

12. PAGEV TÜRK PLASTİK ENDÜSTRİSİ KONGRESİ

Ev Eşyaları ve Bahçe Mobilyalarında Plastikler

AMAN GUPTA

THINGTRAX UK

Dijitalleşme Plastik
Sektörüne Paradan

Nasıl Tasarruf Ettirir?

5 Aralık 2017 Saat:12.40

Hilton İstanbul Bomonti Hotel





How Digitalization can save money for Plastic Industry

THINGTRAX
CONNECTED MANUFACTURING

Agenda

- The Problem
- Industrial Revolution 1, 2 & 3
 - Its benefits and limitations
- Problem faced by Plastic Industry
- What is Digitalisation & Industry 4.0 / 4IR
- Case Study -Benefits of Digitalisation to Plastic Industry
- How to start Digitalisation journey / 4IR
- Conclusion
- Q&A

About Speaker

Co-founder of ThingTrax UK, an Industry 4.0 solution company based out of London. Aman is a technocrat with more than 15 years of experience in technology and how it can be applied to increase efficiency and reduce losses. His passion is to push the boundaries and develop innovative technical solutions for manufacturing industry.

Industrial Revolutions

1st revolution
Industrial



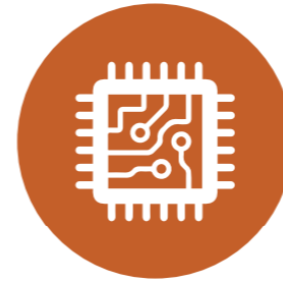
Late 1700s
Mechanisation

2nd revolution
Technological



Late 1800s
Electricity

3rd revolution
Digital



Late 1900s
Electronics

4th revolution
4IR



Early 2000s
Cyber-physical

The problem.



What is Digital Factory/ Industry 4.0 / 4iR

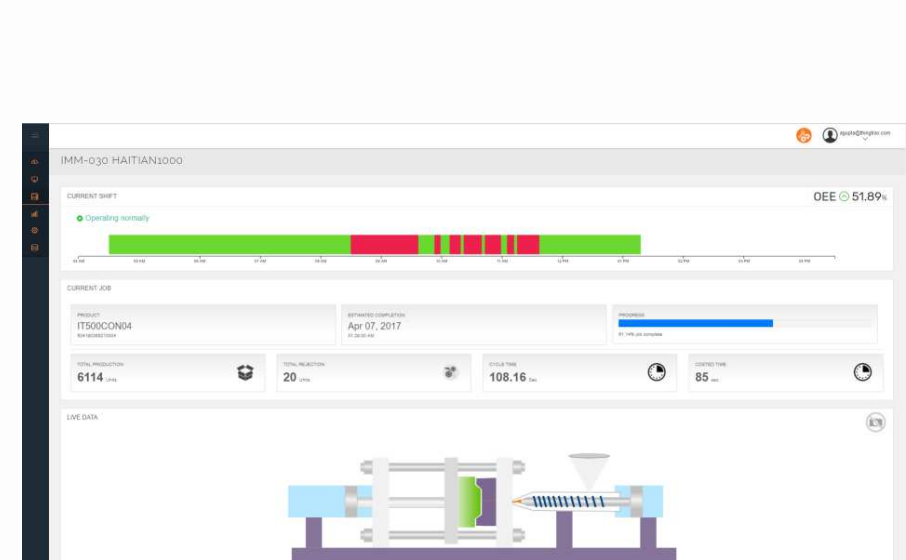
- Streamlined and optimised production processes
- Increased machine uptime and usage
- Reduced capacity constraints
- Better quality products
- Less waste, reduced inventory levels
- More efficient energy usage
- Predictive maintenance and servicing
- Remote diagnostics and maintenance
- Safer working environment
- Mass customisation
- Quicker time to market
- Robots perform difficult or onerous tasks



Case Study 1

CASE STUDY: PLASTIC INJECTION MOULDER REDUCES ENERGY COST BY 15% BY EFFECTIVE MONITORING USING IIOT

- Idle machines in any process costs money, up to 90% of the total costs, which is significant but often ignored by site management.
- Monitoring solutions identifies and alerts on idle running times. The solution analyses each machine cycle and adjusts settings to run the job in the most energy efficient manner.
- The live energy dashboard shows energy consumption of all injection moulding machines and captures rich data of energy consumed down to each production cycle and learns the consumption pattern based on product, tool and machine.

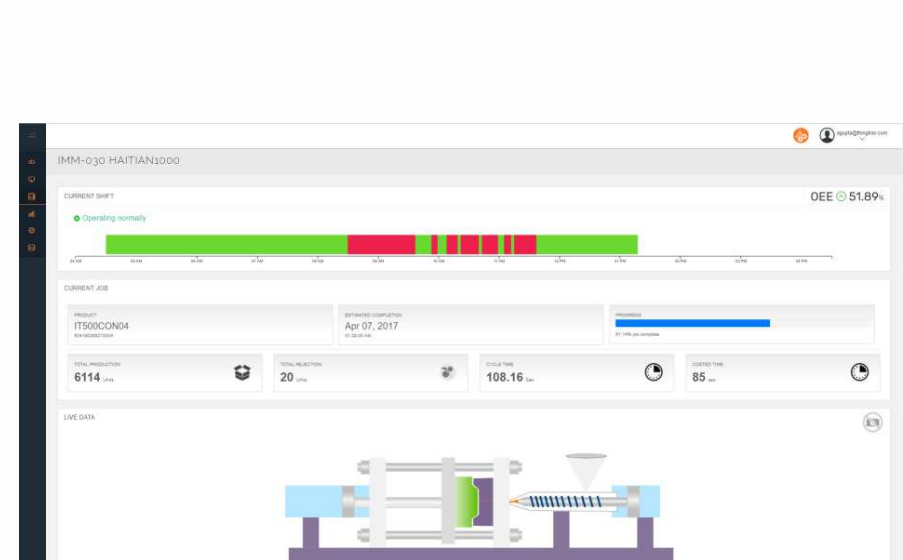


Machine ID	Energy Cost (€)
Imm-003	€1,243.98
Imm-004	€1,243.98
Imm-006	€1,243.98
Imm-007	€1,243.98
Imm-016	€1,243.98
W09	€1,243.98
W10	€1,243.98
W11	€1,243.98
W111	€1,243.98
W12	€1,243.98
W13	€1,243.98
W14	€1,243.98
W15	€1,243.98
W16	€1,243.98
W17	€1,243.98
W18	€1,243.98
W19	€1,243.98
W20	€1,243.98

CASE STUDY: PLASTIC INJECTION MOULDER REDUCES ENERGY COST BY 15% BY EFFECTIVE MONITORING USING IIOT

Machine, Energy and Maintenance help identify key areas in injection moulding to save energy cost in following areas:

- Process settings and controls
- Barrell heating and insulation
- Getting right machine and process automation
- Mould design and maintenance.

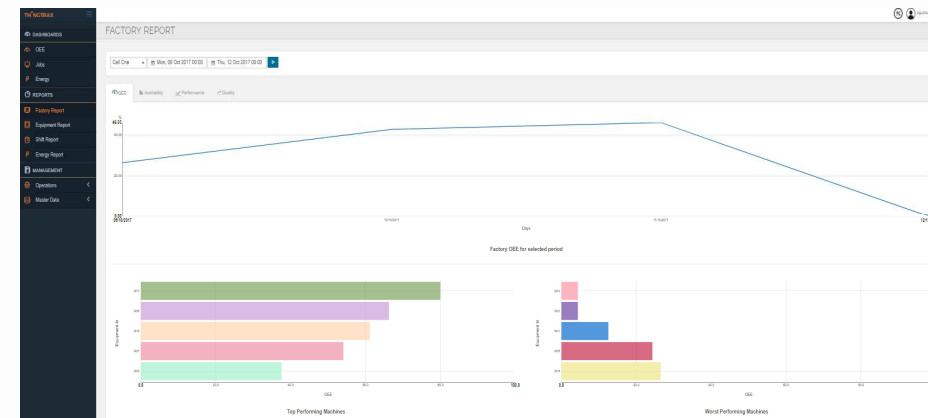
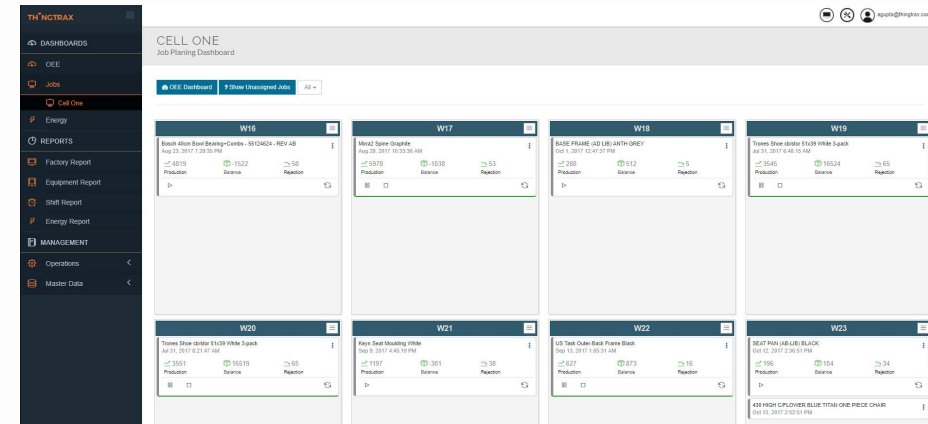


Machine ID	Energy Cost (€)	Energy Cost (€)	Energy Cost (€)	Energy Cost (€)	Energy Cost (€)
Imm-003	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
Imm-004	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
Imm-006	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
Imm-007	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
Imm-016	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W09	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W10	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W11	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W111	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W12	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W13	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W14	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W15	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W16	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W17	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W18	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W19	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98
W20	€1,243.98	€1,243.98	€1,243.98	€1,243.98	€1,243.98

Case Study 2

CASE STUDY: How digitalisation helped plastic injection moulder to increase efficiency by 5% hence saving \$1000s

- Monitor shop floor and analyse data from machines and operators and get shift manager attention to most critical issue.
- Building skills and capability matrix of machines and operators in real time.
- Suggesting operators/staff cross training requirements.
- Keep track of job schedule and completion time and take corrective actions in some cases.
- Ensure that routine safety, quality and maintenance checks are completed.
- Auto planning of jobs taking into consideration various constraints.



Virtual Plant Manager “Molly” powered by ThingTrax AI

- Performs majority of shift management tasks autonomously
- Plans jobs with high accuracy
- Learns un-supervised from data generated from machines and operators in real time.
- Alerts on routine safety, quality and maintenance check points to avoid unnecessary downtimes.



How to start your 4IR journey

Start small

Don't go it
alone

Don't get
left behind

Conclusion

Industry 4IR aren't just for big guys.

Those who dismiss 4IR are at risk.

Start with small and simple projects.

Thanks

- agupta@thingtrax.com
- www.thingtrax.com
- ThingTrax provides an end-to-end industrial IoT solution providing easy to setup devices and simple to use web and mobile software. ThingTrax is the Chromecast for manufacturing machines, bringing desperate disconnected machines online to provide OEE (Overall Equipment Efficiency), OLE (Overall Labour Efficiency) and Predictive Maintenance which are crucial KPIs (Key Performance Indicators) for every manufacturer.