

Jason Tham, CEO **nu**logy

MY BACKGROUND























Contract Packaging

Contract Manufacturing











Food, beverage, consumer goods, pharmaceutical, high-tech, and hard goods.



Awards









Associations















Yes, you. You control the physical world. Welcome to your world.





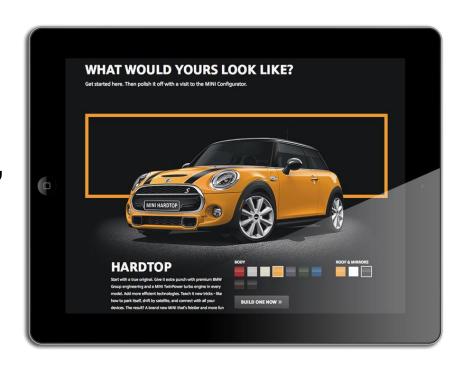
THE BIG PROBLEM



Every customer is in his or her market. Every customer deserves to have exactly what he or she wants at a price he or she is willing to pay and companies must make that happen in a way that is both profitable and safe.

THE CO-PACKER'S BUSINESS

Enable
Mass Customization,
Safely & Efficiently.











THE BIG SOLUTION?

Looking Ahead - Some Call It:

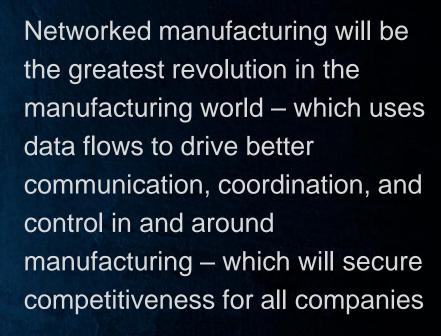
- The Industrial Internet
- Big Data
- Manufacturing of the Future
- Physical Internet (PI)
- Internet of Everything (IoE)

Networked Manufacturing





THE BIG IDEA IN 35 WORDS





NETWORKED MANUFACTURING

"Production Revolution"

In networked manufacturing, the various elements of production systems use data flows to drive better communication, co-ordination, and control.

"I think we have a kind of tipping point now."

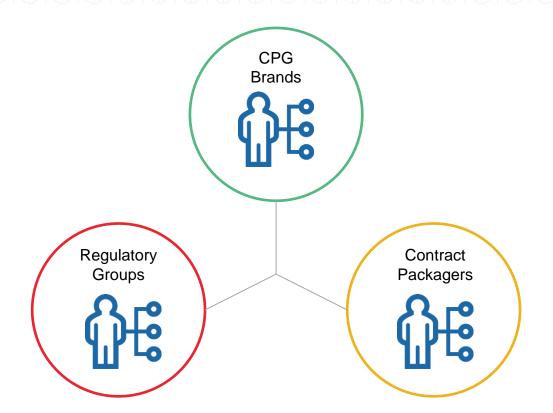


Intelligence Unit

2014

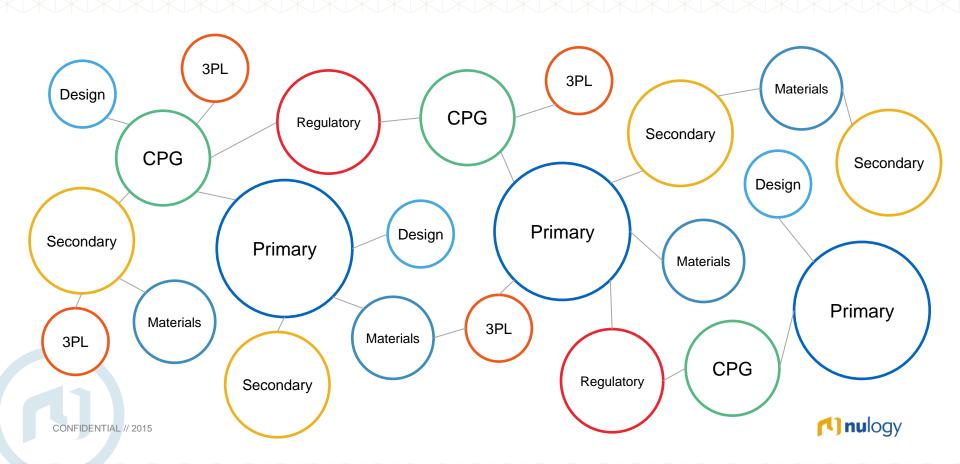


OUR PACKAGING COMMUNITY...



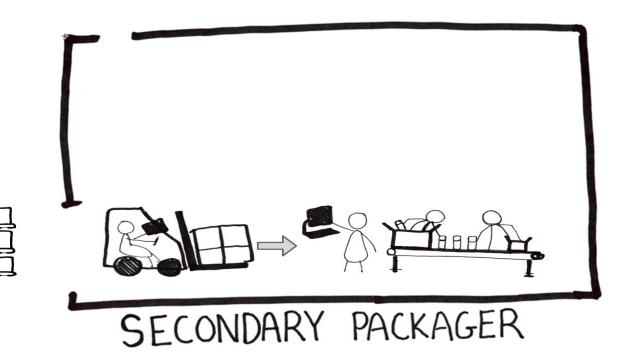


...IS BUILT ON A NETWORK

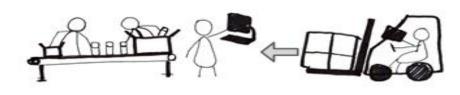




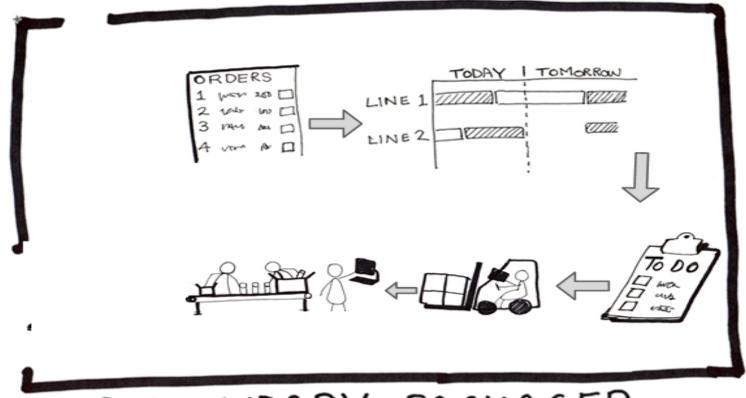




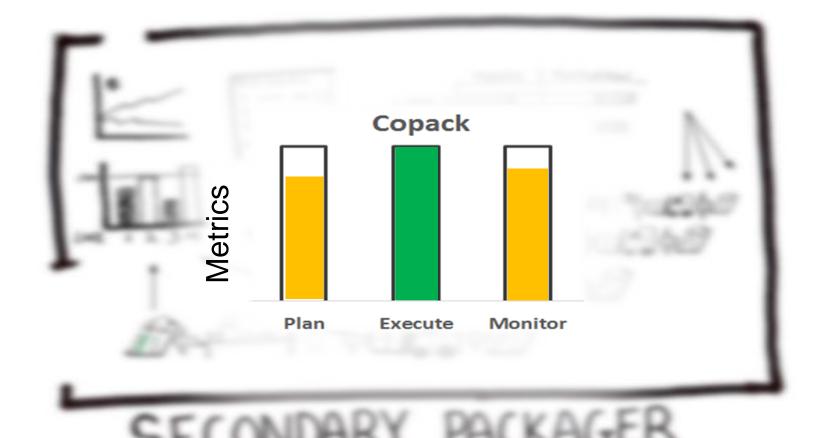


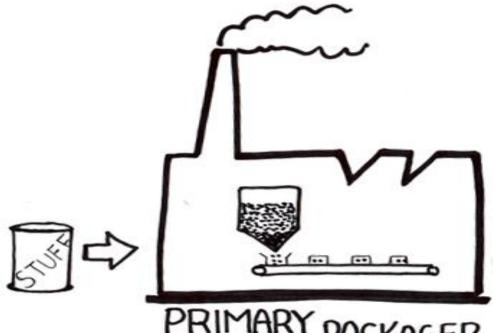


SECONDARY PACKAGER

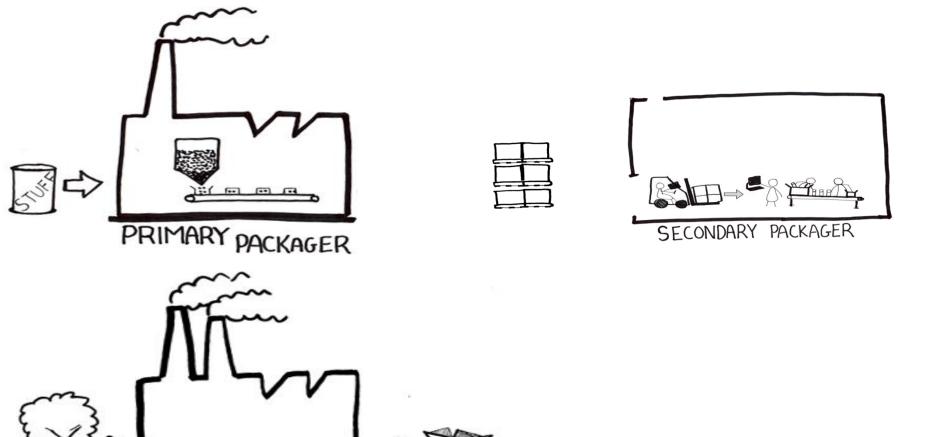


SECONDARY PACKAGER

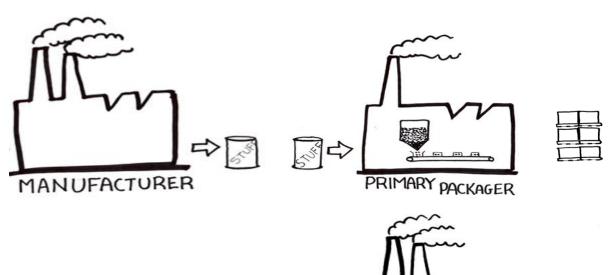




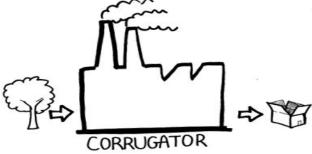
PRIMARY PACKAGER



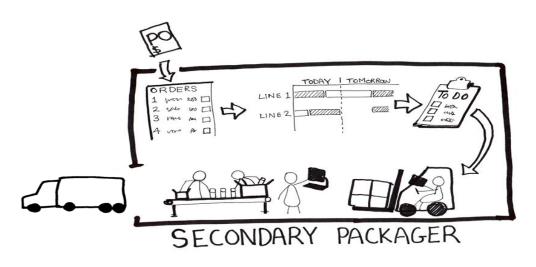
CORRUGATOR

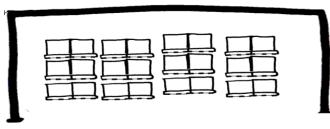




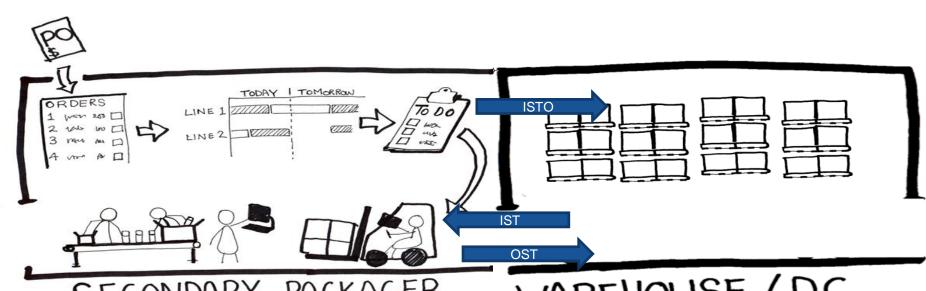


WAREHOUSE / DC



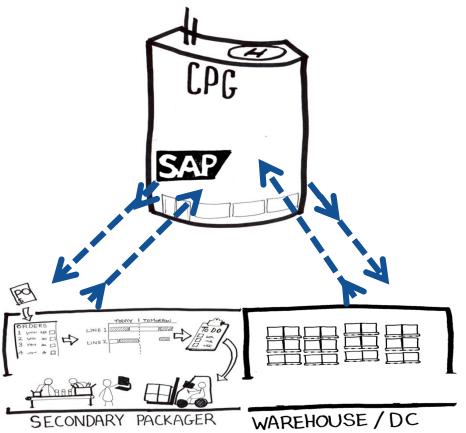


WAREHOUSE / DC

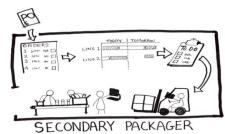


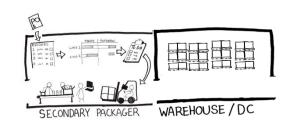
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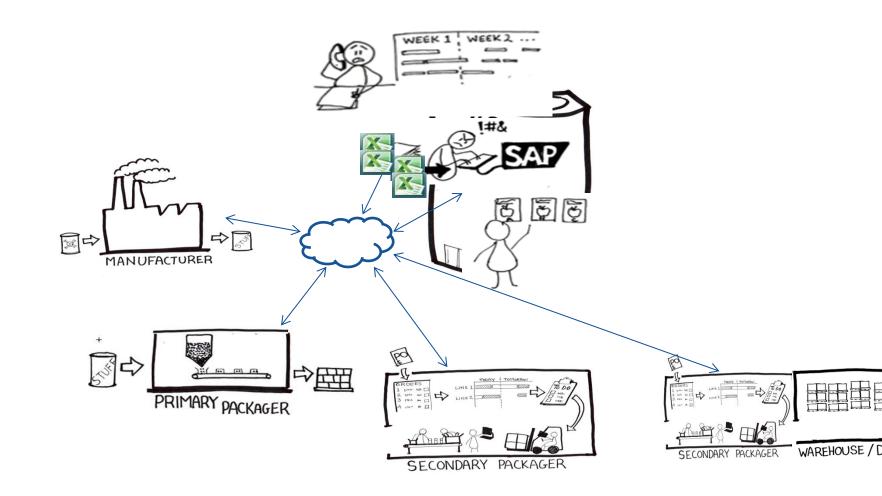
WAREHOUSE / DC



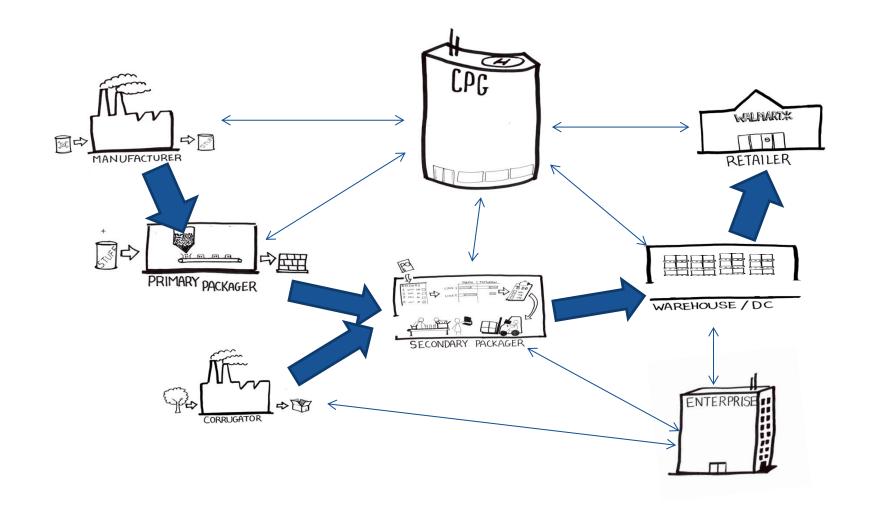






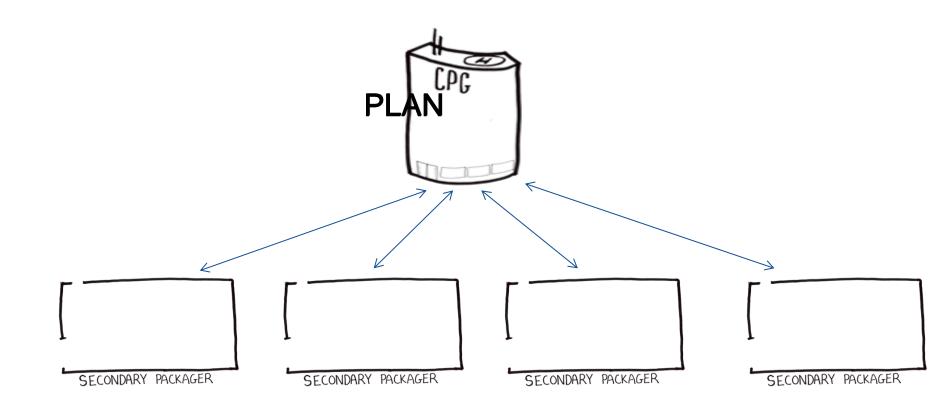


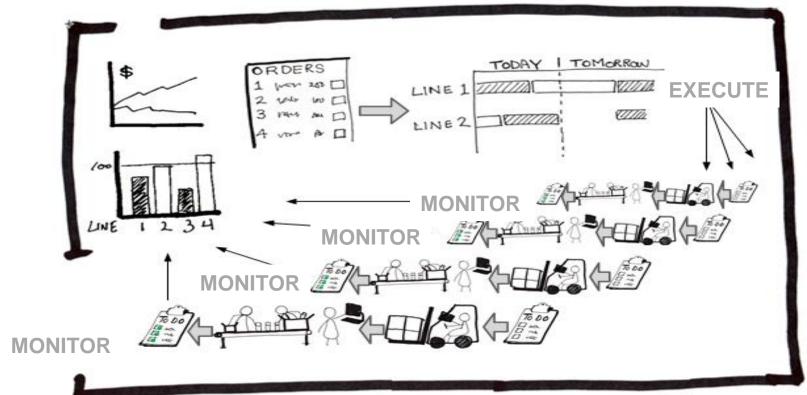
TODAY



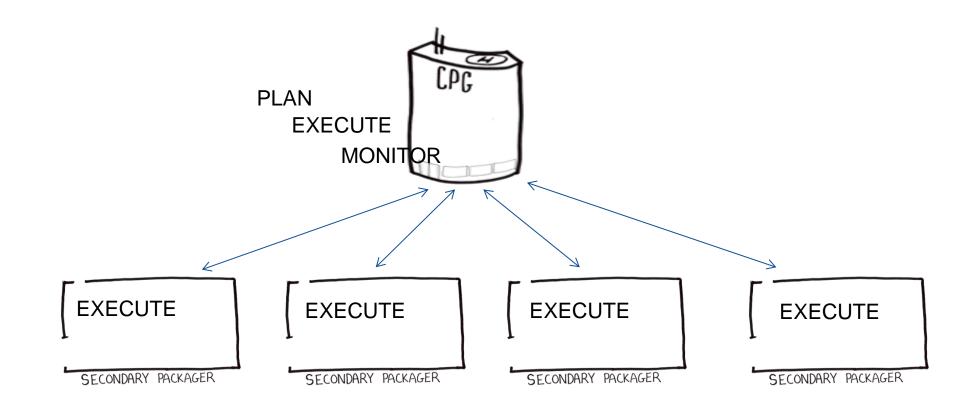
AGGREGATION

AGGREGATION



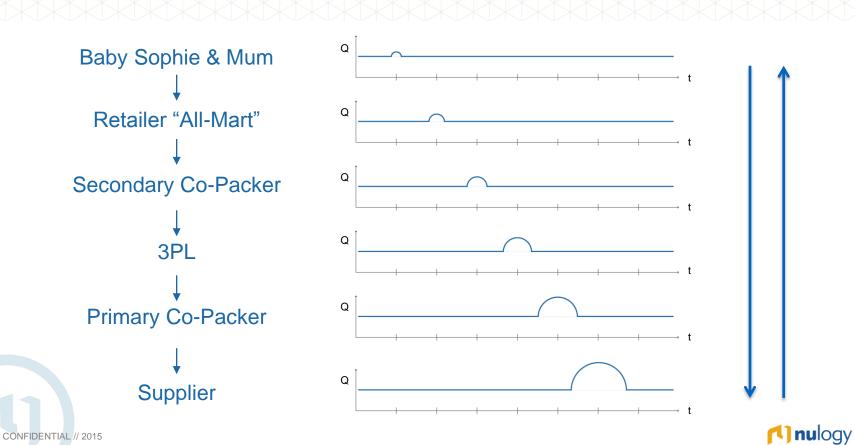


SECONDARY PACKAGER

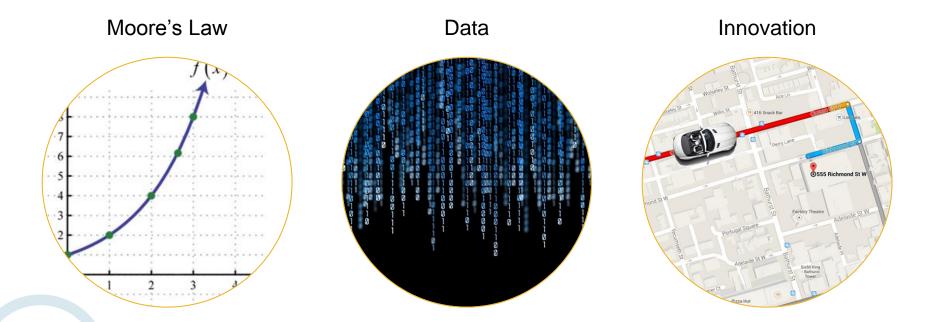








FORCES DRIVING NETWORKED MANUFACTURING?





MANUFACTURING'S IMPORTANCE

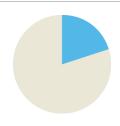
16,000Jobs per month in 2014

\$2 Trillion

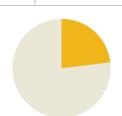
In the U.S. Economy

80%

Of World Trade is merchandise



20.2%
Of Japanese employment



23.2%
Of German
Employment



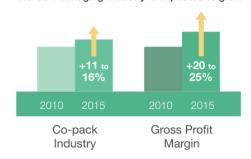
13.4% Of U.S. Employment Manufacturing is the largest multiplier of all sectors in the economy. \$1.00 of manufactured goods creates \$1.37 of value across the economy.



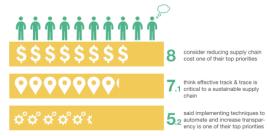
THE STATE OF THE CO-PACK INDUSTRY



From 2010 to 2015 the Co-Packaging Industry is expected to grow



Of 10 Supply Chain Executives...





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NETWORKED MANUFACTURING AND THE FUTURE OF CO-PACKING

- What forces are driving this future?
- Why is happening?
- How did we get here?
- How will this revolution evolve?
- What will this ultimately enable?
- What will this mean for co-packing?

Going beyond

co-packing 3.0,

getting to

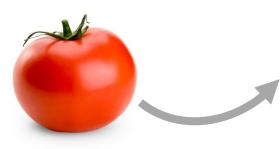
co-packing 4.0





HOW DID WE GET HERE?

Let's go to the beginning of creating economic value







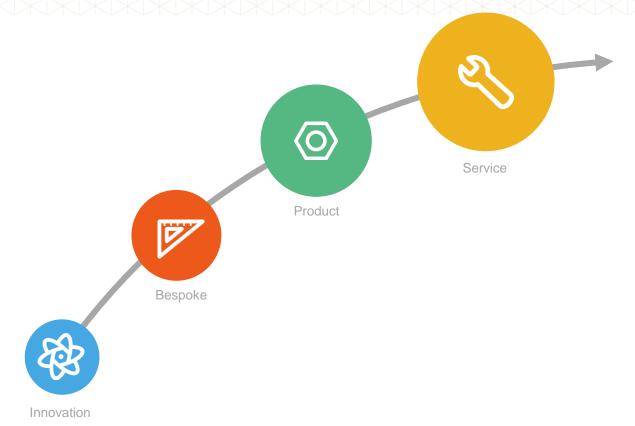




Experiences

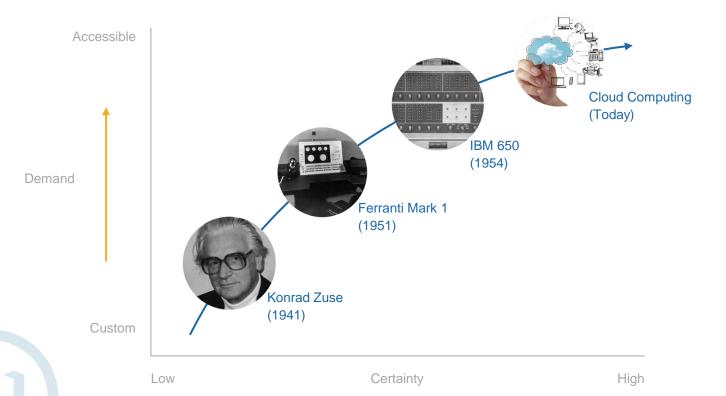


DISRUPTIVE SHIFT OF INNOVATION (S Curve)





COMPUTING'S DISRUPTIVE SHIFT





LAST CYCLE WILL LEVERAGE FROM NEXT

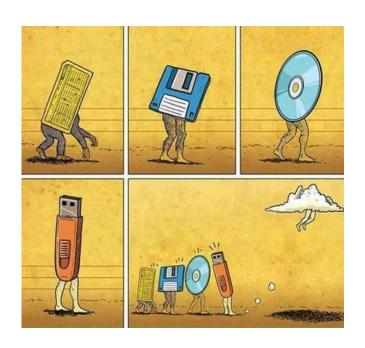


Shorter Cycles



WHAT DOES HISTORY TELL US?

- The next stage of evolution is a componentization of services of the previous, and customization is what advances it to the next.
- The next stage will have a beginning and an end, and it will always be shorter than the previous.





The Internet of Everything (IoE)

The Nest Learning Thermostat Keeps you comfortable.







The Internet of Everything (IoE)











Biosignal Workout Monitoring



Advanced Landslide Warning

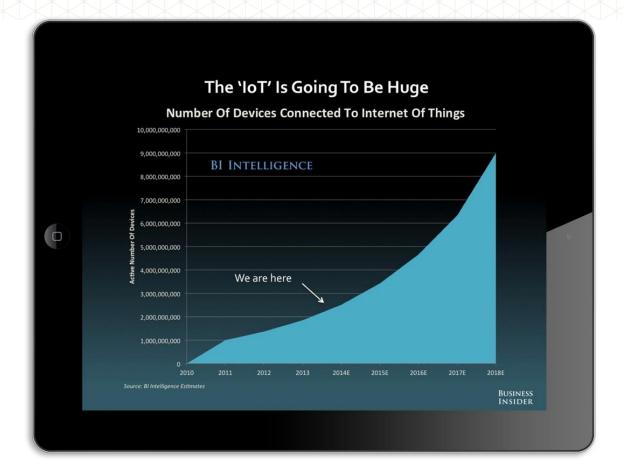






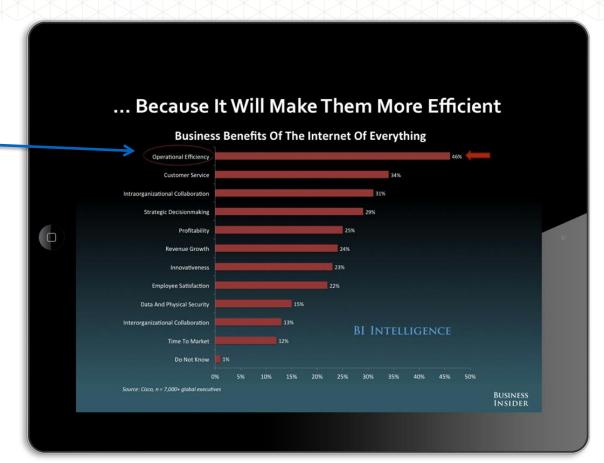
Smart Manufacturing Sensors



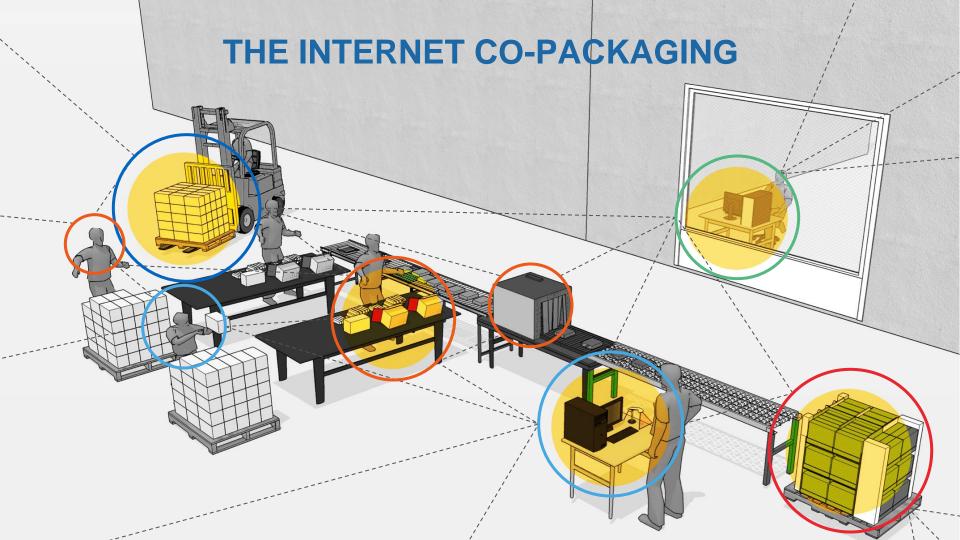




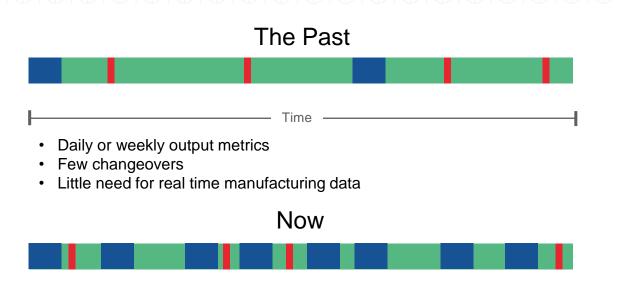
Operational Efficiency





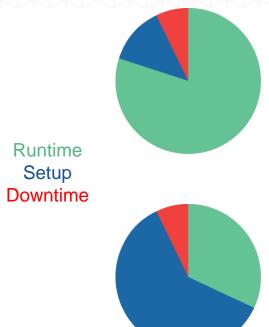


INTERNET OF CO-PACKING (IOC)



- Job level metrics
- Managing changeovers and product mix
- Real time manufacturing data is critical
- Profit tied to how well you manage assets when they AREN'T running

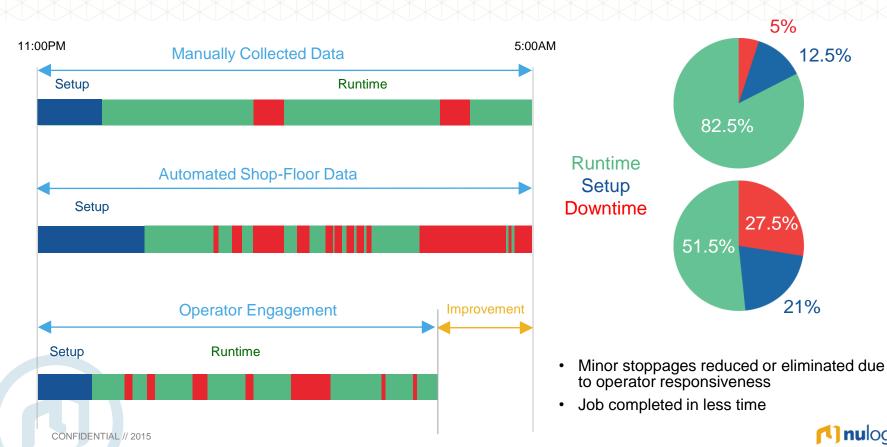
Time





IMPACT OF IOC

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IOC COMPARISON





BIOSENSORS VS. PERFORMANCE LEVEL

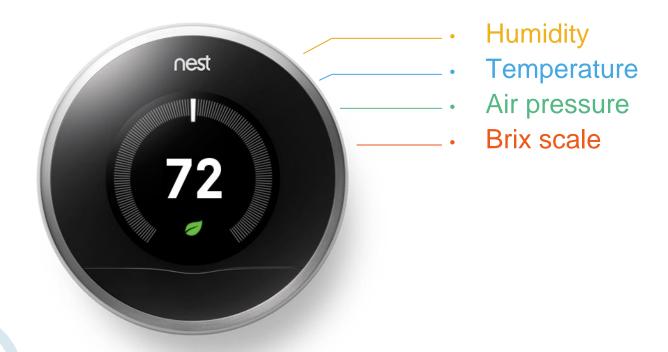


VS.



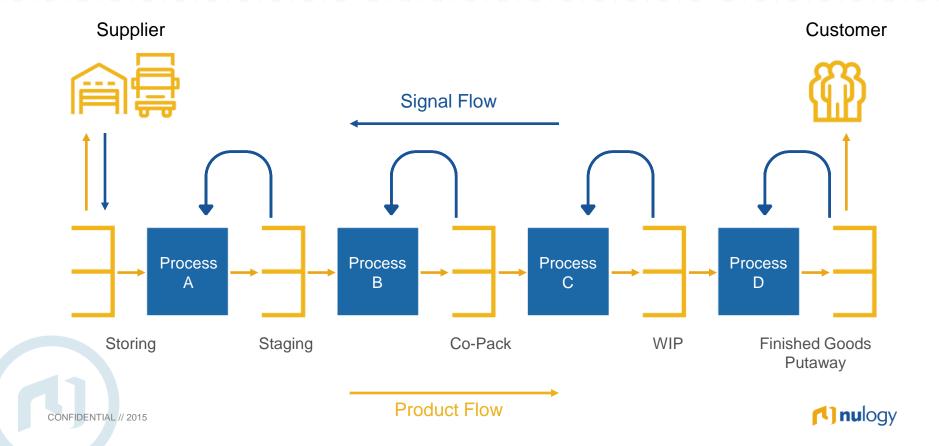
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BLENDING... MADE INTELLIGNET





LAST MILE AUTOMATED REPLENISHMENT (JIT)



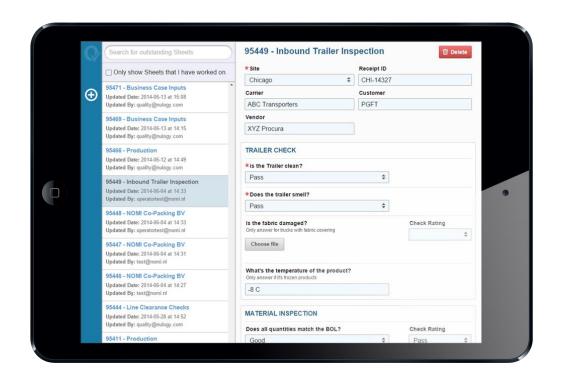
TRACEABILITY... AUTOMATED







QUALITY... SYSTEMETIZED





"In the next century, planet earth will don an electronic skin. It will use the Internet as a scaffold to support and transmit its sensations."

- Neil Gross



MANUFACTURING 1.0 → 4.0

- Manufacturing 1.0 Industrial revolution was the mechanization of production using water and steam power
- Manufacturing 2.0 Introduced mass production with the help of electric power
- Manufacturing 3.0 Digital revolution, use of electronics and IT to further automate production
- Manufacturing 4.0 Interoperability, multi-dimensional, intelligent, event-driven, standardized transactions in multiparty processes

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CO-PACKING 4.0: THE CONNECTED CO-PACKER

- Guarantee of outcomes, guarantee of service
- Provides transparency and addressability of services
- Allows resources to be rapidly deployed, assembled and re-assembled (the new competitive front)
- Can maximize integration availability for their customers to streamline processes, thus increasing trust (an entrust)
- Integrates systems with speed and grace
- Ensures compliancy across community of common interests
- Minimizes the bullwhip effect
- Intra and inter-enterprise connected
- Enables one-piece flow in mass customized environments



BIG THING

"Mass Customization Enabled By Networked Co-Packing"





Thank You

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