

## **INTHECASE**

Presented by digital@INSEAD

Distributed Ledger Business Models: How to Build Minimal Viable Ecosystems?

Wednesday 21 October 2020

**Duration**: 90m

In partnership with

accenturestrategy

We will start in a few minutes at 1 PM CET





# Upcoming webinars

Thursday 5 Nov. 2020 9:00am CET Blockchain for Supply Chains: Hype versus Reality®

Hosted by Sameer Hasija, INSEAD Professor of Technology and Operations Management

Dmitry Sumkin, INSEAD PhD

Philippe Blaettchen, INSEAD PhD student

Aly Madhavji, Managing Partner, Blockchain Founders Fund

Tuesday 10 Nov. 2020 10:00am CET The Paradox of Privacy

Klaus Wertenbroch, INSEAD Professor of Marketing



## **INTHECASE**

# Distributed Ledger Business Models: How to Build Minimal Viable Ecosystems?

Andrew Shipilov

Professor of Strategy

INSEAD



Wilfried Pimenta de Miranda Director Business Development IOTA Foundation



Managing Director Center of Excellence Banking & Trade Marco Polo Network

**Daniel Cotti** 



Founder & CEO DAG Global Holding Ltd.

Sean Kiernan

Presented by digital@INSEAD

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# INTHECASE

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# Special Thank you to Anne Marie

Anne-Marie Carrick
Senior Research Associate
INSEAD





## TECH TALK X

Presented by digital@INSEAD

# Agenda

- INTHECASE + webinar etiquette
- Brief intro to the IOTA case study « Distributed Ledger Business Models: How to Build Minimal Viable Ecosystems? » (Andrew)
- IOTA's current projects (Wilfried)
- Discussion between Andrew and Wilfried: IOTA
- Discussion between Andrew, Daniel and Sean: Marco Polo Network and DAG Global Holding
  - Q&A of all panelists with the audience



## INTHECASE: a live case discussion

- These webinars deep dive into recent cases published by INSEAD together with case protagonist(s), industry experts and presented by INSEAD faculty
  - Webinars offer insights into best practices/frameworks driving success
  - INSEAD is a current leader in case publishing and produces about 70-80 new case studies per year authored by INSEAD Faculty and Research Staff
  - INSEAD's case collection of over 2,000 cases can be visited at

www.publishing.insead.edu



# Webinar etiquette

- Audience is muted, with video off and chat box disabled
- Please use the Q&A tab to suggest questions for the speaker
- You can vote the questions up, so you help us find the most relevant questions for you
- The webinar is being recorded
  - For technical issues, e-mail digital@insead.edu



# Case Summary

- When Wilfried joined the IOTA project as Director for Business Development in early 2017, his mandate was to demonstrate the potential of this technology and increase adoption.
- The IOTA project, an open community programme, sought to engage with external market players to kick off a first set of proofs of concept.
- In 2017, IOTA was working with several large industrial companies, public sector organisations, and a number of nascent 'smart cities'.

#### Challenges:

- How should IOTA scale up beyond showcasing an initial set of use cases? How could the IOTA team engage with market players to trigger the exploration of new data-driven business models and ensure market pull?
- The not-for-profit IOTA Foundation had relied on donations and government grants: could more sustainable sources of funding be found to support its activity across geographies and industries?



# Distributed Ledger Technology

"DLT are shared ('distributed' or 'decentralised') digital ledgers that use cryptographic algorithms to verify the creation and transfer of digitally represented assets or information over a peer-to-peer network. They operate via an innovative combination of distributed consensus protocols, cryptography and in-built economic incentives. "

"DLT adds a new layer of trust into the Internet, offering a new level of data sovereignty, for the first time making it possible to create digital assets that are both scarce and non-falsifiable."



### DLT differs from traditional databases:

- It is physically decentralised. Copies of the same data are stored in different locations. If one node in the network goes down, the ledger remains accessible to all other nodes in the network.
- Distributed consensus means there is no need to trust any party in the network.
- Data integrity is protected by its immutability DLT does not allow changes to be made after the transaction is confirmed and written in the ledger.
- Shared governance. Public ledgers are "open" and regarded as censorship-resistant.



## Not all DLT = blockchain

- Blockchain enables people to send data to a counterparty that they do not know or may not trust.
- A cryptographic signature or "hash" facilitates this.
- Each block contains a cryptographic hash of the previous block, a timestamp and transaction data.
- Blockchain is resistant to data modification.

"Think of blockchain and distributed ledger in the same way you might think of Kleenex and facial tissues. The former is a type of the latter, but it has become so popular that it has become ingrained in people's minds as to what the product is. "



# INTHECASE

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## IOTA Tangle: DLT for the IOT and M2M ©

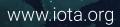
- Tangle doesn't need a block data structure.
- The IOTA tangle was based on Direct Acyclic Graph (DAG) architecture.
- It was designed to meet the requirements of the IoT/M2M environment, in particular high speed/scalability, zero fees for use of the ledger, low energy consumption, and quantum security in preparation for the arrival of quantum computers.



# Minimally Viable Ecosystems

- You don't have an MVP just yet, so build a MVE
- Bring together partners (except direct competitors) to figure out use cases for IOTA
- Co-creation and shared learning without "middlemen"
- IOTA has to be accepted by many parties
- How did you go about building MVEs?
- What worked and what did not work?
- Where is IOTA now?





## The new Data Economy Landscape

- Multi-cloud
- Internet-of-Things
- Artificial Intelligence



- Cybersecurity
- e-privacy
- Interoperability

Real time human centered solutions and cost efficient automated processes bring new technologies at play and data challenges







**Non-profit Foundation**Registered and regulated in
Berlin, Germany since 2017



Develops open source Distributed
Ledger Technologies and provides
technical development and
support services

























## **IOTA Tangle**

Open source

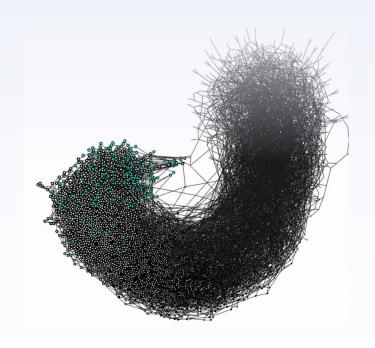
Permissionless / Public\*

Scalable

Feeless data & value transactions

Fit for the IoT / M2M

Low energy



IOTA develops an open source DLT "without Blocks" in order to overcome the limitations of conventional Blockchain protocols



# IOTA can be leveraged by anyone to innovate and create, share and capture value in the IoT economy



DLT enables a digital infrastructure and new business models fit for the IoT and digital economy



# New solutions and business models are being developed across industries in both public and private sectors

#### **Mobility & Automotive**

Delivering accessible, affordable and sustainable multi-modal transportation

#### **Global Trade & Supply Chains**

Accelerating the integration of global trade to benefit all those involved in the supply chain

#### **Smart Cities & Energy**

Connecting city infrastructure to the Tangle for improved efficiency, privacy and safety

#### Telecommunications

Reducing infrastructure cost and accelerating mobile services deployment

#### **Digital Identity**

Building a protocol on the Tangle to enable self sovereign identities connecting people and the identity of things

#### eHealth

Securing electronic healthcare data and enabling new models of care

#### Industrial IoT

Linking physical products with their digital twins for better collaboration in Industry 4.0

#### **Climate & Environment**

Improving monitoring of ecosystems and making trusted environmental metrics available in real time

## Data Trust Example: Project Alvarium





**Problem:** There is currently no way to trust that accuracy, security and privacy are maintained across public and private data silos.

**Solution:** A data confidence fabric creates provenance for data, tracking where data is created and where it goes.

**Project Alvarium**: IOTA is working with the Linux Foundation, Dell Technologies, ARM, IBM, Unisys and more to enable cities, residents and companies to have confidence that data they use has remained uncompromised from the point of creation to final destination. The project creates an open, vendor neutral middleware stack where multiple IOTA products act as enabling technologies.



Source: https://www.youtube.com/watch?v=88KbYmlkFdw



## M2M Value Transfer Example: Car e-Wallet

**Problem:** There Allowing Vehicles to process automated payments and act as data marketplaces

**Solution:** There is currently no way to trust that accuracy, security and privacy are maintained across public and private data silos.

Jaguar Land Rover IOTA car e-wallet could allow

- M2M instant payment: Pay-as-you-go / Pay per-use for EV charging, Parking, Tolls and Road Use charges
- Monetise data transfer: Potholes detection,
   Traffic and congestion information, Car access in sharing economy models









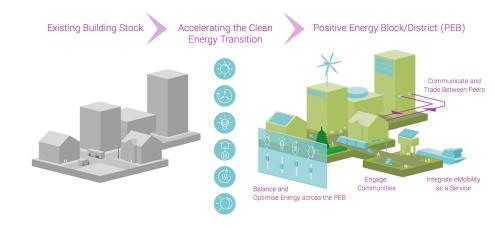


# Automate Example: Decentralised energy marketplace

**Problem:** Unable green and self sufficient communities and city districts

**Solution:** Peer-to-Peer energy trading and decentralised energy marketplaces between positive energy buildings, EVs, Batteries

- Secure digital infrastructure
- Auditable data sharing
- Automated value transfer



### +CITXCHANGE

#### www.cityxchange.eu

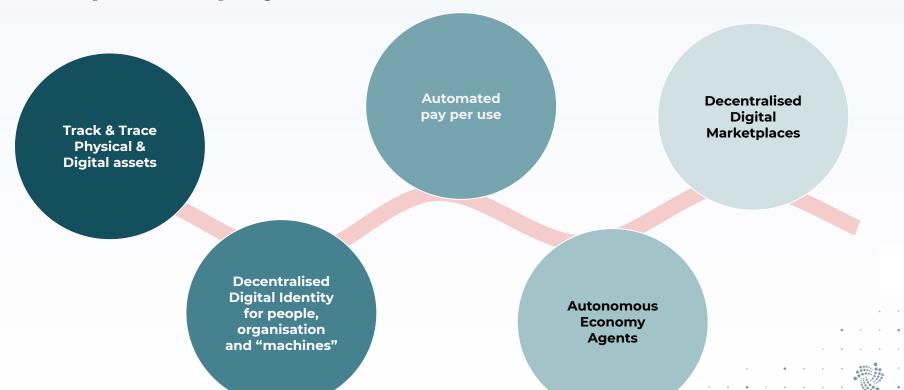
H2020 European Applied research & innovation consortium of 32 partners incl universities, municipalities, public and private sectors

#### ALPHA VENTURI

#### www.alpha-venturi.com

Norwegian Venture studio spinning out an IOTA enabled dedicated venture out of +CityxChange

# Key concepts which will reshape value systems, competitive play and business models



#### **Standardization**

We cooperate with leading regulatory, industry and standards organizations to build an interoperable protocol.





















TangleEE provides a governed environment for organizations and contributors to develop new ideas and applications using IOTA technologies



### Community



- Academic Papers
- Experience X-team
- Hackathons & Grant funds
  - Discord & Social media
- Community-driven Initiatives

235.000+ Community members and followers

### **Partnerships**

Together with partners, IOTA is building an open infrastructure for our digital economy, ready for humans and devices.



- 100+ Collaborations and partnerships
- **250+** Referencing patents
- R&D grant projects & \*
   Professional Technical \*
   Support Services . . .



# Open Innovation through Minimal Viable Ecosystem (MVE) Example: 'Green' smart charging

Live showcase of use case prototype in Trondheim, August 2019















Car e-wallet



Local Energy Market



- Track the green and local origin / provenance of energy
- To provide consumer a guarantee of origin
- Monetise energy attributes and incentivise integration of e-mobility into local and green energy communities





# Thank you!



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#### Marco Polo Network





Founded in 2017 by a group of leading financial institutions and enterprise technology providers, TradelX and R3.

Now the largest and fastest growing distributed trade and working capital finance network in the world.

Digital platform that allows trading parties to automate and streamline their trade and supply chain finance activities.

Multi-Bank, Multi-Product, Multi-Jurisdiction designed for Corporates in one single platform with same integration and user interface

Financial Institutions

7 Technology Partners

20+ Corporates









Open and distributed network for trade and working capital finance powered by open Application Programming Interfaces (APIs) and blockchain technology.



Facilitating trade and working capital finance solutions creating better customer experience and seamless data integration, while reducing costs, time and risk.

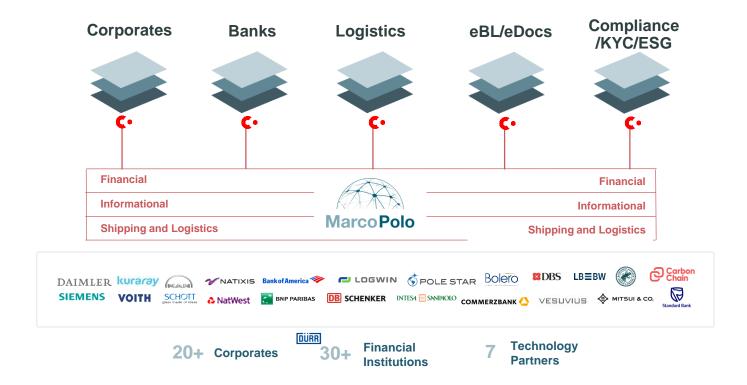


Marco Polo enables the creation of Trade and Working Capital Finance applications and modules through a collaborative co-creation model of the members.

## **Marco Polo – Digital Trade Ecosystem**



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## The Marco Polo Network \Value Proposition & Benefits





#### One Network for multiple Trade Finance Solutions

Instead of using different, separate trade finance solutions for your receivables or payables, the ERP-embedded Working Capital App allows you to manage your trade finance solutions within your ERP platform and interface.



### Works with your existing solutions

No need to change or integrate to various external systems.

The ERP-embedded Working Capital Finance App allows you to work with your existing systems and connect fast and easy with all the banks in the Marco Polo Network.



### Access to distributed ledger Technology

The Marco Polo Network allows you to store your trade data securely on the blockchain.

This provides you with secure, distributed data storage and book-keeping, automated contract enforcement, identity management, asset verification and tracking.



## Access to Trade and Working Capital Finance

Seamless access to financing products delivered through banks on the Marco Polo Network.

One Access to One Distributed Platform

Connect once-connect to many [COCM]

One single integration and interface with ERP, banks, B2B networks, other value added services Multiple Working Capital Solutions Modular applications

Customize and use multiple solutions in the same network

Leveraging Blockchain Technology Permissioned & secure access

Secure, real-time, peer-to-peer exchange of verifiable trade data and assets thanks to Corda's private, enterprise grade DLT protocol

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