

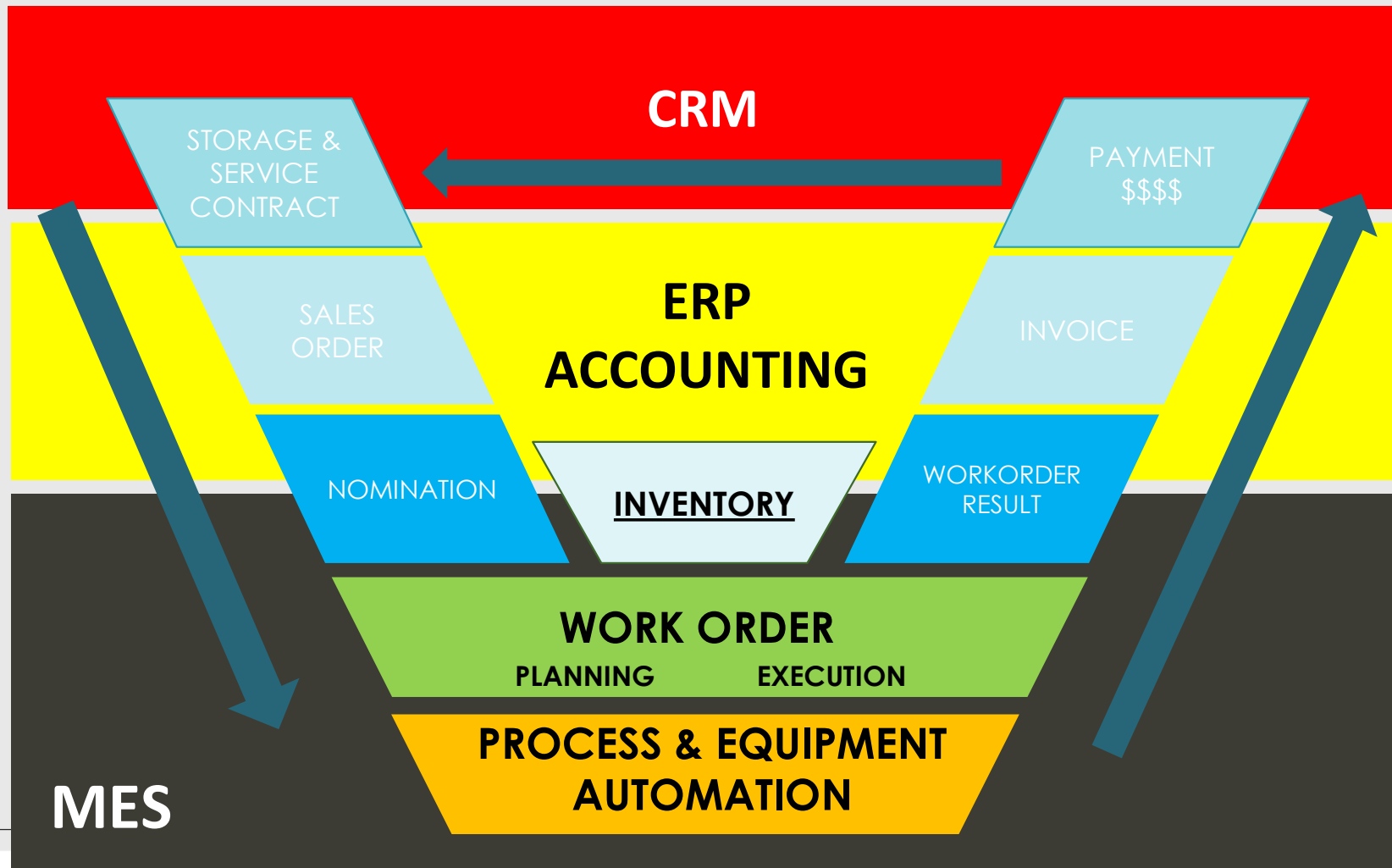


# MES PLATFORM ARCHITECTURE

By Paul Wijsen

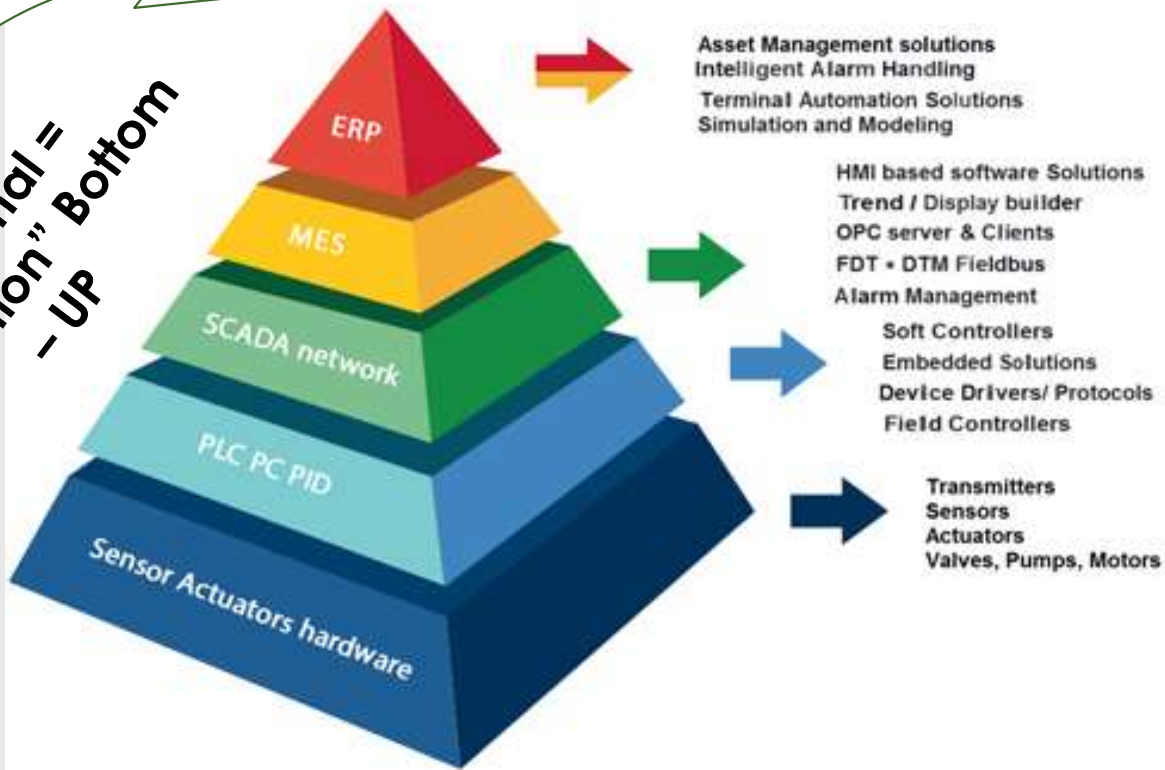
# MES FOOTPRINT :

CONNECT SYSTEMS TO ENABLE ORDER BASED OPERATIONS



# DIGITALIZATION IN PRACTISE

Traditional =  
"Innovation" Bottom  
- UP



Opportunity =  
KPI Driven Top - Down

# LESSONS LEARNED

## DEFINE YOUR OPERATIONAL PHILOSOPHY

### STAKEHOLDER EXPERIENCE

PRODUCT QUALITY  
SERVICES QUALITY  
TURN AROUND TIMES  
ORDER CORRECTNESS  
CUSTOMER COST OPTIMIZATION  
OPERATIONAL TRANSPARENCY

...

CONVENIENCE

### SAFETY

ORDER BASED LOADING  
CONTAMINATION CONTROL  
DATA SAFETY & SECURITY  
REGULATION COMPLIANCY  
SHEQ  
FUNCTIONAL SAFETY  
ACCESS MANAGEMENT  
USER MANAGEMENT

...

SECURITY

### CONSCIOUS ASSET UTILIZATION

PRODUCTIVITY  
PLANNING OPTIMIZATION  
AUTOMATIC WORKFLOW  
END TO END DATA CONSISTENCY  
MAINTENANCE CONTROL  
MULTI SITE ASSETS SHARING

...

EFFECTIVENESS

### LEAN PROCESS

ENERGY MONITORING  
WASTE REDUCTION  
PAPERLESS PROCESS  
OBJECTS TRAVEL DISTANCES  
INACTIVE/WAITING TIMES  
MANUAL vs AUTOMATED  
PROCESS FLEXIBILITY

...

EFFICIENCY

# TECHNICAL SOLUTION DRIVERS OF A MATURE MES

## WHAT MATTERS MOST

### ROBUSTNESS

Services Availability – 99.99 %  
Flexibility  
Critical Components  
Alarm Management  
Human Dependencies  
Recovery Planning + SLA  
Systems Redundancy  
Meantime To Failure + Repair  
Network Topology

**STABILITY**

### ASSET SECURITY

Safety Integrated Systems  
Pump Control & Protection  
ATEX  
Access Management Systems  
Integrate Fencing CCTV  
Assets Tracking & History Tracing  
Fire Fighting  
Break-In  
Cyber Security

**PROTECTION**

### DATA VALUE

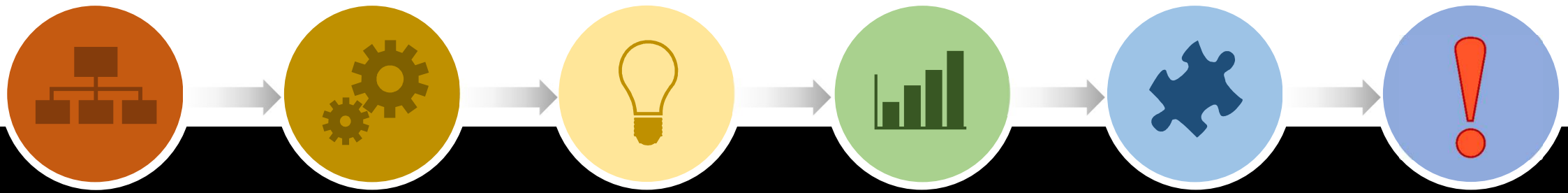
Structure and Analyze Big Data  
Transparency / Accessibility  
Data Sharing and Publishing  
Trend Discovery  
Intellectual Property  
Optimize Turn Around  
Flowpath planning  
Handhelds  
  
ATALK

**INTELLIGENCE**

### MAINTAINABILITY

Life Cycle Services 24/7  
Modular Systems  
Absorb New Technologies  
Distributed Connected Services  
Role Based Applications  
There's No "One Size Fits All"  
Or "One Stop Shop"  
Productized Solutions (SUS)  
Enable Scalability  
Object Based Systems  
Data Re-Use  
Standard Libraries

**RESILIENCE**



## 1. Planning

Customer Service

## 2. Scheduling

Production Planning

## 3. Tracking

Production  
Can be physically  
tracked

## 4. Tracing

Delivered and  
logged  
Available for  
dashboarding

When scaling, group all elements to be scaled. Scale as needed. Use the "Increase Font Size," "Decrease Font Size" buttons or manually change the font size for the editable text. Delete unwanted elements. Change the line weight of the circles or connecting bars as needed.

# 3 Server Domains



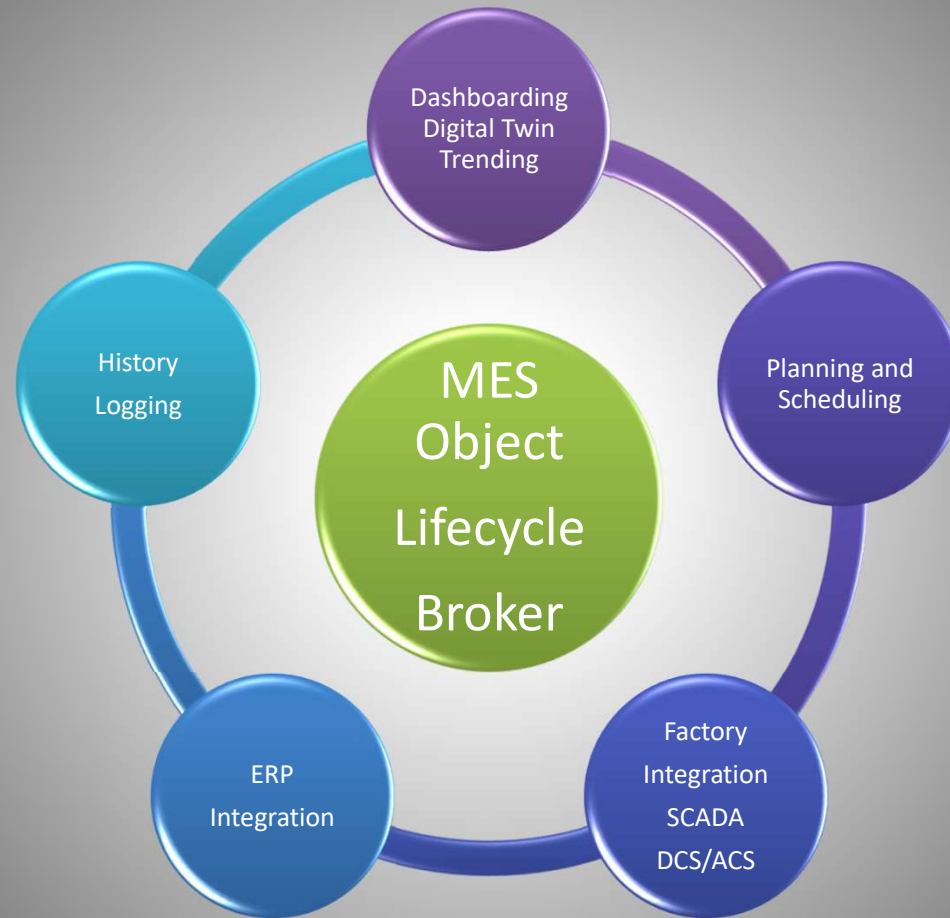
MASTER DATA  
SCHEMA



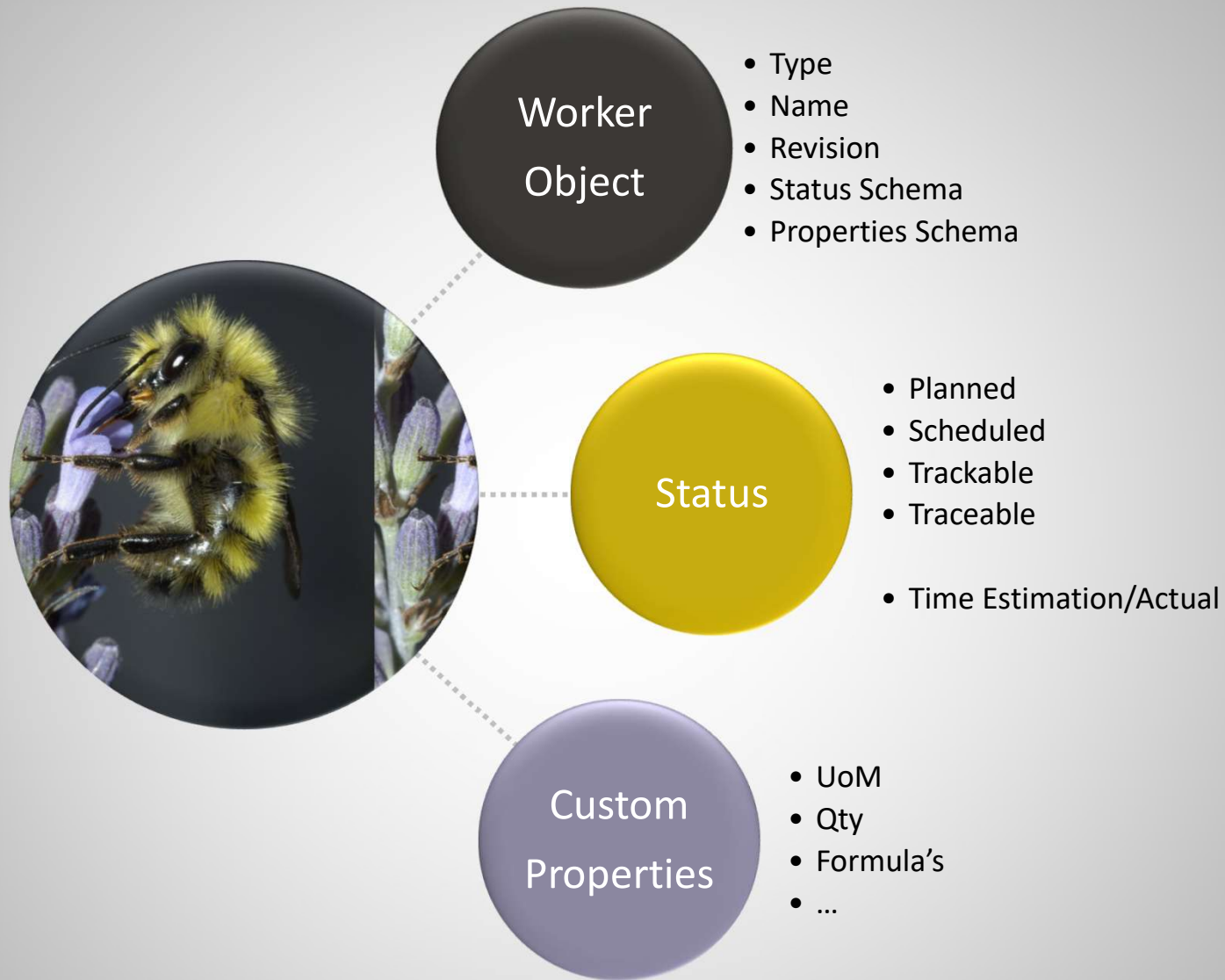
PRODUCTION



BROADCASTING  
DASHBOARDING







## 1. Requirements

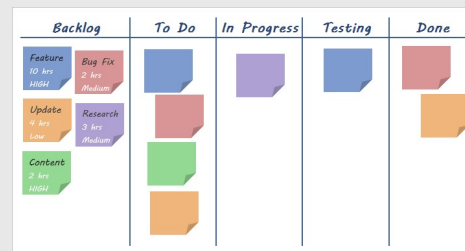
Long Term Vision  
 Individuality, Market Segment  
 KPI / USP Dashboarding  
 Digital Twin Outline



## 3. Implementation Execution

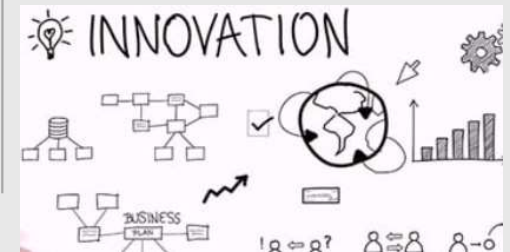
Build as you grow

**Breakdown :** Analyse, Deliver, Train, Document, Adopt  
 Technology Partners Network Collaboration  
 Commissioning, Documentation and Handover



## 5. Evolve

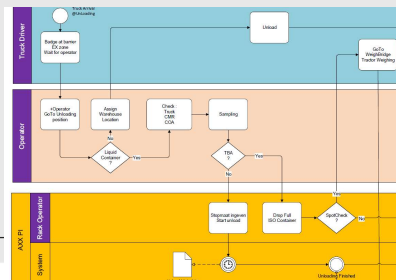
Maintain and Improve  
 Control Inspiration Process  
 NO Disruption



## Integrated Project Team

## 2. Specifications and Design

User Stories Business Process Model  
 Engineering  
 Process Analysis  
 Interviews  
 Stakeholder Commitment  
 Technical Design



## 4. Terminal Operations

Sync Virtual and Reality  
 Evaluate :

1. Stakeholders Experience
2. Safety
3. Assets Efficiency
4. Leanness of Process





**END**

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