Outline

- IKERLAN
- MONDRAGON CORPORATION
- SECURE VALUE CHAIN DATA
- BLOCKCHAIN
- IN-KUBE PROJECT
IKERLAN: where technology is an attitude

IKERLAN is a leading knowledge transfer technological centre providing competitive value to companies. We seek for excellence in R&D&I, thanks to the continuous adaptation to the needs of our customers and the proximity with the business reality.
Positioning
MONDRAGON Corporation

FINANCE

INDUSTRY

RETAIL

KNOWLEDGE

268
BUSINESSES

102
COOPERATIVES

140
SUBSIDIARIES

26
ENTITIES

80 321
JOBS

22,6 MILLION
IN SOCIALLY-ORIENTED ACTIVITIES

11 936 MILLION
REVENUES
Mondragon Supply (Production) Chain

- Predictive Maintenance Efficiency Saving
- Tool Working params
- Press Working params
- Energy, material consumption prediction, usage report
- Lot data, manufacturing data, order data, etc.

TOOLING

STAMPING PRESS

TIER-1 SUPPLIER

CAR MAKER
Securing Mondragon Value Chain data
Blockchain

«Blockchain is like a distributed ledger, shared among all the nodes that compose the system»

**CHARACTERISTICS:**

- Immutable
- Decentralized: persistent, always ON
- Transparent
- Pseudo anonymous
- Auditable
- Traceable
Smart contracts

- Executable code on blockchain → immutable record of execution
- Definition of conditions and consequences.
- Useful in scenarios of exchange of assets, fulfillment of contracts etc.
Use Cases

IoT
- Ability of IoT applications to provide transactional data
- Implications in all industries (transport, supply chain integrity, etc.)

Insurance
- Improve multi-party contracts.
- Streamline the efficiency of risk contracts.
- Speed up the resolution of claims
- Reduce conflicts with the transparency of shared data

Automation
- Accurate and complete tracking of vehicle history
- Supply Chain Parts Management

Cybersecurity
- Combating software piracy
- Ensuring data validity
- No Single Point of Failure

Forecasting
- Combined with automatic learning algorithms, Blockchain can provide a decentralized forecasting tool.

Legaltech
- Intelligent contracts with defined rules, expiration and accessibility for the relevant parties
- Integrity of evidence, protection against falsification of data
- Chronological documentation of events

Transport
- Transport tracking: Blockchain + IoT -> immutable recording of trip data
Blockchain & Smart Manufacturing

- Traceability throughout the production chain
- Renting/Leasing
- Pay per use
- Resolution of warranties
- Maintenance
- Securization of critical data logging
- Increased product trust
- Identification of IoT devices
IN-KUBE: Participants

Qorkli

Manufactures components for:
• Heating and Plumbing
• Thermoelectric Safety
• Water Heating

FAGOR ARRASATE

Manufactures:
• Stamping System and Presses
• Cutting Lines and Processing Systems
• Lines and Equipment for Processing Metal Parts

MONDRAGON ASSEMBLY

Automation and assembly solutions for:
• Solar Energy
• Automotive
• Electrical Components
• Medical
IN-KUBE: Participants

- Qorkli
- FAGOR ARRASATE
- Mondragon Assembly
IN-KUBE: Big picture

Back-end: provide immutability and data persistence for ICS designated critical customer data.

Front-end: Provide evidence about originality of available data sources.
A Black-Box to trust them all
Service contract through an app
Conclusions

**Industrial Benefits:**
- Transparency
- Security
- Traceability
- Efficiency and speed
- Cost Reduction

**Industrial Challenges:**
- Scalability
- Legacy and Resource-constrained devices
- Consensus algorithm selection
- Privacy and Security
- Energy efficiency, throughput and latency
- Infrastructure
- Interoperability and standardization
- Regulatory and legal aspects
INDUSTRIAL CYBERSECURITY CHALLENGES IN THE BASQUE INDUSTRY:

BLOCKCHAIN APPLICATIONS IN MANUFACTURING