

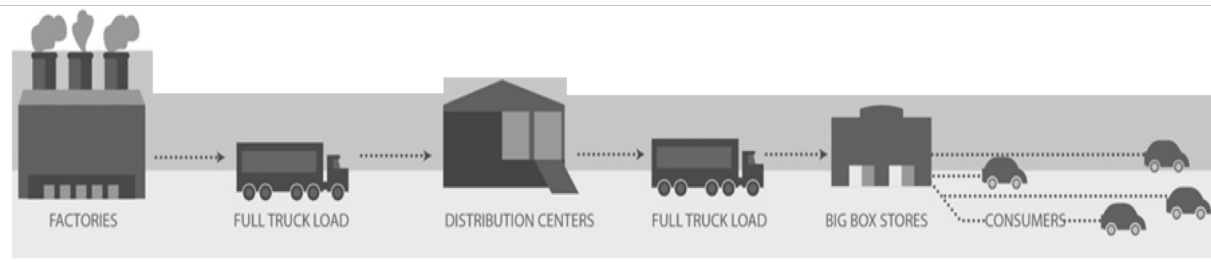
# CLOUDLEAF®

Digitizing the Physical World

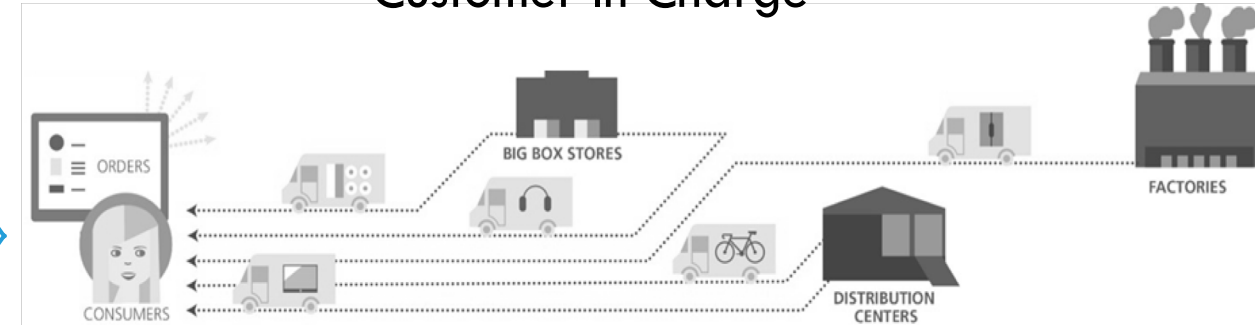


# Disruption in the Supply Chain

## Simple Push Economy: The Linear Pipeline



## Complex Pull Economy / Demand Driven: Customer In Charge



“Commerce is shifting and the death of **Supply chain management** as we know it is on the horizon”

— HBR, 2018

## Capabilities of the supply chain in the future

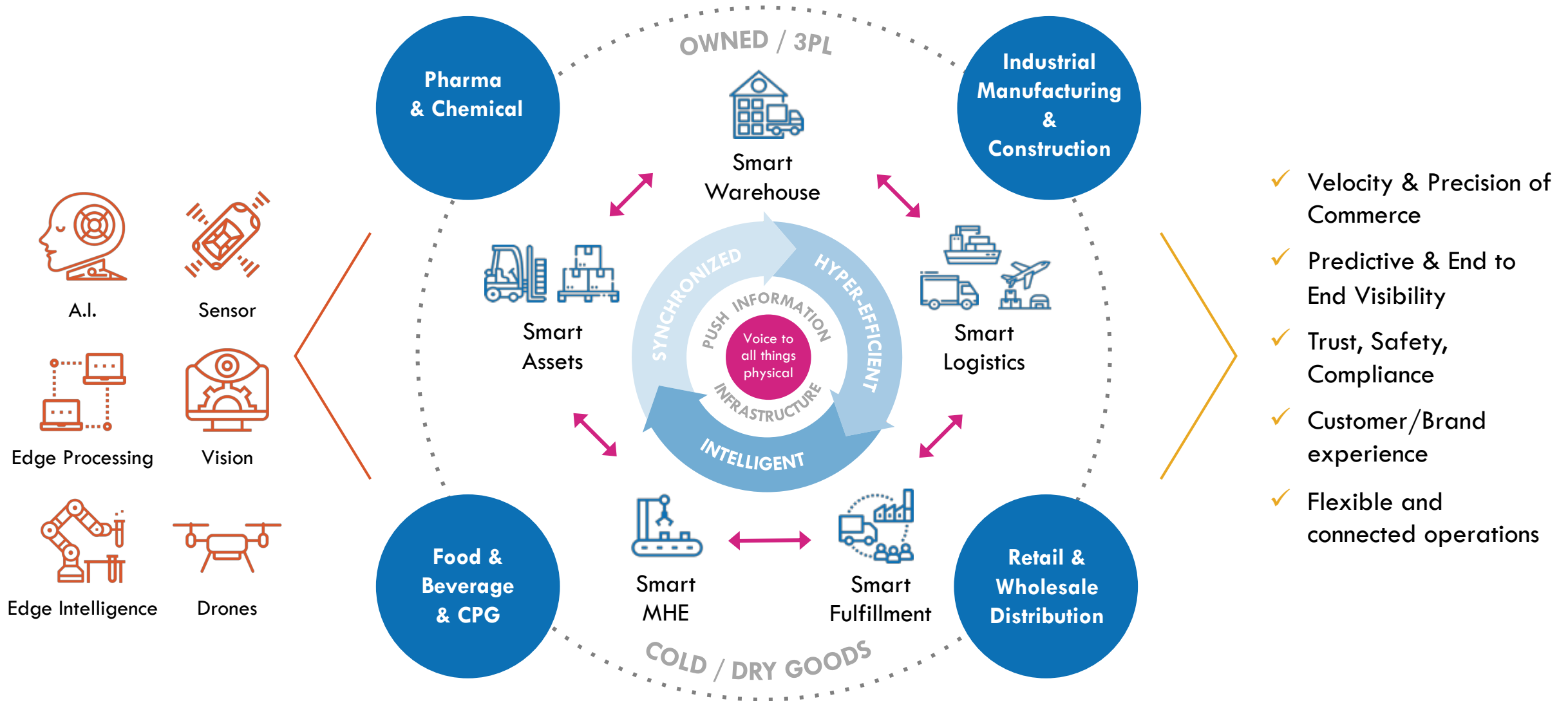
- Support new go-to-market & channel models, commercial disruptions
- Live Monitoring of the end to end autonomic and connected processes
- Responsive to customer demands of speed and access
- Digitally enabled processes for complete trust, transparency and compliance
- Efficient use of assets and zero waste in operational processes

— Globally \$35Trillion will go through transformation over the next decade —

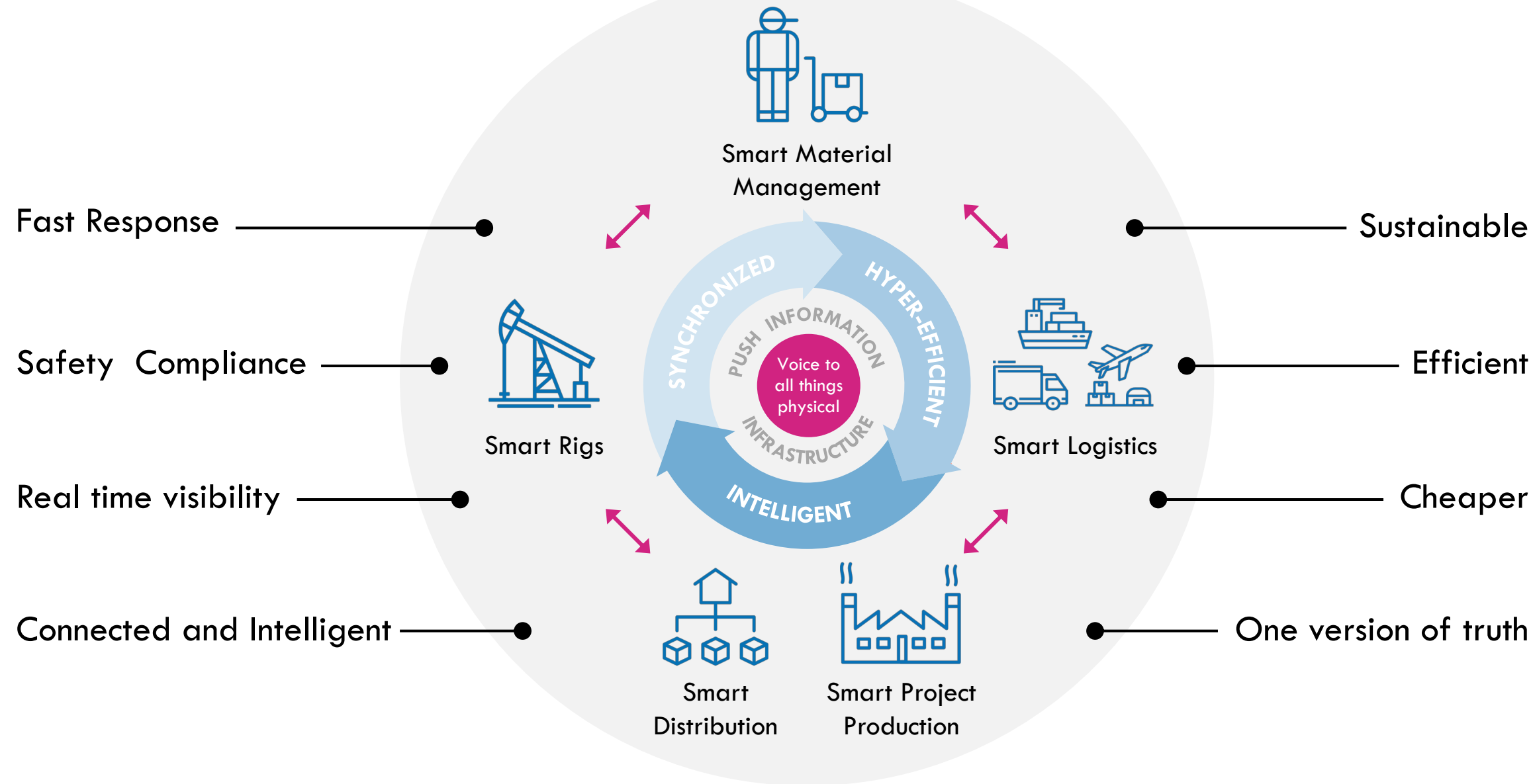


# Future Supply Chain

“The death of supply chain management as we know it is on the horizon – HBR, 2018”



# Future Supply Chain – Oil & Gas



# Digital Enterprise



## DIGITAL ASSET LIFE CYCLE

New Business Models and  
Simplifies associates life



## COLLABORATIVE ECOSYSTEM

Operational Transparency  
and Safe processes



## BEYOND THE BARREL

New and Engaging  
Customer experiences



## ENERGIZING NEW ENERGIES

New carriers and  
Energy Optimization

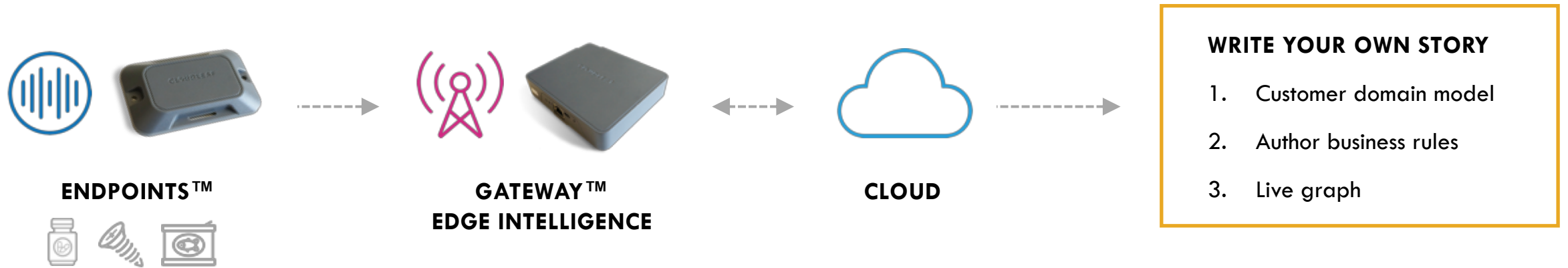
# Problem

Enterprise supply chains today lack real-time DATA & DECISION MAKING.

- **Fragmented Data, System Silos, Dark Spots**
  - Data not captured or instrumented
  - Lack essential Real-Time Data & Visibility into asset and material flows & Condition
- **PULL vs PUSH**
  - Mostly transactional & log data
  - RFID/Barcode provide Spotty coverage; Choke point or Manual Capture
- **No Edge Intelligence**
  - Infrastructure that supports autonomic process needs of the future
  - Seamlessly connected products and assets between and across the organizations
- Variances & disruptions cost **Billions of \$\$ in Value Loss** — material loss, production loss, penalties due to non-compliance (regulatory, quality, safety, audit)



# Opportunity – To Create a Talking Supply Chain



## ENTERPRISE VALUE

- Real time decision making
- Localized decisions
- Efficiency and effectiveness
- Revenue enhancement opportunity
- Compliance and Regulatory compliance
- Responsiveness to news cycles

## CONSUMER VALUE

- New and delightful experiences
- Better value for money
- Empowered decision making
- Di-directional communication with brands
- Reduced waste
- Frictionless engagement

## 400 CUSTOMER TOUCHPOINTS

## MARKET ANALYSIS

## INDUSTRY EXPERIENCE

### THEME 1

Control of the “Assets” that enable operations.

### THEME 2

Digitize and Enable Smart “Workflows” / Operational dark spots To drive end to end Efficiency.

#### SMART “ASSETS”

- Where is my asset?
- What is the count?
- What is the condition?
- Where was it last?
- Who used it last?
- What is the useful life?
- How much is it utilized?
- Financial and Audit Compliance

- Reduce Loss, Reduce cycle time, better financial performance

#### \$10 BILLION MARKET

Forklifts, Returnable containers, Pallets, Machine tools, Parts

#### SMART “IN-TRANSIT” OPERATIONS

- Where is it?
- What is the condition?
- What is the cycle time?
- Was the SLA maintained?
- When will it arrive?
- Actions needed for excursions?
- Reduce time to investigate issues?
- Is it tampered or counterfeit?
- Where was it damaged?

- 3<sup>rd</sup> Party Operations Compliance, expedient and accurate liability assignment, reduced material value loss

#### \$12 BILLION MARKET

Claims processing, Food & Beverage, Pharmaceutical, High value commodity

#### SMART “INDOOR/SITE” OPERATIONS

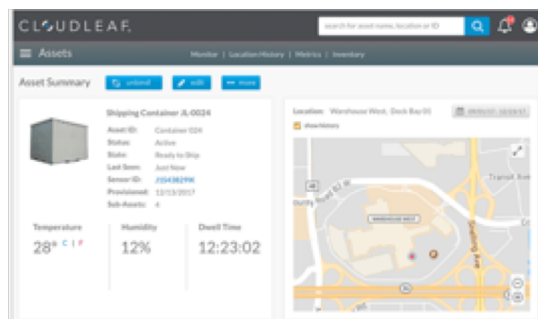
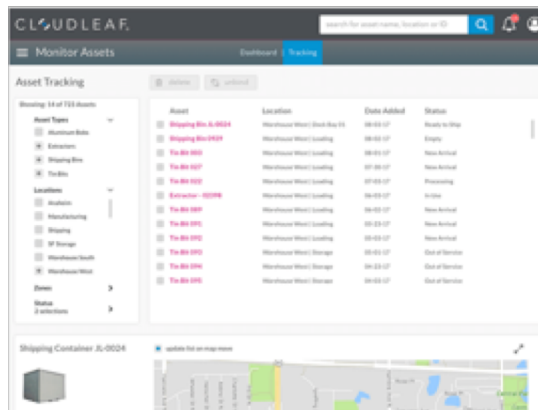
- Is my operations safe?
- Manage Age of the inventory
- Count and Shipment accuracy?
- Dynamically Optimize Operations
- Increase the speed of operations
- Is my process compliant?
- Keep my brands relevant
- Reduce Inventory & WIP

- Reduce Loss, Increase throughput, Reduced inventory needs, Increased efficiency and yield of operations

#### \$60 BILLION MARKET

Claims processing, Food & Beverage, Pharmaceutical, High value commodity

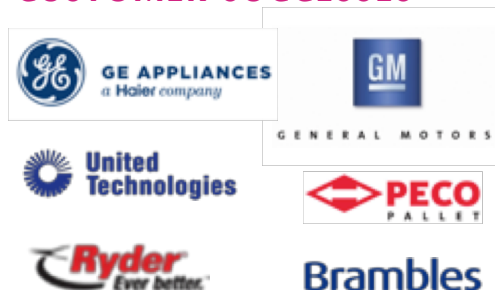
# Smart “Assets”



## PERSONAS

- Plant manager
- Finance
- Operations Manager
- Maintenance Manager
- OEM
- Maintenance Service Provider

## CUSTOMER SUCCESSES



## ROI

Time To value: **<3 Months**

Payback: **30X**

Decision to Delivery: **2 Days**

## DEFINITION

Organizations are exceptionally good in managing inventory but rarely have great focus on the assets that enable the operations. “Smart Assets” provides customers with comprehensive visibility into the assets to enable operations efficiency, reduce losses and increase productivity by providing real-time visibility, timely alerts, process flow impact and actionable insights

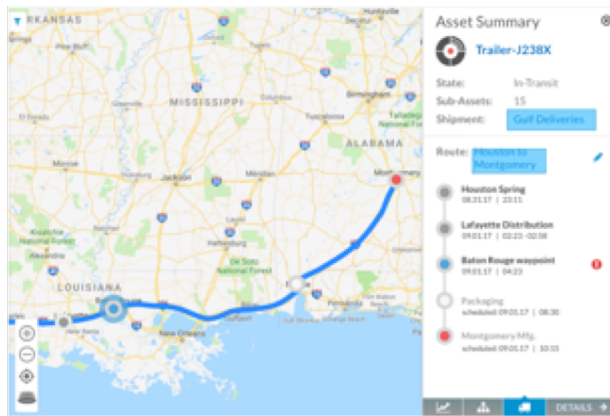
## CAPABILITIES

- Assets Health, Condition Monitoring
- Assets Utilization
- Audit Compliance
- Assets Maintenance
- Assets Location and cycle times Management

## FEATURES

- Easy and flexible deployment
- Model Sites, Work areas and Factories
- Asset Classes
- Self-service business rules systems
- Customizable Notifications and Alerts
- KPI reports and Actionable Insights
- ERP Integration ready
- Asset Paths

# Smart “In-Door” Operations



## PERSONAS

- Food Safety manager
- Supply chain Ops manager
- Retail store operations
- Planning manager
- Quality Manager
- Producing Brands

## CUSTOMER SUCCESSES



## ROI

Time To value: **<3 Months**

Time to Investigate Issues: **90% reduction**

Payback: **30X**

Decision to Delivery: **2 Days**

Compliance - **FMSA**

## DEFINITION

Cold chain logistics, or temperature-controlled transportation supply chain, are vital for the safe and sanitary delivery of temperature-sensitive items. Smart “Indoor” operations enables customers visibility into operations in temperature controlled environments by providing exceptions-based temperature alerts and automated data access

## CAPABILITIES

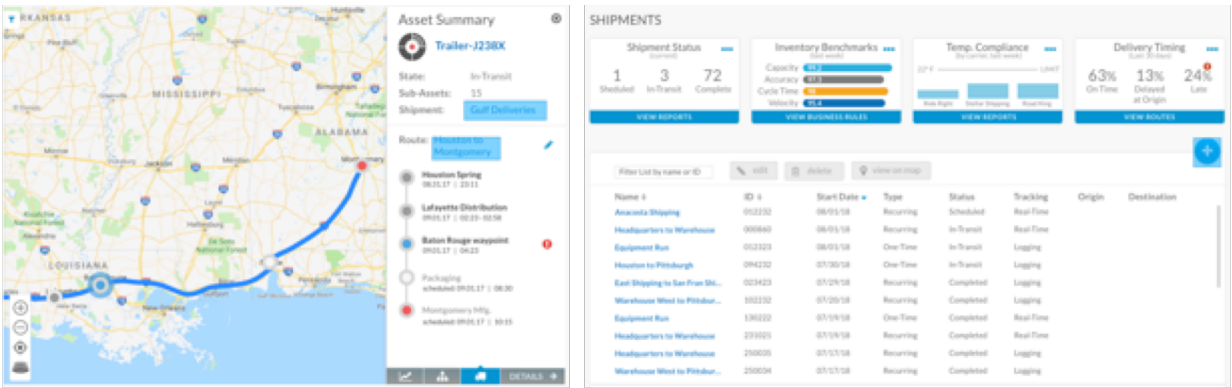
- Real-time condition monitoring in SC – Discreet/Continuous
- Multi-sensor powered data Logging
- Safe operations compliance
- Step Change improved accuracy and efficiency in Operations
- Food compliance (FSMA)

## FEATURES

- Easy deployment of data loggers
- Monitoring of storage temperature and humidity levels
- Any time data access via automated uploads
- Receive real time alerts/notifications
- Various automated reports for easy monitoring
- Chamber-level temperature tracking and alerting
- Compliance Reports
- Root cause analysis



# Smart “In-transit” Operations



## PERSONAS

- Logistics Planning Mgr
- Operations Mgr
- Transportation Mgr
- Finance
- Asset Protection Mgr
- Supply Chain Operations Mgr

## CUSTOMER SUCCESSES



## ROI

Time To value: **<3 Months**

Clams Approval Increase: **30%**

Payback: **30X**

Decision to Delivery: **2 Days**

## DEFINITION

Corporations find it difficult to track & trace assets and inventory that are in motion between sites. 3<sup>rd</sup> Party operational compliance and LTL performance is one of the biggest problem plaguing Supply Chains. 50% of all domestic and international claims are denied today. “Smart in-Transit Operations” provides customer with visibility into material loss/damage, real-time location and condition tracking and predictive ETAs, compliance and chain of custody.

## CAPABILITIES

- Real-time location tracking
- Condition monitoring and alerting
- Chain of Custody
- Shipments visibility
- Predictive ETAs

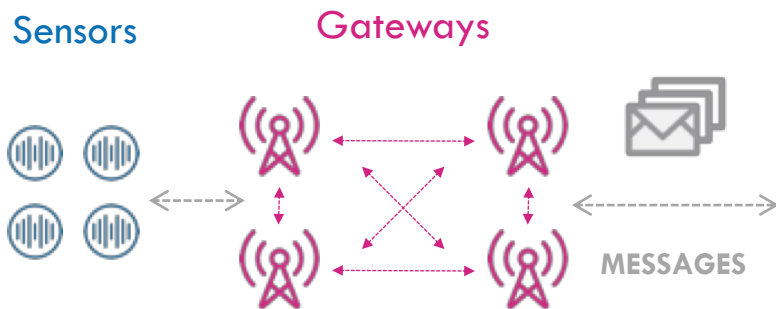
## FEATURES

- Shipments planning and management
- Custom Notifications/alerts to functional organizations
- Location and condition tracking – RT and Interval based
- Mobile enabled visibility and alerts
- ETA Prediction with monitoring and real-time updates
- KPI and Insights – Cycle Times, on-time Shipments,...

# Technology

**“Machine-to-machine communication** will enable the sensors to relay data constantly to the WMS, while **integrated analytics and machine-learning capabilities** enable that system to pass instructions back to warehouse robots”  
– Logistics Bureau

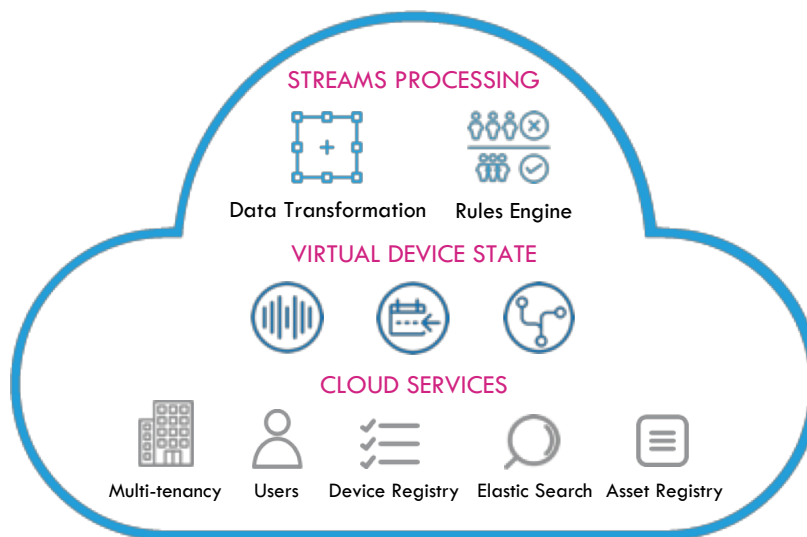
## SELF LEARNING EGDE INTELLIGENCE



### Captures continuous real-time data and PUSH to Cloud

- Purpose built low power sensors, 2-5 Yr
- Location, Condition, Path
- Self learning Gateway Mesh and manage handoffs with Edge Intelligence
- Agnostic of sensor type

## CLOUD PLATFORM



### Middleware engines model, transform & orchestrate data streams

- ML & AI engines for location & correlations
- Workflow & Business Rules engines
- Data correlation for asset location, condition & path analytics
- Self authorable Customer modeling environment

## INSIGHTS & TOOLS

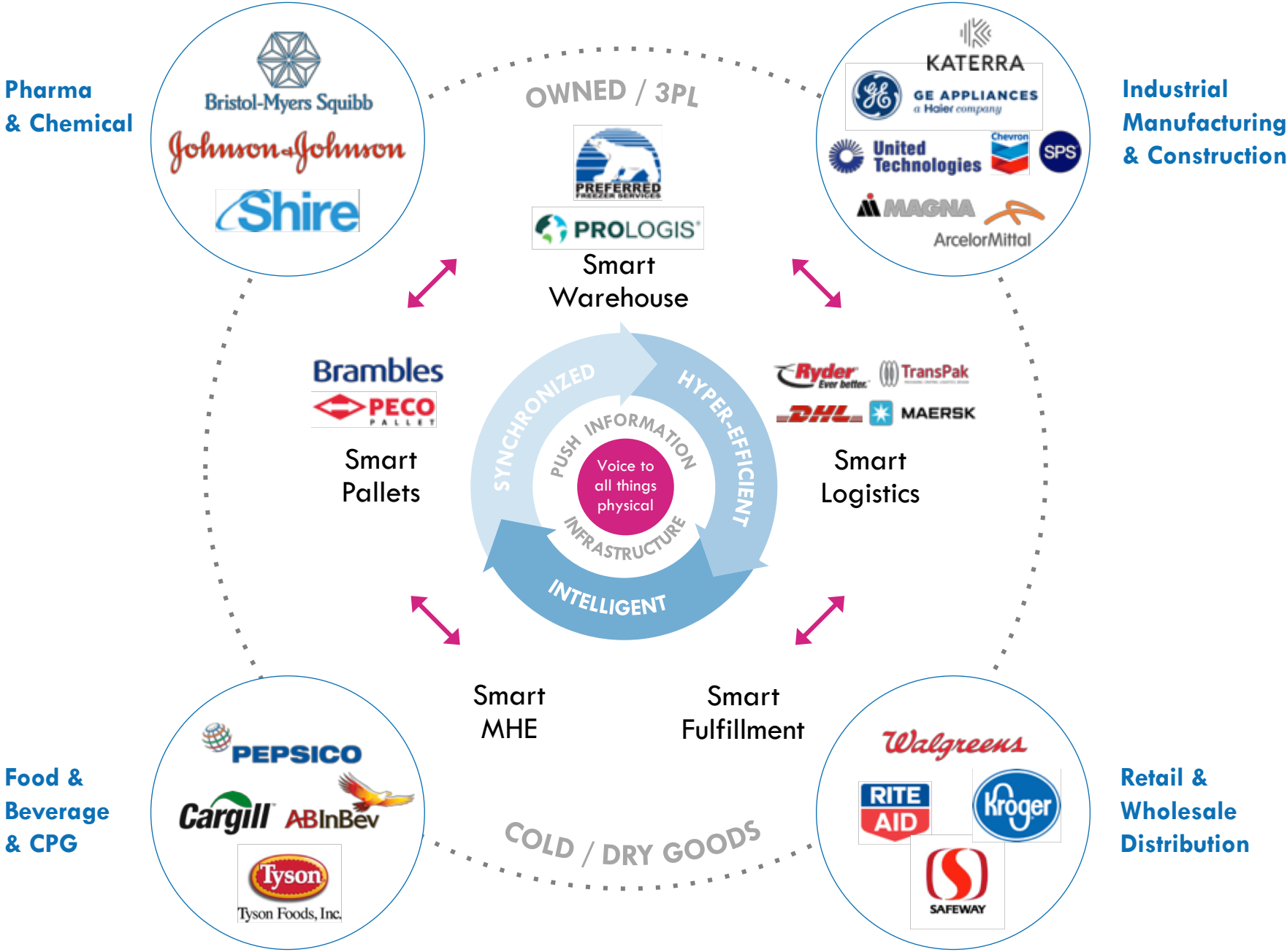


### Real-time Insights, Mgmt Tools & APIs

- Alerts, Notifications, Analytics and Reports
- APIs for enterprise integration
- Sensor Fabric Control Center
- Predictive insights and secured data exchange across partners

# Customer Success

✓ 100M Data Points and 10M Insights per day!



# Customer Case Studies



## Smart Ops

- Second largest blood plasma Co in US
- Materials losses, FDA Compliance
- 5 sites, 80+ collection centers
- ROI \$70-100 Million in annual savings



## Smart Assets

- Worlds largest pallet leasing company
- Loss/shrink/liabilities, SLAs
- 550M pallets; 300 services centers in US
- ROI – \$10+Million annually



## Smart Ops

- Largest automotive parts supplier in US
- Production loss, SLAs
- 300+ production sites
- ROI - \$10M annually



## Smart Ops

- Worlds largest warehouse REIT
- Smart warehouse solutions for tenants
- 700M SFT, 3K buildings, 5K customers
- New revenue opportunities



## Smart Ops

- Worlds largest Steel manufacturer
- Material/production loss, compliance, WIP
- 100M tons, 100+ sites
- ROI – millions of \$\$ annually



## Smart Assets

- Largest Appliance maker in US
- Audit compliance, Production loss
- 100K+ tools across 13 sites
- ROI \$10+M annually





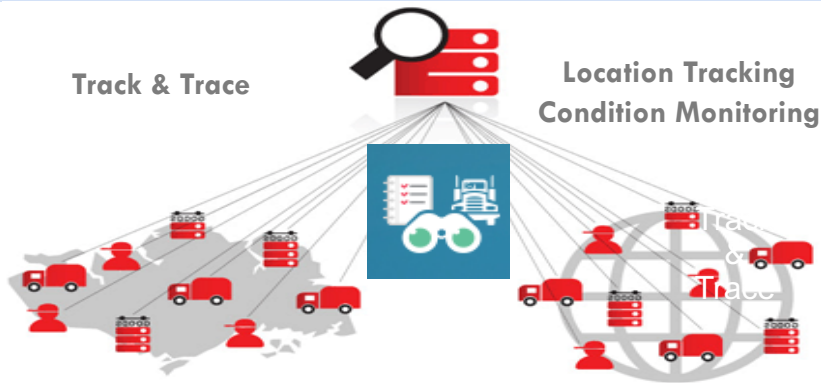
# AMAT – Tools/Shipment Tracking – Smart “In-Transit”



Order-> Configure-> Manufacture

Plan Shipment

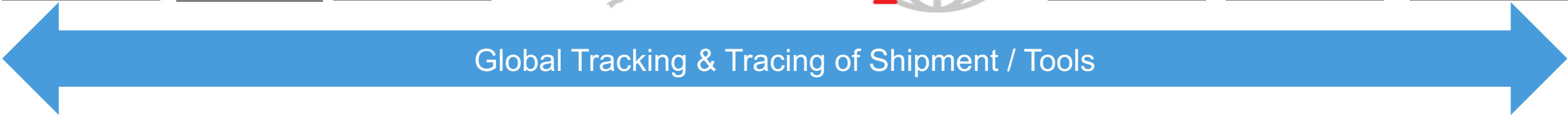
Pack Tools  
Bind Devices  
Ship



Shipment @  
Destination  
WH / Staging  
Area

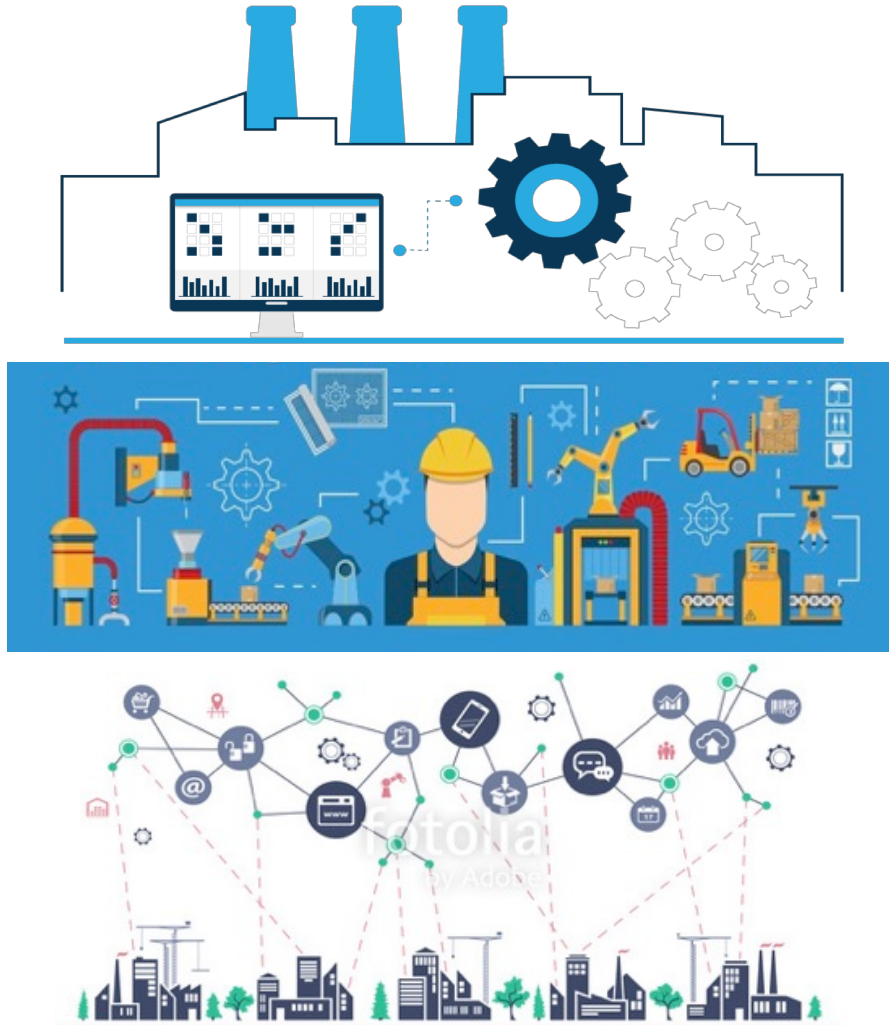
Installation &  
POD  
Acceptance

Cash  
Collection

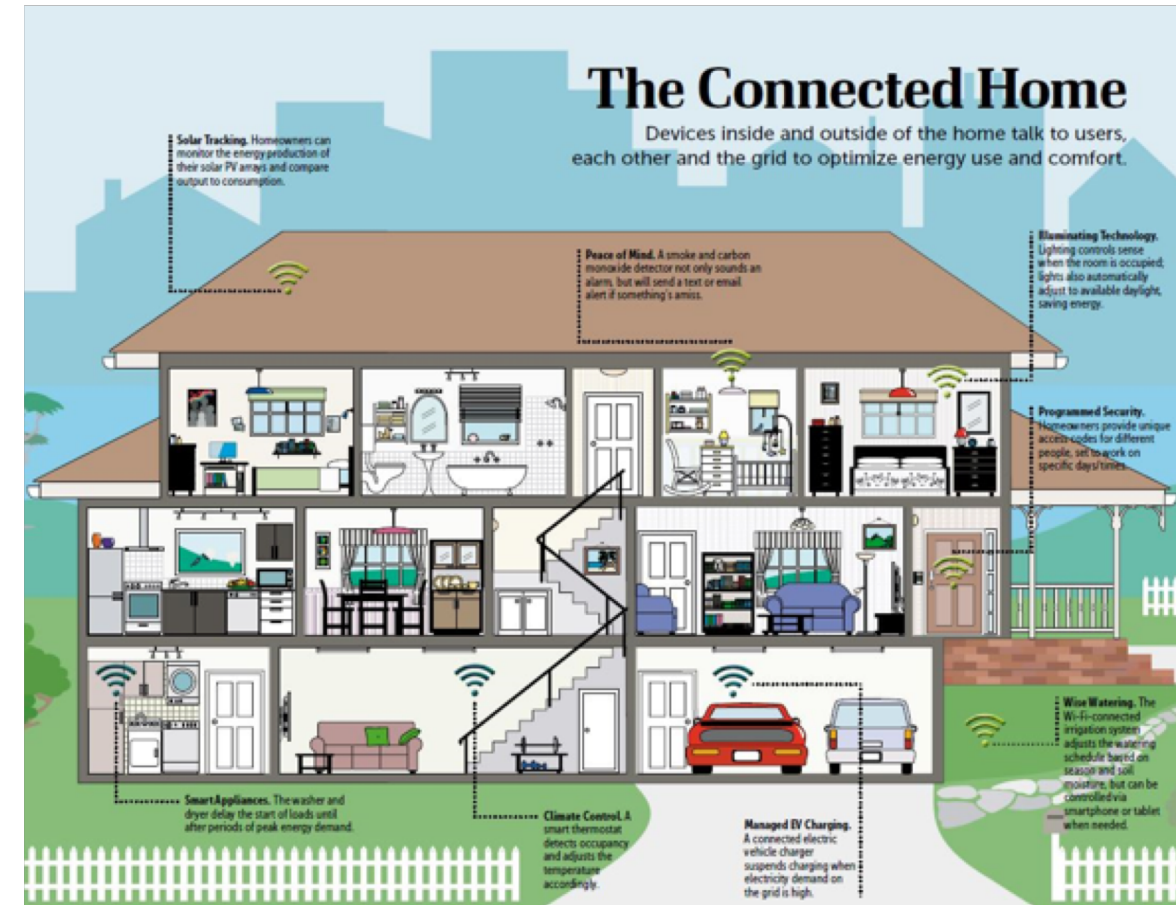


# Katerra...Build your dream home

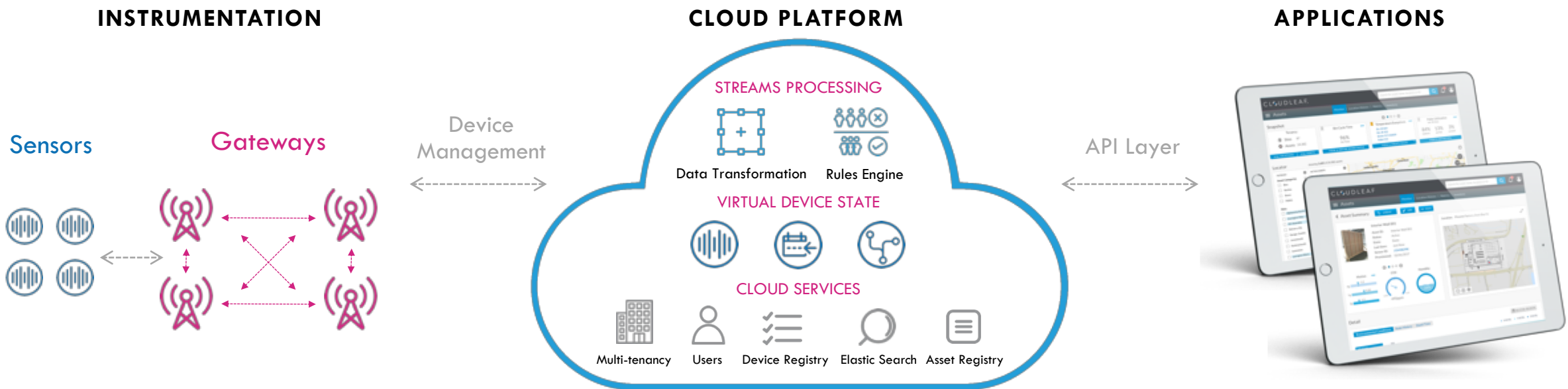
Smart Factories and Material Management



Smart Homes - Predictive on demand home services



# Partnership Strategy



— **Cloudleaf enables customers Digital Supply Chain needs** —

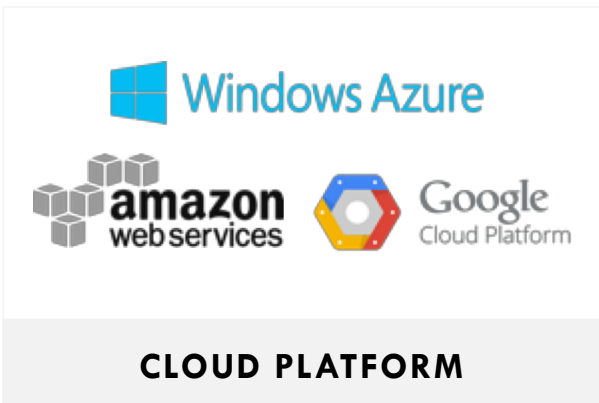
“Create the Data pipe & Data exchange”



**3<sup>RD</sup> PARTY SENSORS**



**NETWORK INFRASTRUCTURE**



**CLOUD PLATFORM**



**ERP PLAYERS**

# Company Overview

- We “Connect the Unconnected” Assets, Operations and Sites to enable Live Flow Monitoring of End to End Supply Chains
- Our patented technology captures Digital Intelligence at the Edge and our Self Learning Sensor Fabric Platform provides predictive insights using AI/ML
- Product commercially deployed; IP portfolio with 40+ patent filings
- ~\$7M bookings in 2018 ramping to ~\$20–25M by 2019
- 10+ revenue customers; 40+ customer & \$25M pipeline
- 50K+ sensors in deployment; ~500K+ sensor pipeline
- 100M data points and 10M insights generated per day
- SAAS revenue model with 80% gross margin
- Gartner Cool Vendor 2018; Supply Demand Chain Exec 100 Award; CNBC Upstart 100
- Offices in the Silicon Valley and India with 50+ employees
- Seasoned management team



# Emerging Technologies



**Virtual  
Reality**



**Blockchain**



**Immersive  
Planning**



**Augmented  
Reality**

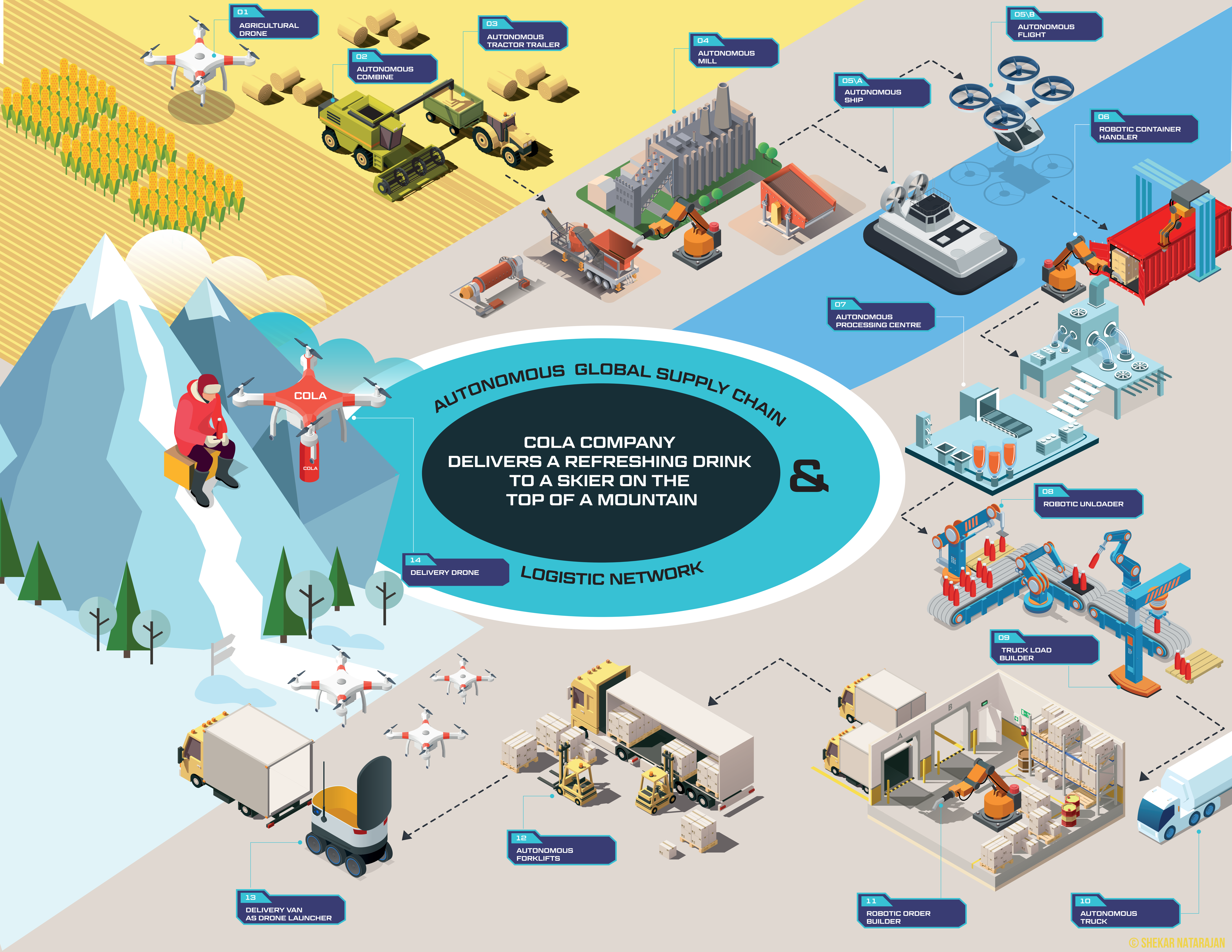


**Autonomy**



**Artificial  
intelligence**







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