

Implementation, Use and ROI of IIoT and AI Technologies in Composites Manufacturing for the New Now

Amir Ben-Assa

VP Marketing & Product Strategy



About Plataine

New software intelligence layer
complementing your current
systems

IIoT: collecting sensor &
system data in real-time

Optimize & automate
manufacturing at both site
and supply-chain levels

AI: delivering alerts &
recommendations improving
productivity



Market-Proven in the Most Demanding Production Environments

Select Customers



Select Partners



Awards and Recognition

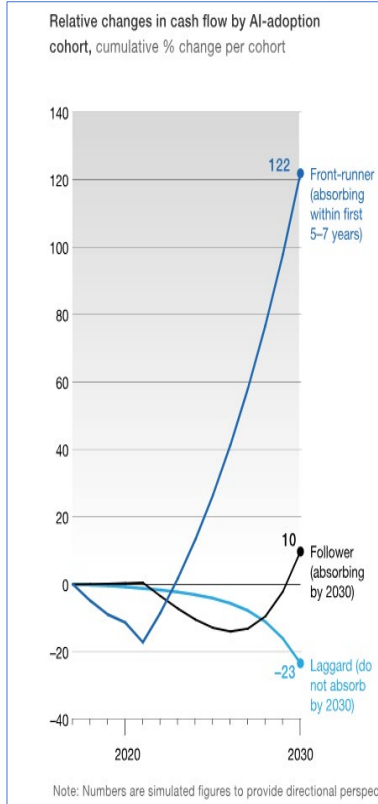
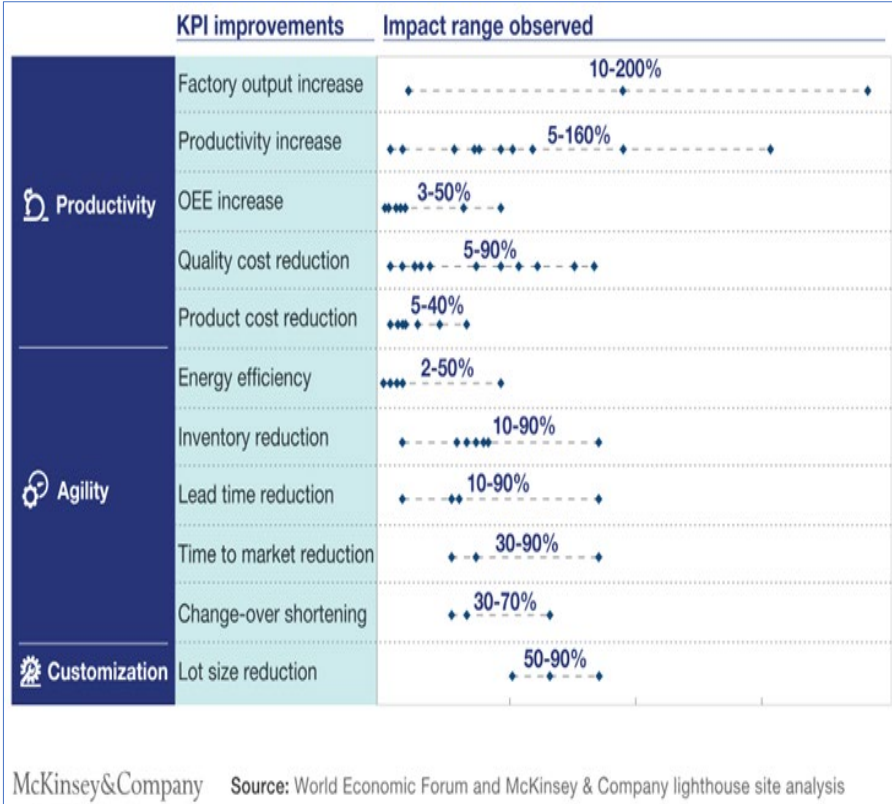


Industry 4.0 Opportunity

World Economic Forum & McKinsey & Company:

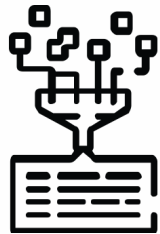
“Industry 4.0 dramatically improves both top & bottom lines”

“Early Adopters stand to gain significantly greater benefits”



The Critical Steps for a Fully Connected, Intelligent, Digital Factory

COLLECT



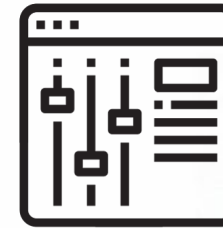
Collecting data from sensors in real-time

ANALYZE



AI providing predictions & recommendations

OPTIMIZE & AUTOMATE



Driving efficiency, while reducing costs & waste

Data Collection: getting as much (relevant) data, in digital format, in real-time



Enterprise systems:
PLM, ERP, MES...



“Things” on the production floor:
Sensors, machines
Connect the “unconnectable” – older machines, parts,
material, tools...



Human (operator) input:
Applications, wearables

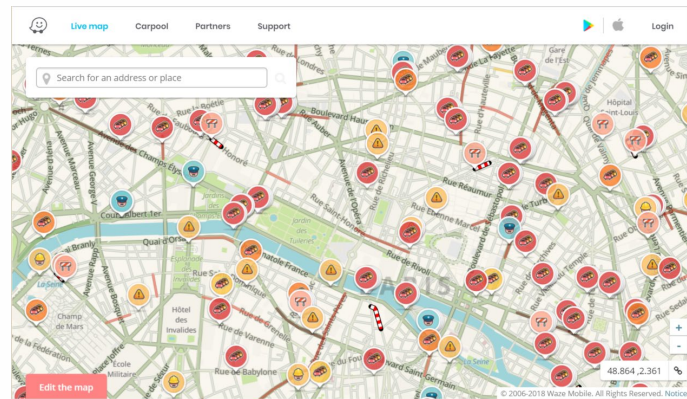
The Role of AI in Manufacturing

Collect data and then what?

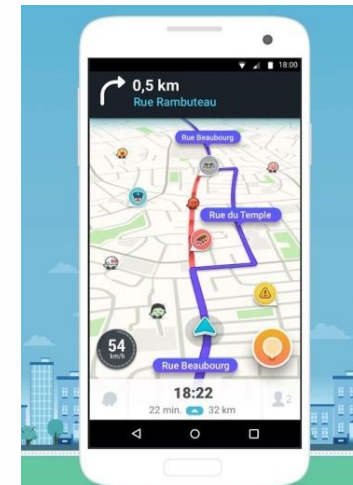
Where are we? What is happening?	Context Recognition ("Descriptive Analytics") e.g. Pattern Recognition algorithms
Where are we heading? What is going to happen?	Predicting potential evolution/implications ("Predictive Analytics") e.g. Predictive Modeling algorithms
What to do about it?	Selecting optimal action ("Prescriptive Analytics") e.g. Optimization/Search algorithms

The Confusion Between Industry 4.0/AI and Reports/Dashboards

Dashboards & reports display data, but do not solve problems

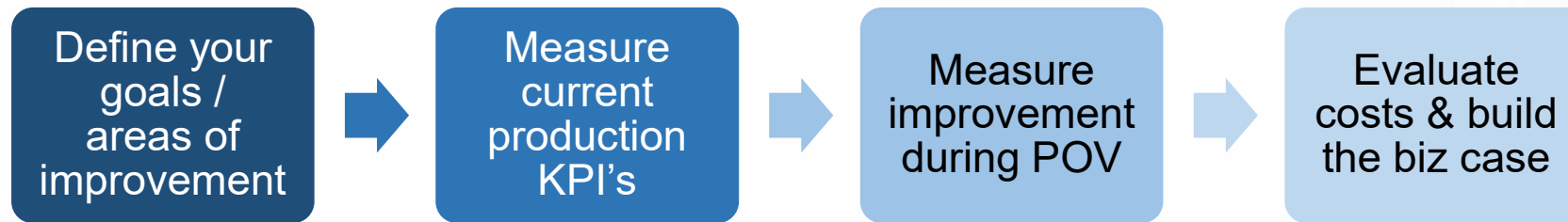


An intelligent digital assistant provides real-time recommendations & alerts



PoC vs. PoV

Build a business case instead of just testing if a technology works



Cost Evaluation



Hardware and sensors



Software (license or subscription)



Long-term maintenance and support












Integration



Deployment

Direct cost
Production downtime
Staff training

Savings & ROI

Top Line Benefits Drive Strategic Value	Bottom Line Benefits Increase Profitability	Digital Manufacturing Minimizes Risks
 5% - 10% Factory throughput increase	 5% - 15% Product Cost Reduction	 100% Production Visibility
 10% - 40% Rework Reduction	 10% - 15% Inventory Reduction	 10% - 20% Reduction in Quality Risks
 10% - 25% Faster Time to Market	 5% - 20% Labor Savings	 100% Traceability & Audit Ready

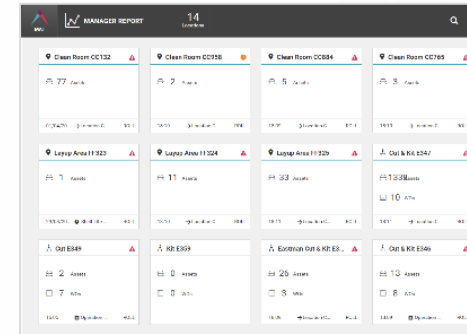
Significant, Measurable Results → Typical ROI of 4-6 months

Example 1: Manufacturing Cost Reduction

Aerospace Tier 1 Supplier;
5 weeks PoV

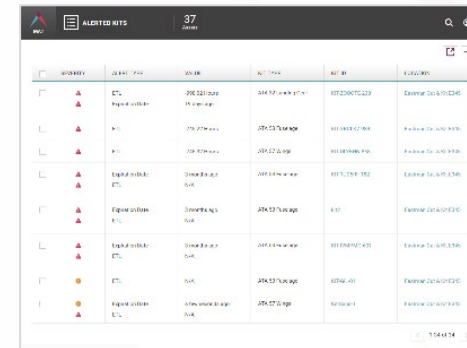
- RFID-based automatic tracking of material, kits and parts
- Software generates pick lists based on required jobs retrieved from ERP
- Software calculates material shelf-life and exposure time

Factory overview



Area	Status	Value	Value	Value	Value
Clean Room CC132	▲	77	▲	5	▲
Clean Room CC316	●	7	▲	5	▲
Clean Room CC384	▲	7	▲	5	▲
Clean Room CC765	▲	7	▲	5	▲
Layer Area F1322	▲	7	▲	5	▲
Layer Area F1324	▲	7	▲	5	▲
Layer Area F1326	▲	7	▲	5	▲
Out & Kit E347	▲	7	▲	5	▲
Out E349	▲	7	▲	5	▲
Kit E359	▲	7	▲	5	▲
Bottom Out & Kit E3...	▲	7	▲	5	▲
Out & Kit E346	▲	7	▲	5	▲

Alerts preventing material expiration



ID	Job	Date	Location
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223
ETL	Preprod subcon	2023-03-09	10322007223

Example 1: Manufacturing Cost Reduction

Aerospace Tier 1 Supplier;
5 weeks PoV

Item	Value
Eliminate material waste due to misplacement and expiration	\$1,096,200
Increased throughput by minimizing machine idle time	\$661,500
Labor savings due to automated tracking and reporting	\$252,000
Reduce inventory & WIP carrying costs due to tighter inventory control	\$79,800
Total savings per year	\$2,089,500

Example 2: Equipment Utilization

Aerospace Tier 2 Supplier; 4 weeks PoV

- Automatic real time tracking of tools' location (autoclave resistant tags)
- Complete visibility over clean rooms, staging, curing and de-molding areas
- Reducing delays due to missing tools, tool's availability, and unplanned tool maintenance



Example 2: Equipment Utilization

Aerospace Tier 2 Supplier; 4 weeks PoV

- 3 Autoclaves in the specific facility

Increased autoclave utilization

Item	Value
Autoclaves current utilization rate	63%
Autoclaves utilization rate during PoV with RFID tool tracking	74%
Autoclaves utilization improvement	11%
Monthly value of work orders (average of 16 material types)	\$1,830,000
Monthly savings attributed to utilization improvement	\$201,300
Months per year	12
Annual savings attributed to utilization improvement	\$2,415,600

Legend
Measured during PoV
Provided by customer
Calculated

Summary

- AI and Industry 4.0 address significant business pains
- Implementation focus must be on the business value
- Benefits seen include both top and bottom-line savings
- Quantifying the benefits is within reach and demonstrates significant outcomes

Thank You!

... and now it's time for Q&A

Amir Ben-Assa

VP Marketing & Product Strategy

amir.benassa@plataine.com

PLATAINE[®]
people-smart automation

