Supply chain evolution from horseless buggies to driverless cars

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Context

- 105 years old
- Global manufacturing
- Broad supply chains
- Highly regulated
- 75M Cars / year

- Will soon never be same

http://www.scotsusa.com/heritage/on-this-day-100-years-ago-henry-t-ford-installed-the-first-moving-assembly-line/
Suppliers to the Porsche Cayman S

Image courtesy: Automotive News Europe
IoT Fatigue or Renaissance?

https://www.yaabot.com/31856/iot-fatigue-real-thing-happens-avoid/
**Tectonic Auto Industry Shifts**

**Autonomous**
From horseless to Driverless

**Connected**
5G enables peer to peer communications at scale

**DATA, DATA, DATA**
Captive Audience = Unprecedented Marketing

**Electrification**
Disrupts massive Oil Industrial Complex
Data Hierarchy of Needs

- Teachable (to Machines)
- Raw & Filtered (Security)
- Connected – V2V eventually
- Heterogeneous
- Compliant
Tools

- Software supply chain:
  - Aggregation
  - Verification (Merkle vs PKI)
  - Distribution

- Data: (Vehicle Black Box)
  - Provenance
  - Lineage
  - Immutability as needed
  - Valuation
Software 2.0 = Teaching Algos with Data
Data Poisoning

- Security Violation
- Integrity
- Availability
- Privacy

- Undetected Intrusion
- DoS
- Silent Data Breach

- Inbound traffic
- Poisoning attack
One Chain to Bind Them

Blockchain Nodes on fleet of vehicles
Natural deployment model. Secure the genesis block and create distributed set of nodes with mining Proof of Work as:
• Miles / Kilometers driven
• Regenerative braking energy gained
• Roads mapped via LIDAR
• Images classified from cameras
• Incident / Event info exchange over 5G
Digital Supply Chain

- Software
- Config & State
- 3D Printing
- Data (Events)
Ecosystem

- Rideshare
- Loyalty
- Service (incl Preventative)
- Connectivity
- Security (Public & Private)
- Insurance
- Registration
Novel Use-Cases

- **Loyalty Program$**
  - Hidden Gem – New MRR / ARR
  - Partner / Ecosystem Heavy

- **Compliance (Driverless)**
  - Optimize for Superset of Legal Jurisdiction
  - Adapt to evolving L3-L5 Autonomous Regulations

- **Global Logistics Manufacturing<->Shipping**
  - Robotic Assembly Optimizes for Location
  - Raw Material Supply Chain (Li-on, Cobalt, ...)

- **Recalls & Fines (VW DieselGate, Right to Repair)**
  - Avoidance via Machine Learning Predictions
  - Efficient Recall Processing via Gaming Theory
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Blockchain Study Guide

- Token Economics (NEW)
- Miner Retention & Recruitment (Cost of PoX relative to Token Profit)
- Governance (NEW)
- Scaling (ON & OFF Chain, Big Focus)
- Network / Wallet Development & Operations
- 51% Attack Crypto51.app (NEW & Tangible)
- Replay Attacks
References

- Software 2.0
  https://medium.com/@karpathy/software-2-0-a64152b37c35

- EV Certificate Abuse: (PKI limitations)

- IT Admin Credentials for Sale

- Crypto 51% attacks: real-time ROI
  https://www.crypto51.app/