## Industrial Intelligence Solutions

# UNS is Powerful for Industry 4.0







## **INTRODUCTIONS & AGENDA**



The **Unified Namespace** is Powerful for Industry 4.0, But How Does it Work?

- 1) Introductions
- 2) Business Challenges
- 3) What is the UNS
- 4) Apply it to Manufacturing
- 5) Examples
- 6) Stop & Review
- 7) How to Execute
- 8) Q&A



#### **David Schultz**

Solution Architect G5 Consulting



Kevin Jones CEO/Founder Ectobox

## **MANUFACTURING CHALLENGES**

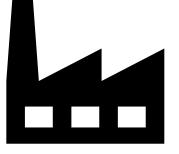
#### Manufacturing and Industry:

- More Competitive
- More Expensive
- Limited Workforce
- Workforce Traits
- Supply Chain Disruptions
- More Orders, Economy Coming Back
- Inflation
- More Demanding Customers

#### In the Plant:

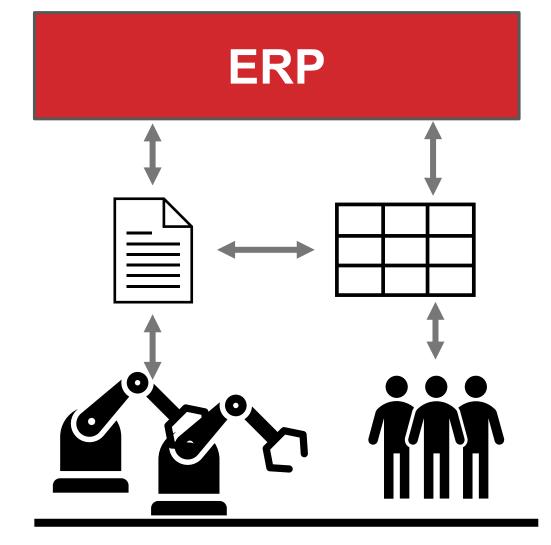
- Machine Downtime
- Production Throughput
- Quality
- On-Time Delivery
- Recruiting
- Retention
- Revenue & Profit
- Company Valuation





#### **CURRENT STATE**



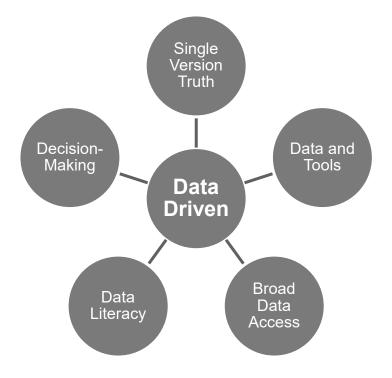


## **DATA-DRIVEN MANUFACTURING**

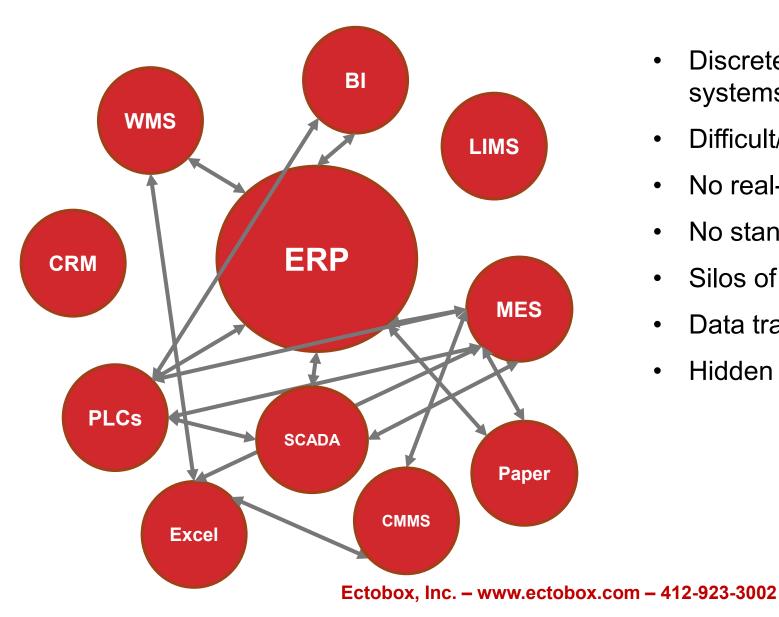
#### Holy Grail

- Everything and Everyone is Plugged into Network
- Layers of Business are Integrated and Operate Based on Data and Information from All Other Layers
- Stakeholders Know the State of the Business in Real-Time
- Stakeholders Know the Future State of the Business in Real-Time

#### **Become a Data-Driven Manufacturer**



#### **CURRENT STATE**

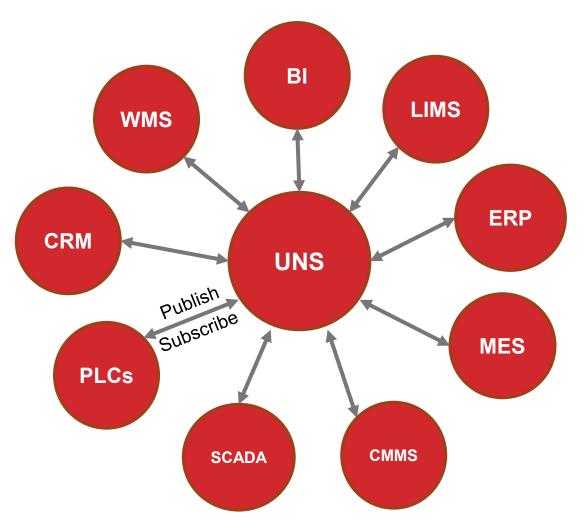




- Discrete connections between many • systems
- Difficult/Expensive to change systems •
- No real-time visibility •
- No standards for data •
- Silos of data •
- Data trapped in PLCs and machines •
- Hidden Factory / Dark Data •

#### **FLEXIBLE ARCHITECTURE**

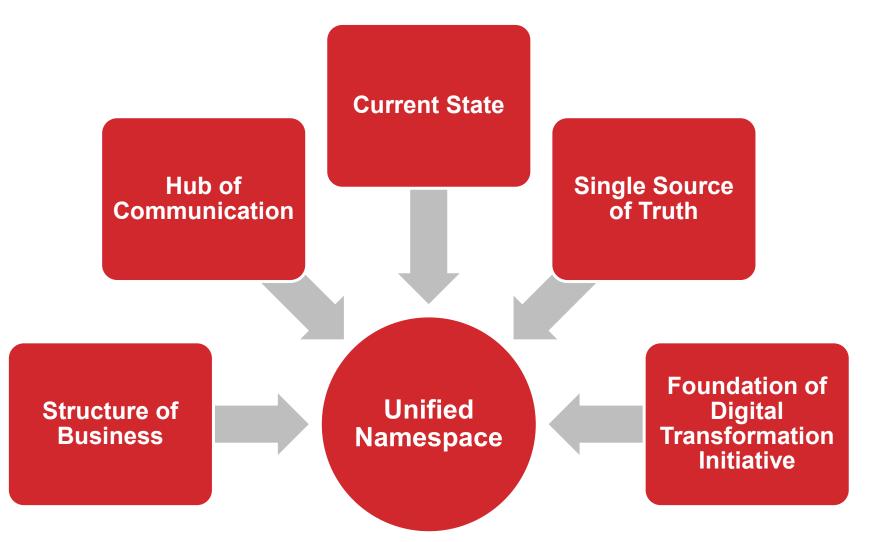




## UNS – WHAT IS IT?

Namespace - a system to identify and uniquely refer to related concepts or objects





### UNS – WHAT IS IT?



#### Example

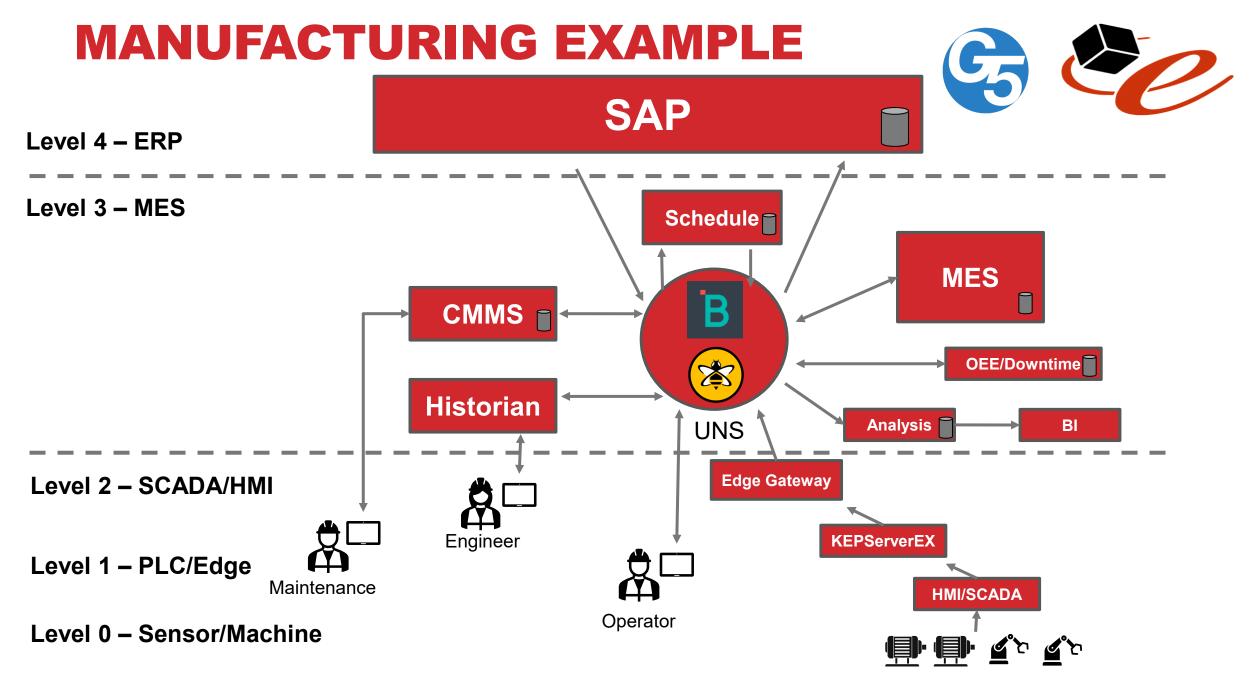
- Coca Cola
  - Pittsburgh
    - ERP
      - Work Order
      - Routing
      - Schedule
    - Bottling
      - Line 1
        - Process Control
        - PLC 1
          - PLC Tags
      - Line 2
      - MES
        - OEE
        - Downtime



#### **Unified Namespace**

- Enterprise
  - Site
    - Area
      - Line
        - Cell

\* From ISA-95 Part 2







## Examples

#### **UNS EXAMPLES**

#### Site Overview

- Q S edge	· 1 ·	
Tags	UDT Definitions	
Tag	Value	
Enterprise		
The site 1		
- 🗁 Area		
Line 1		
Line 2		
► E> Line 3		
CRM		
- D Quote		
Parameters		
- 👧 company	Strickland Propane	
► 👧 contact	Hank Hill	
🕨 🐼 Dataset 📃 🕥	Dataset [1R x 7C]	
► 👧 description	Standard Orange Juice	
► 🙀 item	OJ2000	
► 👧 number	SO39095	
> 🗩 quantity	200	
► 🚌 uom	cases	
The ERP		
Purchase Order		
Parameters		
► 👧 company	Sensient Food Colors	
► 👧 contact	Bryan Adams	
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▶- 🚌 item	Color	
▶ 🕞 number	PO58594	
► 🚘 quantity	500	
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escription	Standard Blue Juice	
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#### Line Overview

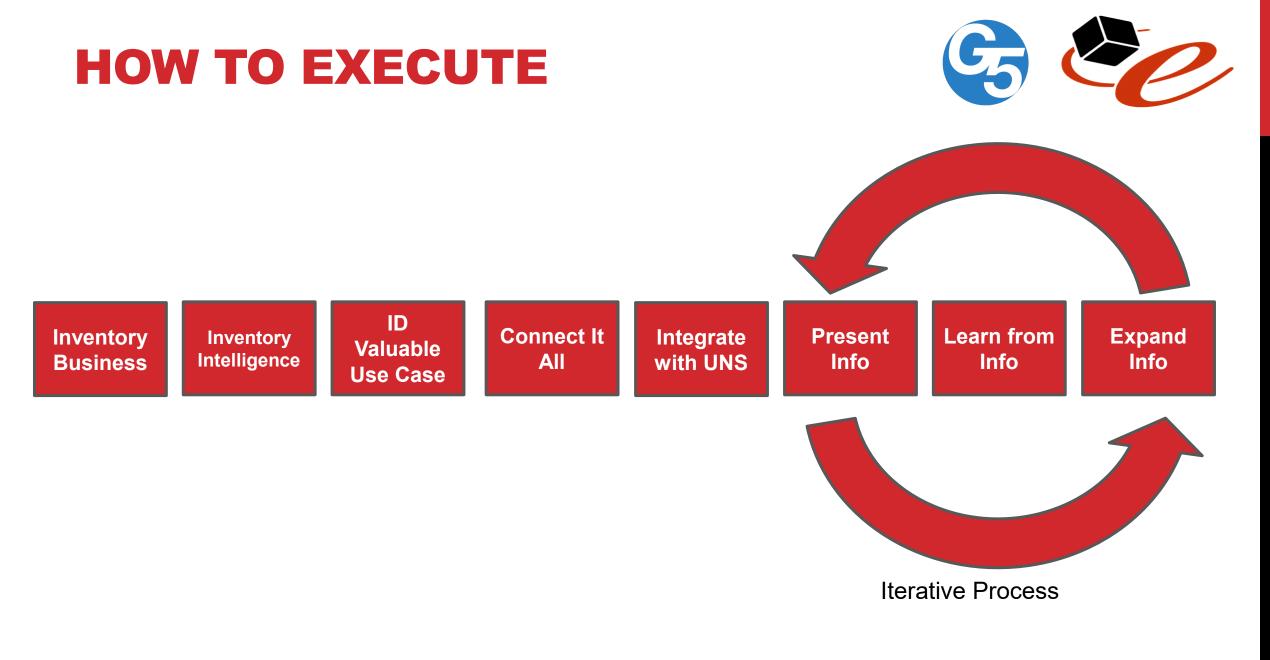
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## WAIT!!! WHY IS THIS VALUABLE?

Short Term			
Down-Time	Medium Term		
Production	Survive & Thrive	Long Term	
Quality	Employee of Future	Data in Supply Chain	
Etc.		Products Become Smarter	
		Solid Future	
		Company Value	
		<u>Become Data</u> <u>Company!!!</u>	



### **COMMON QUESTIONS**



- Where does it live?
- Does it store data?
- Where does it store data?
- What if devices don't speak MQTT Sparkplug B?







David Schultz dschultz@g5ces.com

Kevin Jones kevin.jones@ectobox.com





