Supply Chain Innovation in 2020 and Beyond

The Road to Trust
About Chris

Founder & CEO of Truckl

- Supply Chain Technologist
- Private Equity Turnarounds
- Edgeware, GPS, RFID and IoT
- Several start-ups ($45M venture funding)
- Stints in cyber security and cryptography
- 75+ software implementations on three continents
- 5 awarded patents on edge computing, IoT and GPS, several more pending
- 14+ years of teaching at UNT (Supply Chain Strategy, ERP, SCM), 7+ Years at University of Dallas (Strategic Management, Supply Chain Strategy)
Just Food for thought ...

Supply chain professionals were in far greater demand than nurses at the outset of the COVID pandemic.

Source: ZipRecruiter & BOND, 2020
Part 1: A Couple of Thoughts

Part 2: Major Trends in Supply Chain
- New Markets
- Everything Real-time
- Dazzling Possibilities
- New Friends
- Brave New World

Part 3: How Can You Deal With All of This?
“The Americans have need of the telephone, but we do not. We have plenty of messenger boys.”

Sir William Henry Preece (1834 - 1913), Chief Engineer to the British Post Office.
The Question Is Not How It Starts, But What Comes Of It.

Think Big, Start Small, Move Fast!
Mahler foresaw that music would someday be listened to by tens of thousands of people.
“Innovation is the market introduction of a technical or organizational novelty, not just its invention.”

“Creative Destruction”

“No innovation, no entrepreneurs.”

“Firms must constantly keep on their feet, on ground that is slipping away from under them.”
The team begins to collect stories and inspiration from people to prepare and conduct field research. Translate field research into frameworks, opportunities, solutions and prototypes. Realize the solution through rapid revenue and cost modeling, capability assessment and implementation planning.
What Makes Innovation Work

Prerequisites for any technology offering

Desirability

What do clients want and need?

What can be financially attractive?

Viability

Feasibility

What is technically and organizationally possible?

People

Business

Technology

Now Implement

Source: Ideo
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GOOGLE EFFECT: EVERYONE IS SKILLED IN FINDING THE FACTS
Product authenticity will grow in importance.

King Crab Fisheries provides a product traceability portal for its restaurant customers.
Smarter use of consumer and market data through AI

Ikea uses AI to maximize returns profitability
Convenience trumps other factors and sets expectations.

Amazon Go store in Seattle opens to public.
Exciting new experiences may fade, but cost-cuts could stick.

Creator offers burgers made by a robotic cook.
Micro plants, warehouses and popup stores

Reef offers containers as mobile kitchens – it owns a lot of parking lots
Amazon understands the importance of last mile

If you own the last mile, you de facto own the customer
Supply chain flexibility is the new gold

DHL created a pop-up warehouse in 48 hours
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Supply chains need to process information increasingly faster ... at the edge!

Source: Gartner, 2020
IoT is pervasive and will continue to grow (quietly)
IoT enables self-organizing systems
Sensors gradually permeate our lives

Toyota Woven City was designed for sensors
Roadways are getting smarter and need to be ready for AV

Panasonic is enabling smart highways
Vehicles as platforms – think hardware and software

Daimler recognizes the new role of trucks
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AR is the next interface along with voice

Apple’s first AR glasses are about 2 years away
Inventory counts, service and support, production lines, ...

Niantic already offers a platform for 3rd party apps
Collaborative AR unlocks potential for design and optimization

Ubiquity6 makes the sharing of AR experiences extremely easy
Real-time data from the road needs to be actionable.

Embark just implemented real-time diagnostics.
Expect machines to be increasingly “human”

Google DeepMind uses games to raise its EQ
AI will eventually be available to everyone.

NeuralLogic enables regular PCs to run AI.
We might think it’s fake, but our kids won’t

Xinhua uses virtual news anchors
Technologies such as blockchain have potential

Truckl designed a blockchain solution to reduce congestion, lower emissions and enhance safety on federal highways.
Immutable ledgers allow you to prove what you did.

Air New Zealand anchors 3D printed parts on-chain.
Traceability requires immutable ledgers, but ...

UNT, BAI and Truckl have proposed tracking COVID test kits on-chain
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Robots do jobs that humans don’t want or can’t do

Knightscope offers robotic security guards
Sometimes they are actually better suited than we are.
Virtual helpers will become more commonplace as well. Samsung provides avatars that form memories.
Avatars help in situations where humans would be overwhelmed.

Tailspin programs avatars that train employees.
Some jobs are likely going to be lost within our generation.
Automation is likely similar to the shift from ag to industry

Geek+ now competes with Amazon’s Kiva
RaaS (lease-pay) will foster fast adoption

Locus eCommerce fulfillment robots
Co-bots help where human intelligence and situational awareness is key.

Strongarm manufactures exoskeletons allowing workers to lift heavy loads.
Drone deliveries face obstacles, but...

Most sought-after job in China: drone pilot
Engineers will figure it out, if consumers want it.

Amazon patent on packages that can be dropped from the air

Walmart started a pilot to deliver package by air this week.
Cargo drones can fly 500 lbs. already

Volocopter works with DB Schenker on cargo
We have self-driving cars already

NASA built a self-driving car for Mars
The last mile battle is far from over

Nuro rolled out pilots with Kroger & Walmart
AT have been used in mines and remote locations.

Einride is working with Lidl.
First autonomous Grand Prix in 2021: 20 laps around Indy in 25 minutes at an average speed of 185 mph
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Molecular Storage
Inventory Sounds
Quantum Computing
AI as an Inventor
Hitchhiking Drones
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Supply chains ultimately must come together, and collaboration will be the new normal.

Optimization doesn’t stop within your organization. It’s just a matter of time.
Autonomy and robotics will eventually become commonplace, and integrate across supply chain and manufacturing. Are we going to see fully robotic supply chains from farm to table?
Computing continues to push towards the edge, and everything will be much more decentralized.

That means decisions will be made at the edge.
Supply chain capacity, services and space will be automated, and can be traded like any other commodity.

Market places or stock exchanges for logistics and supply chain.
The confluence of many different technologies enables a Brave New World.

It’s scary to think about some of these things, but ...
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“The key to winning is getting to where the puck is going to be next.”

“The Great One”
Not All Innovation is Equal - Identify Pretenders Early and Fast
Adopting innovation requires an open mind and the willingness to fail. Don’t …

OO + NT = EOO
Questions, please!
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