




# The logistics sector: creation of a new business unit

Fernando J. Garcia Pardo (fppardo@)  
July 9th – Els Juliols – Fundación Naturgy

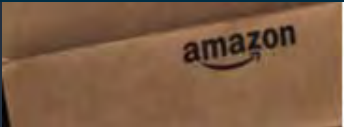
# You heard about Amazon!



UNPRECEDENTED  
SCALE



HYPER  
SPEED



RELENTLESS  
INNOVATION



CUSTOMER  
OBSESSION

# You (probably) heard about **Amazon Web Services!**



UNPRECEDENTED  
**SCALE**



HYPER  
**SPEED**



RELENTLESS  
**INNOVATION**



CUSTOMER  
**OBSESSION**

## In case you haven't...

**\$30.8B**

Revenue run rate

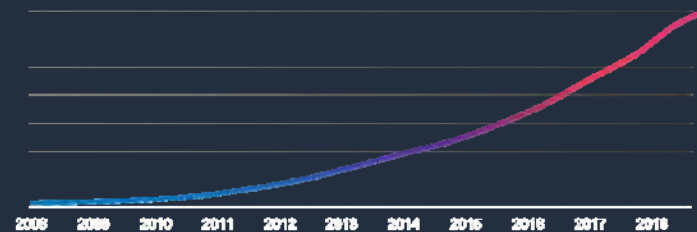
ANNUALIZED FROM Q1 2019

**41%**

Y/Y growth

Q1 2019 vs. Q1 2018

### Millions of Active Customers



## Amazon Web Services in numbers

A large, dark, monolithic structure stands on a beach, with a reflection in the water. The structure is a tall, rectangular block with a slightly irregular top edge, appearing to be made of a dark, solid material. It is positioned in the center of the frame, with a body of water in the foreground and a cloudy sky in the background. The water in the foreground is shallow and reflects the dark structure. The sky is filled with heavy, grey clouds, creating a dramatic and somewhat somber atmosphere. The overall scene is a mix of natural and artificial elements, suggesting a monument or a significant landmark.

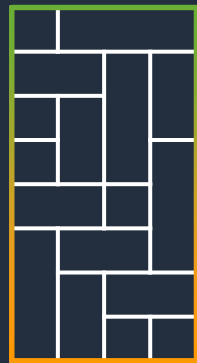
**Amazon.com  
used to be a  
monolith  
(2001)...**

**A 1GB executable  
that took 18hrs to  
compile**

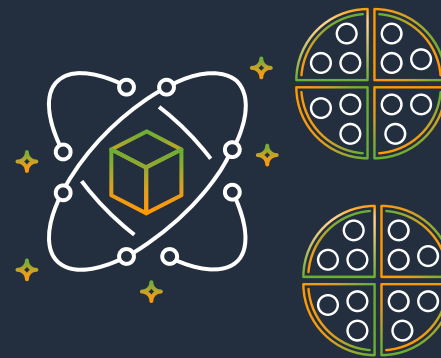
# Development transformation at Amazon.com: 2001–2002

## Decompose for agility

2001 -----> 2002



monolithic  
application + teams



microservices  
+ 2 pizza teams

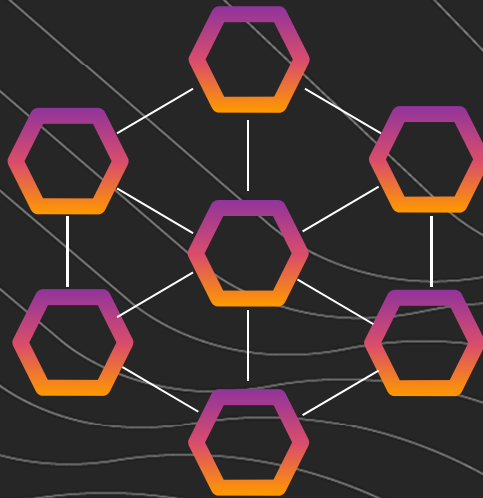
From monolith...



**MONOLITH**  
Does everything



...to microservices



**MICROSERVICES**  
Each do one thing



( THOUSANDS  
OF TEAMS )

X

( MICROSERVICE  
ARCHITECTURE )

X

( CONTINUOUS  
DELIVERY )

X

( MULTIPLE  
ENVIRONMENTS )

=

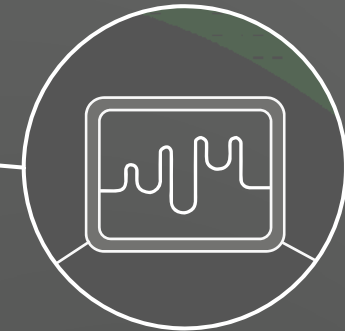
50  
MILLION  
DEPLOYMENTS  
A  
YEAR



Marketing analytics



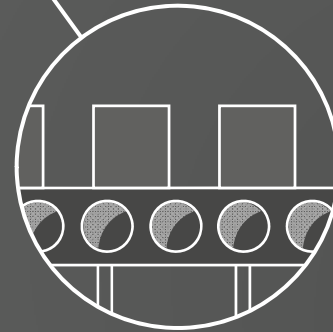
OLD WORLD IT



Employees at work



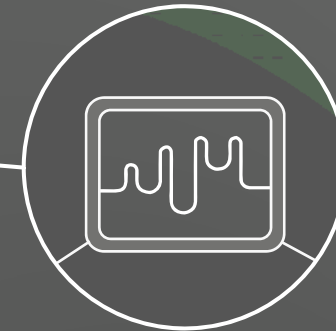
Sales channels



Factories + supply chain



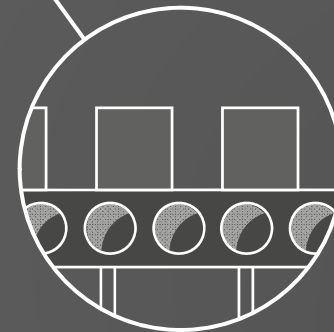
Marketing analytics



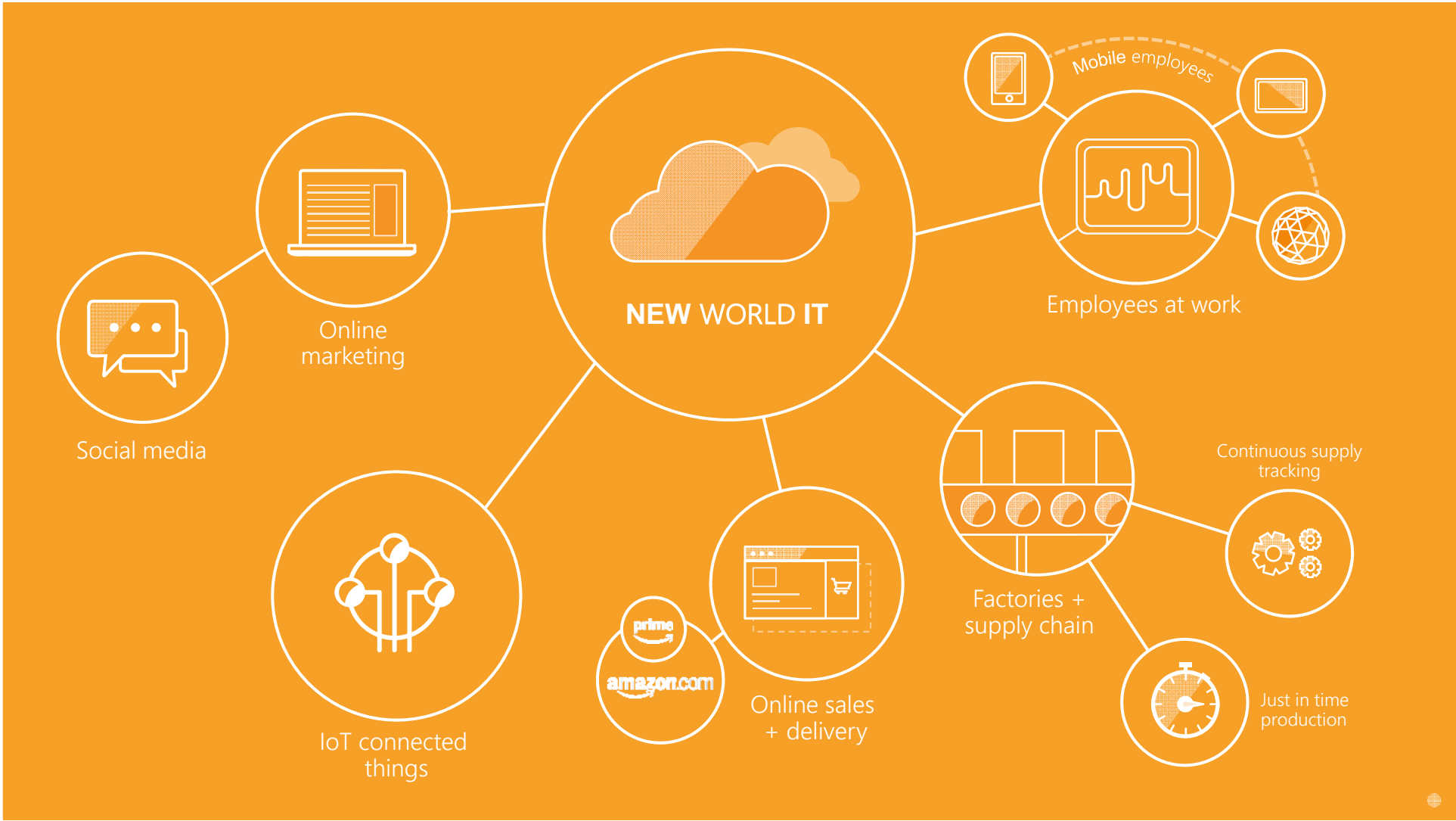
Employees at work



Sales channels



Factories + supply chain



**If you knew the state of everything in the world,  
and could reason on top of the data...**

**what problems would you solve?**

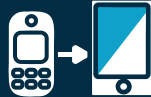
# The True Value of Digital

## Revenue growth

data drives business growth



New services  
and business  
models



Products that  
get better with  
time



Better  
relationships  
with customers

## Operational efficiency

data decreases operational expenses



Increased  
efficiency



Intelligent  
decision  
making



Data driven  
discipline

# The Value of a Digitized Supply Chain



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Increased  
Visibility



---

Proactive  
Issue  
Resolution



---

Enhanced  
Customer  
Experience



---

Data anytime  
Anywhere.  
Any device.

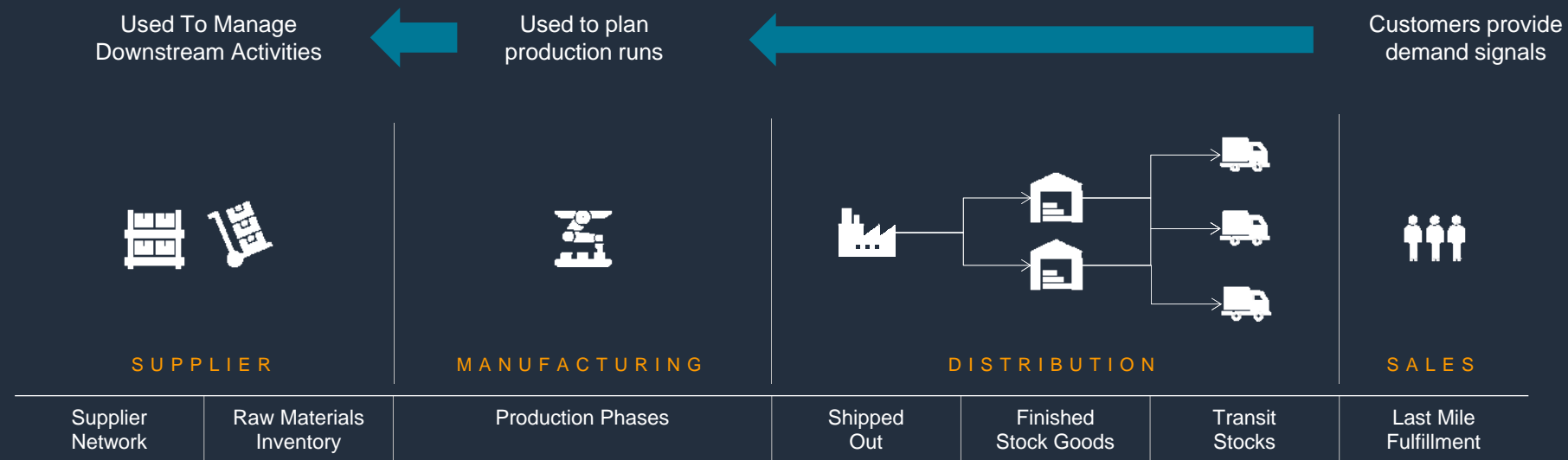


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End-to-end  
collaboration



# Digital Manufacturing is an Important Element of the Digital Supply Chain



# Amazon's Supply Chain

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# Amazon **Global Operations**

Connected through technology, setting the foundation for deep scale

**100M+**

Prime Customers

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**300+**

Transportation Sites

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**143M**

Square Feet

---

**185+**

Fulfillment Centers

---

**17**

Countries

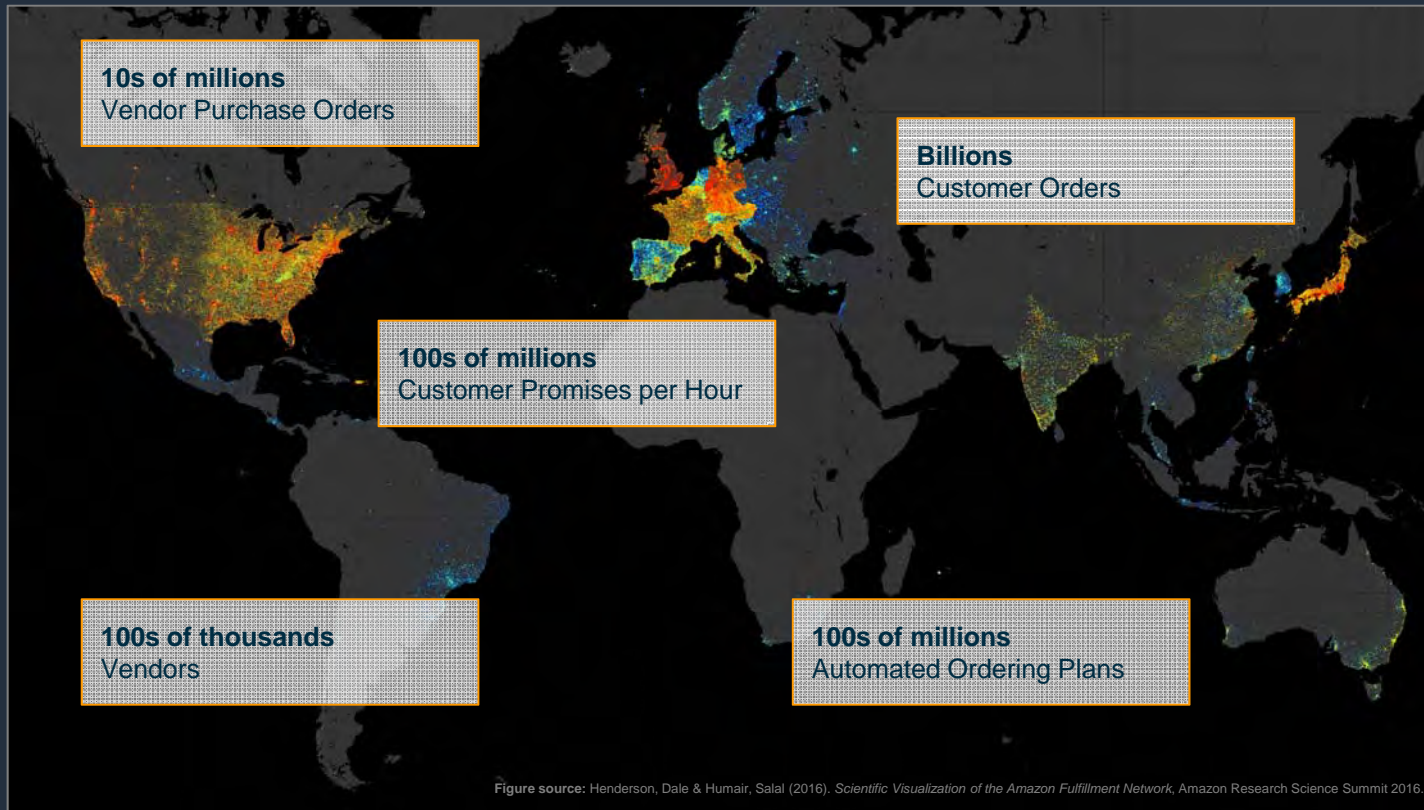
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**500K+**

FT Employees & Contractors

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# This adds up to a lot of **complexity**



# Amazon's **Operations Playbook**

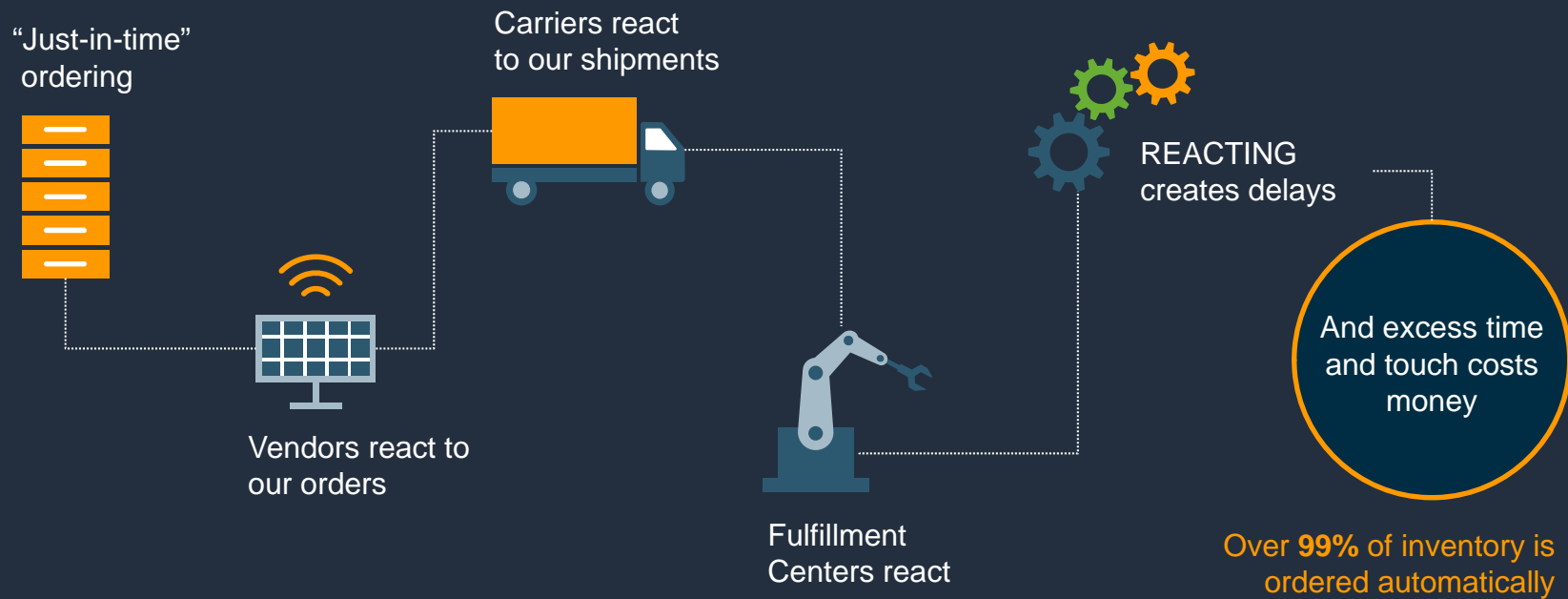
More manufacturing than traditional retail operations

- Lean
- Continuous flow
- Single piece versus batch
- Systems thinking
- Optimization of bottlenecks
- Systematic defect reduction

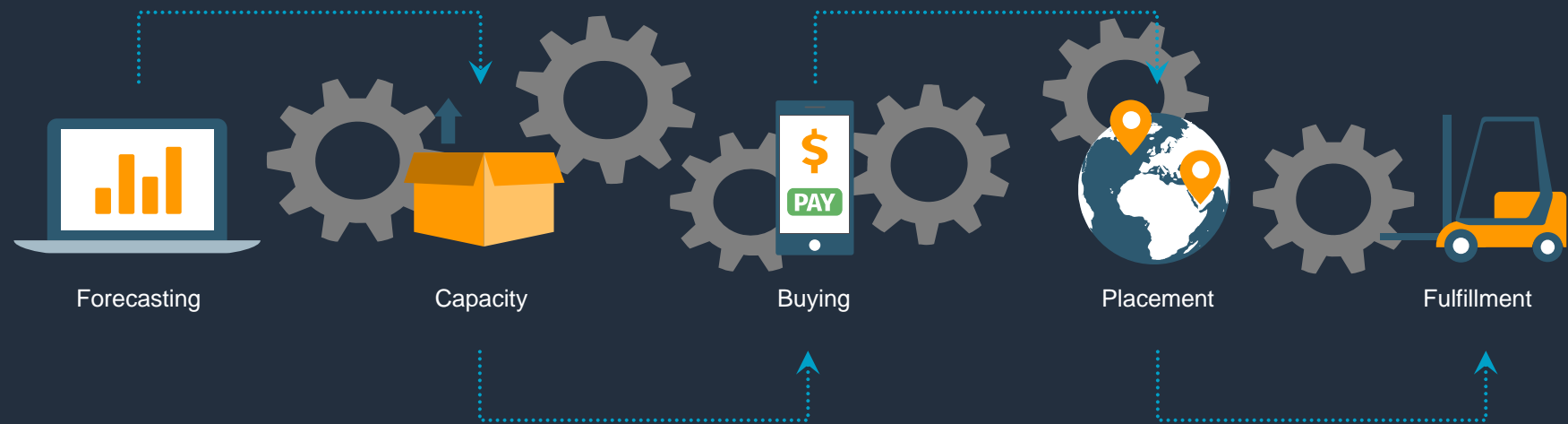
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# Traditional Supply Chain Flow



# Amazon's Supply Chain – Automation End-to-End





# Amazon Forecast

Improve forecasting accuracy by up to 50% at 1/10<sup>th</sup> the cost



More accurate forecasts that integrate external data



Easy to use, through the console and API



Works with any historical time-series

## Key Features

Consider multiple time-series at once

Automatic machine learning

Evaluate model accuracy through the console

Visualize forecasts in the console & import results into business apps

Schedule forecasts and model retraining

Bring existing algorithms from Amazon SageMaker

# Typical Sortable FC Specs



- 2,000 associates
- Amazon Robotics in a 850 square feet footprint
- Built to have the ability to ship 1M units in a 24 hour period

# Amazon Investments in Automation





# Amazon usage of **AWS** IoT solutions

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# AWS IoT Buttons to simplify operations...



# AWS IoT Buttons/Serverless Computing/messaging



Operator can call assistance from:

- Water spider (one click)
- Engineer (long click)

Results:

- Text message to the right person
- Message on SCADA



# What's brewing?

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# Edge Computing (**Greengrass**) on new machines



# Greengrass on existing machines



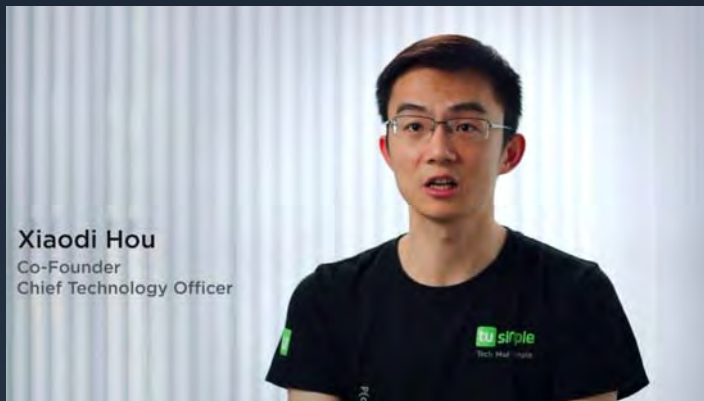
# Voice control in the shop floor



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# Self Driving in logistics



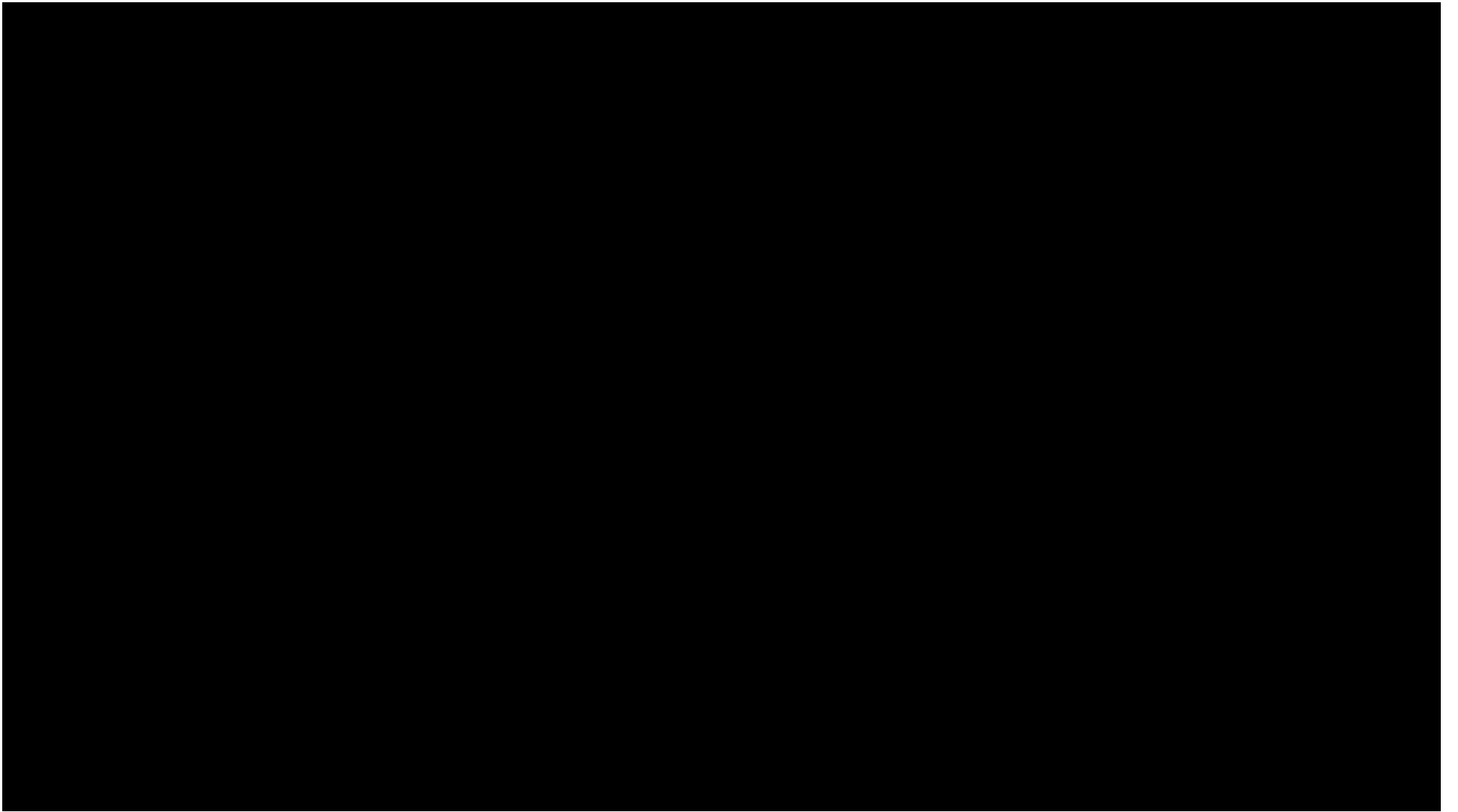
*“**AWS** provides the most comprehensive suite in the **cloud** that we can use without re-inventing the wheel ourselves”*



# Drone Based delivery New generation...

amazon  
Prime Air







# Gràcies! Gracias! Thank you!