

# BLOCKCHAIN AS A GAME CHANGER FOR SUPPLY CHAIN MANAGEMENT AND TRANSPORT LOGISTICS



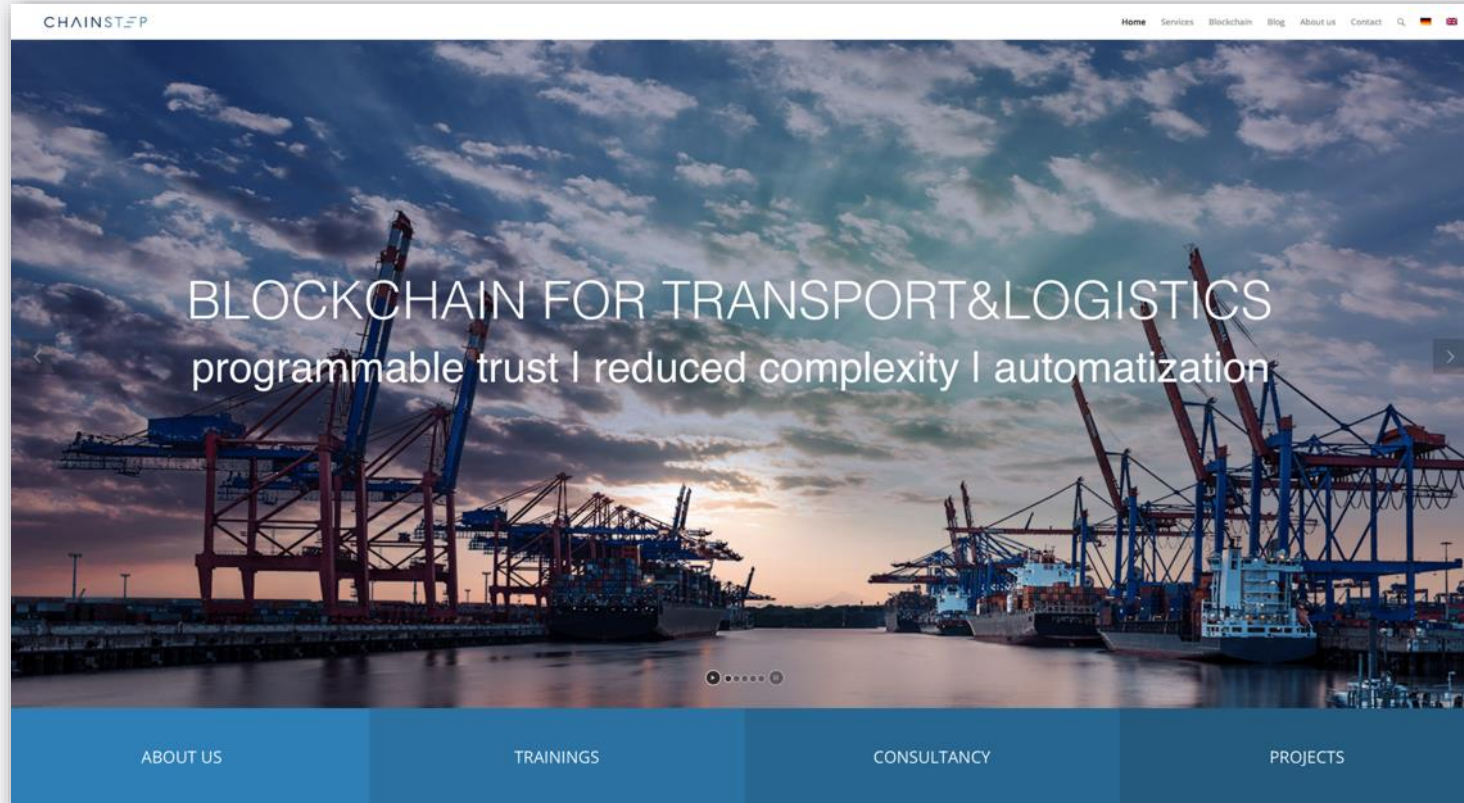
## Brief CV Frank Bolten

- 25 years senior management in CE/IT/telco biz
- Companies: Sony, Deutsche Telekom, Sharp
- Since 2011 focus on the digital transition
- Experienced in the implementation of digital technologies and applications e.g.:
  - e-Commerce since 1998
  - Renewable energies since 2004
  - Internet of Things since 2011
  - Digital Education since 2014
  - Blockchain since 2015 -> CHAINSTEP since 05/17





## Website



## Actual brochure



BLOCKCHAIN, COMPANIES, ECOMMERCE, GENERAL

## HAMBURG AS AN IMPORTANT LOCATION FOR “REAL LIFE” BLOCKCHAIN APPLICATIONS



Some days ago Jan C. Rode published a blog post titled “Blockchain rüttelt Hamburgs Wirtschaft auf” (blockchain brisks up Hamburg economy) on Nextmedia-Hamburg.de. After I posted the article on the social networks LinkedIn and Xing with the comment “Hamburg has the potential to become an important location for “real life” blockchain applications” an interesting discussion started in my network. Topic:

**Is there any chance for a blockchain startup scene to survive in Hamburg in competition with Berlin?**

# CHAINSTEP PLANS TO BRING BLOCKCHAIN TO THE REAL ECONOMY IN THREE STEPS



Started 05/17

0

## Blockchain Consultancy and Trainings

Concentrate on adjacent businesses like Supply Chain Management and Logistics. Cooperate with training institutes.

Support of the “Innovationsforum Blockchain” (funded by BMBF)

As of 09/17

02

## Realization of Customer Projects

From strategy over use case and prototype to implementation. Utilizing own resources and our wide network of leading experts

As of 2018

03

## Step by step work on own Assets

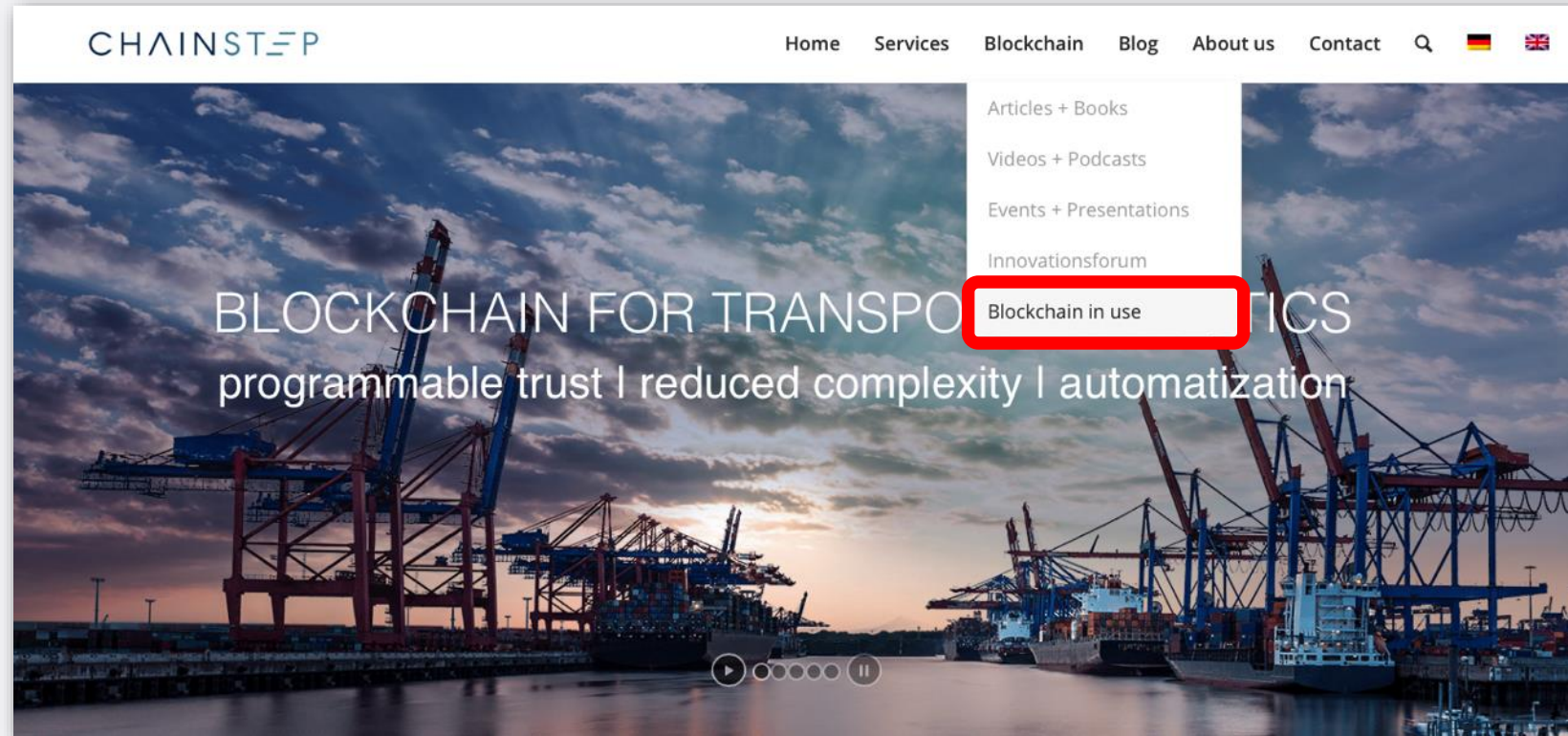
Develop and establish blockchain-based concepts i.e. for 3D printing, SCM, License Management and alike. Focus on smart contracts.



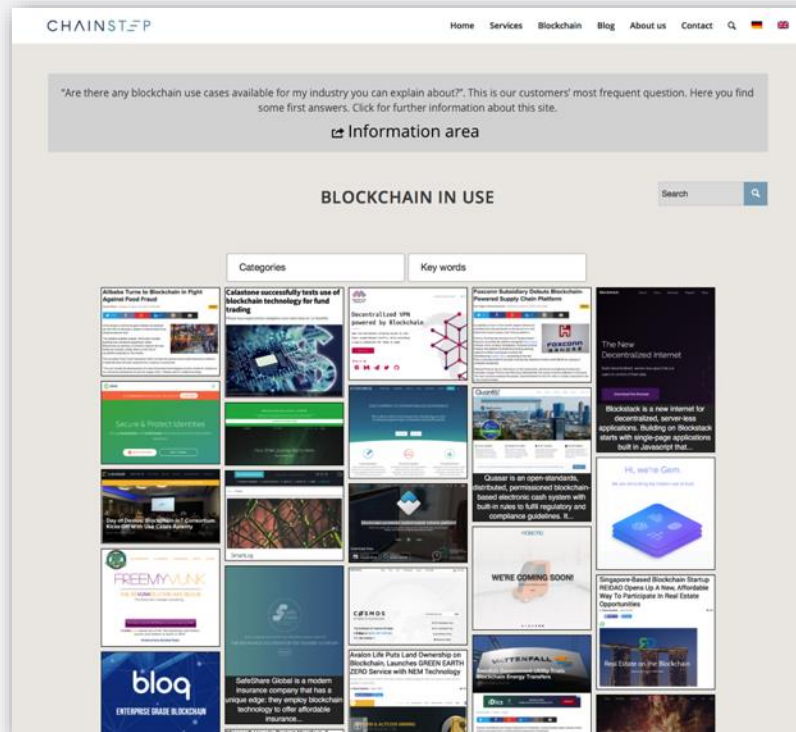
# Blockchain projects











<https://www.chainstep.com/use-cases/?lang=en>

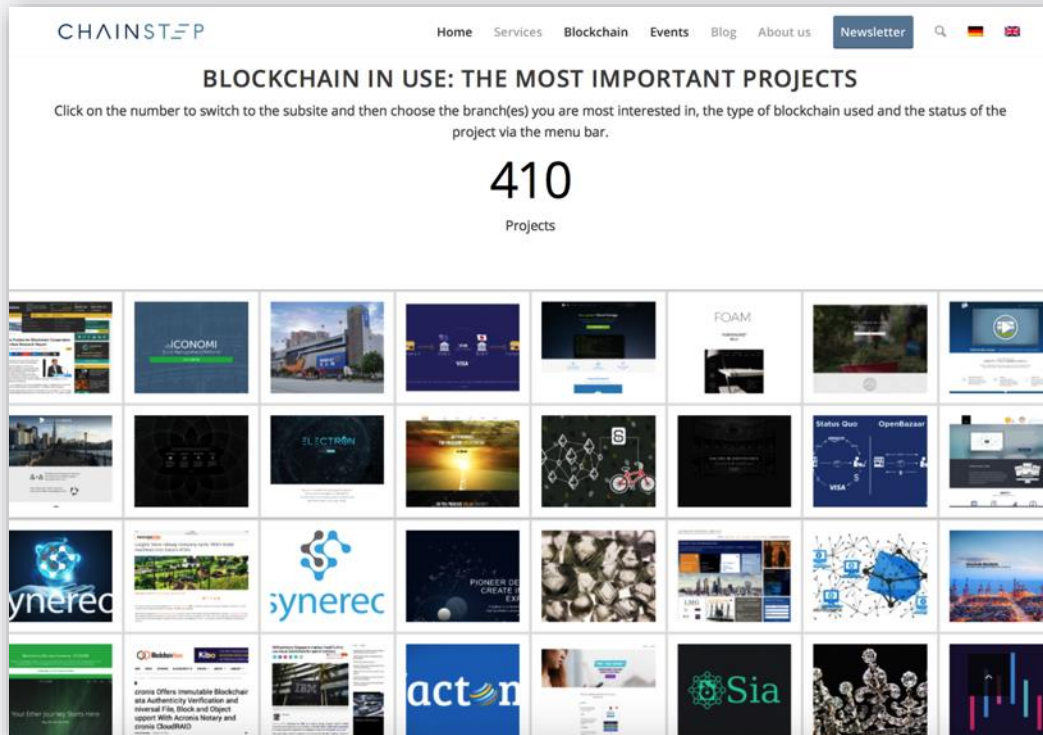
## Categories

Authenticity  
eCommerce  
Energy  
Enterprise  
...  
SCM  
Security  
Social media  
Storage  
...

## Key words

Public  
Enterprise  
  
Info  
Concept  
Live  
  
Consortium  
Digital Asset

# BLOCKCHAIN IN USE: THE MOST IMPORTANT PROJECTS



<https://www.chainstep.com/use-cases/?lang=en>

## „Blockchain in use“ segments

Segment	No. of projects*
Finance	108
Supply Chain Mgt	46
Enterprise	45
Government	38
Energy	27
Internet of Things	27
Security	18
Entertainment	15

\* As of Oct 14, 2017, 410 projects in total, multiple tagging possible



# Blockchain in use: SCM/transport/logistics



# BLOCKCHAIN & SCM/TRANSPORT/LOGISTICS

## China Federation of Logistics & Purchasing Kicks Off Blockchain Application Sub-Committee

By Richard Kastelein - December 21, 2016

Gefällt mir 3 Tweet

## Ohne Papier auf hohe See



Für jeden Container ein BL, da besteht beispielsweise bei der 'MSC Zoe' ein enormes Einsparungspotenzial (Foto: Hasenpusch)

## Landmark transaction merges blockchain, smart contracts and IoT

DECEMBER 21, 2016 / BY SANNE WASS



## Europe's Big Blockchain

Stan Higgins (@mpmcswenee)

281 f g+ segment

The operator of Europe's largest shipping port is taking part in a new blockchain consortium focused on logistics.

Announced earlier this month, the Netherlands-based effort includes support from a number of local and regional institutions, including the Port of Rotterdam, the Netherlands

ift Univel Logistics sector gets to grips with blockchain technology

News Item - 16 November 2016

Innovation



## PwC: Blockchain Will Drive Holiday Season Logistics

By Kevin Helms - October 23, 2016

5630 0

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## Blockchain Technology in Supply Chain and Logistics

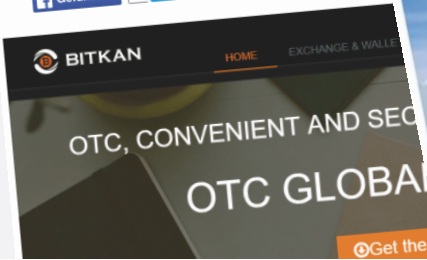
July 14, 2016 By: Sofia

485 f M p Twitter G+ LinkedIn

The limits haven't been reached yet in attempts to find use cases for blockchain technology across industries and extract all the benefits distributed ledger can bring into sometimes unexpected areas of application.

One of the elements of businesses that blockchain technology is believed to aid in improvement is supply chain and logistics. Similar to the financial services industry, in supply chain and logistics, blockchain has a great potential in increasing transparency.

Modern business models in industries requiring vast supply chains for seamless distribution of goods usually keep the network behind the store shelves hidden. Hence, for the most part of the products in everyday consumption, customers are free models to trace the logistics and understand the origin and journey that the product



## Why Blockchain is a Game Changer for Supply Chain Management Transparency



From conducting payment and audits to tracking inventory and



### Latest News & Press

Trump Names China Critic Robert Lighthizer as U.S. Trade Representative



U.S. President-elect Donald Trump on Tuesday named Robert Lighthizer, an official in the Reagan administration and harsh critic of China's trade practices, to be his chief trade negotiator....



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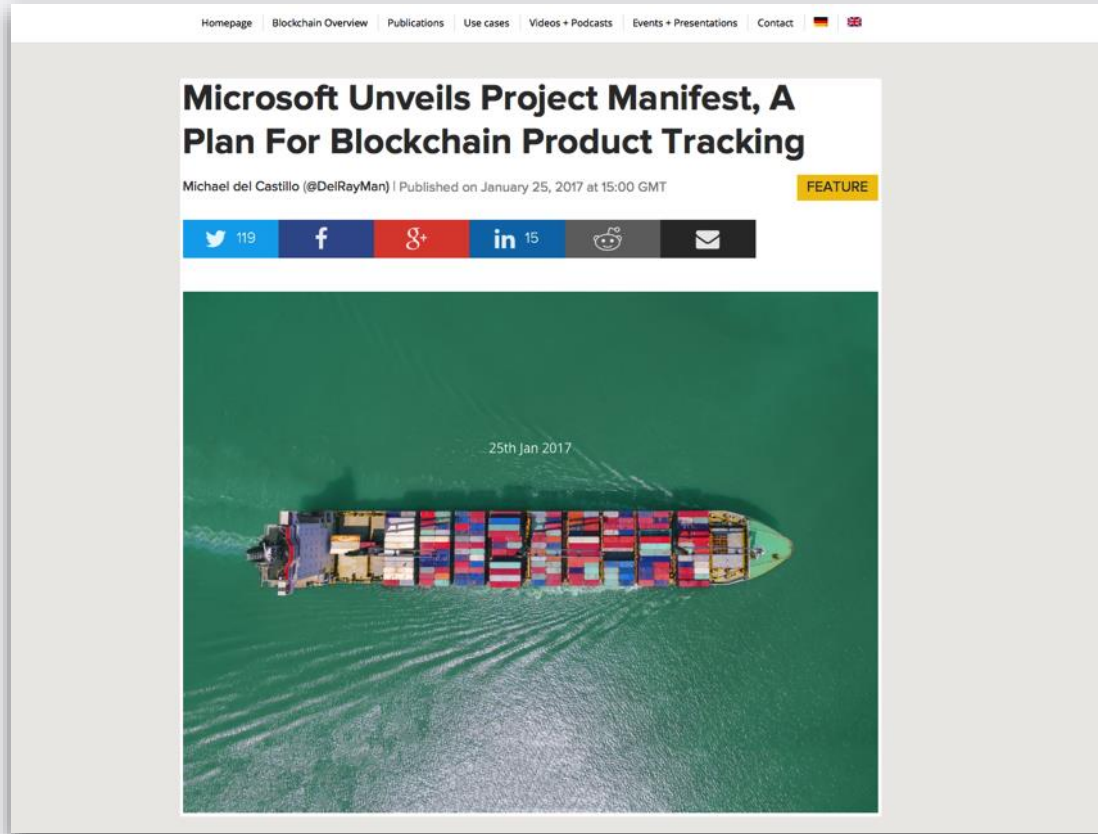


-  Document Management
-  Tracking & Tracing
-  Multiparty Agreements
-  Finance / Payment
-  Additive Manufacturing (3D Printing)





# Project Examples



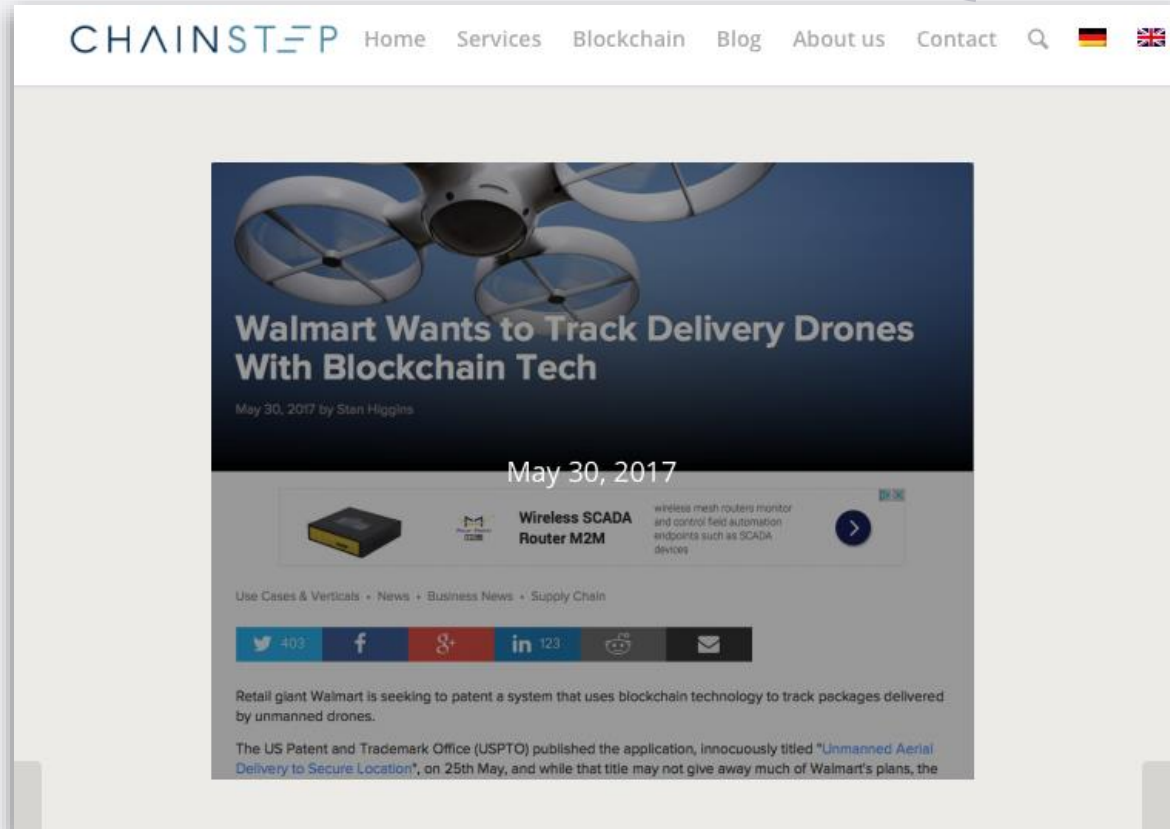
*"Project Manifest is actually designed to look at the challenges of visibility in the supply chain. One of the reasons why we worked with Mojix is because they already have technology and know-how in supply chains for scanning RFIDs."*

- Actually an academic project is carried out with > a dozen companies (retailers and brands) by the Auburn University
- Turn a distributed ledger into the „connected tissue“ that gives complicated cross-industry supply chains real-time accuracy
- Deploy Ethereum, automating the writing, shipping and receiving of transactions in smart contracts on the blockchain

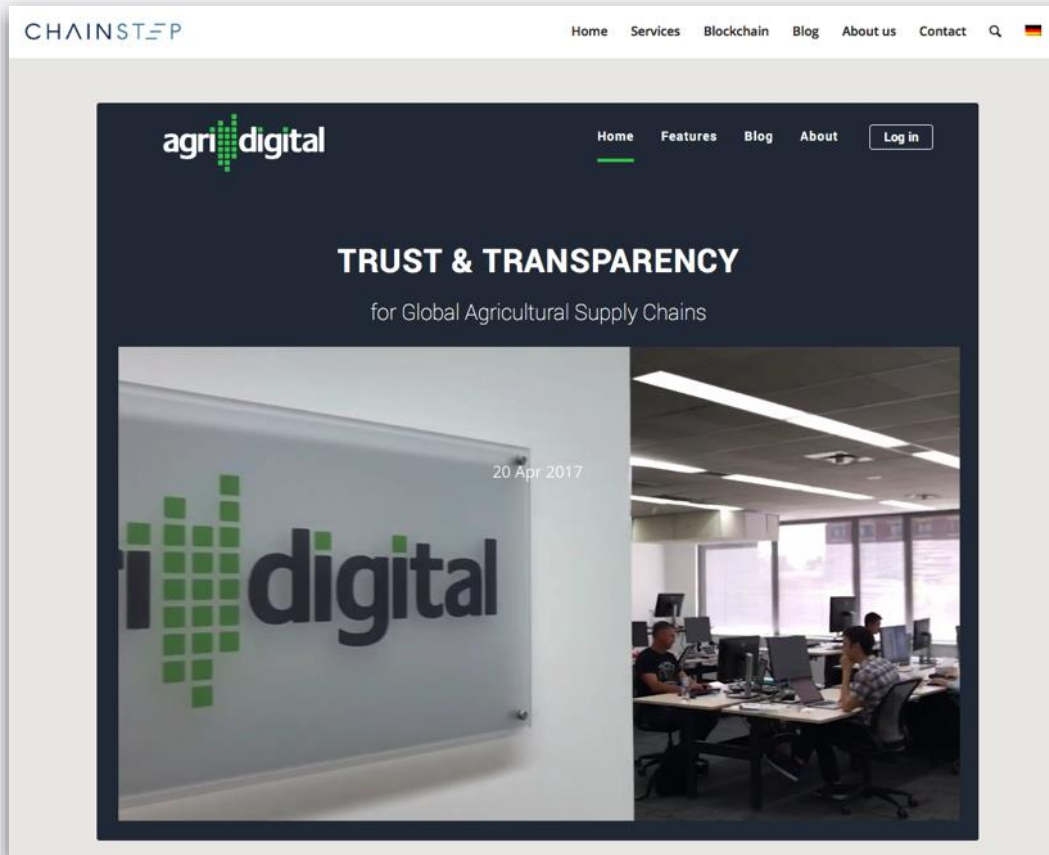


Walmart is seeking to patent a system that uses blockchain to track packages delivered by unmanned drones. The patent application explains:

*„Package tracking by blockchain may include elements including but not limited to location, supply chain transition, authentication of the courier and customer, ambient temperature of the container, temperature of the product if available, acceptable thresholds for ambient temperature of the product, package contents placed in the container system (products & goods), or a combination thereof.“*





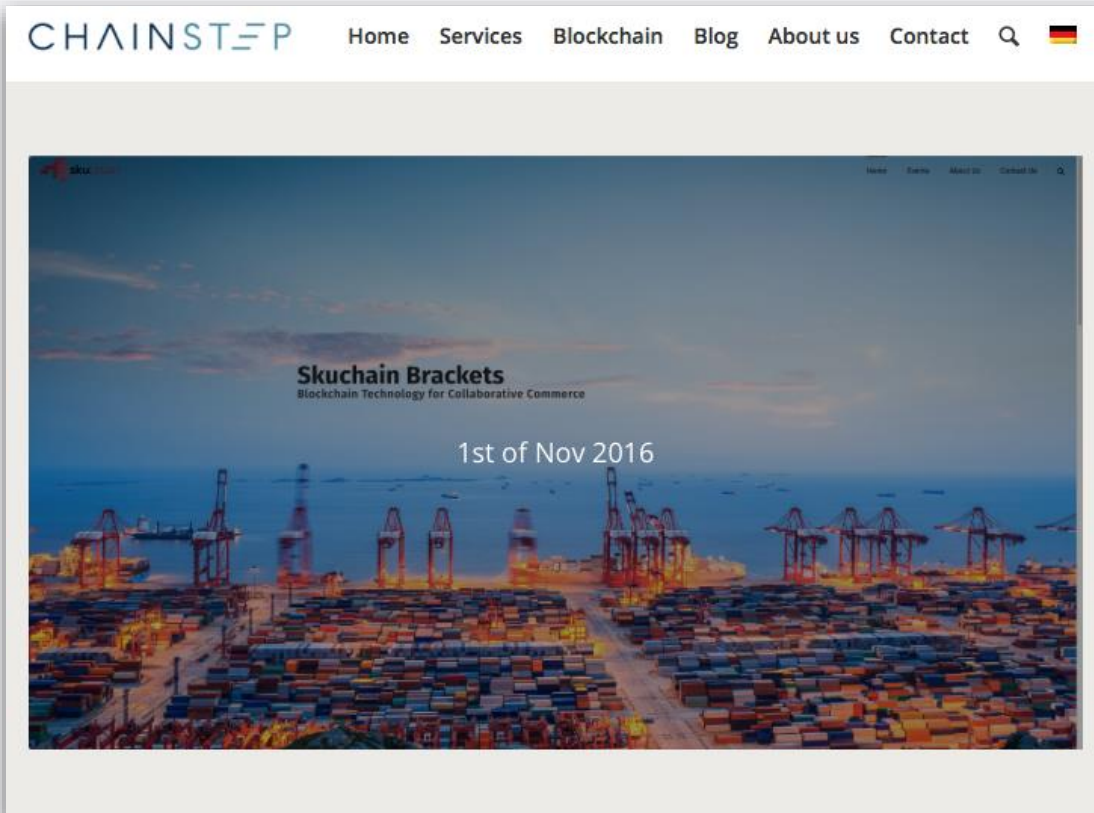


*„At AgriDigital we develop solutions to real world problems in the agriculture sector. We bring transparency, efficiency and trust to farmers and the post-farmgate ecosystem.“*

- Integrated commodity management solution for the global grains industry
- applied blockchain technologies, distributed ledgers and smart contracts
  - realtime payment
  - increased efficiency
  - Transparency

# SKUCHAIN BLOCKCHAIN BASED SCM PLATFORM

Example of  
SCM  
segment



*"Skuchain is a blockchain platform that provides transparency, security and efficiency to the supply chain, enabling optimal planning and agility for downstream buyers and working capital relief for upstream suppliers."*

- IMT provides inventory financing that de-risks transactions and unlocks capital opportunities for the entire supply chain.
- Popcodes are Proof of Provenance codes, a crypto-serialization solution to track flow of goods on SKU level.
- BRACKETS are cryptographically secure smart contracts governing an entire purchase cycle.



# Projects with CHAINSTEP involvement



# HANSEBLOC SECURED E-BILL OF LADING

**Final application  
submitted Aug 31,  
2017**

**Example of  
SCM  
segment**



Non-final logo



Project focus: utilize blockchain to secure the consignment note and to enable new business models. Therefore a consortium of complementary stakeholders in transport&logistics is set up.

Targeted project duration: Feb 2018 – Jul 2020

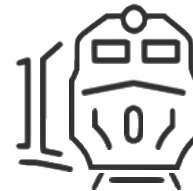
Lead: „Logistik-Initiative Hamburg“

Participants: logistics, transport and IT companies – universities - blockchain specialists

Project application submitted to Federal Minstry for Economics Affairs and Engery April '17

Feedback July '17: project outline highly appreciated, deadline complete application Aug '17

# TARGETED ARCHITECTURE OF THE CONSORTIUM SOLUTION



Data based added **value services** (transparency, ressources balancing, risk management, predictive maintenance)



## Extended digital industry infrastructure



**Smart Contracts**  
Contractual logic  
Payment



**Blockchain tech.**  
Notarisation  
Trust



**Smart Oracles**  
Utilization of  
sensor data



Existing digital system and communication infrastrucutre



# SAMPL SECURE ADDITIVE MANUFACTURING PLATFORM

Example of  
3d-Printing  
& SCM




CHAINSTEP

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## SAMPL

Secure Additive Manufacturing Platform



**Why Blockchain?**

The SAMPL consortium will implement the described technologies to help solve the urgent challenges around copyright protection in additive manufacturing. With SAMPL it will be possible to secure printings with license grants and to distinguish between original and counterfeit or illegitimate print based on the RFID components integrated into the printed objects. The aviation industry is a leader in the application of additive manufacturing, but the subject addressed by SAMPL is also interesting for other industries such as medical technology products. The project will therefore also have a positive impact on other industries, starting with the first use cases in aviation industry. Source: [SAMPL project website](#)

**Additional sources**

- YouTube
- Articles
- Podcasts
- Presentation

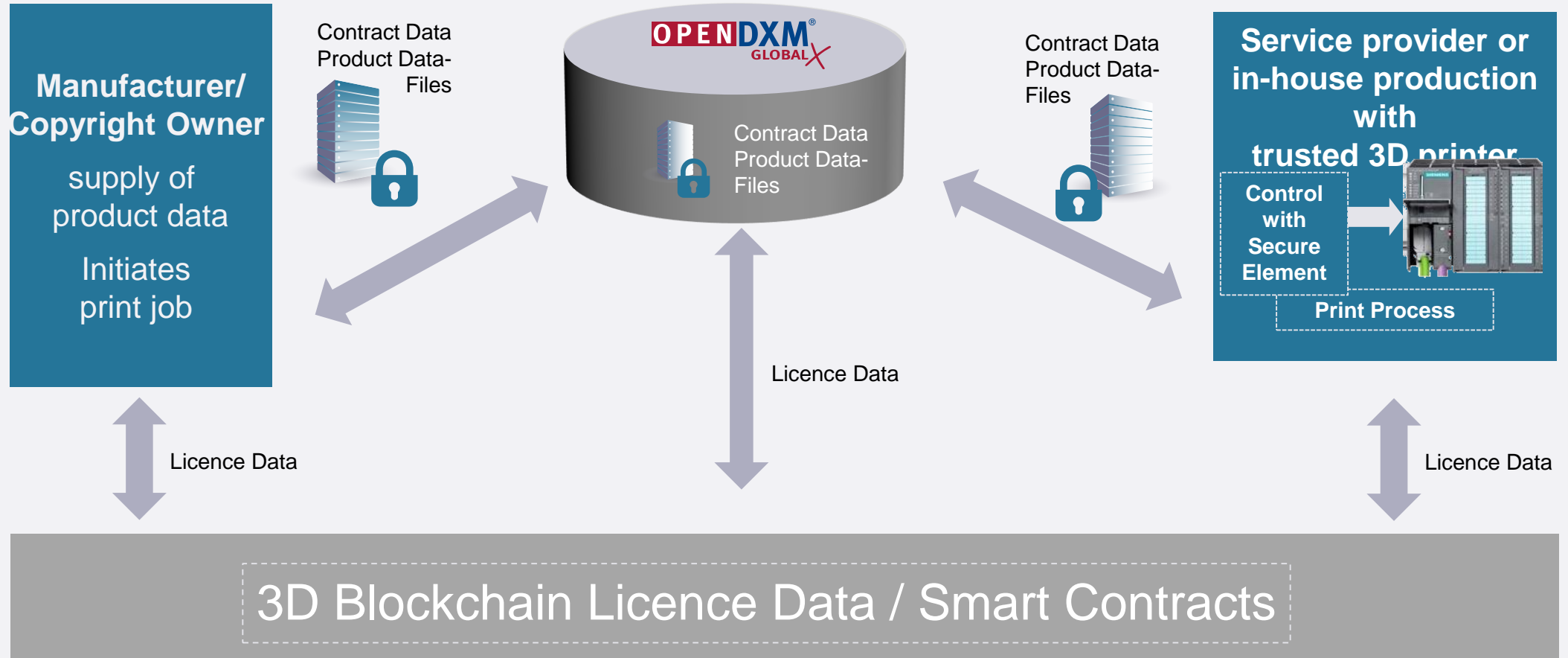
**Basic facts**

The overall goal of the SAMPL project is the realization of an end-to-end security chain, from the creation of digital 3D printing data via the exchange with the 3D printing service provider via Trusted 3D printers right into the printed product using RFID chips. In addition to the encrypted 3D CAD data transfer, the implementation of digital license management is based on blockchain technology, which enables traceable and secure transactions. Source: [TUHH website](#)

*“The SAMPL project has the goals to realize an end-to-end security chain in additive manufacturing and to implement a license management based on the blockchain technology.”*

- Secure printings with license grants
- Distinguish between original and counterfeit or illegitimate print based on RFID components integrated into the printed objects.
- First focus on aviation industry
- Partners: Airbus, NXP, 3D Microprint (and others)
- Funded by the Federal Ministry of Economics and Renewable Energies









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thank you.