. Energy consumption: 2. Scalability 3. Security 4. Privacy: 5. efficiency: 6. Hardware 7. Lack of talent 8. Data gates:

- **HOW BLOCKCHAIN WILL BENEFIT AI**

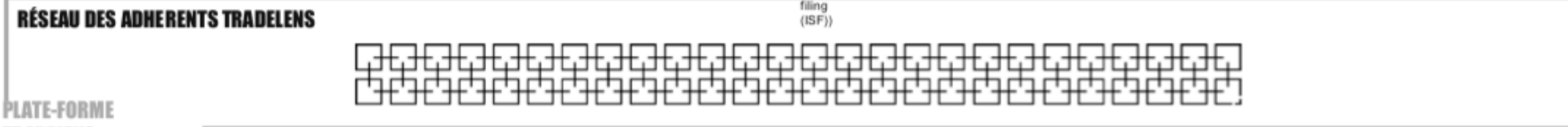
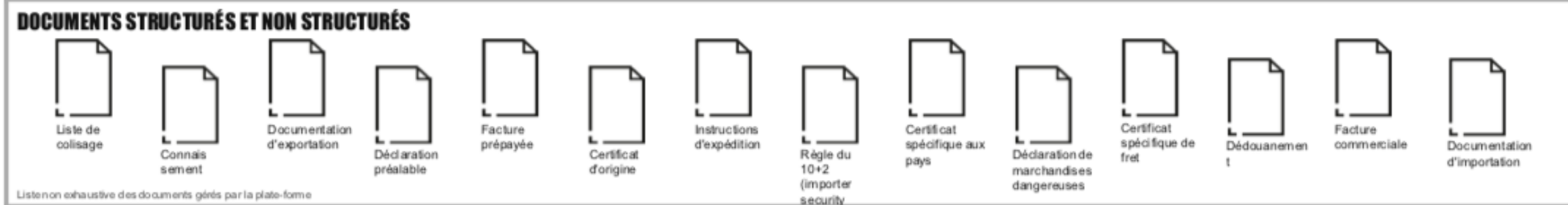
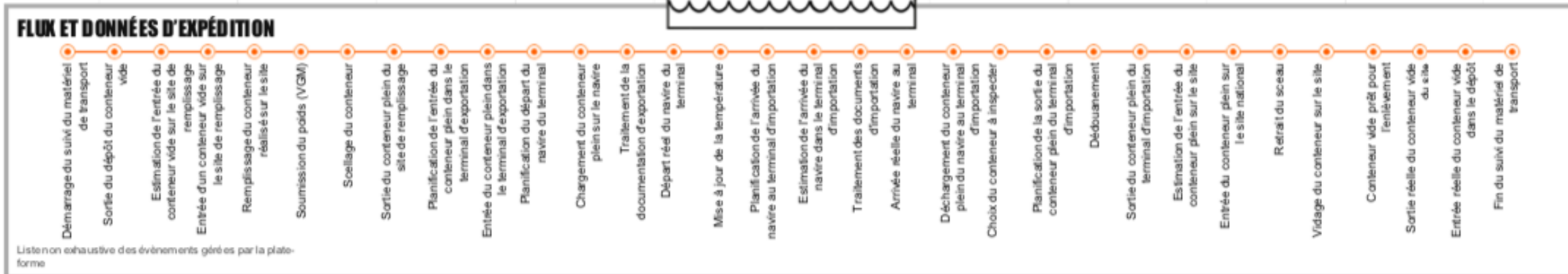
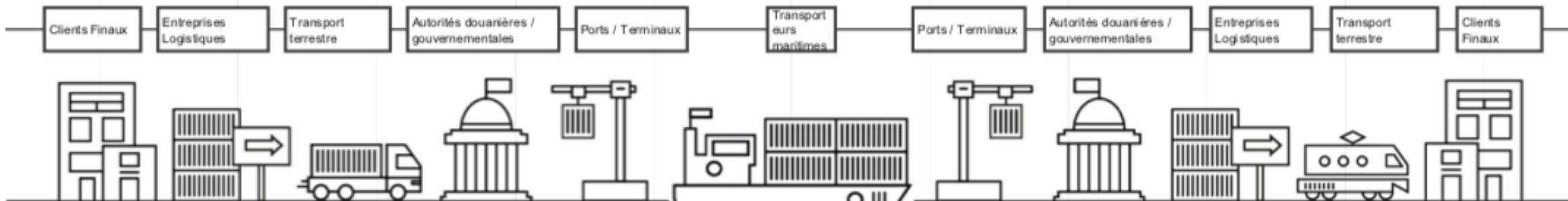
- 1. Help AI explaining itself 2. Increase AI effectiveness 3. Lower the market barriers to entry 4. Increase artificial trust 5. Reduce catastrophic risks scenario

INLAND FREIGHT USING BOTH : AI & BLOCKCHAIN

INLAND FREIGHT RELYING ON TECHNOLOGY : hardware & usage & regulatory matter (national, international)

But not just good things happening with AI...
Facke news and other great things...





IBM & Maerks Tradelens

Blockchain for Maritime: Securing the Cyber Environment

Edition 78 - Linking the Supply Chain (/journal_archive/pt78_linking_the_supply_chain)



Darko Djuric, Blockchain Business Integration Advisor, CargoX

View in full: Blockchain for Maritime: Securing the Cyber Environment

[Read the full article](#)

Blockchain is being introduced in an already fragile digital landscape, with reports of hacking being ubiquitous. A single cyberattack in late June last year cost Maersk up to \$300 million. Maersk responded with "different and further protective measures" to contend with a "new type of malware". This highlighted a growing problem for the shipping industry.

Blockchain is hailed as a safe, robust alternative to existing systems with central points of failure. If this claim is factual, could the maritime sector be facing an inevitable transition to such solutions? As a provider of a Blockchain-based platform for trade related documentation processing, CargoX has put extensive thought into the sensible adoption of Blockchain for the maritime industry. Many of the concerns around adopting blockchain regard the peripheral points of failure rather than Blockchain as a protocol itself...

Linking the Supply Chain (/journal_archive/pt78_linking_the_supply_chain) Security, Surveillance and Detection (/technical_papers/list/category/customs_security)

TRADELENS Présentation de Tradelens À propos de la solution Tradelens 17-Apr-19 23

ÉTAT ACTUEL DU RÉSEAU - JANVIER 2019

Ports et terminaux

Emplacement du terminal	Opérateur	État	Emplacement du terminal	Opérateur	État
Algésiras, Espagne	Port d'Algésiras	⊖	Liverpool, Royaume-Uni	MCP	⊕
Algésiras, Espagne	Terminaux APM	⊕	Los Angeles, Californie, États-Unis	Terminaux APM	⊕
Apapa, Nigeria	Terminaux APM	⊕	Maassluis II, Pays-Bas	Terminaux APM	⊖
Auckland, Nouvelle-Zélande	PortConnect	⊕	Manila, Philippines	ICTSI	⊖
Avonmouth, Royaume-Uni	MCP	⊕	Melbourne, Australie	Terminaux Patrick	⊕
Bahrein	Terminaux APM	⊕	Montréal Canada	MGTP	⊖
Barcelone, Espagne	Port de Barcelone	⊖	Mobile, AL, États-Unis	Terminaux APM	⊕
Bilbao, Espagne	Port de Bilbao	⊖	Napier, NZ	Administration portuaire de Napier	⊖
Brisbane, Australie	Terminaux Patrick	⊕	Newcastle, Royaume-Uni	MCP	⊕
Buenos Aires, Argentine	Terminaux APM	⊕	Onne, Nigeria	Terminaux APM	⊕
Busan, Corée du Sud	Port de Busan	⊖	Philadelphie, PA USA	Terminaux Packer	⊕
Callao, Pérou	Terminaux APM	⊕	Pipava, Inde	Terminaux APM	⊕
Cotonou, Bénin	Terminaux APM	⊕	Poim, Brésil	Terminaux APM	⊕
Elizabeth, NJ, États-Unis	Terminaux APM	⊕	Port, Géorgie	Terminaux APM	⊕
Falmouth, Royaume-Uni	MCP	⊕	Rubidum, Pays-Bas	Terminaux APM	⊖
Fremantle, Australie	Terminaux Patrick	⊕	Sydney, Australie	Terminaux Patrick	⊕
Göteborg, Suède	Terminaux APM	⊕	Singapour, Singapour	PSA	⊕
Halifax, Canada	Halterm Canada	⊕	Tanger, Maroc	Terminaux APM	⊕
Hong Kong	Terminaux Modern	⊕	Tauranga, NZ	PortConnect	⊕
Houston, TX États-Unis	Port de Houston	⊕	Tweeport, Royaume-Uni	MCP	⊕
Itapá, Brésil	Terminaux APM	⊕	Valencia, Espagne	Port de Valencia	⊕
Izmir, Turquie	Terminaux APM	⊕	Vishakhapatnam, Inde	JM Bai	⊖
Lazaro, Mexique	Terminaux APM	⊕			

Transporteurs maritimes

Transporteur maritime / courte distance	État
Maersk Line	⊕
Safmarine	⊕
Sealand	⊕
Hamburg-Süd	⊖
Pacific International Lines	⊖
KMTC	⊖
Seaboard	⊖
Namsung	⊖
Boluda Lines	⊖

Transport terrestre

Transporteur	État
Ancobrans	⊕
CN Rail	⊖
IMCC	⊕

Autorités gouvernementales

Autorité	État
Affaires intérieures australiennes	⊖
Douanes de Bahraïn	⊖
Douanes du Canada	⊖
Douanes néerlandaises	⊖
Ghana / GONET	⊖
Douane d'Arabie Saoudite	⊖
Douane du Pérou	⊖
Douane de Singapour	⊖
Douane de Turquie	⊖

Événements d'expédition

+ 285 M à ce jour
1 M par jour

September 4th 2019, Geneva

China: Shenzhen Issues Country's First Subway Electronic Invoices Backed With Blockchain

2808 Total views
155 Total shares
Listen to article
1:51



About 6 m blockchain invoices issued in Shenzhen after 1 year operations
Source: Xinhua | 2019-08-06 09:49:12
SHENZHEN

BATHJDX vs GAFAMI

Baidu, Alibaba and Tencent are Getting Into Blockchain too

The three internet giants are developing and commercializing their own blockchain offerings.



- In September 2018, Baidu Finance released its first blockchain whitepaper outlining capabilities in consumer finance, management of financial clients and community building, asset digitization, public welfare, identity systems, digital rights management and logistics.
- Of the 197 registered projects by the Cyberspace Administration of China, Baidu has three: Baidu Blockchain Engine, Superchain, and Tuteng.

BITMAIN

- The world's biggest producer of bitcoin mining rigs has given up on its plan to go public in Hong Kong after the company struggled through mass layoffs and a leadership reshuffle.



- In October 2018, Alibaba Cloud launched its global Blockchain-as-a-Service (BaaS) offering, which provides enterprise-level platform services to help companies build a trusted cloud architecture.



- Tencent, along with Huawei and several other companies, formed the Financial Blockchain Shenzhen Consortium (FISCO).
- Their goal is to develop China's first open-source platform that meets regulatory requirements and financial industry demands.
- Tencent's registered projects include Tencent blockchain and Tencent Cloud's TBaaS platform.

Source: Cyberspace Administration of China, Baidu, Alibaba, Tencent

Amazon Managed Blockchain

Easily create and manage scalable blockchain networks

Amazon Managed Blockchain is a fully managed blockchain service that makes it easy to create and manage scalable blockchain networks using the open source Hyperledger Fabric and Ethereum frameworks. You can write smart contracts and applications and run them on the blockchain network to transact securely.

Blockchain network

Create an Amazon Managed Blockchain network

Create a network

Pricing

There is no up-front commitment with Amazon Managed Blockchain. For Hyperledger Fabric on Amazon Managed Blockchain, you pay an hourly charge for your network membership, peer nodes, and peer node storage. You also pay for the amount of data that you write to the network. When you finish with an Amazon Managed Blockchain network, you can leave the network and stop paying.

[See pricing](#)

Getting started

Using the AWS console, you can quickly provision an Amazon Managed Blockchain network including your network membership, peer node, and VPC endpoint to access your blockchain resources. Next, invite other AWS accounts to join your network, or create additional network members in your account. Finally, deploy smart contracts and applications to the endpoints on your blockchain resources.

How it works



Step 1: Create a network

Choose an open source blockchain framework, and set up a new blockchain network and your membership in just a few clicks.



Step 2: Invite members

Invite other AWS accounts to join the network and create their memberships, or create additional members in your account to simulate a multi-member network.



Step 3: Add peer nodes

Create and configure peer nodes for your membership that run the blockchain peer software and store a local copy of the ledger.



Step 4: Deploy applications

Create and deploy chaincode, smart contracts, and decentralized applications to peer nodes on the network.

THALES

Thales e-Security

SOLUTIONS ▾

PRODUCTS & SERVICES ▾

PARTNERS

SUPPORT

KNOWLEDGE BASE ▾

Home > About Thales e-Security > Press > News > Accenture Integrates Blockchain Technology with Thales Hardware Security Module to Address Key Risks for Financial Services, Government, Healthcare and Other

» News & Information

Visit us regularly to stay abreast of our latest news, coverage, and general information as well as exciting market trends and developments!

February 8, 2017

Accenture Integrates Blockchain Technology with Thales Hardware Security Module to Address Key Risks for Financial Services, Government,

Contact Thales e-Security

ACCENTURE + THALES =
Blockchain
& Hardware security approach

MANAGING DIGITAL TWINS FOR BUSINESS & DATA CLOUD INFRASTRUCTURE



Smart Data

for Smart Sensing Economy :
Blockchain, IA, IoT, Edge
Computing, HPC, Smart Data
Center, 5G, Cloud Computing,
Data Lake, Platforms, Digital
Twins

From Sandbox to Free Trade Zone & BRI

- **Sandbox country**

- China BC sandbox
- French BC sandbox (AMF & ACPR)
- Etc.

- **Sandbox corporate**

- Deloitte
- Ernst & Young
- IBM Maerks *

https://docs.tradelens.com/reference/sandbox_zone/

Paradox : more free space for trading & investment
more controls anti-laundering, fraud & security

- **Free Trade Zone**

- Chinese deployment from Shanghai to Shenzhen
- Great Bay Area for fastest response to the global market needs
- World FTZ and OBOR / BRI

- According to United Nations: 3500 FTZ in 135 countries employing 70 millions +
- Biggest FTZ are located in China, Singapore & United Arab Emirates
- Image problems for lack of transparencies mainly in emerging countries, not compliant with WTO rules (empty shell etc)
- China in 1978 they started with SEZ Special Economic Zones to attract **FDI, and main production towards export.**
- August 1980 Standing Committee of the 5th Congress approved 4 coastal cities Shenzhen, Zhuhai, Shantou et Xiamen with facilitating economic policies, further regulated with Kyoto agreements.

- **6 Major Benefits** :

- Trade & FD Investment facilitated
- Reforming Administrative & Financial setup
- Cross-border e-commerce
- New taxes policies for FTZ

AMELIORATION en FTZ

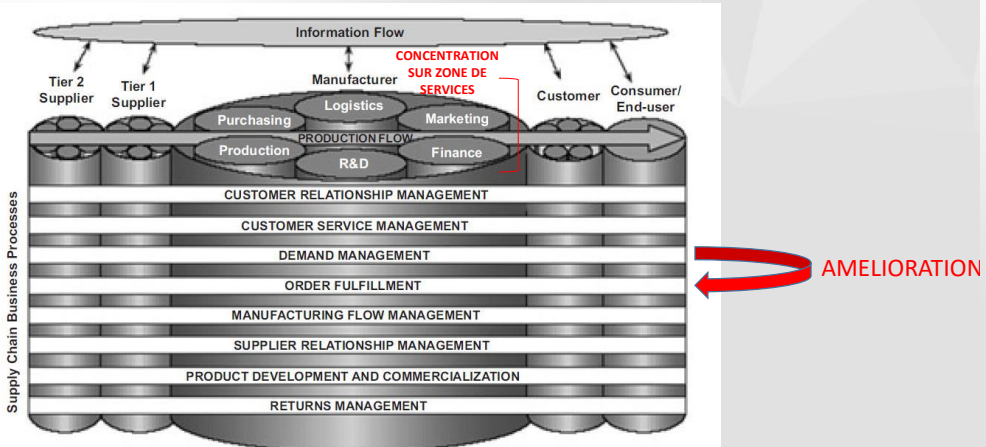


Figure 2.5 Integrating and managing business processes across the supply chain

FTZ IMPACT Evolving export channels

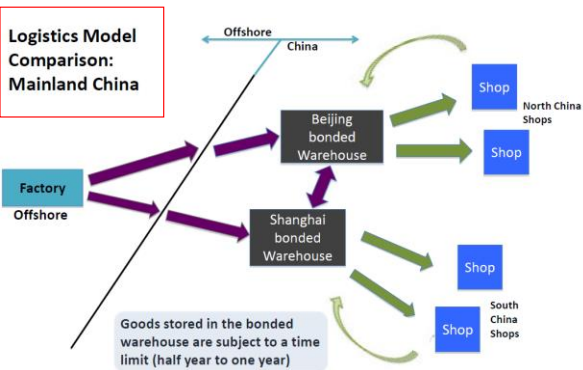
Traditional trading



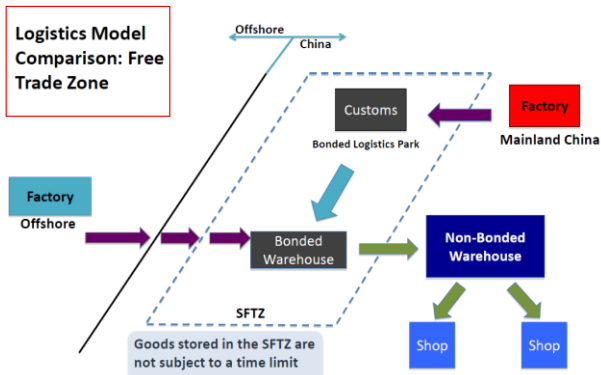
B2C export e-commerce



SANS FTZ

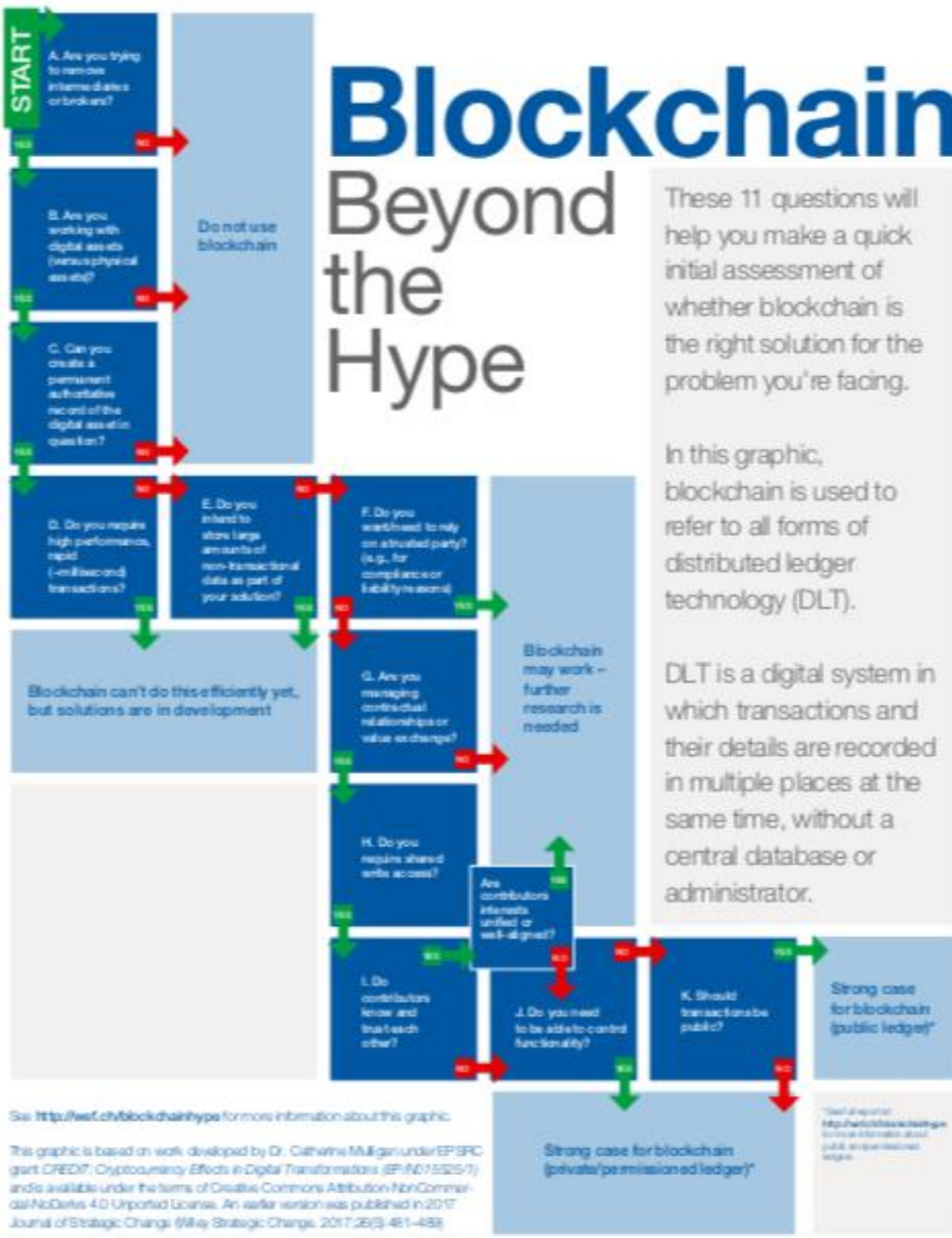


AVEC FTZ



- In 2016, the 4 FTZ de Shanghai, Guangdong, Tianjin & Fujian generated 409 Bn RMB of collected taxes

The decision tree is composed of a number of questions that assist in defining whether a blockchain is the correct approach for a particular business or not.



These 11 questions will help you make a quick initial assessment of whether blockchain is the right solution for the problem you're facing.

In this graphic, blockchain is used to refer to all forms of distributed ledger technology (DLT).

DLT is a digital system in which transactions and their details are recorded in multiple places at the same time, without a central database or administrator.

See <https://www.chf.blockchainhype.com> for more information about this graphic.

This graphic is based on work developed by Dr. Catherine Mulligan under EPSRC grant CREDIT: Cryptocurrency Effects in Digital Transformations (EP/I015525/7) and is available under the terms of Creative Commons Attribution Non-Commercial-NoDerivs 4.0 Unported License. An earlier version was published in 2017 Journal of Strategic Change (Wiley Strategic Change, 2017, 26(3): 461-488)



Millions in Crypto Is Crossing the Russia-China Border Daily. There, Tether Is King

Arina Boyakova

Jul 30, 2019 at 04:00 UTC • Updated Jul 30, 2019 at 23:10 UTC

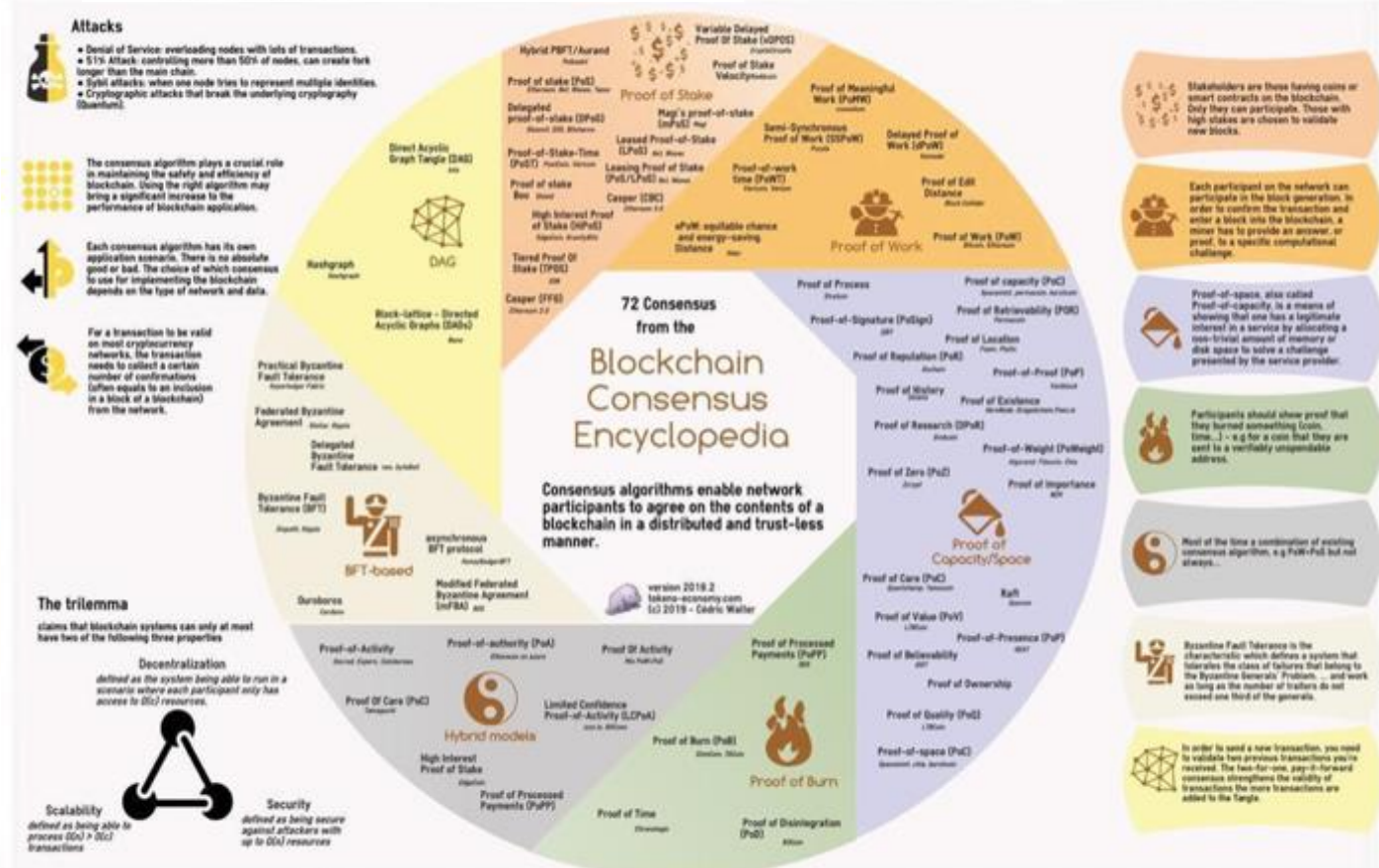
FEATURE

The Takeaway

- Chinese importers in Russia are buying up to \$30 million a day of tether (USDT) from Moscow's over-the-counter trading desks.



Price of USDT over the last 30 days via Coinbase data.



100+ Different proof of work, authority, stake etc. What is the right choice for Rail Freight

Architecture, Consensus & Smart Contract

WHY PROOF OF AUTHORITY?

<u>PROOF OF WORK & PROOF OF STAKE</u>	<u>PROOF OF AUTHORITY</u>
<ul style="list-style-type: none">• Very inefficient use of energy and taxing on the electrical grid• Costly, slow, and unscalable validation processes• Limits overall control and the possibility for improvements• Can allow certain actors to acquire too much power and monopolize the market	<ul style="list-style-type: none">• Traditional mining is not necessary, leading to minimal energy usage• Speed, cheap, scalable and customized validation processes• Allows changes and amendments to be made without the use of “forks”• Balance of power is maintained & institutions keep pace with innovation

MONEY·BY·DESIGN

AMEND
& Cost Savings

Avoid hegemony of GAFA or BATHX or COUNTRY

September 4th 2019, Geneve

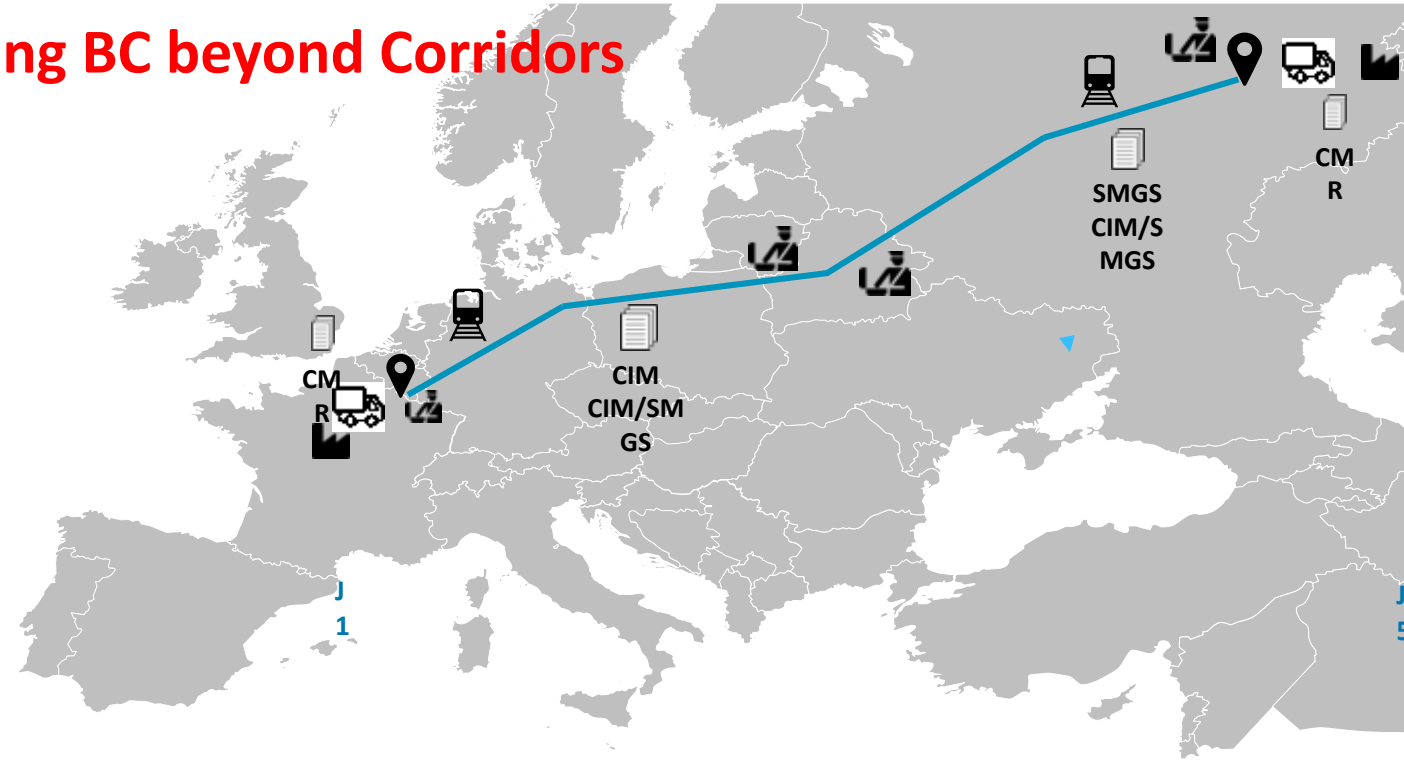
SOLVING The PROBLEMS

Proof of Authority & Amend unique features

Up to \$100 M added value per Year by using BC beyond Corridors

3 strategic leverages

- Cost savings (40% less nodes)
- improved performance (40% for 2 days cut)
- improved predictable ETA (10%)



Vs Today your clients are facing :



Difficult Access to certified information

Little stakeholders interoperability



High Costs of border controls

Length & frictions with customs



Point of **administrative rupture**

High risks of human errors through manual ERP processes

VIDEO UIC

September 4th 2019, Geneve

The EU Cybersecurity Act

The EU Cybersecurity Act revamps and strengthens the EU Agency for cybersecurity (ENISA) and establishes an EU-wide cybersecurity certification framework for digital products, services and processes.

A new mandate for ENISA

ENISA, (European Union Agency for Network and Information Security)the EU Agency for cybersecurity, is now stronger. The EU Cybersecurity Act grants a permanent mandate to the agency, more resources and new tasks. In particular, ENISA will have a key role in setting up and maintaining the European cybersecurity certification framework by preparing the technical ground for specific certification schemes and informing the public on the certification schemes as well as the issued certificates through a dedicated website.

ENISA is also mandated to increase operational cooperation at EU level, helping EU Member States who would request it to handle cybersecurity incidents, and supporting the coordination of the EU in case of large-scale cross borders cyber-attacks and crises. This task builds on ENISA (European Union Agency for Network and Information Security)'s role as secretariat of the national Computer Security Incidents Response Teams (CSIRTs) Network, established by the Directive on security of network and information systems (NIS (Network and Information Systems) Directive).

A European cybersecurity certification framework

The EU Cybersecurity Act introduces for the first time an EU-wide cybersecurity certification framework for ICT products, services and processes. Companies doing business in the EU will benefit from having to certify their ICT products, processes and services only once and see their certificates recognised across the European Union.

The Directive on security of network and information systems (NIS Directive)

The NIS Directive is the first piece of EU-wide legislation on cybersecurity. It provides legal measures to boost the overall level of cybersecurity in the EU.

The [Directive on security of network and information systems](#) (the NIS (Network Information Systems) Directive) was adopted by the European Parliament on 6 July 2016 and entered into force in August 2016. Member States have to [transpose](#) the Directive into their national laws by 9 May 2018 and identify operators of essential services by 9 November 2018.

The [NIS \(Network Information Systems\) Directive](#) provides legal measures to boost the overall level of cybersecurity in the [EU \(European Union\)](#) by ensuring:

- Member States' preparedness by requiring them to be appropriately equipped, e.g. via a Computer Security Incident Response Team (CSIRT) and a competent national [NIS \(Network Information Systems\)](#) authority,
- cooperation among all the Member States, by setting up a [cooperation group](#), in order to support and facilitate strategic cooperation and the exchange of information among Member States. They will also need to set a [CSIRT \(Computer Security Incident Response Team\) Network](#), in order to promote swift and effective operational cooperation on specific cybersecurity incidents and sharing information about risks,
- a culture of security across sectors which are vital for our economy

and society and moreover rely heavily on [ICTs \(Information Communication Technology\)](#), such as energy, transport, water,

How supply chain security has evolved over two decades

1 Both physical and cyber supply chain security are critically important.

Expert Ernie Hayden outlines the recent history of supply chain defenses and what enterprises need to know.

October 2018, the U.S. Federal Energy Regulatory Commission (FERC) officially approved a new standard for the North American electric energy industry. The critical infrastructure protection standard, referred to as "CIP-013-1 -- Cyber Security -- Supply Chain Risk Management," was issued to address "... cyber security risks to the reliable operation of the Bulk Electric System (BES) by implementing security controls for supply chain risk management of BES Cyber Systems."

The history of supply chain rules and guidelines

Prior to the attacks on Sept. 11, 2001, common discussions regarding supply chain risk management primarily took place in the insurance and risk management industries... there was no systematic methodology to analyze shipment risks.

After 9/11, supply chain security began to evolve into a more structured and methodological. Since 2012, there has been increased awareness and emphasis on cybersecurity in the supply chain process.

Phase one: Physical supply chain security

Phase two: Cyber supply chain security

Cyber Crime

For economical or political reasons,
By Countries or Private Individuals

DES PIRATES PEUVENT VOLER UNE TESLA EN 30 SECONDES

JANICK BERGER | PUBLIÉ LE 24/06/2019 À 13H21



Tesla



In today's connected world, security is an ongoing process,
Not a point-in-time solution

DES HACKERS RÉUSSISSENT À PIRATER UN AVION DE CHASSE F-15

THOMAS ROMANACEK | PUBLIÉ LE 20/06/2019 À 10H34 | MISE À JOUR LE 20/06/2019 À 20H05



Des hackers réussissent à pirater un avion de chasse F-15

USA Attorney General
Eric HOLDER May 2014
Case Wang Dong

QUANTUM COMPUTING...

Even more threats as

QC calculation 1h = 300 Years of a PC

IPS = Intrusion Protection Systems – **Detection in 465 days in Europe vs 160 days in USA/CAD/UK =>>> average 240 days**

**TESLA CAR HACKED IN 30 SEC,
US AIRFORCE F-15 CONTROLLED IN FLIGHT etc...**

IoT is just an entry door

https://www.capital.fr/lifestyle/des-pirates-peuvent-voler-une-tesla-en-30-secondes-1348147#utm_source=Welcoming&utm_medium=cpc&utm_campaign=emailwelcomin

Horizon 2020 cybersecurity pilot projects

 Partners: 46 EU Member States involved: 14	 Partners: 43 EU Member States involved: 20
 Partners: 30 EU Member States involved: 15	 Partners: 44 EU Member States involved: 14

#H2020 #CyberSecurity

How to factor 2048 bit RSA integers in 8 hours using 20 million noisy qubits

Craig Gidney^{1,*} and Martin Ekerå²

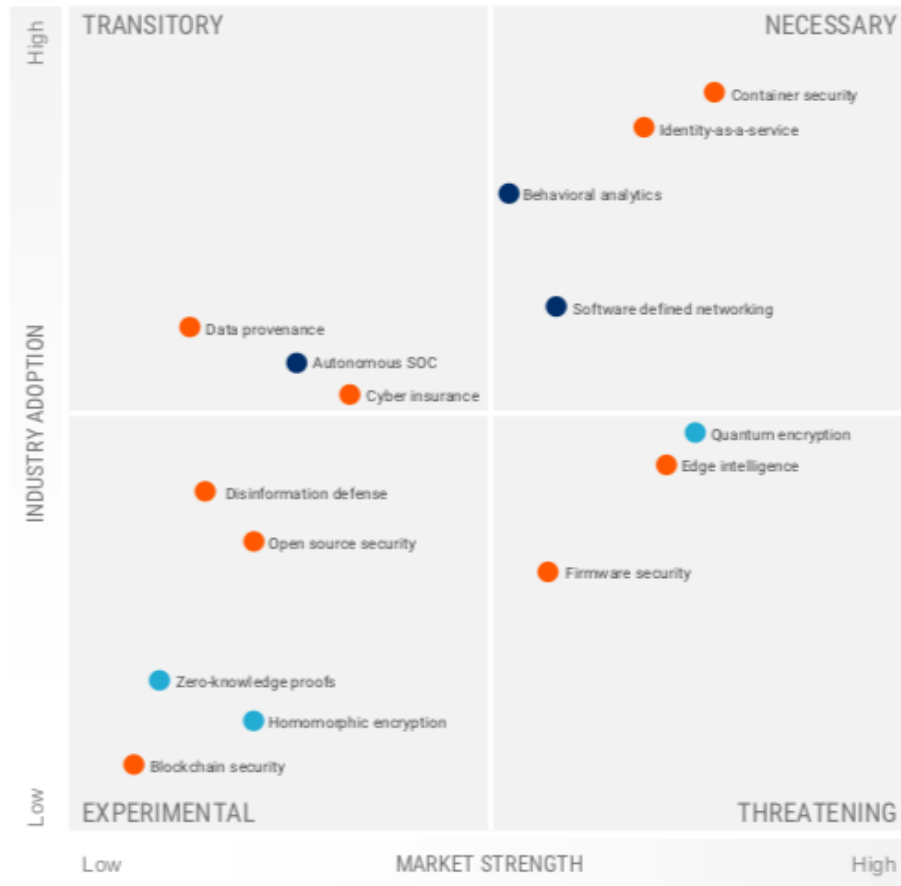
¹Google Inc., Santa Barbara, California 93117, USA

²KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden
Swedish NCSA, Swedish Armed Forces, SE-107 85 Stockholm, Sweden

(Dated: May 24, 2019)

We significantly reduce the cost of factoring integers and computing discrete logarithms over finite fields on a quantum computer by combining techniques from Griffiths-Niu 1996, Zalka 2006, Fowler 2012, Ekerå-Håstad 2017, Ekerå 2017, Ekerå 2018, Gidney-Fowler 2019, Gidney 2019. We estimate the approximate cost of our construction using plausible physical assumptions for large-scale superconducting qubit platforms: a planar grid of qubits with nearest-neighbor connectivity, a characteristic physical gate error rate of 10^{-3} , a surface code cycle time of 1 microsecond, and a reaction time of 10 microseconds. We account for factors that are normally ignored such as noise, the need to make repeated attempts, and the spacetime layout of the computation. When factoring 2048 bit RSA integers, our construction's spacetime volume is a hundredfold less than comparable estimates from earlier works (Fowler et al. 2012, Gheorghiu et al. 2019). In the abstract circuit model (which ignores overheads from distillation, routing, and error correction) our construction uses $3n + 0.002n \lg n$ logical qubits, $0.3n^3 + 0.0005n^3 \lg n$ Toffolis, and $500n^2 + n^2 \lg n$ measurement depth to factor n -bit RSA integers. We quantify the cryptographic implications of our work, both for RSA and for schemes based on the DLP in finite fields.

Emerging Trends in Cybersecurity



High

INDUSTRY ADOPTION

Low

TRANSITORY

Trends seeing adoption but where there is uncertainty about market opportunity. As Transitory trends become more broadly understood, they may reveal additional opportunities and markets.

NECESSARY

Trends which are seeing widespread industry and customer implementation / adoption and where market and applications are understood. For these trends, incumbents should have a clear, articulated strategy and initiatives.

EXPERIMENTAL

Conceptual or early-stage trends with few functional products and which have not seen widespread adoption. Experimental trends are already spurring early media interest and proof-of-concepts.

THREATENING

Large addressable market forecasts and notable investment activity. The trend has been embraced by early adopters and may be on the precipice of gaining widespread industry or customer adoption.

Low

MARKET STRENGTH

High

- IT Governance, Risk, & Compliance
- Data Security
- Network Security

ISO/IEC 27000:2018

Information technology & Security techniques

Information security management systems
Overview and vocabulary

QUANTUM COMPUTING France GVT

 **LES NOTES SCIENTIFIQUES DE L'OFFICE**
OFFICE PARLEMENTAIRE D'ÉVALUATION DES CHOIX SCIENTIFIQUES ET TECHNOLOGIQUES 

Note n° **16** — **Technologies quantiques : la programmation quantique** — Juillet 2019


Avant représentation

Résumé

- Le calcul quantique concerne aussi bien le support physique d'information (les qubits) que les langages de programmation permettant de les manipuler et d'en optimiser l'utilisation. Ces deux domaines, a priori distincts doivent être développés de manière synchronisée.
- La recherche en programmation quantique s'intéresse aussi bien au langage machine, qui contrôle les qubits, qu'à la création d'interfaces utilisateurs indépendantes de la technologie de qubits utilisée.
- La puissance potentielle de l'ordinateur quantique couplée à des algorithmes quantiques optimisés permet de résoudre des problèmes à fort enjeu, tels que des calculs d'optimisation.

M. Cédric Villani, Député, Premier vice-président

Si le succès de l'informatique repose en partie sur les progrès considérables réalisés dans le domaine de l'électronique ces dernières décennies (notamment en termes de miniaturisation conformément à la loi de Moore⁽¹⁾), le développement d'algorithmes et de logiciels (traditionnellement regroupés sous le terme « *software* ») de plus en plus efficaces a également joué un rôle majeur dans son essor.

Les développeurs n'ont pas besoin de connaître le fonctionnement physique d'un ordinateur pour écrire des programmes classiques. En effet, ils utilisant le plus souvent des **langages de programmation de haut niveau**⁽²⁾, orientés vers les problèmes à résoudre et qui permettent de s'affranchir des spécificités du matériel. À l'opposé, un ordinateur ne comprend que les **langages de bas niveau**, qui font faire au processeur les opérations élémentaires qu'il doit réaliser sur les bits, et dépendent donc de son architecture physique. Pour traduire efficacement les programmes de haut niveau en instructions de base, de nombreux **procédés de compilation**⁽³⁾ et **d'optimisation** ont été développés dans les dernières décennies.

De la même manière, il sera nécessaire de savoir programmer efficacement un ordinateur quantique opérationnel, en prenant en compte ses spécificités. La programmation quantique, radicalement différente de l'informatique classique⁽⁴⁾, commence à s'imposer comme un domaine à part entière, indispensable et complémentaire au développement de la partie matériel ou hardware.

Le développement de langages de programmation quantique

Contrôler des qubits et des portes logiques quantiques demande une programmation spécifique, notamment afin d'intégrer la dimension probabiliste du calcul quantique, différente du déterminisme de la physique classique. L'un des objectifs de la recherche actuelle en développement logiciel consiste à mettre au point, par anticipation, des **environnements de programmation adaptés**, qui pourront être utilisés par les programmeurs dès que des machines quantiques de capacité suffisante seront disponibles.

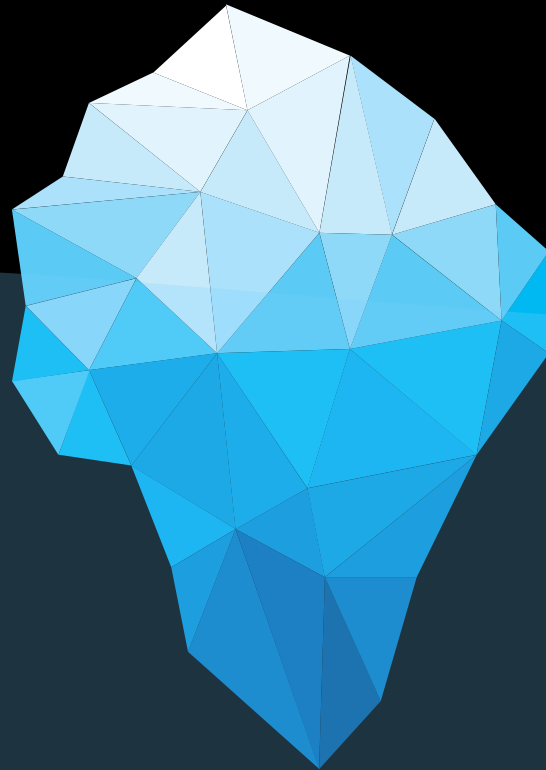
La création de langages de programmation quantique concerne, d'une part, des langages de bas niveau, dépendant de la technologie de qubits utilisée⁽⁵⁾ et de ses caractéristiques (temps de cohérence, des portes logiques...⁽⁶⁾), d'autre part, des langages de haut niveau indépendants du système physique. Entre les deux, de nouveaux procédés de compilation doivent être développés. Plusieurs plateformes de programmation ont déjà été mises au point, certaines par des équipes académiques (comme le langage QISPEC⁽⁷⁾), d'autres par des industriels qui les associent à des outils de simulation en ligne (comme le langage Q# développé par Microsoft⁽⁸⁾ ou les langages AQASM et pyAQASM d'Atom). Des bibliothèques de calcul quantique sont également déjà disponibles en complément des langages de programmation classiques actuels comme Python. Les plateformes développées sont en général disponibles en libre accès ou dans le cloud, dans une perspective de recherche participative et afin de permettre au plus grand nombre de développeurs de se familiariser avec

Document communiqué - 202 rue de Valenciennes - 75013 Paris 13^e arr. - Tél. : 01 42 42 20 42 - secretariat@office-choicescientifiques-technologiques.fr
Internet : www.office-choicescientifiques-technologiques.fr - Tél. : 01 42 42 20 42 - secretariat@office-choicescientifiques-technologiques.fr

- Hunting the universal model of Quantum Computing...
- Aiming at the US NIST Post Quantum

Smart Cities Assets Optimization

The Railways Use Case



For every train schedule a heuristic approach is required to solve an optimization problem

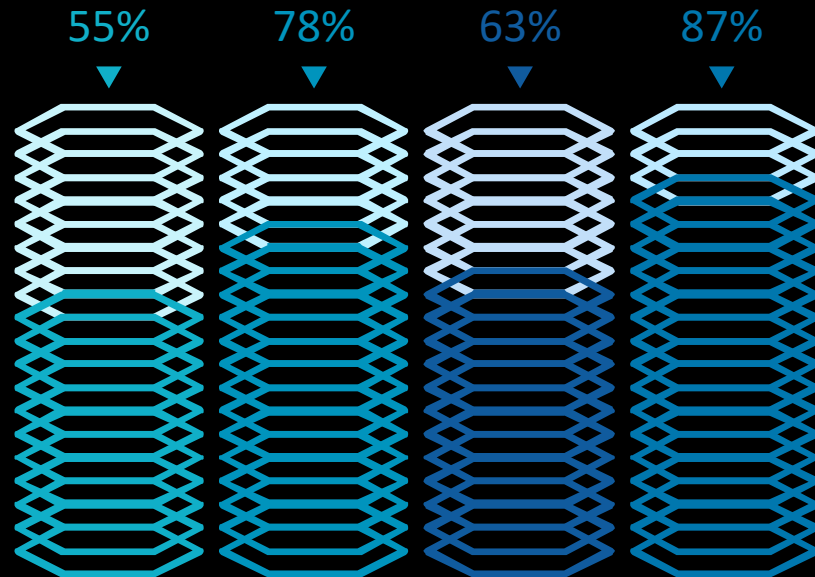
Indirect Constraints

Amongst parameters to consider:

- Topological layouts
- Railways connectivity
- Multimodality interactions (e.g.: Freight)
- Real-time changes
- Workforce & resources planning
- Maintenance scheduling

NEW ERA OF DIGITAZATION OF ASSETS EMPOWERED BY QUANTUM ANNEALING

Quantum Annealing Performance Indicators



16ms

Optimisation of time table schedules
performed on D-Wave 2000Q

Suitable for all categories
business and personal
presentation

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Conclusion in IMPROVING TRUST

BlockChain & Multi-Modal Freight

- At stake : an increase in the value of transported goods (threshold > 500K\$ per container and saving of up to 100m\$ / Year on BRI)
- Improved attractiveness of the choice of transport's benefits within Freight Ecosystems
- Improved effectiveness & efficiency of the entire freight ecosystems as engaged in BlockChain
- **Governments need to explore further blockchain's potential through its use in public-sector projects that demonstrate its workings**, its potential and its inevitable limitations. Although blockchain is not nearly as evolved now as the internet was in 2005, co-operation among all stakeholders on issues like taxonomy or policy guides on basic principles is crucial.
- Those stakeholders include government, industry, academia and civil society. All this must be done while keeping in mind the global nature of blockchain and that blockchain regulations need to be made in synch with regulations on other issues are adjacent to the technology, such as electronic signatures. However, work can be done in the global arena through international initiatives and organizations such as the ISO.

=> Be recognized agile contributor in the \$380Bn/Y Freight industry