Digital Transformation Forum

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Presenting:

A journey from an unstructured maintenance department to relying on digital twins

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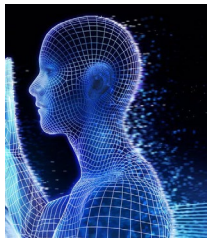
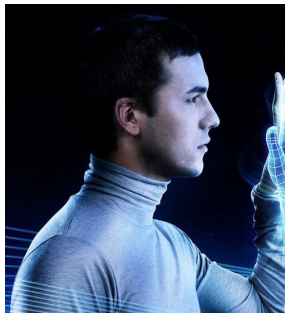
Digital Twin Concepts

What is a Digital Twin?

Identical

Digital representation of something real in constant interaction.

Reality	Digital Twin
Self-Monitoring	
Warnings	Task automation
Simulation	Search
	Real time status
	Real time availability

Why to create one?

In a world competing for limited resources:

INCREASING SPEED	**Wins Customers**
	Retains Customers
	Drives Efficiencies
	Reduces Errors
	Saves Money

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Dusobox Corp.

Case study

2. Dusobox Corp.

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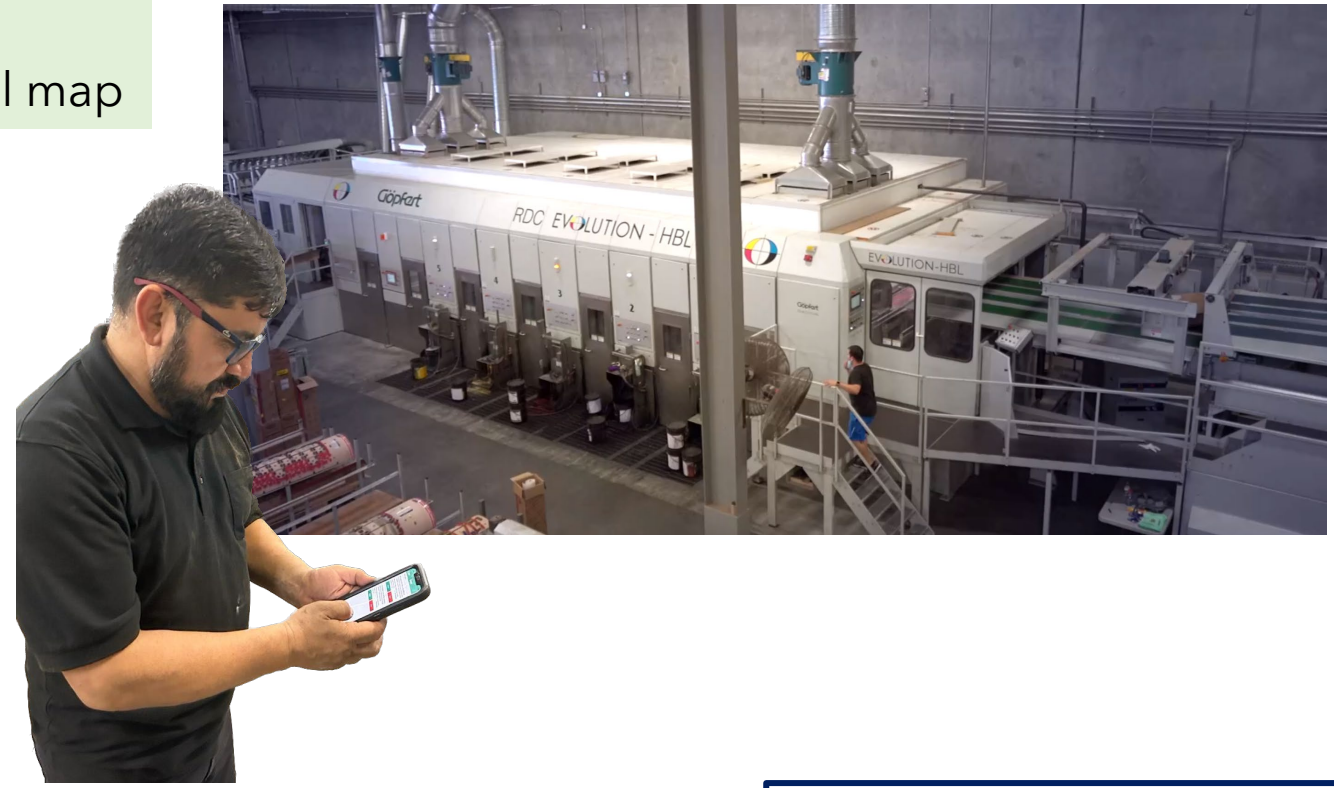
Asset Digital Twin

Identical Digital Twin of an Asset

DUSOBOX

Asset identification.
Asset location
Asset functional map

- Fast asset/location/system identification
- Fast job reporting
- Fast asset information retrieval
- Real-time Asset Tracking



2. Asset Digital Twin

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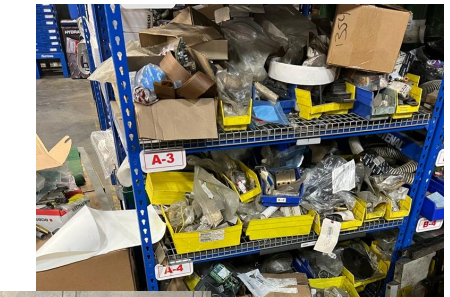
Storeroom Digital Twin

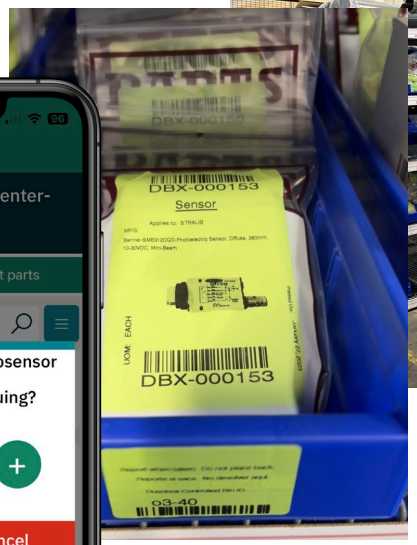
Identical Digital Twin of the Storeroom

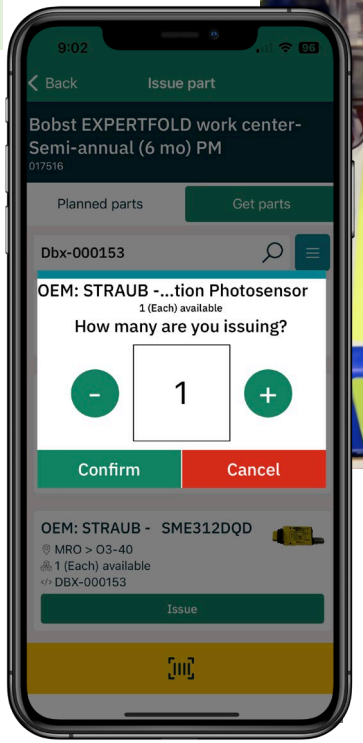
DUSOBOX

Spare parts ids.
Visual aids.
Store locations.
Vendor's parts

- Locating pieces
- Inventory availability
- Semi-automatic ordering
- Image recognition







3. Storeroom Digital Twin

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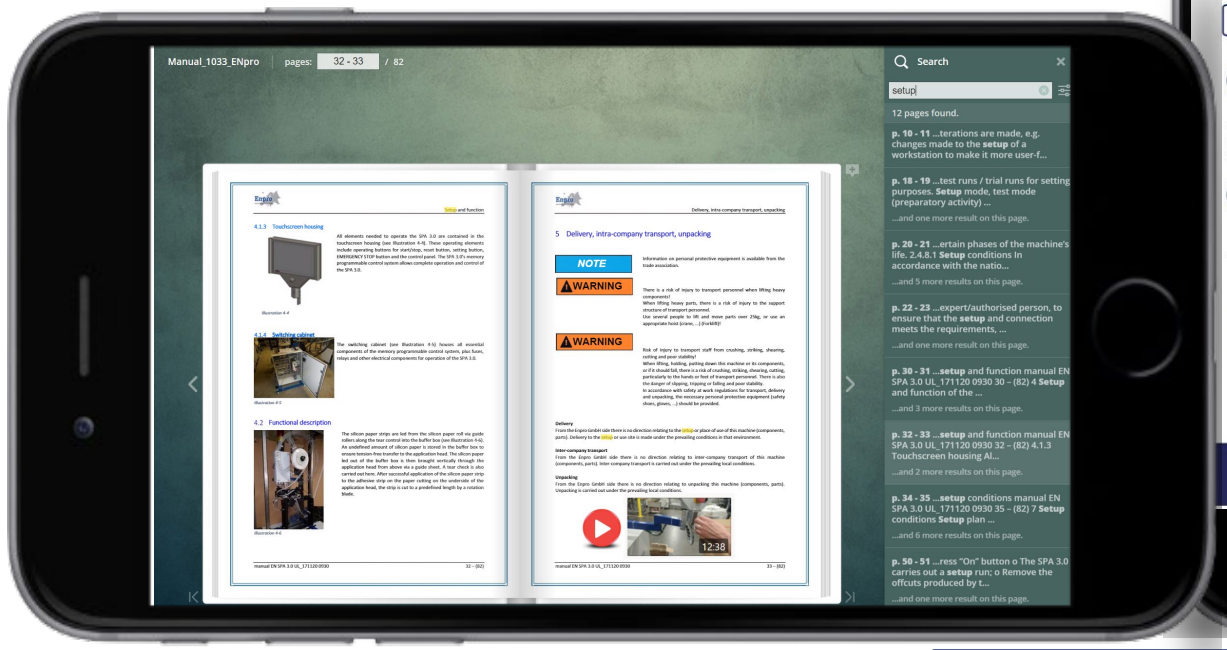
Technical knowledge
Digital Twin

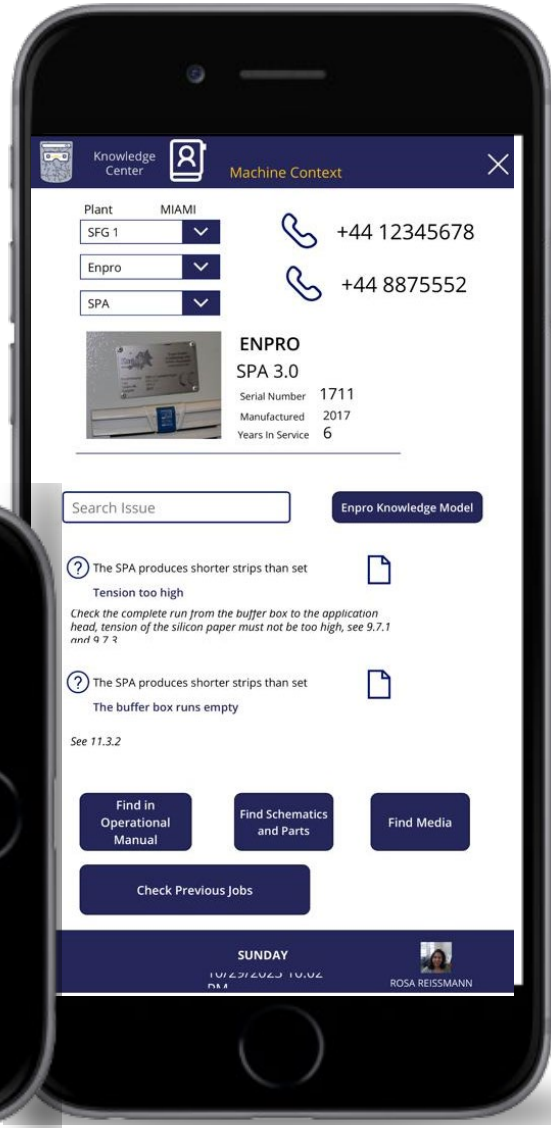
Identical Digital Twin of Technical Knowledge

DUSOBOX

Digital Documentation
Videos.
Plant conceptual mapping.

- Fast retrieval of part numbers
- Functional understanding
- Faster troubleshooting
- Bot answers





4. Technical Knowledge Digital Twin

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Implementation Strategy Vision

Higher speed

Dashboard (set of variables)
Automation (cruise control)
Autonomy (collision control)

VS.

Lower speed

- **A Parallel** model is faster than a linear model
- Parallel *is not* multi-tasking, it is to provide humans with more real-time **context**

5. Implementation Strategy - Vision

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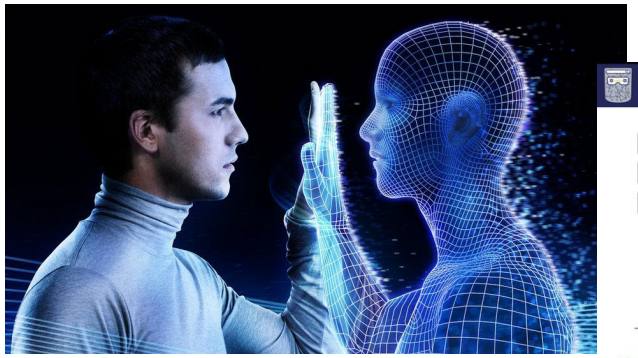
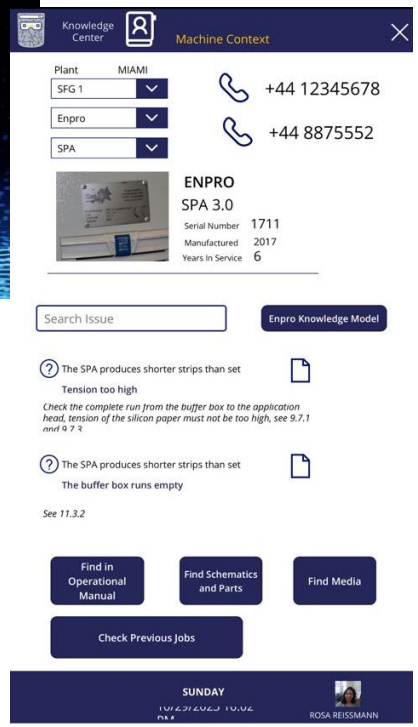
Implementation Strategy Vision





Parallel Model

Machine issues resolution	Context
Manual	Spare parts availability
IoT Loc / Warnings	

- Faster
- Less task with more context

Linear Model

Task 1 → Task 2 → Task 3

- Slower
- Many more tasks performed by humans

5. Implementation Strategy - Vision

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Implementation Strategy
Project Management

DIGITAL TRANSFORMATION	BUSINESS ENTERPRISE SOLUTIONS
Initiative	Project
Product leader	Project manager
Proof-of-concept	Business requirements
Start small, grow big	Start big
Closer to real time	Period analysis
Narrow impact	Wider impact
Personal focus	Corporate focus
Competency	Competitiveness
Short time to results	Long time to implement
Small team	Multi-role team
Transformation architect	Solution architect
$	$$$

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Technology Strategy Stack of Tech

DIGITAL TRANSFORMATION TECHNOLOGY	FUNCTIONALITY	BUSINESS APPLICATIONS TECHNOLOGY
Cognitive Services (OCR, speech recognition, visual recognition, text analytics, etc.)	Quick human interaction	
CMMS (Mobile version)	Field Job	
CMS	Documentation Experience Videos	
Bar coding / RFID	Quick Identification	
Generative AI	Virtual Agents (Bots)	
Machine Learning	Machine Monitoring	
IoT	Sensors / signal analysis	
Process Automation	Approvals/Request	

Enterprise finances and Operations	ERP
Customer Relationship Management	CRM
Maintenance Management	CMMS

7. Technology Strategy – Stack of Technology

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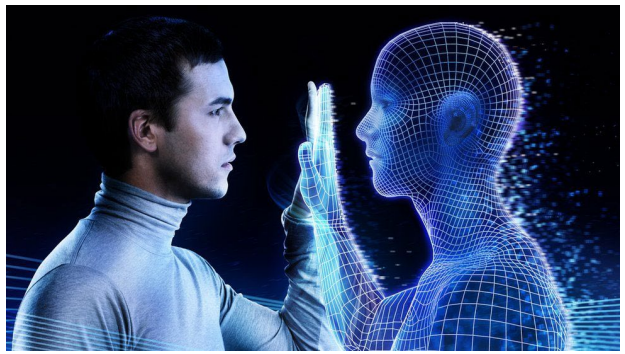
Success by Design - Adoption

Success is achieved by using an *Identical* Digital Twin.



Adoption

Personal

Team Work

Speed up

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Implementation Strategy Success Factors

Onboarding speeds adoption

Onboarding needs:

1. Person
2. Bot
3. Asset
4. Parts
5. Vendor
6. Documentation

Parallel approach:

1.
- Support Network
- Common concepts
- Mentor
- Technology (digital)
- Equipment technology
- Virtual-video experience

2.
- Semantic sintax
- Security
- Governance
- Grounding

3.
- Technical specs
- Special features
- Functional Units/systems
- Pictures
- 3D Model

6.
- Manual scanning
- Cognitive recognition
- Repositories
- Parcing
- Tagging

Artifacts:

Conceptual Infographics	Business Processes
Automation	Mobile Apps
Business Processes	Machine onboarding process
Digital Technical Library	Bot (Gen AI)
Smart Search	Smart Lenses

10. Implementation Strategy - Onboarding

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Benefits

- Time savings/speed to market
- Knowledge retention
- Elimination of mistakes
- Process automation, i.e. onboarding, approval, identification, knowledge sharing
- AI accuracy
- Leadership development

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Thanks for your attention…

cambrica

Knowledge in action

https://www.cambrica.com/dtimplementationstrategy

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