Industry 4.0 Awareness Seminars Reports Template

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1.	Date of the Seminar	09/08/2019
2.	Organizers	CII
3.	Title of the seminar	Awareness Programme on Smart Manufacturing and Industry 4.0 *The Indian Perspective*
4.	Programme	Attached
5.	Report: suggested contents (1) Main takeaway / good suggestions (2) Clusters covered – **Bhavnagar** (3) Nos attended - **47** (4) Success stories that need to be compiled / shared – **PPT names** • **Engineering technique industry 4.0 smart manufacturing-CII Bhavnagar** • **Milacron Industry 4**	Main takeaway / good suggestions • Basic concepts of Industry 4.0 • 3D Printing concepts were cleared very well
6.	List of Speakers with contact details	Attached
7.	Photographs	Annexure 1
8.	Resource persons for providing consultancy, skilling, guidance etc.	**Mr Mayur Kachhiya** Head – Engineering & 3D Printing services Engineering Technique **Mr Ketan Parekh** CEO EroNkan Technologies Pvt Ltd
9.	Presentations	Annexure 2
10.	Learnings from the seminar	• More practical/case studies are demanded by the audience

		• Time management • Diversification in topics was appreciated by the audience

Awareness Programme on Smart Manufacturing and Industry 4.0

The Indian Perspective

Date: 09 August 2019
Time: 1600 – 2000 hrs
Venue: Hotel The Basil Park, Bhavnagar, Gujarat

PROGRAMME		
1600 - 1630 hrs	Registration	
1630 – 1640 hrs	Welcome Remarks	**Mr Piyush Tamboli** Vice Chairman, CII Gujarat State Council & Chairman & Managing Director Investment & Precision Castings Ltd
1640 – 1710 hrs	Industry 4.0 - Relevance and Implications in Indian Industry	**Mr Shirish Divgi** Managing Director Milacron India Pvt Ltd
1710 – 1715 hrs	Q & A	
1715 – 1745 hrs	Technology Disruption	**Mr Prashant Mamtora** Founder & CEO Milople Technologies Pvt Ltd
1745 – 1750 hrs	Q & A	
1750 – 1810 hrs	Tea Break	
1810 - 1840 hrs	Implementing Industry 4.0 Solutions Using An Industrial IoT Platform	**Mr Ketan Parekh** CEO EroNkan Technologies Pvt Ltd
1840 – 1845 hrs	Q & A	
1845 - 1915 hrs	Industry 4.0 – Smart Manufacturing	**Mr Mayur Kachhiya** Head – Engineering & 3D Printing services Engineering Technique
1915 – 1920 hrs	Q & A	
1920 - 1950 hrs	Challenges & Opportunities for MSMEs – Industry 4.0	**Mr Mukesh Dobariya** Head - Sales & Marketing Hi-Mak Pvt Ltd
1950 – 1955 hrs	Q & A	
1955 – 2000 hrs	Summing Up	
2000 hrs	Dinner	

List of Speakers with contact details

S. no.	Organisation Name	Name	Designation	Mobile
1.	CII Western Gujarat Zonal Council	Nisheeth Mehta	Vice Chairman	9227550777
2.	Milacron India Pvt Ltd	Shirish Divgi	Managing Director	9512950011
3.	Milople Technologies Pvt Ltd	Prashant Mamtora	Founder & CEO	9879807819
4.	EroNkan Technologies Pvt Ltd	Ketan Parekh	CEO	
5.	EroNkan Technologies Pvt Ltd	Kahaan Vasa	Manager - Business Development	9712907181
6.	Engineering Technique	Mayur Kachhiya	Head – Engineering & 3D Printing services	9033282441
7.	Engineering Technique	Hoshang Patel	Head - Marketing	
8.	Hi-Mak Pvt Ltd	Mukesh Dobariya	Head - Sales & Marketing	8980802565

Annexure 1

Photo gallery


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Indus
Prashar
Founder &
VISIT US
www.milople.com


People Development and Culture Building
Sponsors
Change Champions
Change Agents
Developing Young Technicians
Developing Young Engineers
Developing Effective Team Members
Developing Effective Supervisors
Developing Effective Managers
Developing Future Leaders
Management Development Programs for Leaders

Annexure 2

Presentations

Industry 4.0

Relevance and Implications In Indian Industry

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Is Industry 4.0 a Revolution?

YES!

Revolution happens before it is declared / people realize.

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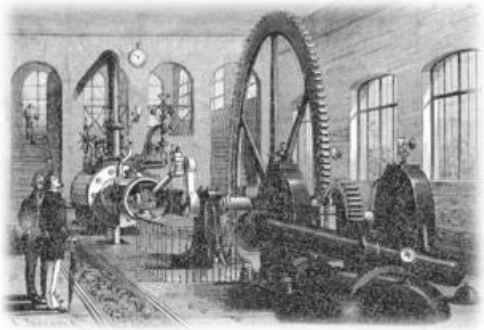
INDUSTRY 4.0 a Revolution

A movement is called a revolution when it impacts multiple dimensions of society.

Industry 1.0 (harnessing of steam power)

Economics (capitalism)
Politics (colonisation)
Social (working class)
Technological (locomotives, spinning mills)



Industry 4.0

Manufacturing
Competitiveness of nations
Nature of employment
Profitability of companies

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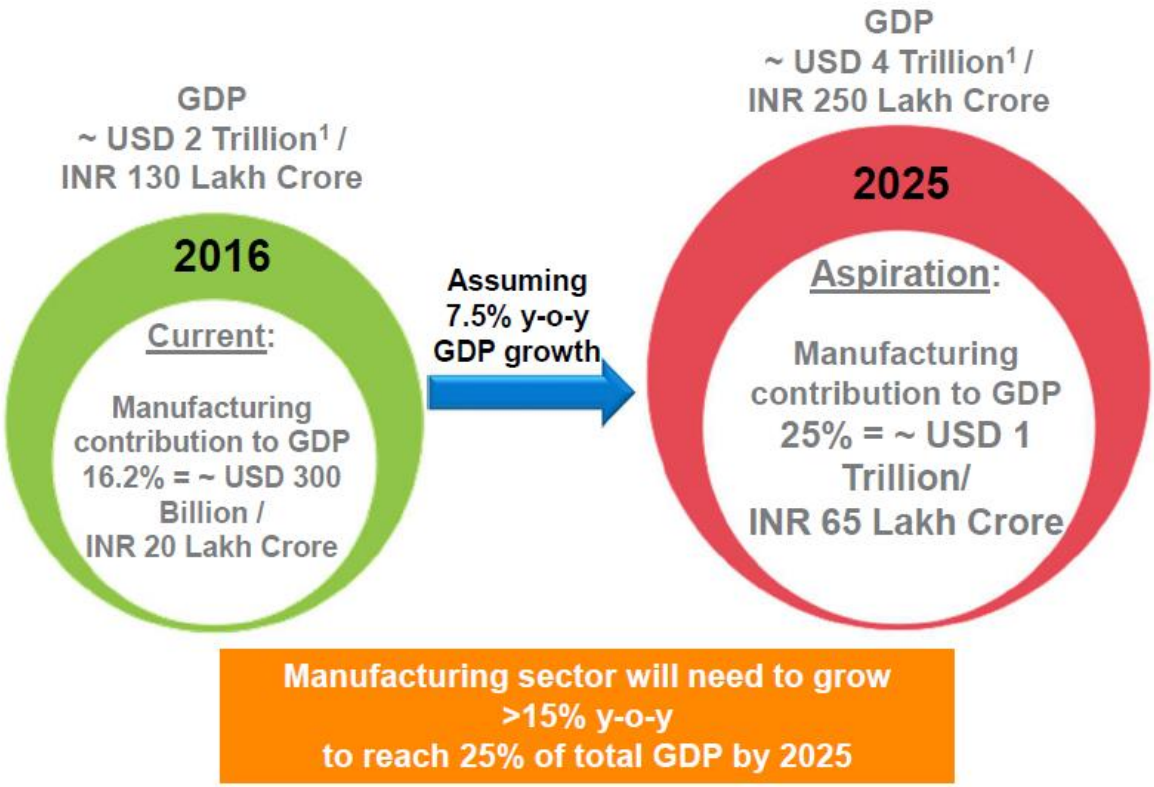
GDP
~ USD 2 Trillion[1] /
INR 130 Lakh Crore
2016
Current:
Manufacturing contribution to GDP 16.2% = ~ USD 300 Billion / INR 20 Lakh Crore
Assuming 7.5% y-o-y GDP growth
GDP
~ USD 4 Trillion[1] /
INR 250 Lakh Crore
2025
Aspiration:
Manufacturing contribution to GDP 25% = ~ USD 1 Trillion/ INR 65 Lakh Crore
Manufacturing sector will need to grow >15% y-o-y to reach 25% of total GDP by 2025

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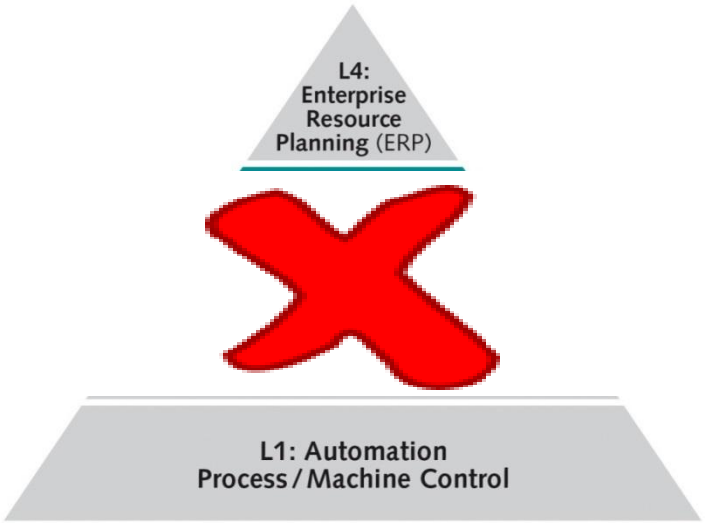
Today's Manufacturing

• L1 - At the first level the machines have replaced the humans, thereby reducing time & increased production PLC/SCADA operates the machine automatically. PLCs collect huge amount of data which can be use for analysis

• L2 - The Line Management system controls the manufacturing line based on inputs from L1. L2 get the inputs through human intervention by ma data collection from L1.

• L3 – MES collects huge amount of data from L2 & presents information in form of Trends, Charts, OEE & other performance indicator to the analysts or Decision Makers.



• L4 - The Top level is the ERP, which is now commonly used by all industries to manage the production system.

Due Human Intervention there is disconnect between L1 & L4

Today's Manufacturing

Today's Scenario

Due to Human Interventions there are risks/possibilities of

- Showing more production than actual
- Showing Less Downtime than actual
- Showing less rejections than actual

Result

- Mismatch between Raw Material Consumption vs Actual Production
- Financial Losses
- Inefficiencies gets unnoticed
- Investment in additional Manpower to identify the deficiencies.

Expectations

What Do We Want

Correct Information on

- Productivity
- Rejection
- Downtime
- Early warning on possible problems
- Energy Efficiency

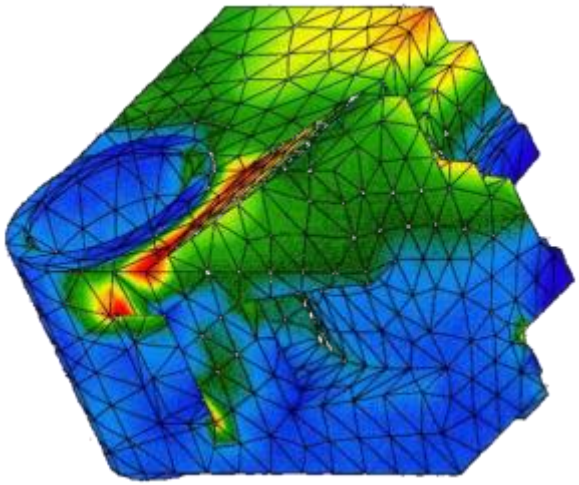
Result

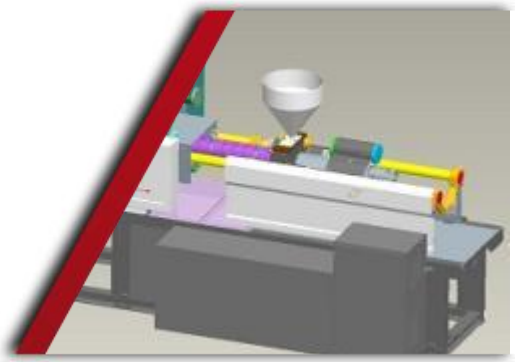
- Correct & Informed decision based on above inputs
- Improved Financials

Global Designing

Engineering & Software Development

- Advance Computer Simulations viz.:
  - Finite Element Analysis (FEA)
  - Stress & Impact Load Analysis





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Cellular Manufacturing

Assembly & Run-off

- Manufacturing & Process Excellence through Cellular Manufacturing Techniques which helps in
  - Cell Manufacturing Concept – Injection, Clamp, Hydraulics & Electrical + Electronics
  - Synchronous Material Feeding
  - Flexibility for Customization
  - Reduction in Floor Time
- ERP for Enhanced Business Productivity

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Support Manufacturing

Paint Shop

- Pressurized Grit Blasting Room
- Pressurized Wet Paint Booths
- Pressurized Solvent Extraction System
- PNG fired Paint Baking Ovens
- Complying with current environmental regulations as per ISO 14001:2004

Heat Treatment Shop

In-house Gas Nitriding Shop ensures Superior Quality Surface Hardening of:

- Barrels
- Feed Screws
- Tip Seat Valves

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Precision Part Manufacturing

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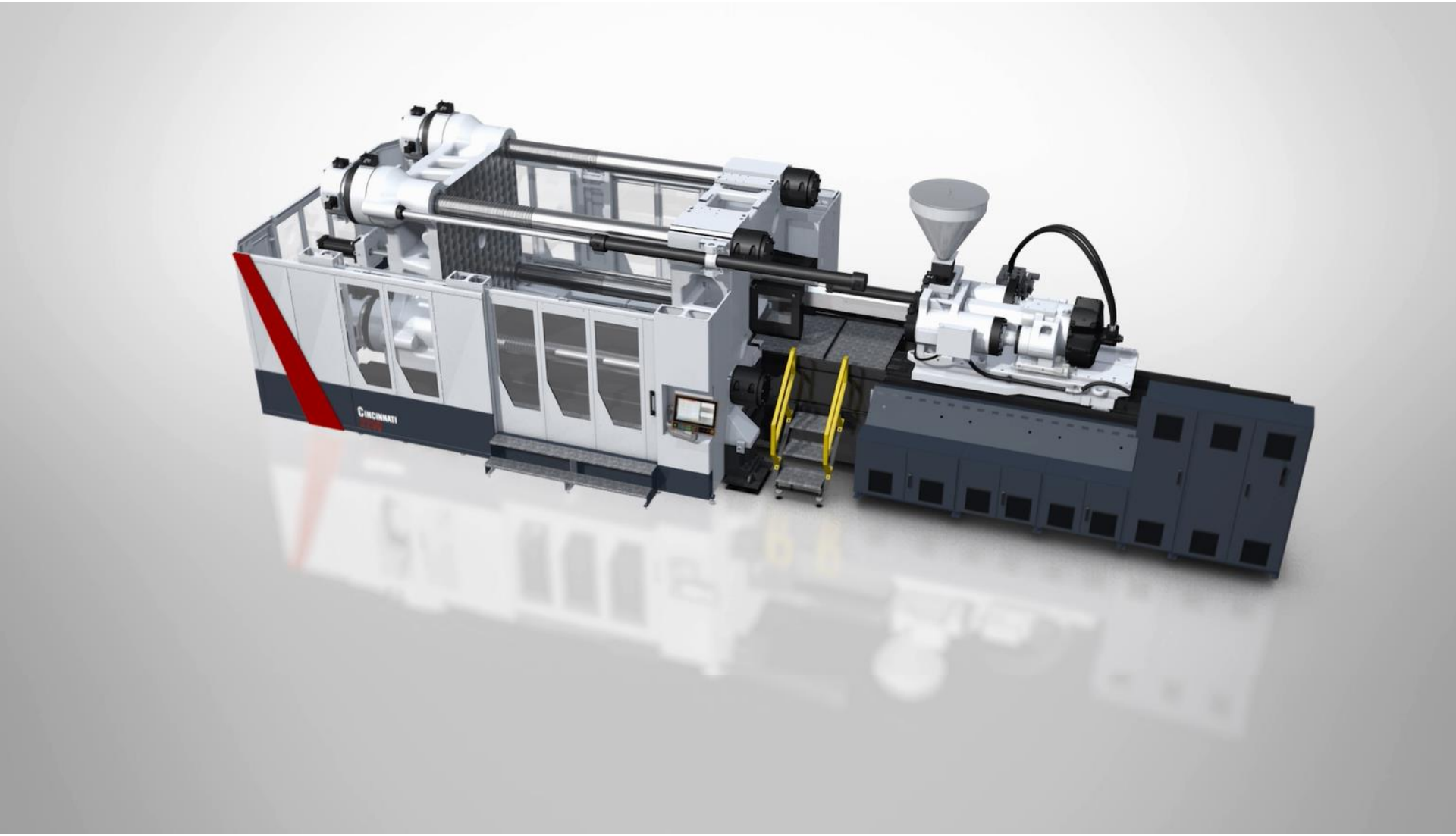
Solutions with IoT



The Difference 1% Makes

Small improvements add up to make big differences in your operation.
All molders can uncover areas of improvement to recover lost productivity costs.

Factor	Baseline	Performance	Availability	Quality
Cavitation	48	48	48	48
Weight (g)	2.9	2.9	2.9	2.9
Cycle (s.)	5.5	***5.4***	5.5	5.5
Uptime (%)	90	90	***91***	90
Scrap (%)	3	3	3	***2***
Improvement (Production Vol.)	231.6 M Parts	+2.3 M	+2.3 M	+2.4 M
1% Annual Net Profit +		$2,888	$2,888	$2,888

Figures in $USD. Net profit calculations estimated off a cap & closure application. For reference only.

OEE Factor	World Class Manufacturing	Top 10% Molder	Average Molder
Availability	95%	94%	**84%**
Performance (Cycle)	98%	98%	95%
Quality	99.9%	98%	96%
OEE	93%	90%	**76%**

Most significant improvement opportunity

*Production based on 7,600 hrs annually.

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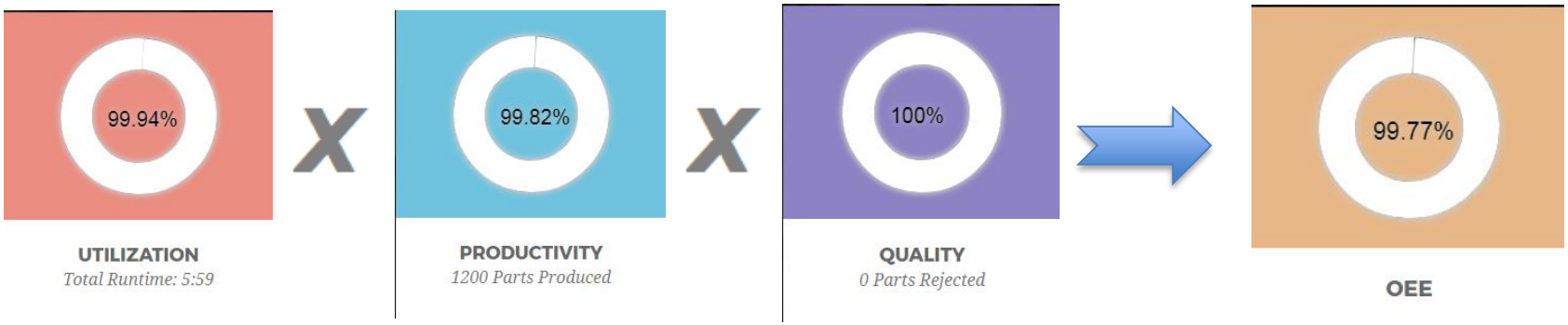
OEE – Overall Equipment Efficiency



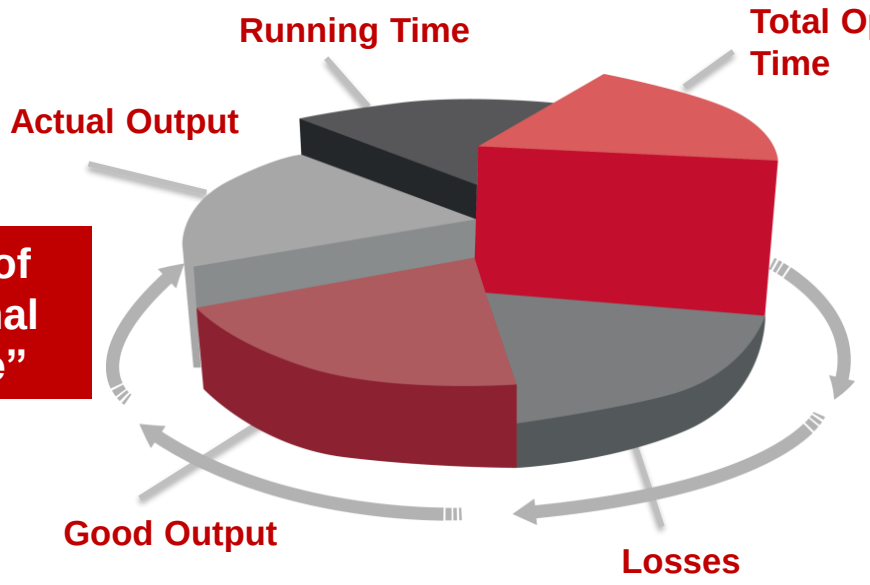
- **OEE** gives a clear idea on how an equipment is performing or is being operated.

- It gives insight into the performance of the equipment and its user.

The Challenge

- Any reduction in **OEE** is a major issue that costs your business money that is difficult to recapture.
- Margins continue to get thinner and thinner.
- Milacron **M-Powered** is the ***solution*** that provides the data to help identify these opportunities and put money back in your pocket.

Sources of Operational "Leakage"



Overall Equipment Effectiveness	Recommended Six Big Losses	Traditional Six Big Losses
Availability Loss	Unplanned Stops	Equipment Failure
	Planned Stops	Setup and Adjustments
Performance Loss	Small Stops	Idling and Minor Stops
	Slow Cycles	Reduced Speed
Quality Loss	Production Rejects	Process Defects
	Startup Rejects	Reduced Yield
OEE	Fully Productive Time	Valuable Operating Time

Capture the Six Big Losses to gain additional actionable insight to the OEE Factors of Availability, Performance, and Quality.

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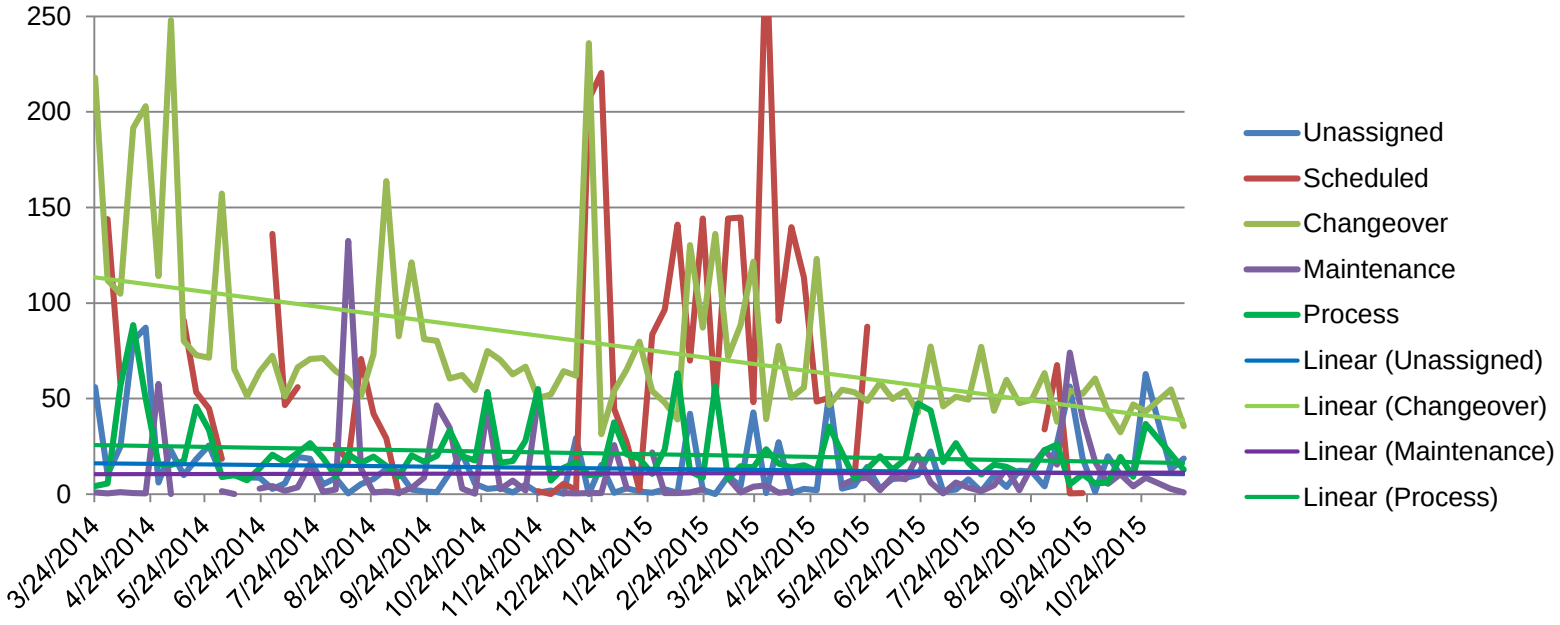
Downtime Improvement Case Study



- Changeover downtime was reduced by 64% in a 20 month period while using the Milacron M-Powered cloud solution.

- Focus was always on Changeover improvements on the machines, with more opportunity to address the unassigned and scheduled downtime instances as well.

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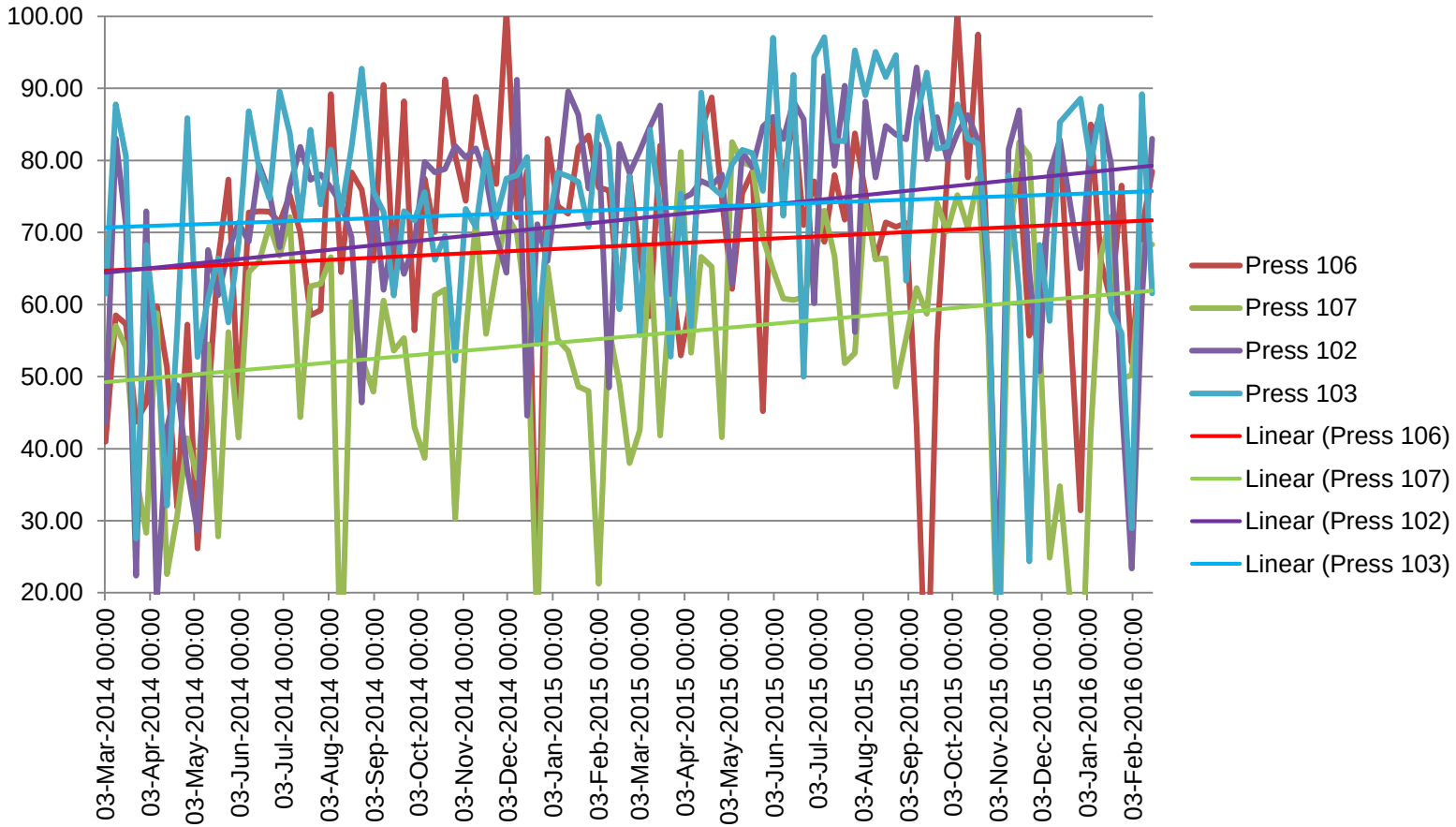
Overall OEE Improvements



A 9.8% OEE Increase on a 40 second cycle was equal to 300,000 more parts across 4 machines in 20 months

	3-Mar-14	16-Feb-16	Increase	Average
Press 102	64.4	79.2	14.8	9.8
Press 103	70.7	75.7	5.0	
Press 106	64.6	71.6	7.0	
Press 107	49.3	61.8	12.5	

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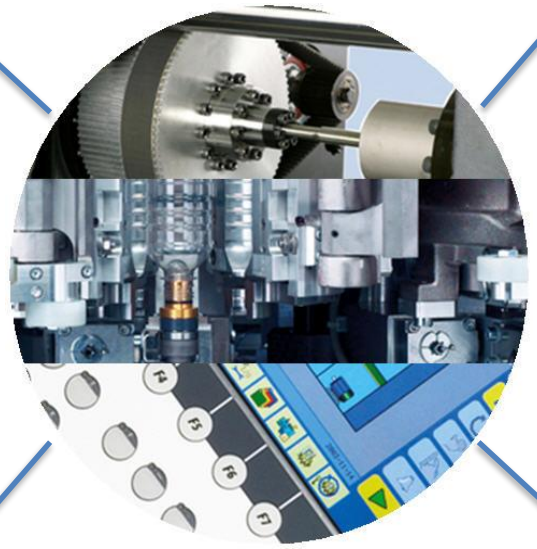
The Solution – Smart Factory

Transparency & Flexibility in Production

Shorter Innovation Cycle



Energy & Resource Efficiency

Vertical Integration (MES)

INDUSTRY 4.0 is the path to Smart Factory

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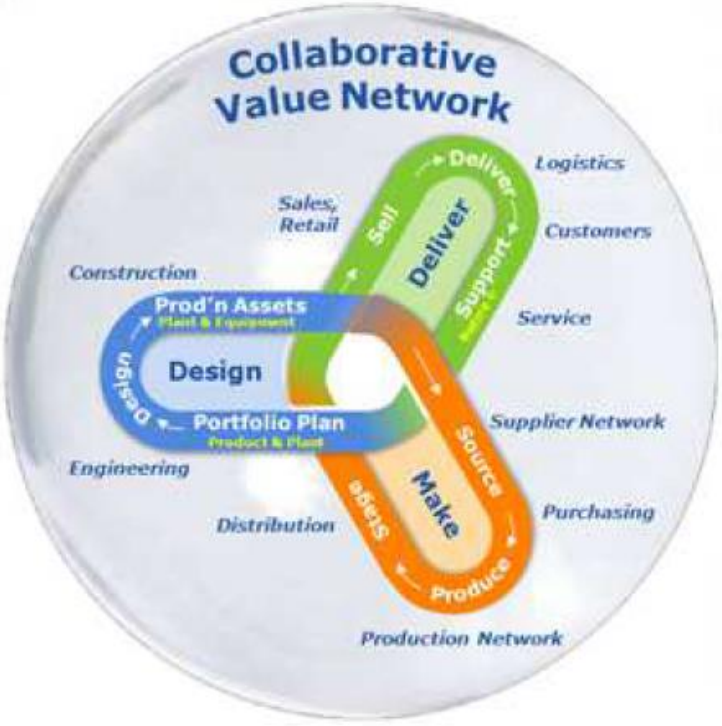
SMART FACTORY

A Fundamental change

in the fabric of industry !

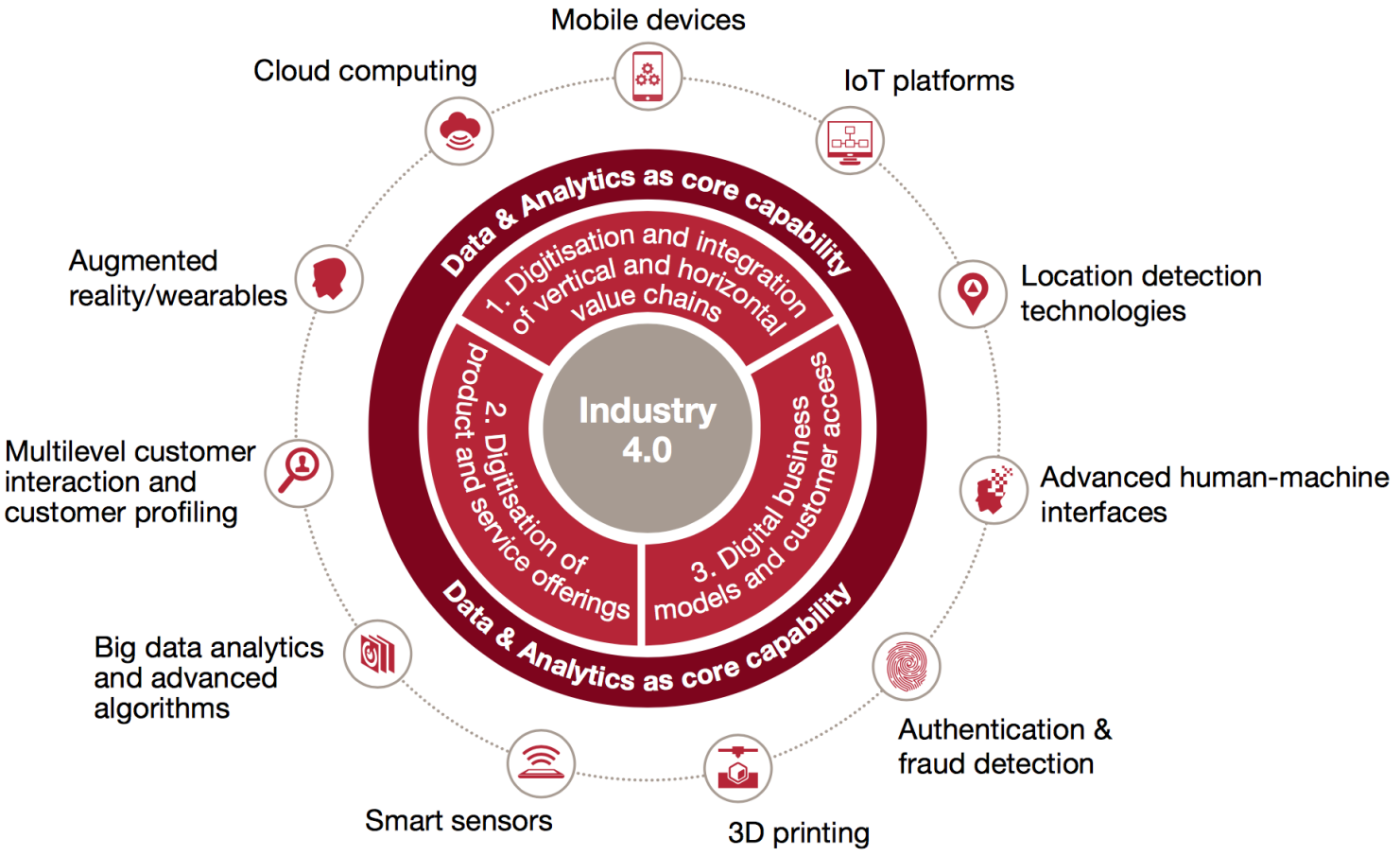
Transformation from linear
Value-Chain to Value Network

Close cooperation across companies,
disciplines and cultures



INDUSTRY 4.0

Use of above equipments/methods/software individually or in combination results in improved productivity



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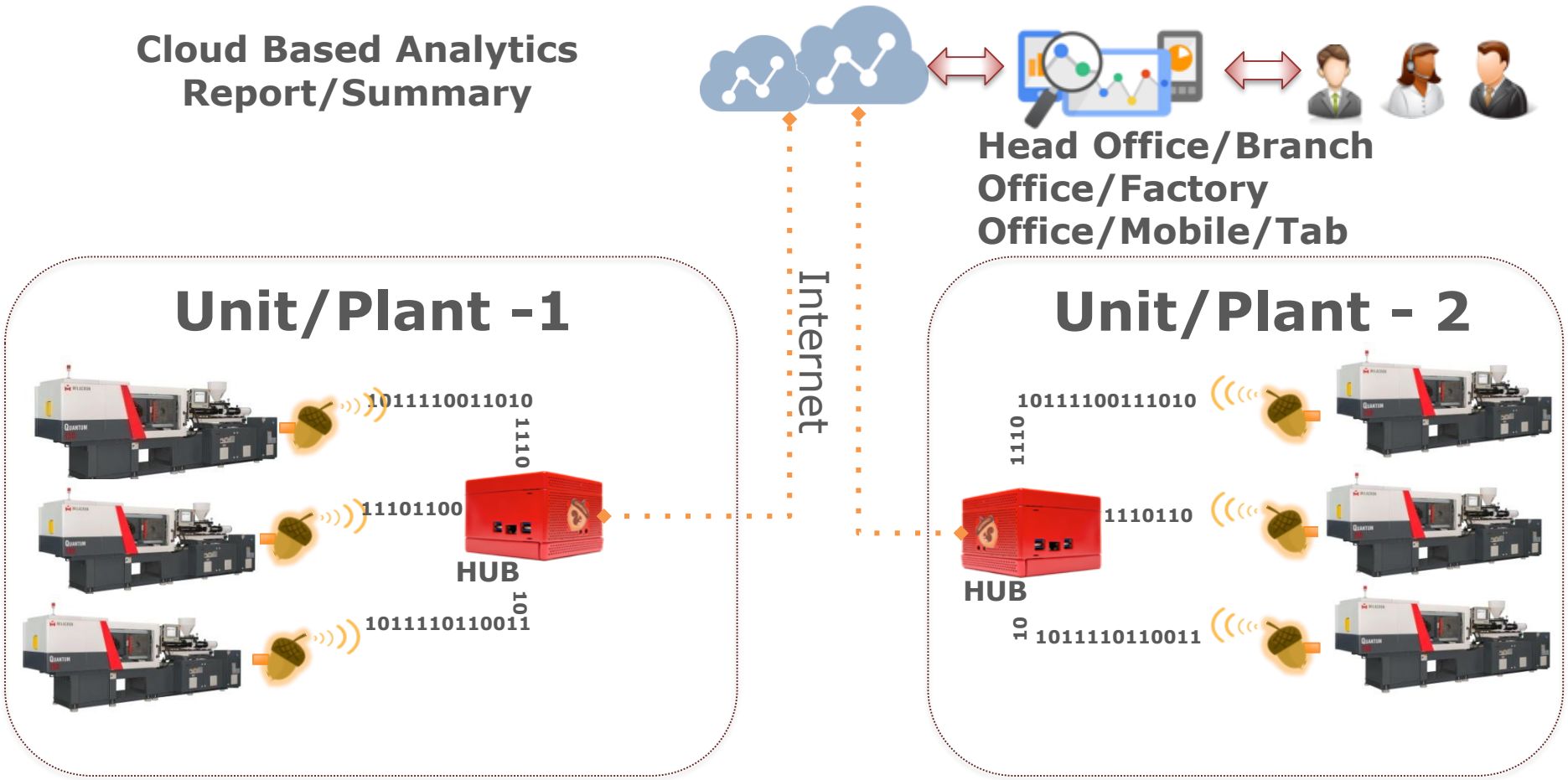
Connect all Equipment



- Collect information from all locations for analysis.
- Single Analytics Platform for the Multiple Locations.

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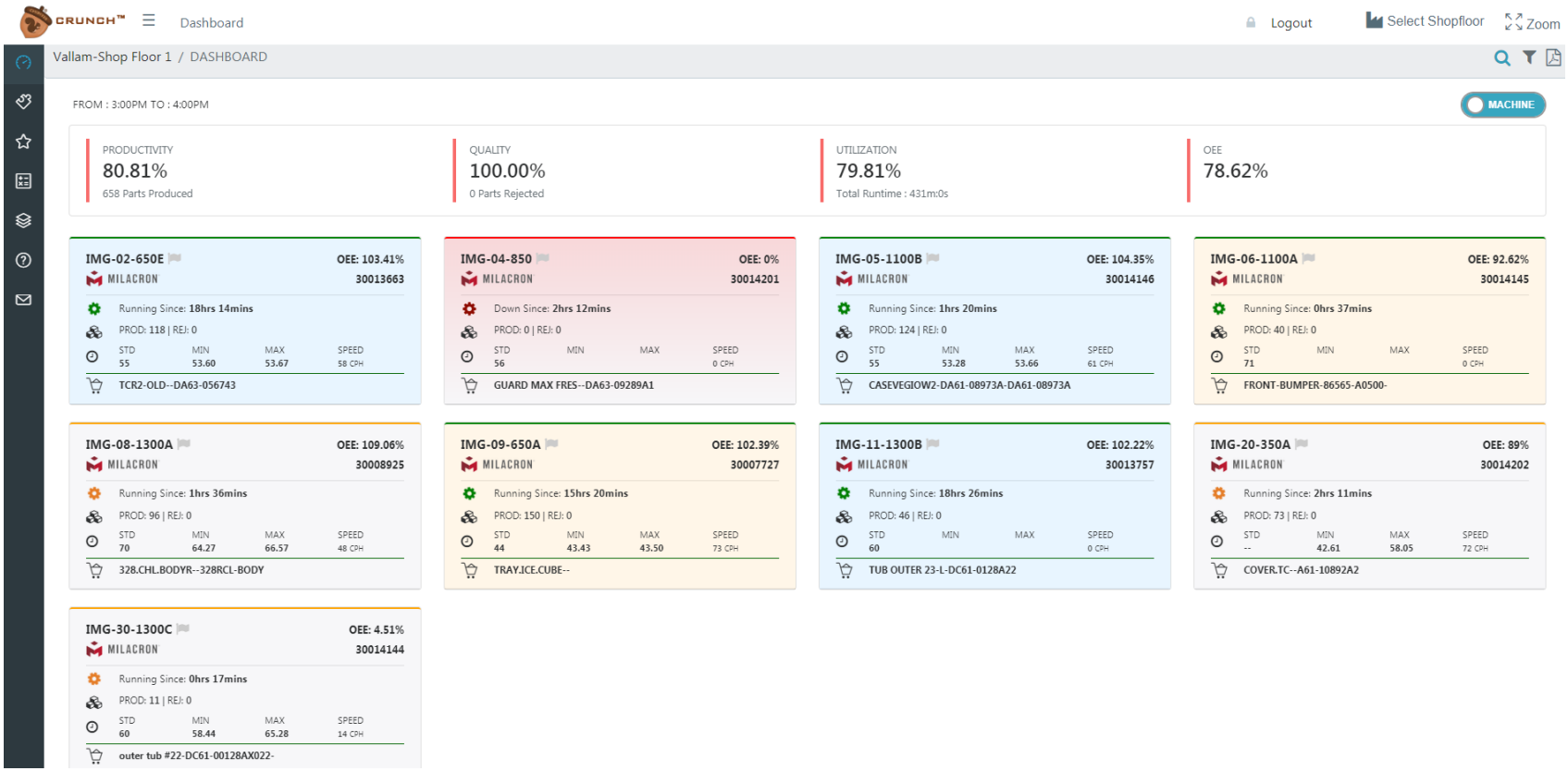
Overview all Equipments



- Dashboard that provides status & information of all equipment at a glance
- Information of Multiple locations are provided on the same screen.
- **Plant level OEE, Productivity, Quality & Utilization is available.**

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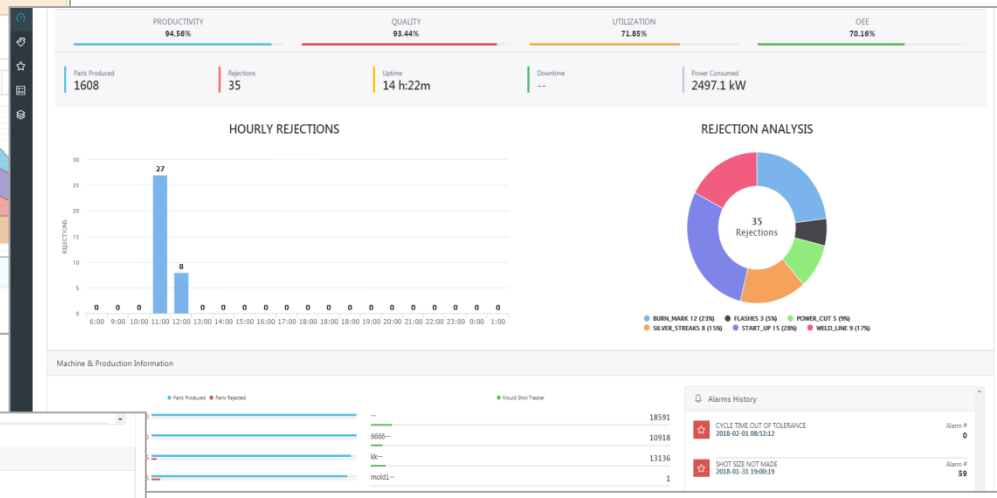
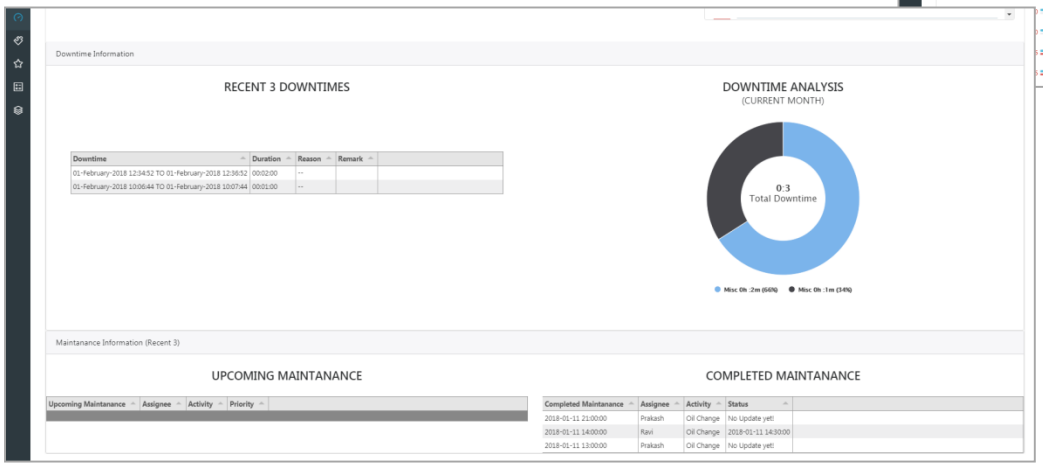
Overview of Modules





- Real Time Data
- **Equipment specific Productivity, Quality, Availability & OEE**

- Performance indicator
- Downtime Overview
- Maintenance Schedule
- Production details of each Mold

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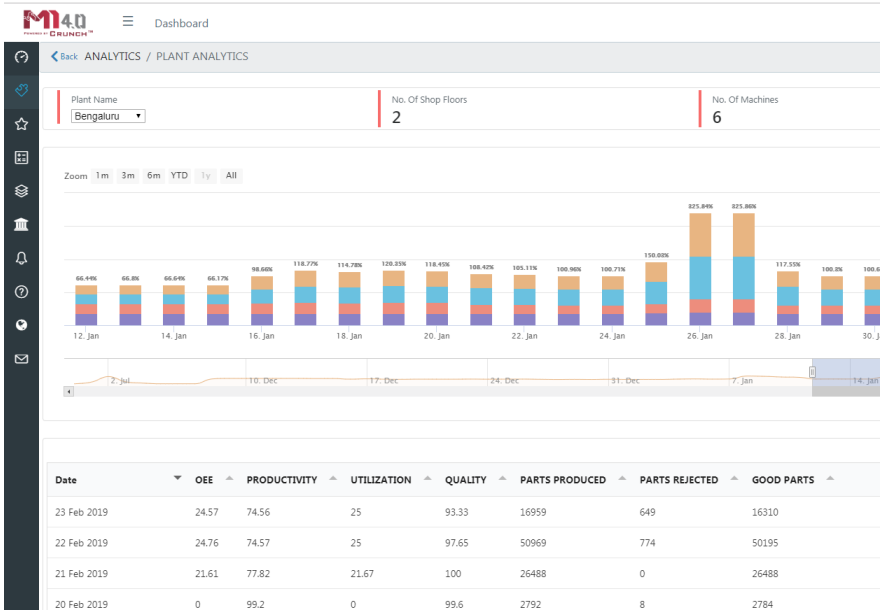
Overview of Modules



- **Plant Analytics** provides the total analysis of a plant (all shop floors)

- Comparison between the performance of different plants could act as a reference for improvement

- **Shop Floor Analytics** provides the graphical comparison of the OEEs of all shop floors in a plant.

- Gives Clear idea on the performance of the shop floors with respect to others.

- Helps the Management to take informed decisions.

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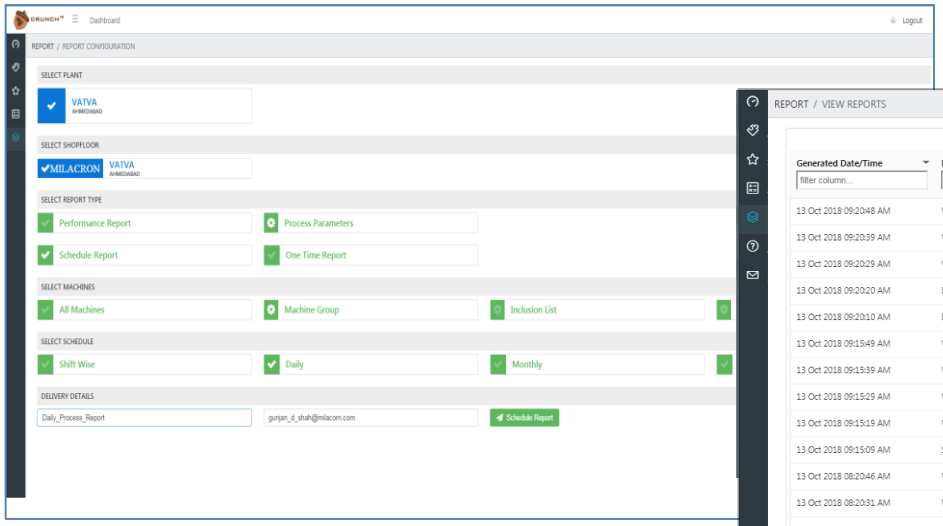
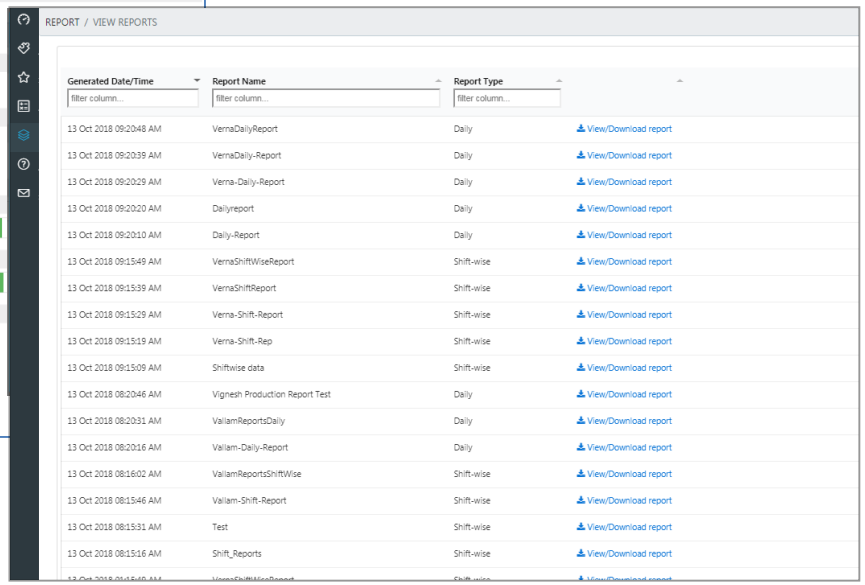
Various Reports

- **Scheduling** various Reports (Production, Process information etc)
- Reports can be downloaded OR Emailed in various formats





- View & Edit the created Schedules.
- View & Download the Old Reports

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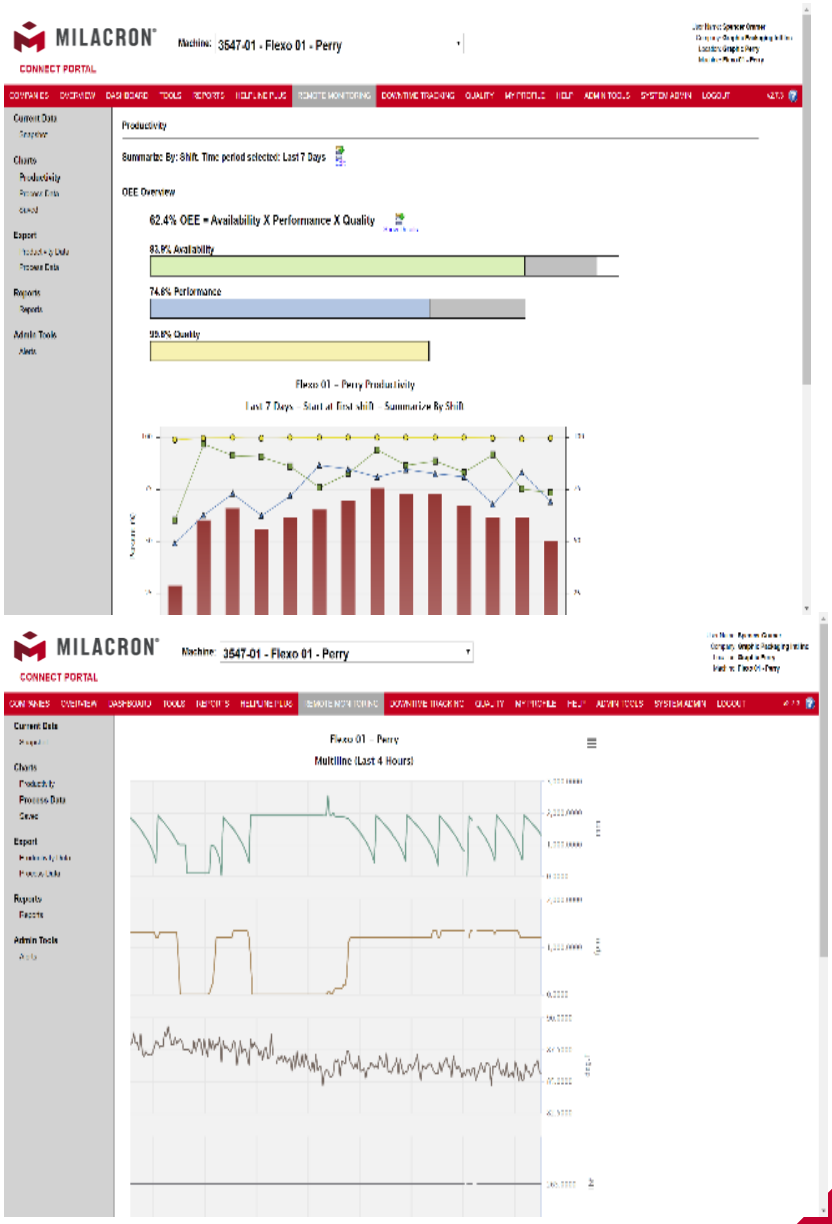
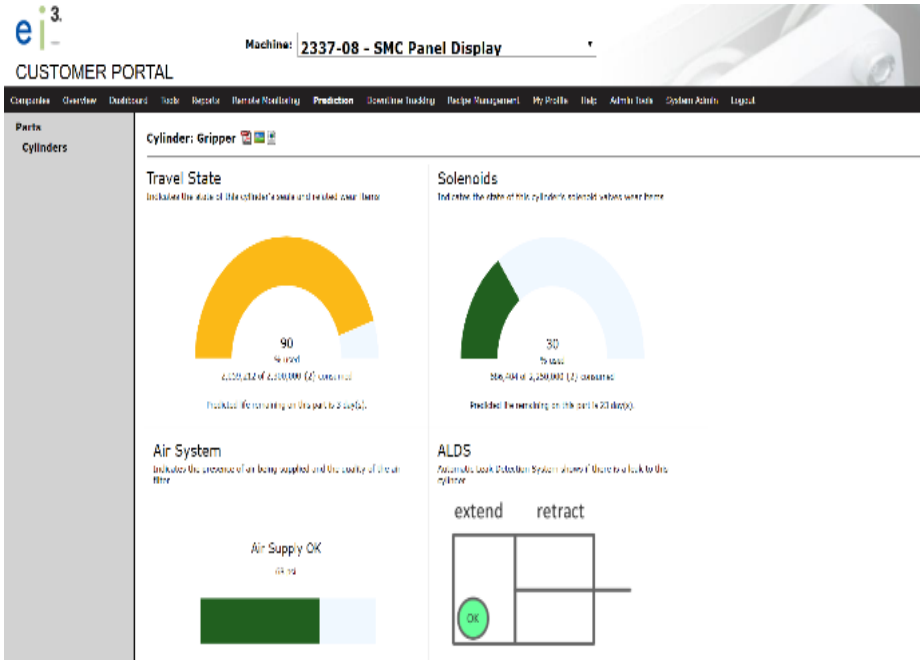
Remote Service, Data & Alerts

- Remote Service provides the ability for Milacron experts to provide remote assistance, thus reducing downtime.
- Utilize Data and Alerts to monitor your process and prevent costly quality escapes
- Setup and easily output ISO quality reports that can be ran automatically at your discretion
- Foundational building block for Alerts and Predictive Analytics

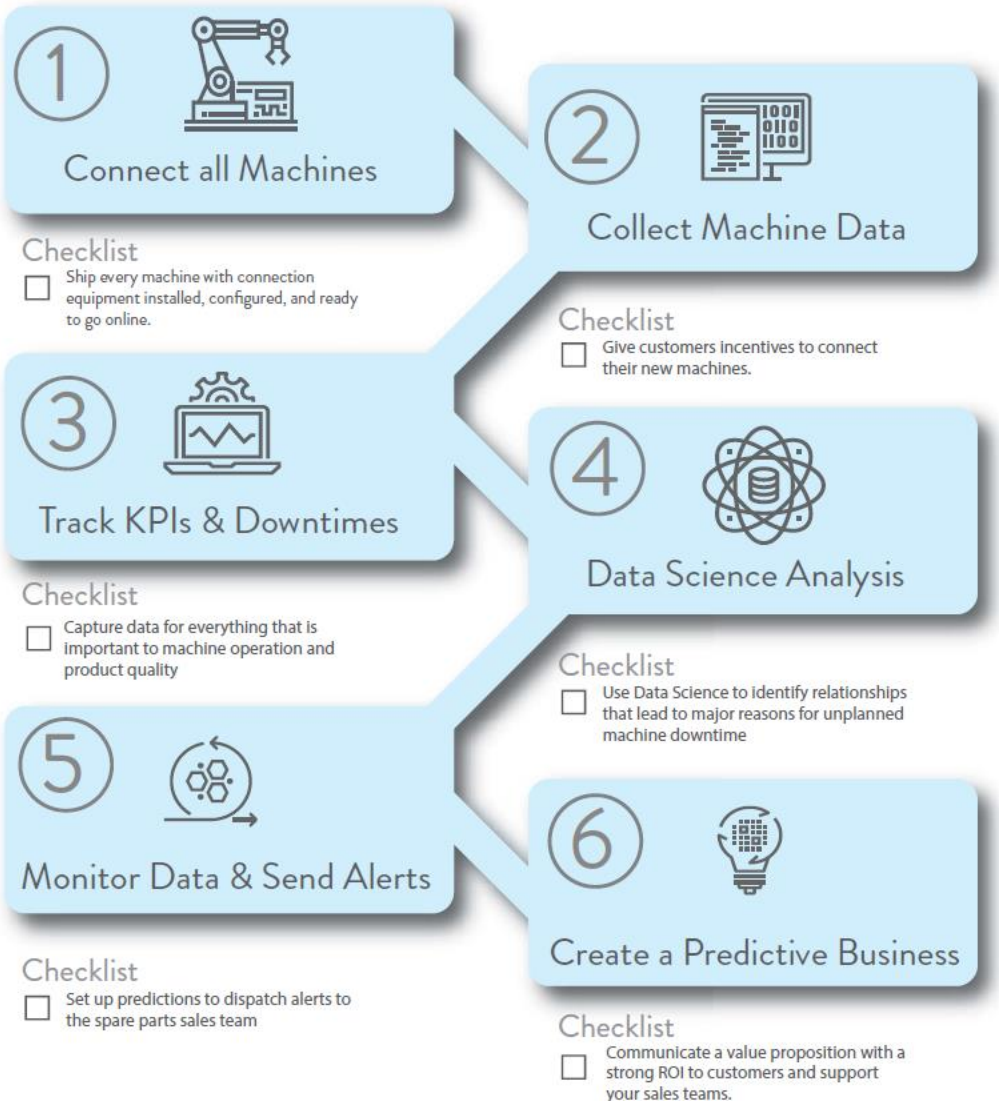


Maintenance Scheduling

- Downtime can be reduced by maintaining (or over-maintaining) the utility.
- Over-maintenance leads to financial losses due to excessive inventory, frequent replacement of parts.
- To avoid over-maintaining machinery Milacron works with customer to create a Preventive Maintenance schedule for every machine based upon actual machine run time and diagnostics.
- This allows for intelligent stocking programs to ensure a lean inventory
- Free up workforce for value-added activities



The M-Powered Path to Predictive



- The Path to Predictive is not an overnight journey, and will have multiple iterations.

- However, without connecting the equipment and collecting data the process can never begin!

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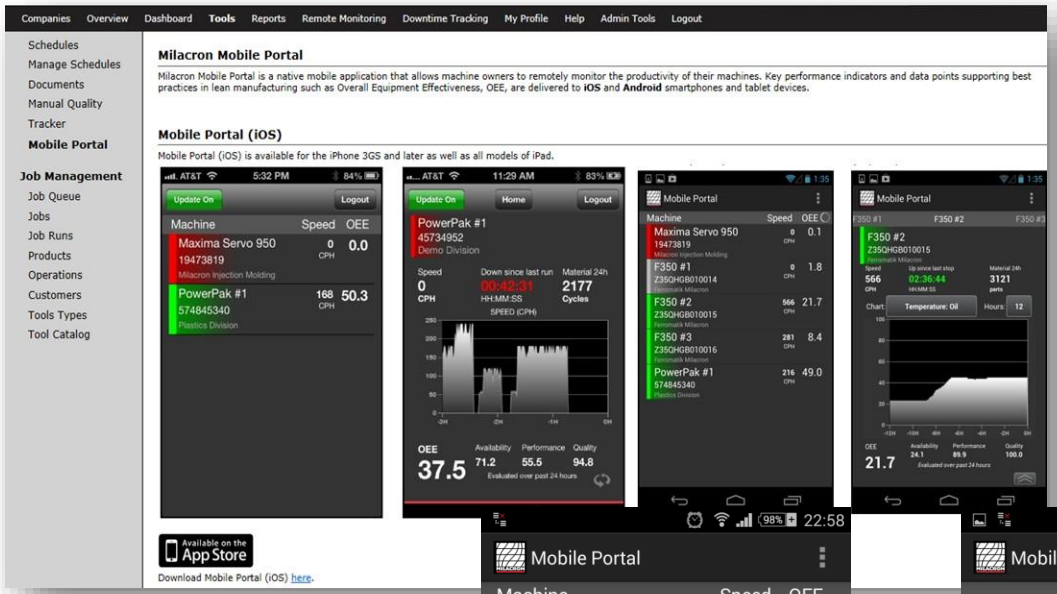
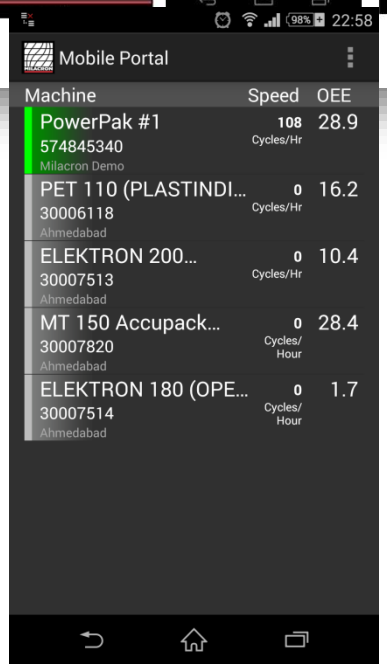
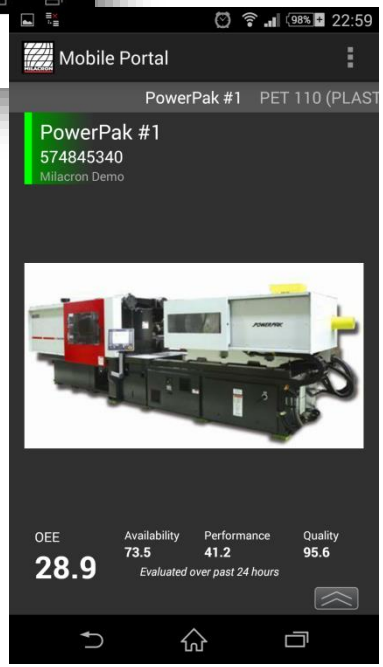
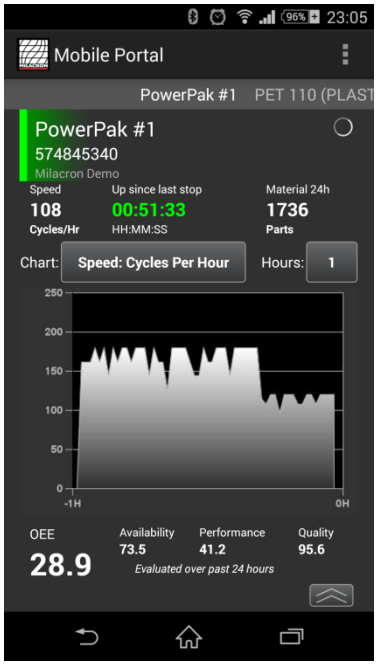
Connect from Anywhere









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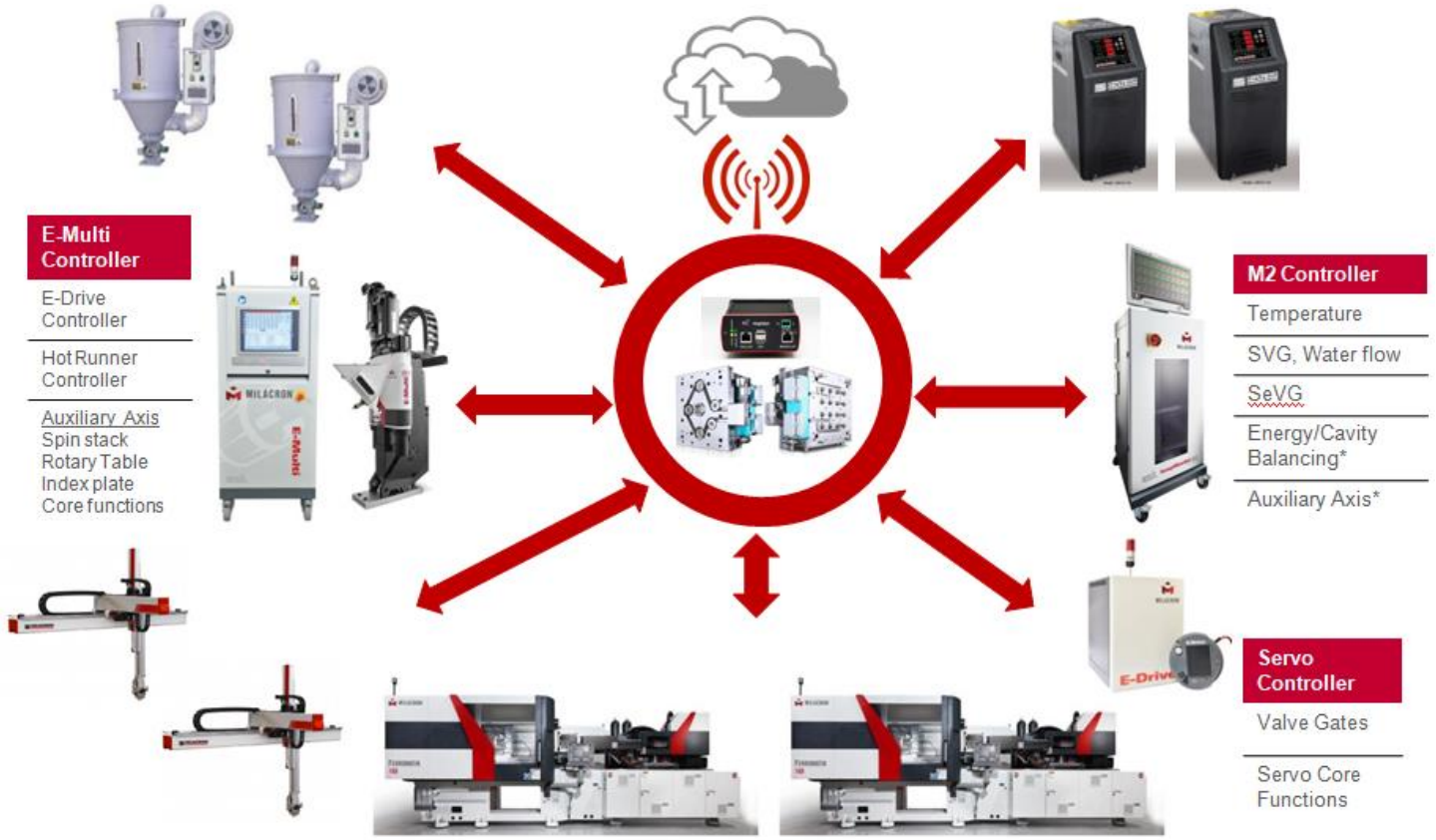
Connect to Anything

Smart Connected Workcell of the Future



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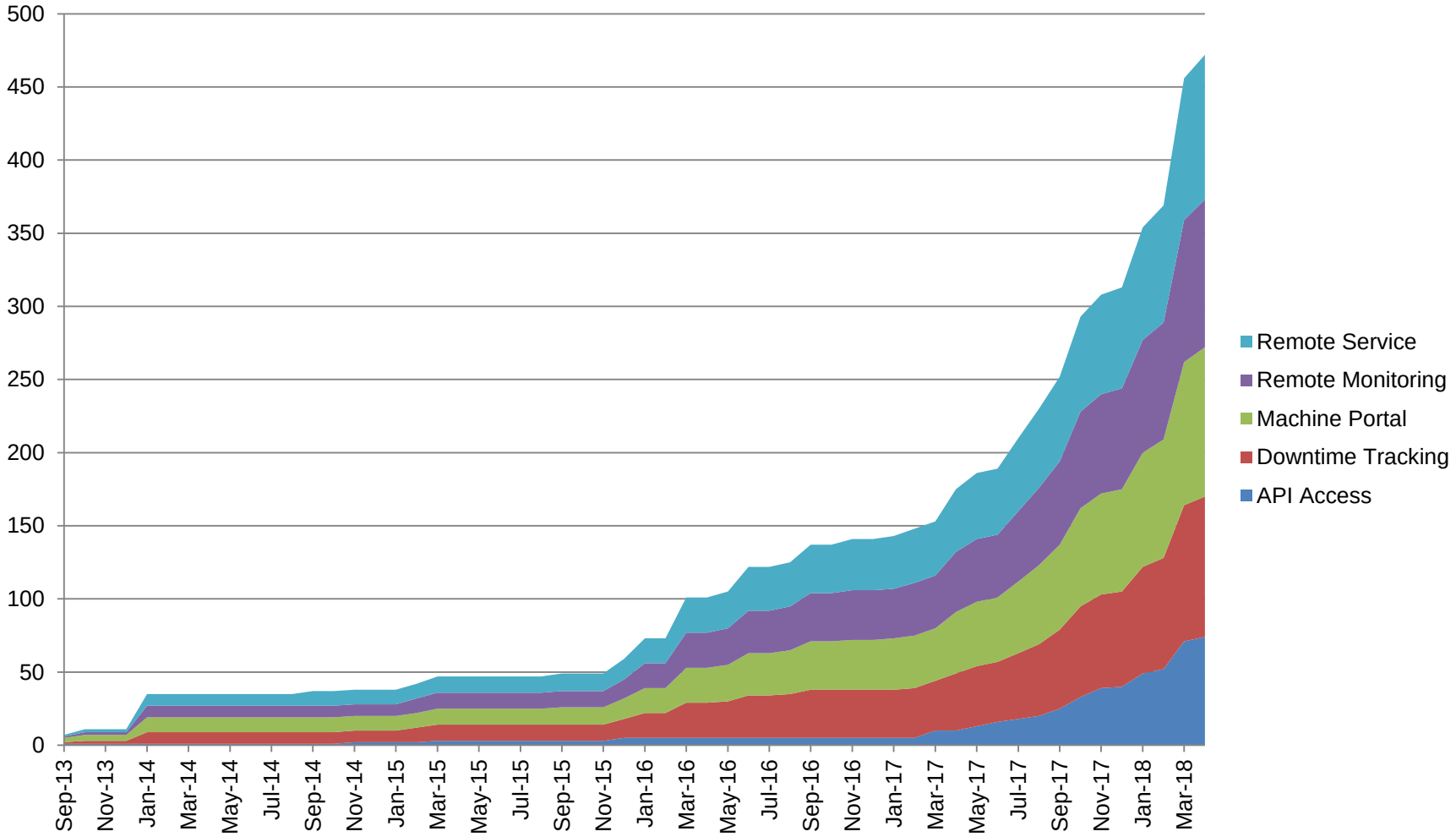
M-Powered Active Users



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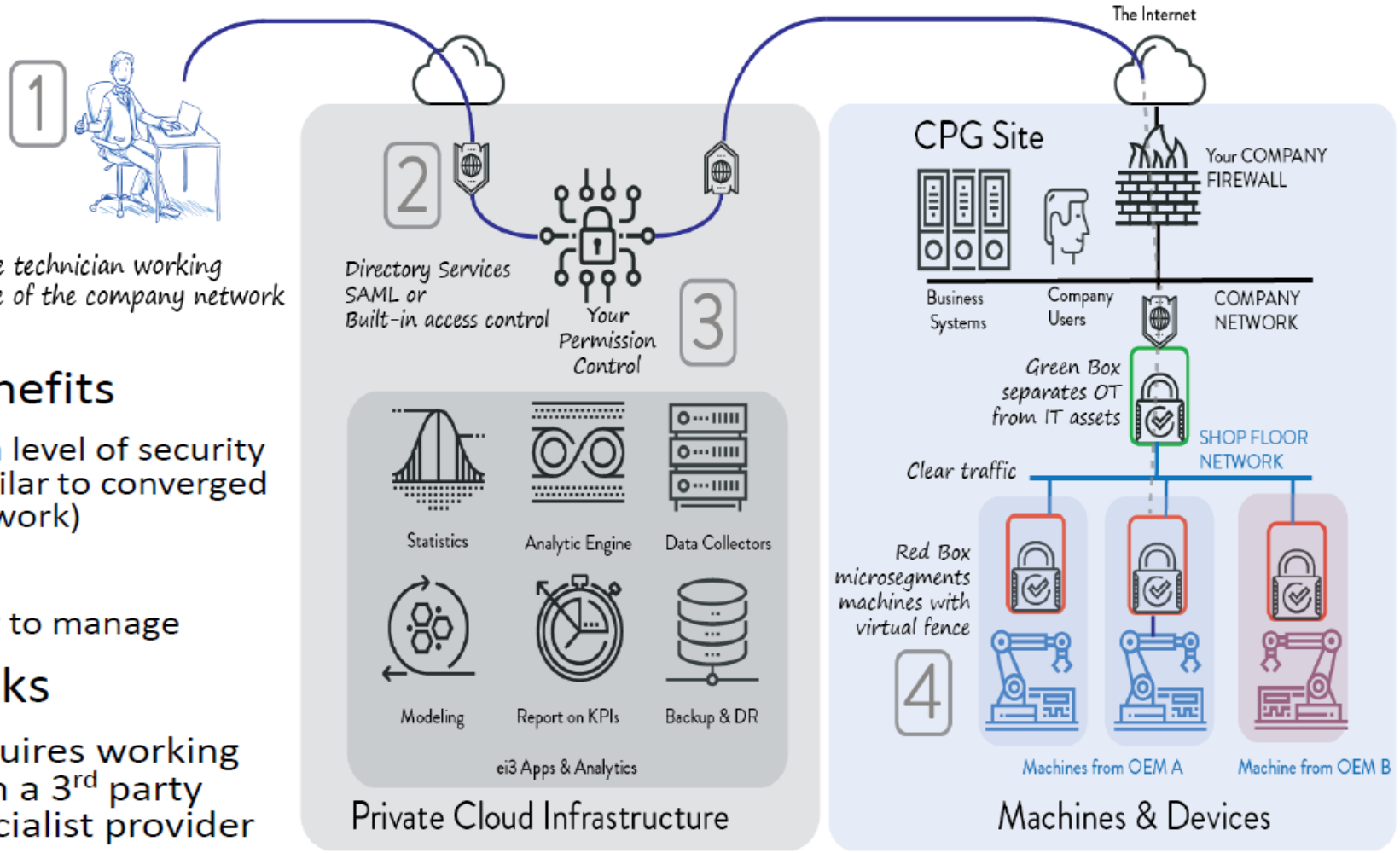
Security is at our CORE



Benefits

High level of security (similar to converged Network)

Easy to manage

Risks

Requires working with a 3rd party specialist provider

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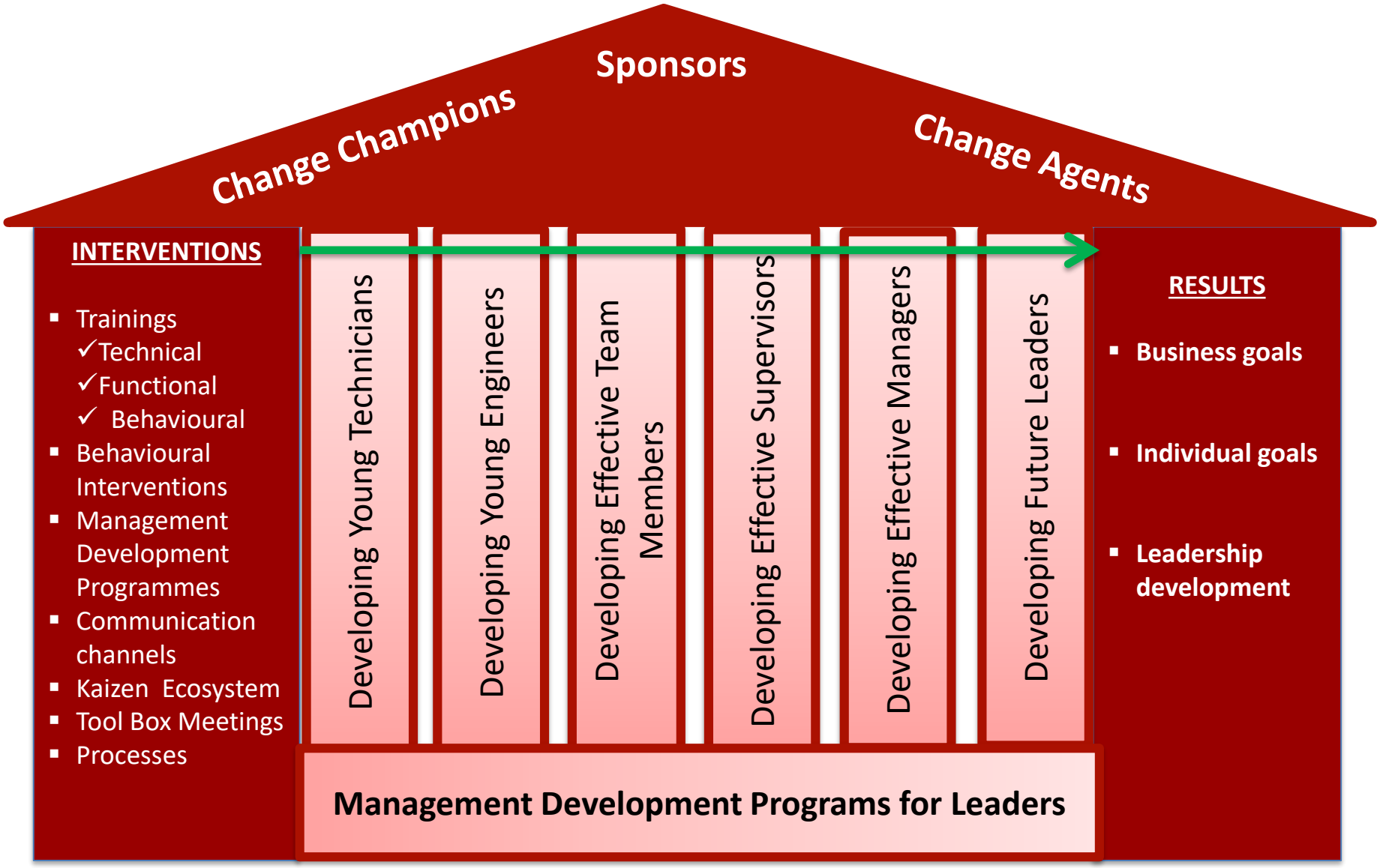
People Development and Culture Building



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Implication of Industry 4.0 on Manufacturing

- Automated OEE data
- Process & Quality Management
- Effective Production Planning
- Predictive Maintenance & Machine Life check
- Downtime Analysis for finding the root causes of repetitive problems.
- Quick Production & Process parameters reports & Management information
- Better utilization of Manpower

Future - “Act on –What I See”

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Thank You & Jai Hind

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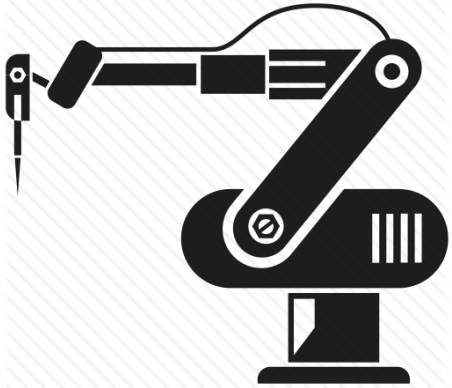
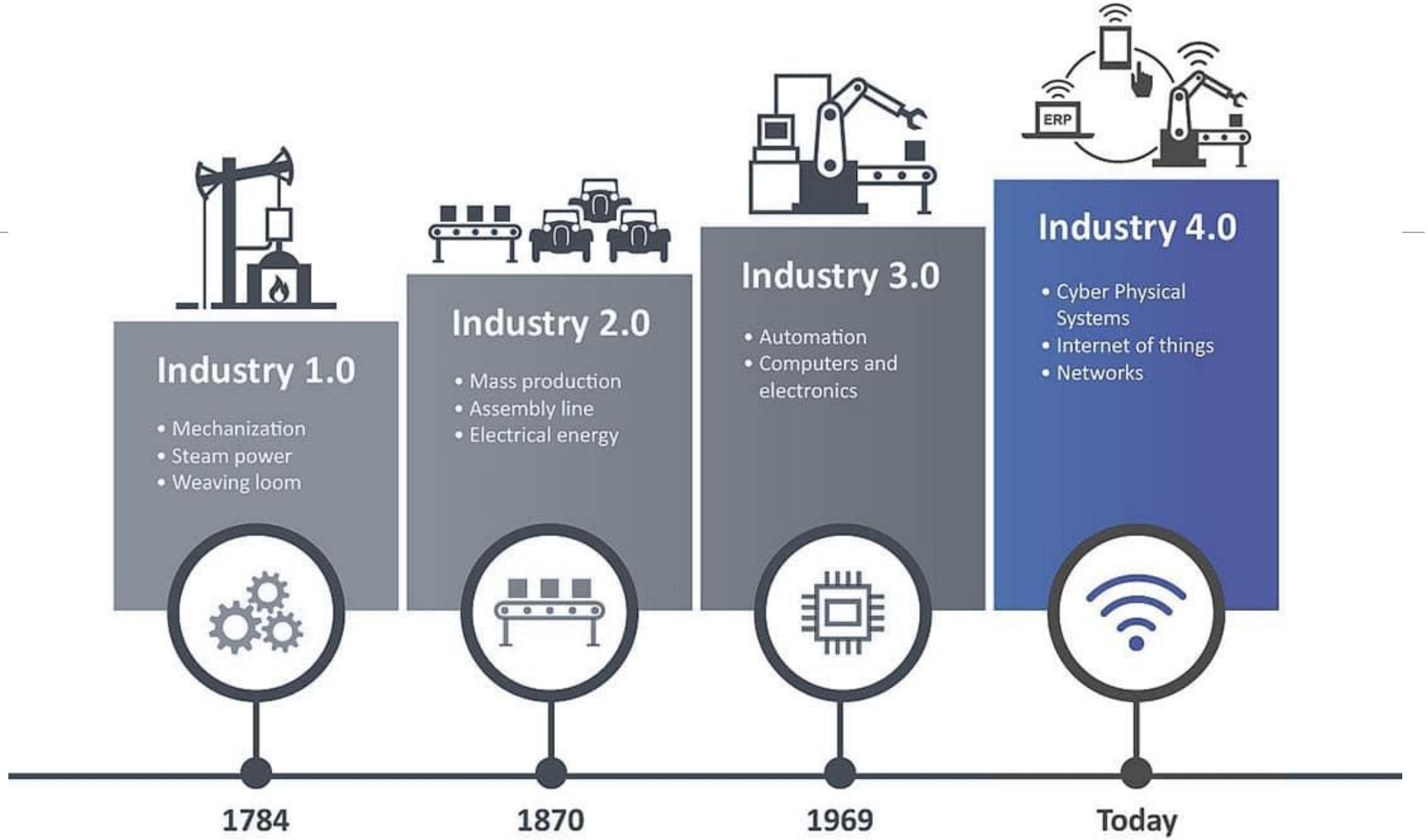
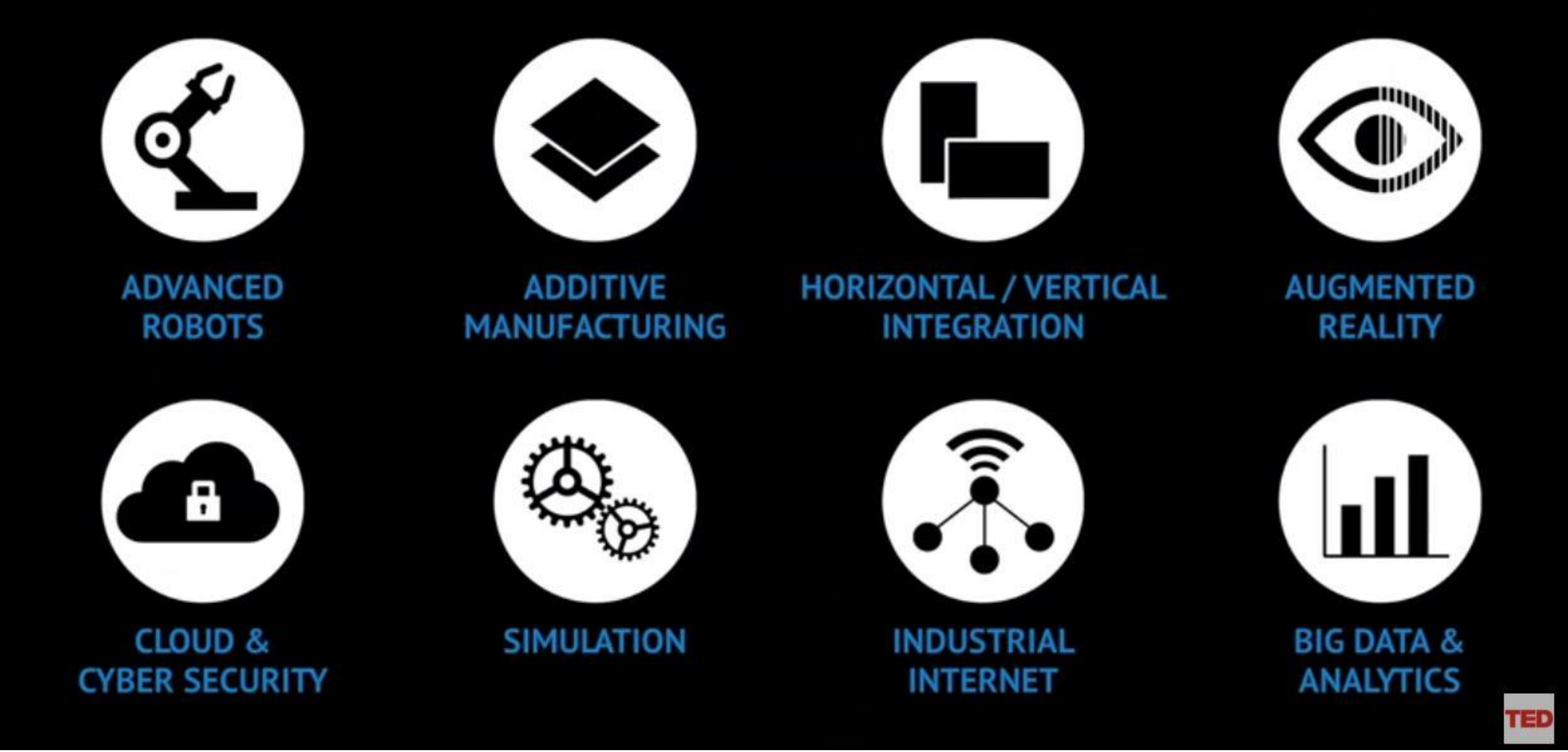
INDUSTRY 4.0 – SMART MANUFACTURING (SM)

Smart manufacturing (SM) is a technology-driven approach that utilizes Internet-connected machinery to monitor the production process. The goal of SM is to identify opportunities for automating operations and use data analytics to improve **manufacturing** performance.



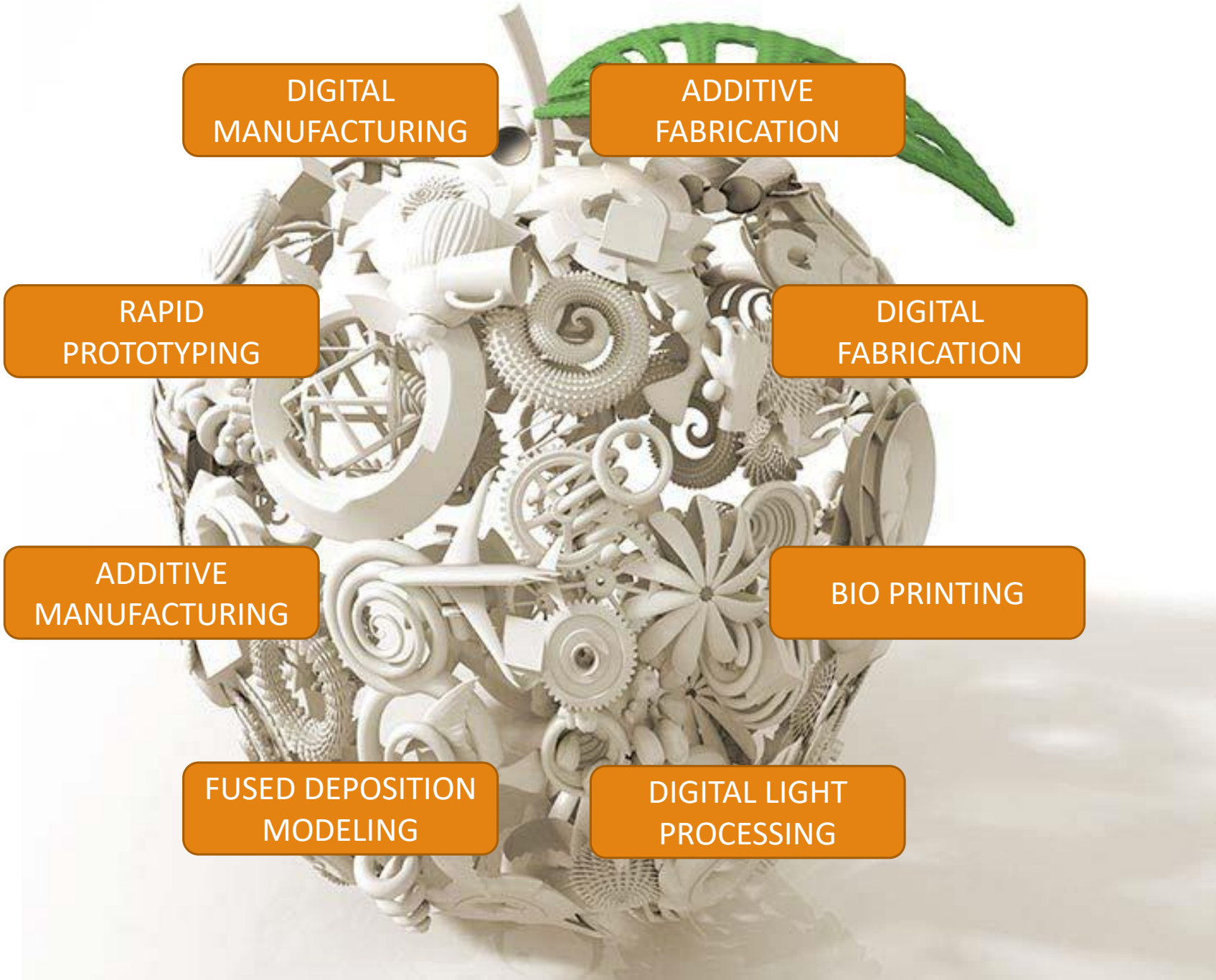
INDUSTRY 4.0 – SMART MANUFACTURING (SM)


ERP
Industry 1.0
• Mechanization
• Steam power
• Weaving loom
Industry 2.0
• Mass production
• Assembly line
• Electrical energy
Industry 3.0
• Automation
• Computers and electronics
Industry 4.0
• Cyber Physical Systems
• Internet of things
• Networks
1784
1870
1969
Today

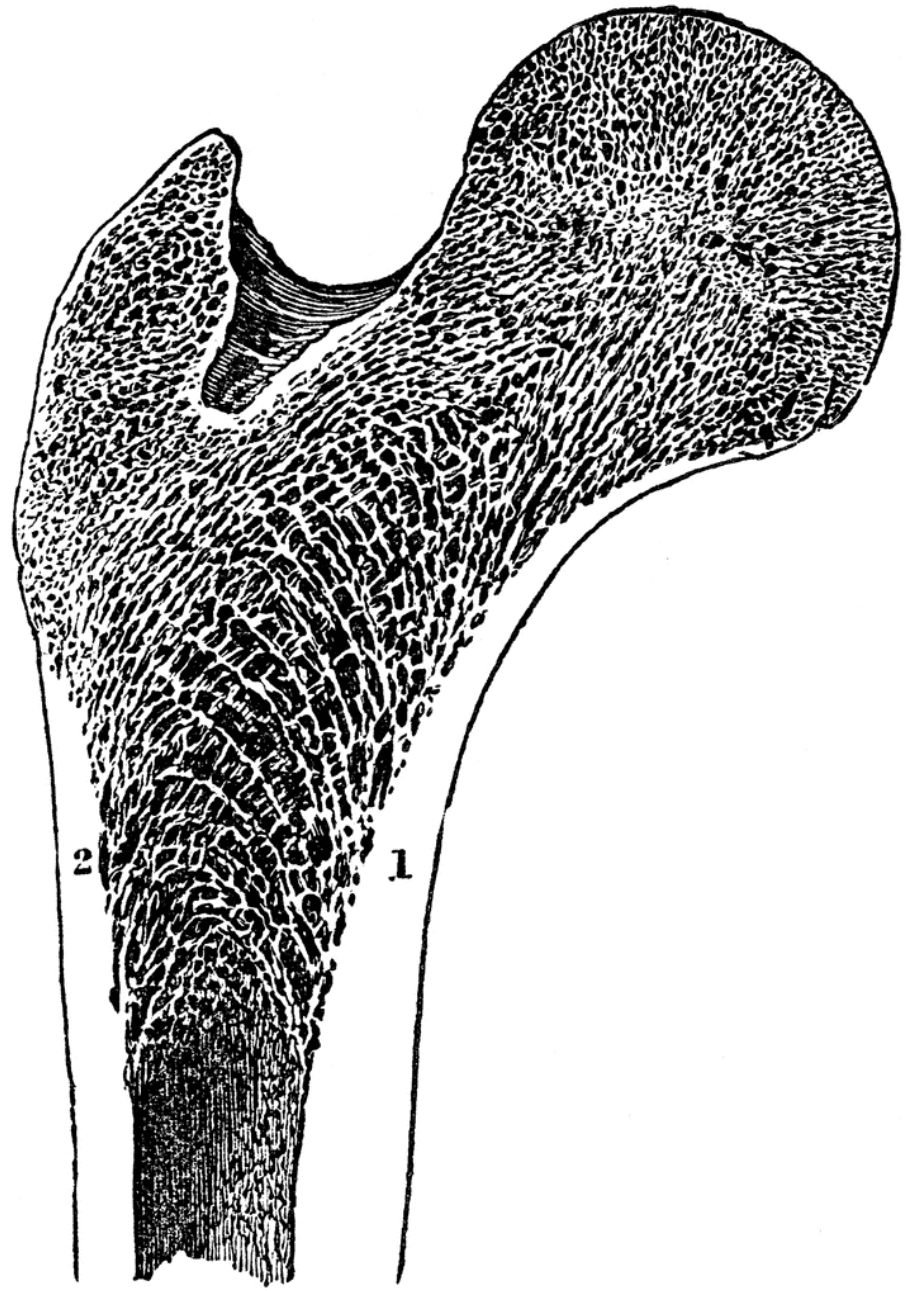

ADVANCED ROBOTS
ADDITIVE MANUFACTURING
HORIZONTAL / VERTICAL INTEGRATION
AUGMENTED REALITY
CLOUD & CYBER SECURITY
SIMULATION
INDUSTRIAL INTERNET
BIG DATA & ANALYTICS
TED

ADDITIVE MANUFACTURING: MOVING BEYOND RAPID PROTOTYPING

“3D PRINTING” : A BUZZWORD OF CURRENT TIME



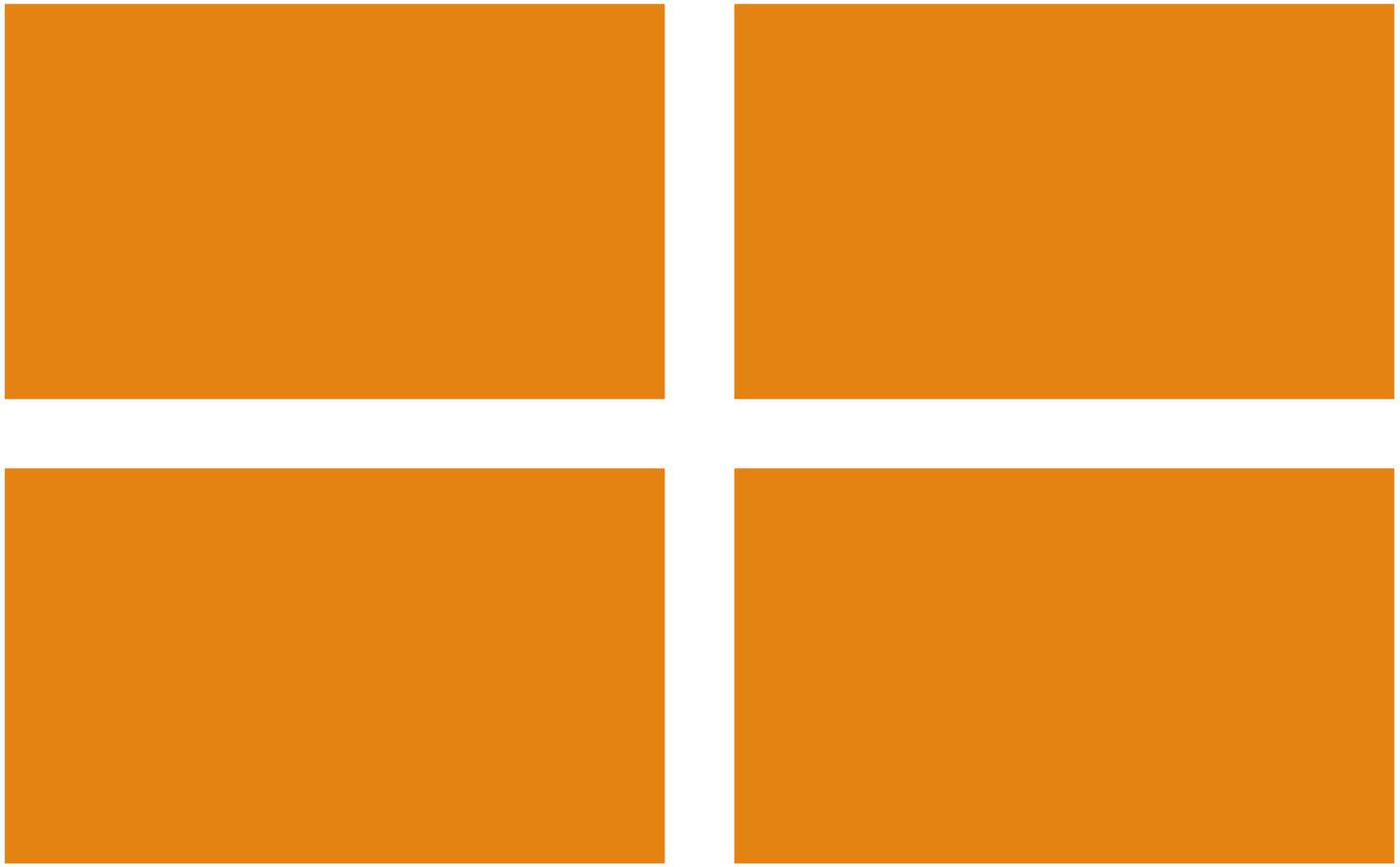
why people call it **DISRUPTIVE TECHNOLOGY** or a next **INDUSTRIAL REVOLUTION** ?


2
1

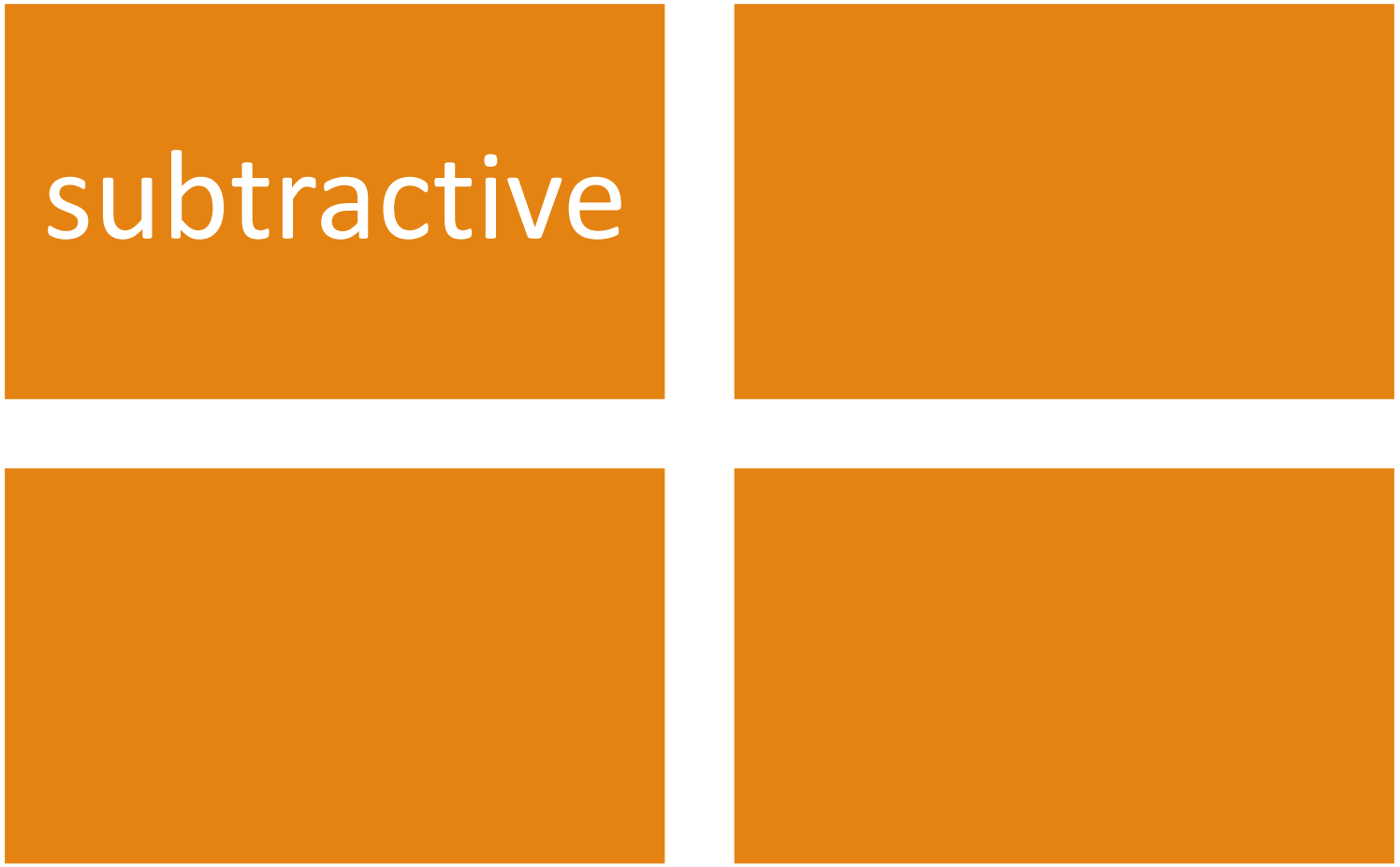
how do we make stuff ?

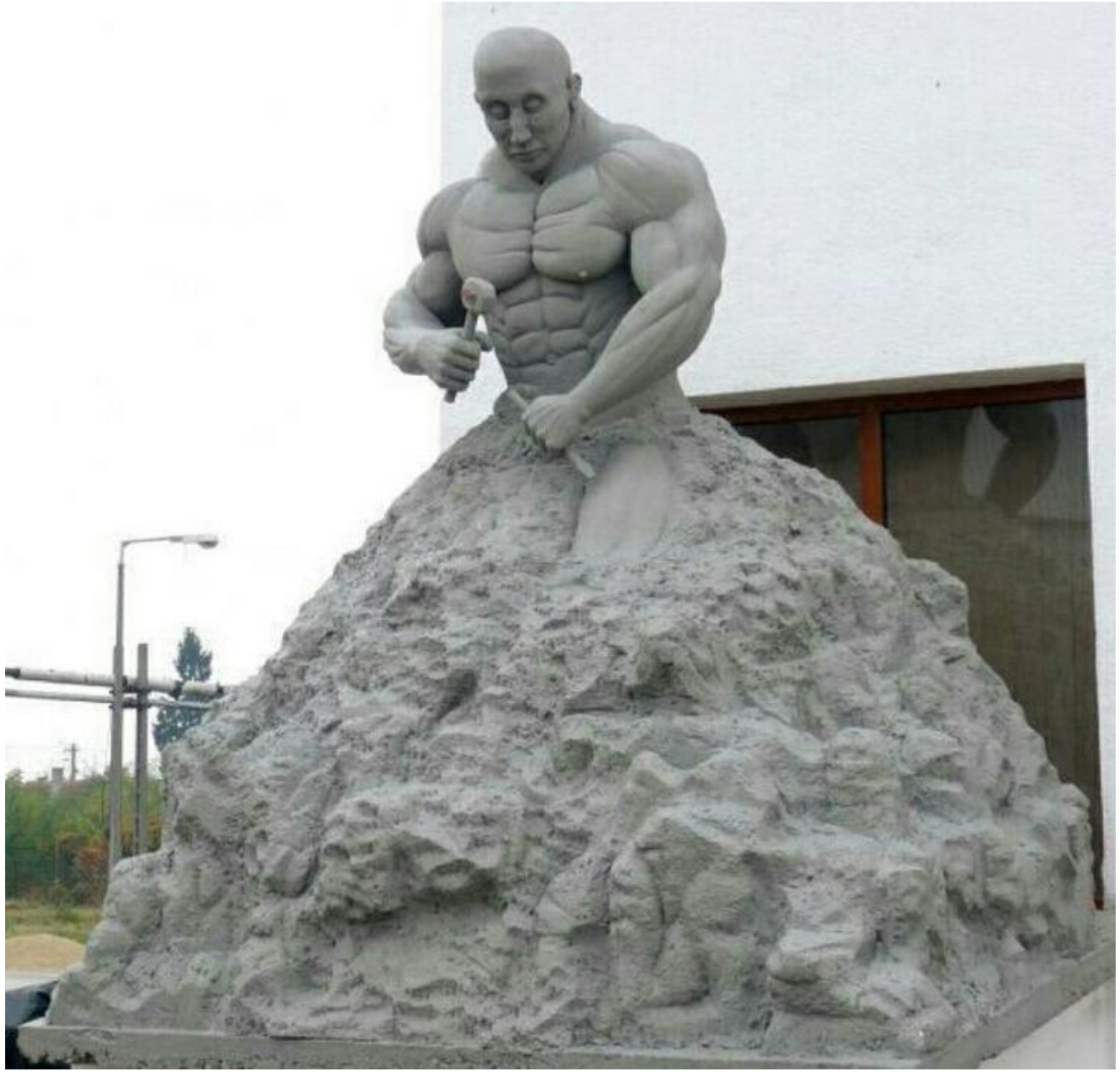
from raw material to product

how do we make stuff ?



how do we make stuff ?





how do we make stuff ?

Subtractive

forming

how do we make stuff ?

subtractive

forming

casting


Thorntons

how do we make stuff ?

subtractive

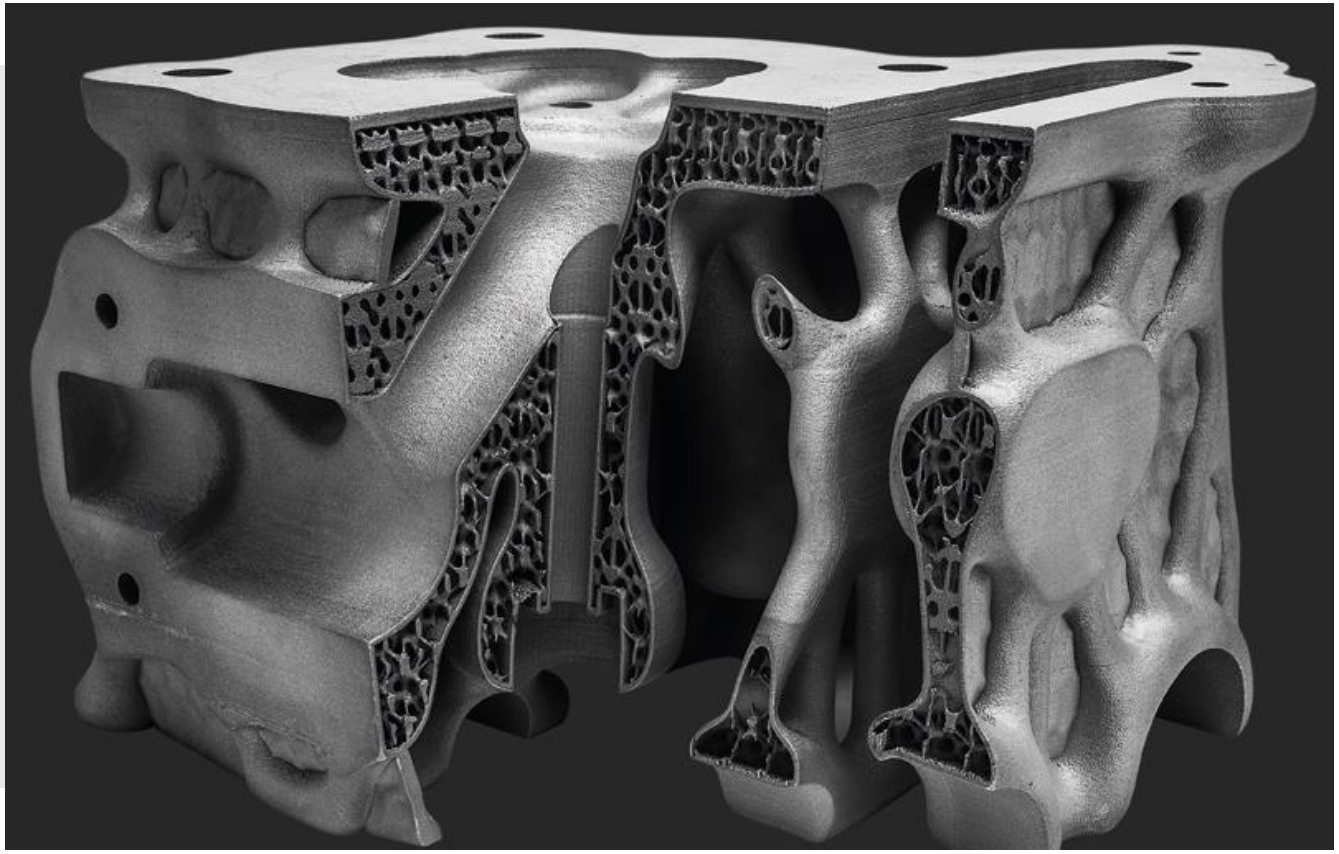
forming

casting

additive

Additive manufacturing – A Smart Choice

Conventional
5.1 kg



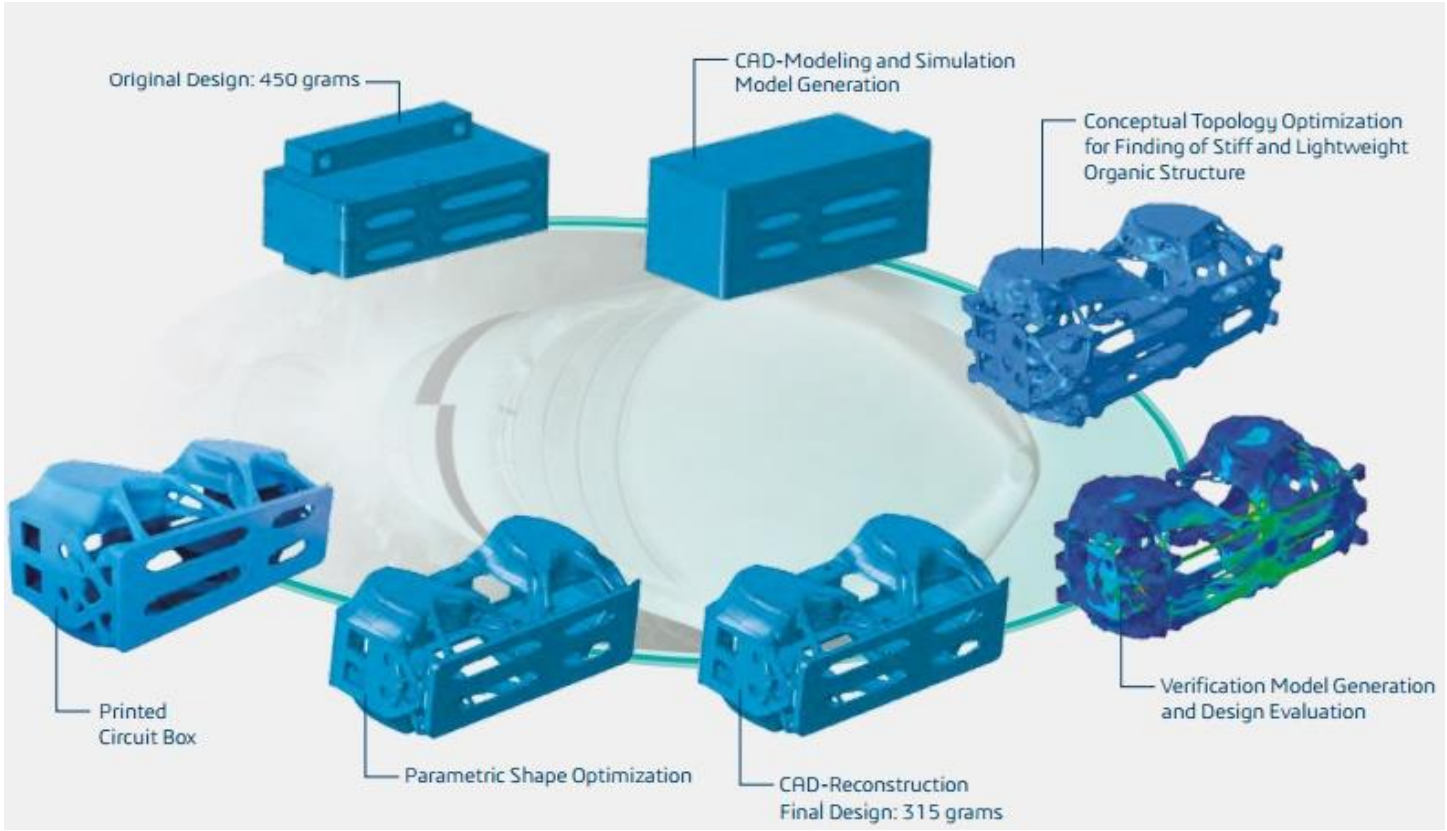
Additive
1.9 kg

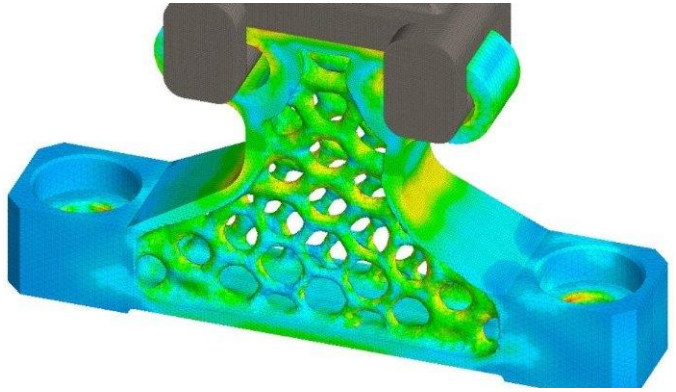
Additive manufacturing – A Smart Choice

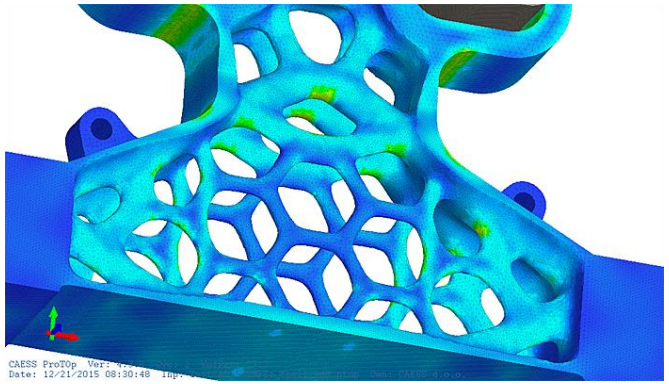
Additive manufacturing – A Smart Choice

Additive manufacturing – A Smart Choice

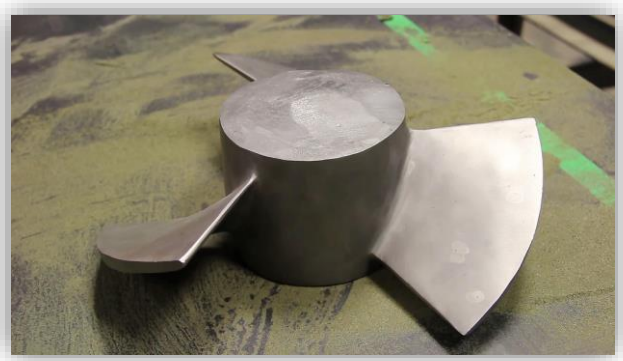
DFAM (Design for Additive Manufacturing)



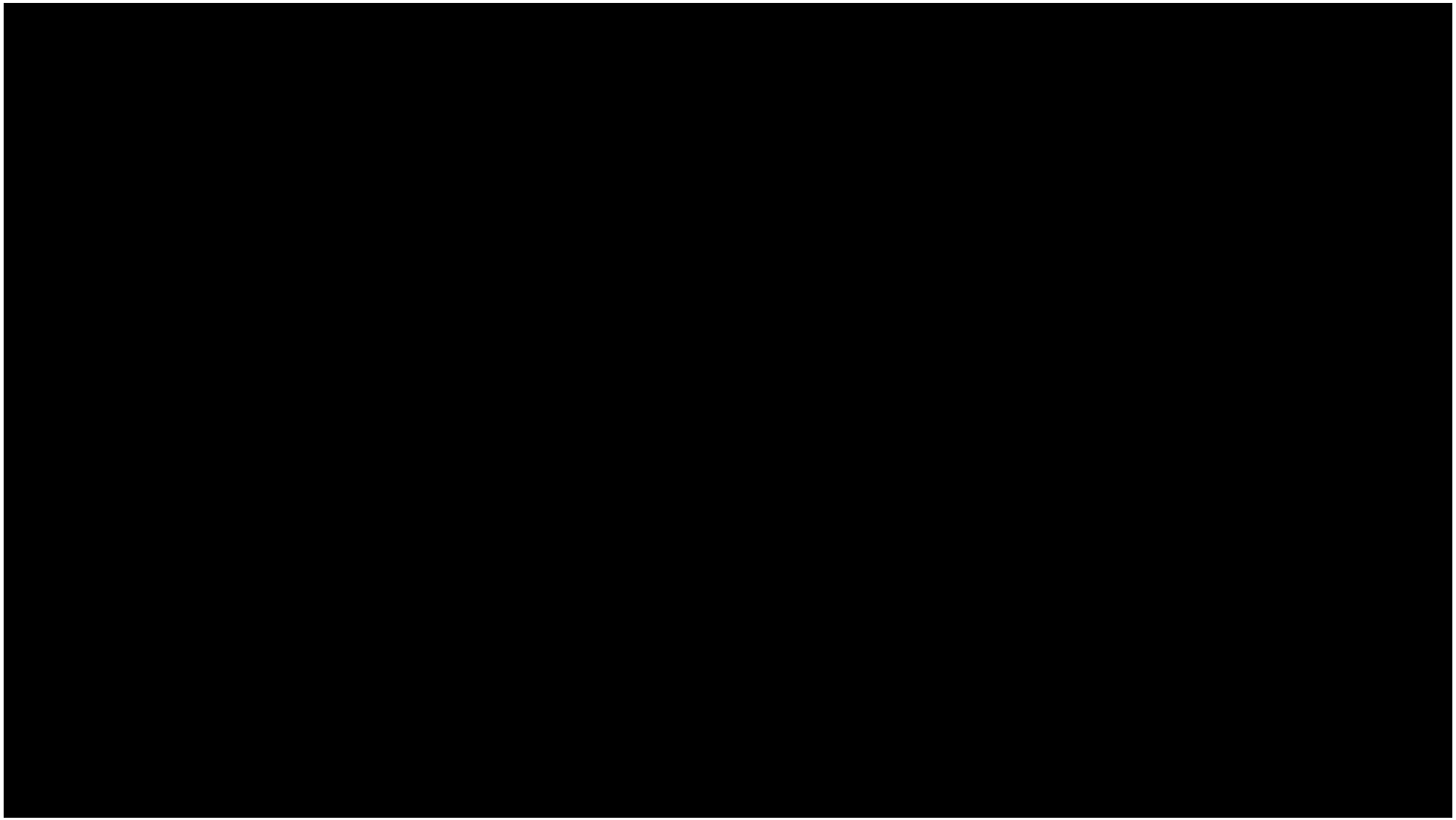




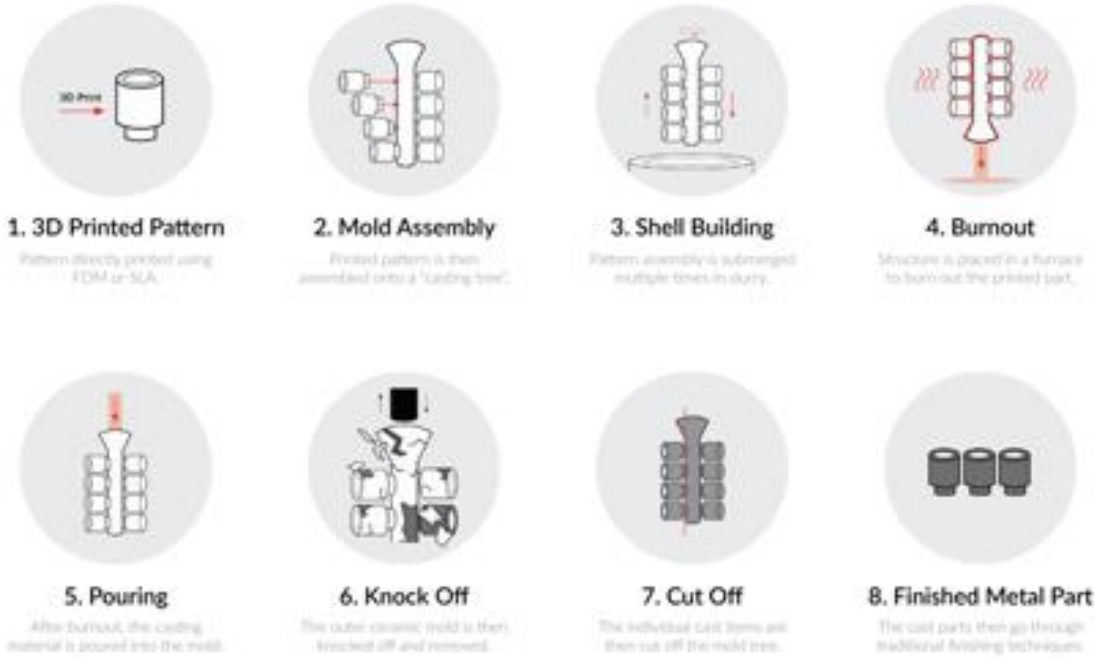
RAM – Robotic Additive Manufacturing – A Smart Foundry



RAM – Robotic Additive Manufacturing – A Smart Foundry



Additive Manufacturing in investment casting– A Smart Foundry



3D Printing enables the manufacturing of complex shapes and designs enabling structures that are lightweight, but stronger

Typical Applications:

- ✓ A prototype for a new product
- ✓ A highly customized or complex part or product
- ✓ A product with complex features or geometries traditional manufacturing cannot make
- ✓ A small run of an existing part / product
- ✓ Quick replacement of no-longer-being-made parts for an older legacy products
- ✓ Need for a one-off object fast and can’t wait for the longer traditional manufacturing cycle, shipping, customs or other delays

3D Printing Solutions We Provide…

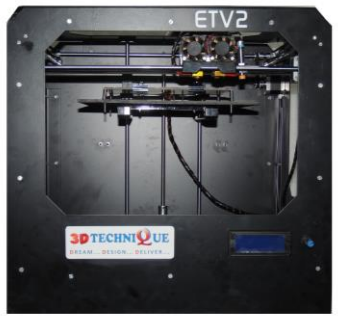
FDM – Fused Deposition Modeling based 3D Printers manufactured by **Engineering Technique**

Solutions by EnvisionTEC, Markforged, & Shining3D

Technologies we offer,

1. DLP – Digital Light Processing
2. 3SP – Scan Spin & Selectively Photocure
3. Bio Fabrication
4. SLCOM - Selective laminate composite object manufacturing
5. Robotic Additive Manufacturing Technology (Viridis3D)
6. SLA (Stereolithography)
7. SLS (Selective Laser Sintering)
8. SLM (Selective Laser Melting)
9. ADAM - Atomic Diffusion Additive Manufacturing
10. CFF – Continuous Fiber Filament

3D Printing Machines



3D Printing Materials

Polymers

ABS, PLA, Nylon, PC, PP etc.

Cast-able Resin

For 3D Printing Patterns for Investment casting

Metals

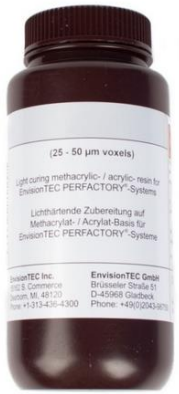
SS, Aluminium, Tool Steel, Inconel, Titanium, etc.

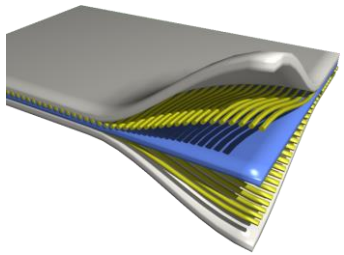
Composites

Carbon fibre, Fibre Glass, Kelvar, PEEK, etc.

Sand

For Sand Casting Molds & Cores





EVERY INDUSTRY CAN NOW BE IMPACTED BY 3D PRINTING

FROM INDUSTRIES FAMILIAR WITH 3D PRINTING

MEDICINE

Artificial human tissue with several properties of living tissues is fabricated with a 3D printer

DENTAL

The dental industry has used 3D printers to make custom parts that require a perfect finish (crowns, bridges, dentures...)

CAR

An Australian programmer has built its own Aston Martin DB4 using a 3D printer

TIRE

Michelin used 3D printing to mold tire prototypes

AIRCRAFT

A 5-meter long titanium airplane part has been 3D printed in one piece

EVERY INDUSTRY CAN NOW BE IMPACTED BY 3D PRINTING

TO INDUSTRIES NEWLY ENGAGED WITH THISTECHNOLOGY

TOYS

Disney researchers develop software to enable people to create and print in 3D format mechanical toys

FOOD

The ChefJet 3D printer produces edible prints (with flavors like chocolate, vanilla, mint…)

DEFENCE

World's first 3D printed metal gun by additive manufacturing process

FASHION

Victoria’s Secret printed a 3D lingerie ensemble for its annual fashion show

JEWELLERY

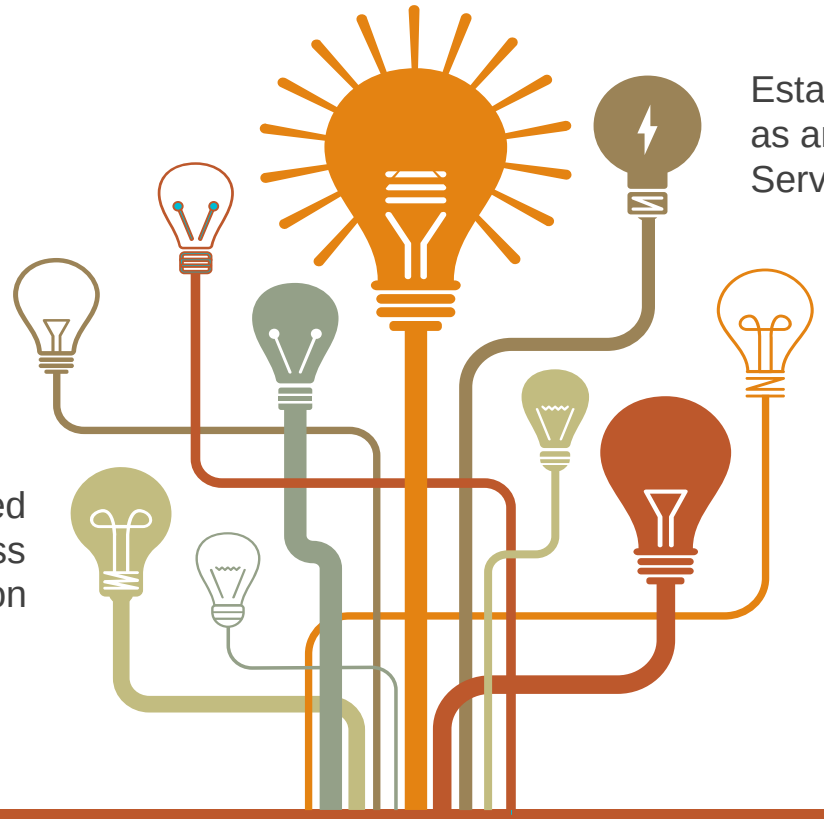
3D rings printed and cast in gold by EnvisionTEC 3D Printers

ENGINEERING TECHNIQUE

Your Vision, Our Solution, Your Success

Established in 2000 as an Engineering Service Provider

Awarded & Recognized For Providing Engineering CAD/CAM/CAE/PDM/RPT technologies



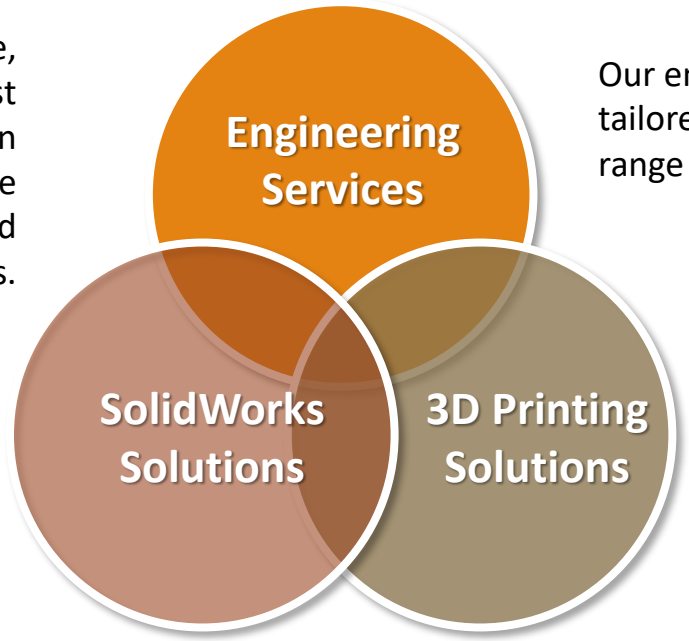
Team of Certified Professionals Across Organization

Managing Customer base right from SME's To Large Accounts

Our Business

We at Engineering Technique, provide high quality and cost effective Engineering design services that will quickly increase your design capacity and resources.

Being the Authorized Reseller for SolidWorks we at Engineering Technique provide end to end 3D Design solution through SolidWorks products along with the partner products



Our engineering design solutions are tailored to meet the needs of wide range of industry verticals

We are now a PAN India Distributor of EnvisionTEC, Germany for their range of professional grade 3D Printing Solutions addressing industry verticals like, Medical, Dental, Manufacturing, Jewelry, Aerospace, Automotive etc.

At Engineering Technique we provide the complete 3D Solutions under one roof.

Corporate Profile – Engineering Technique

Founded: 2000
Headquarter: **Vadodara**
Branch Offices: **Ahmedabad** & **Surat**

4 Channel Partners in India with
30+ Direct & 200+ Indirect employees serving
500+ customers across India

Group Company:

TECHNIQUE® IT'S A WAY OF WELDING. . . . .BETTER

(A 30 years old Welding machine manufacturer)
www.technique-baroda.com

Business Alliances:

SOLIDWORKS

envisionTEC 15 YEARS BETTER

Markforged

SHINING 3D®

Awards and Recognitions:

ENGINEERING TECHNIQUE Your Vision, Our Solution, Your Success

Engineering Technique's *Education Profile*

ENGINEERING TECHNIQUE
Your Vision, Our Solution, Your Success

3D CAD - SolidWorks & 3D Printer *Education*

in

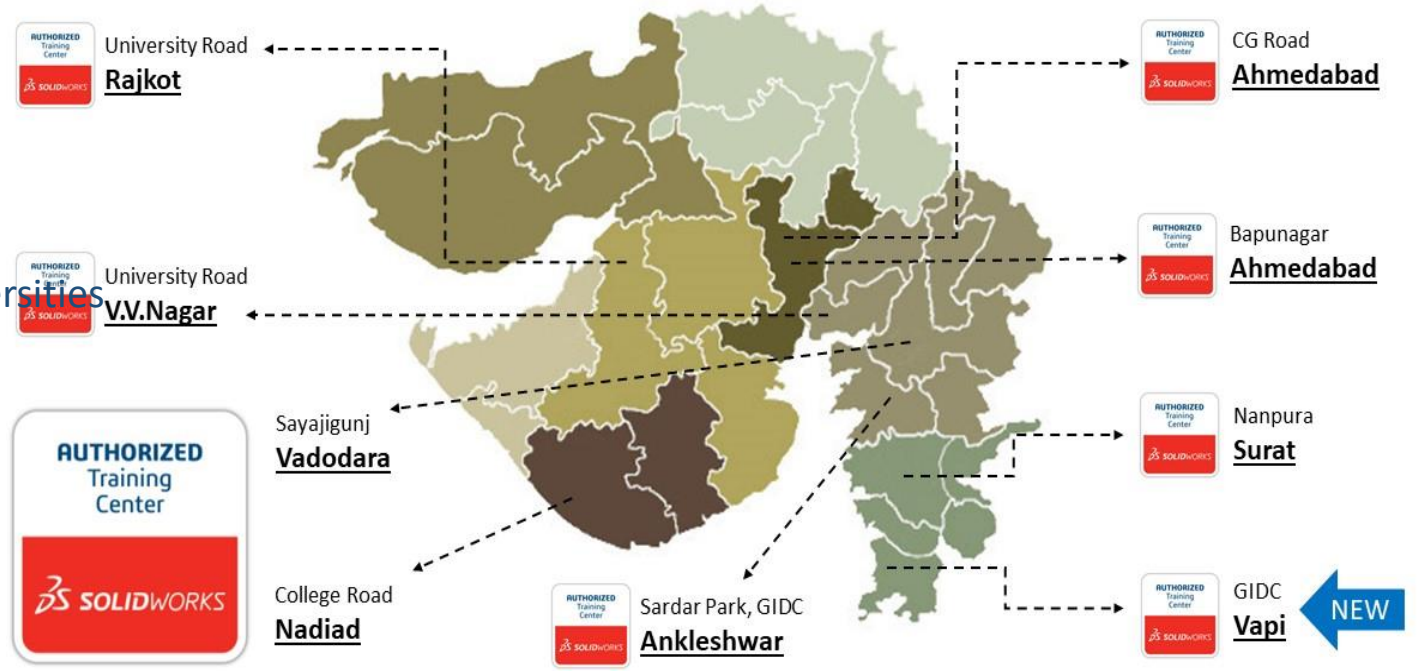
AUTHORIZED Training Center
SOLIDWORKS

Rudresh Vyas
Education Manager

Education Profile of Engineering Technique

- **10 SATCs** (SolidWorks Authorized Training Centres) in **7 Cities** of Gujarat
- **25+ Trainers** Internationally Certified
- **1500+ Students** Trained & Certified
- **1500+ Students** International CSWA Certified
- **75+** Seminars/Workshops in Engineering Colleges /Universities
- **30+ Colleges & Universities** using SolidWorks
- **DFAM / DAM (3D Printer)** futuristic courses launched
- **Placement / Immigration support** for Trained students

SOLIDWORKS ATC Network (Gujarat)



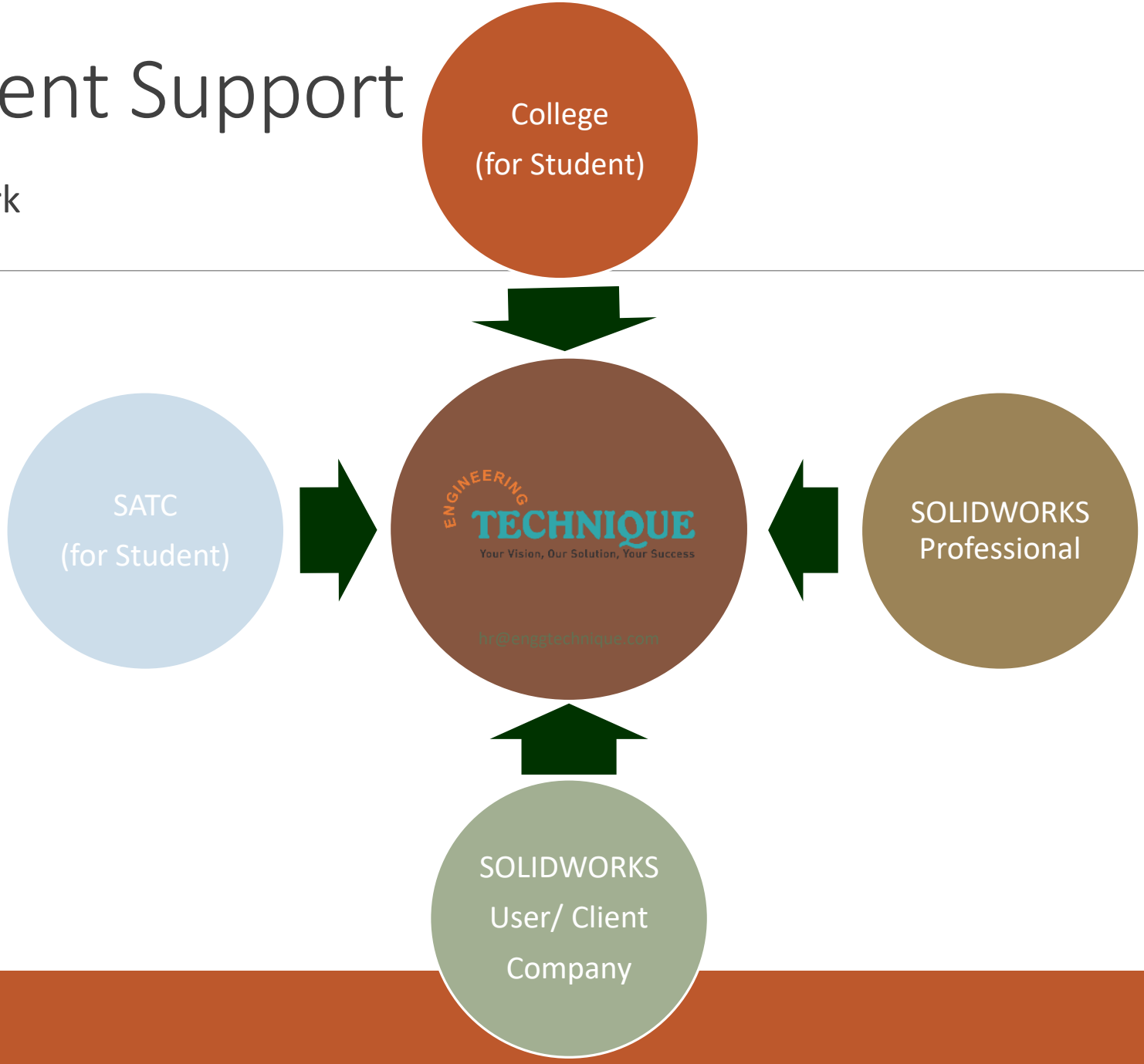
Partial list of Colleges/ Universities!

Call for enquiry @ +91-93762 11272

HEAD OFFICE | 1-2-3 SIYA ENCLAVE, Near Ambe School, Opp Krishna Bungalows | Darbar Chokdi, Vadsar Road, Manjalpur | Vadodara - 390 011
REGIONAL OFFICE | B-701, Solitaire Corporate Park, Prahaladnagar | Nr. Divya Bhaskar Press, SG Highway | Ahmedabad - 380 015 | INDIA

Placement Support

By SATC Network



AUTHORIZED
Training Center
SOLIDWORKS

Partial List Of Our Clients

and 600+ more

"Quality is remembered long after the price is forgotten" - Aldo Gucci

Mayur Kachhiya mayur@enggtechnique.com +919033282441 www.enggtechnique.com

ENGINEERING TECHNIQUE
Your Vision, Our Solution, Your Success

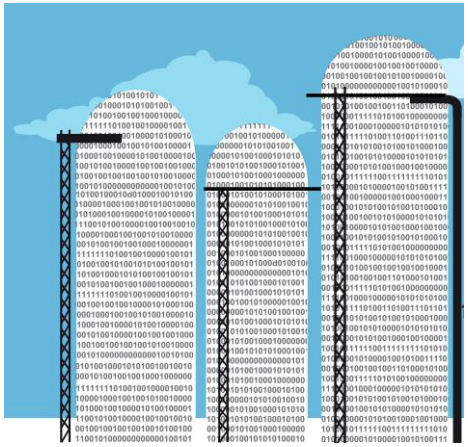
EroNkan

The platform for the 4th Industrial Revolution

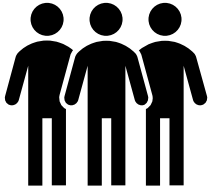
About Us

- Founded in 2014 to provide solutions in the Industrial Automation space
- Innovator in the IIoT (Industrial Internet of Things) space, having created a proprietary and comprehensive software platform
- Provide Industry 4.0 solutions to enable manufacturing units to improve their manufacturing processes and Overall Equipment Efficiency (OEE)
- Subscription based SaaS model and On-Premise Installation Option
- Currently rolled out in the Food Processing and Packaging industries
- Experienced promoter team with over 40+ years of experience across different disciplines such as Factory & Cloud-based Automation and Software Platforms
- Numerous successful and varied installations with quantifiable benefits
- Two offices – Bangalore, India and Ahmedabad, India

Manufacturing – Current Issues



Automation and Enterprise Systems – **operating in data silos**



Increasingly **manually intensive approach** in internal solutions

Realtime production dashboard impossible without integrated systems

Lack of **Integrated Operational Efficiency** – not possible to account for losses in real time (shiftwise, batchwise, operatorwise, etc.)

Data driven decisions not being adopted by management

High reliance on **manually maintained spreadsheets and paper reports** to determine productivity

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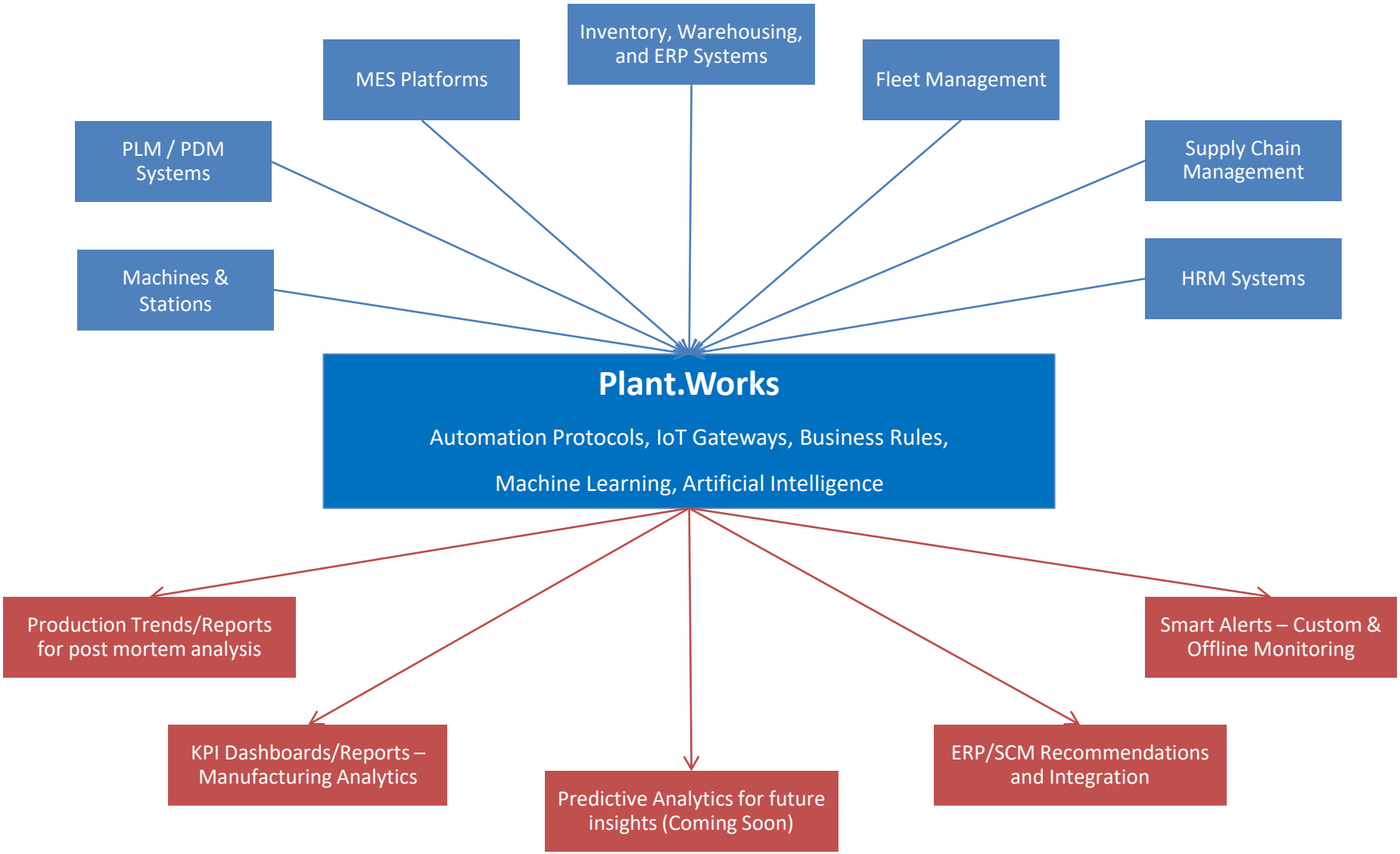
IIOT PLATFORM

Plant.Works



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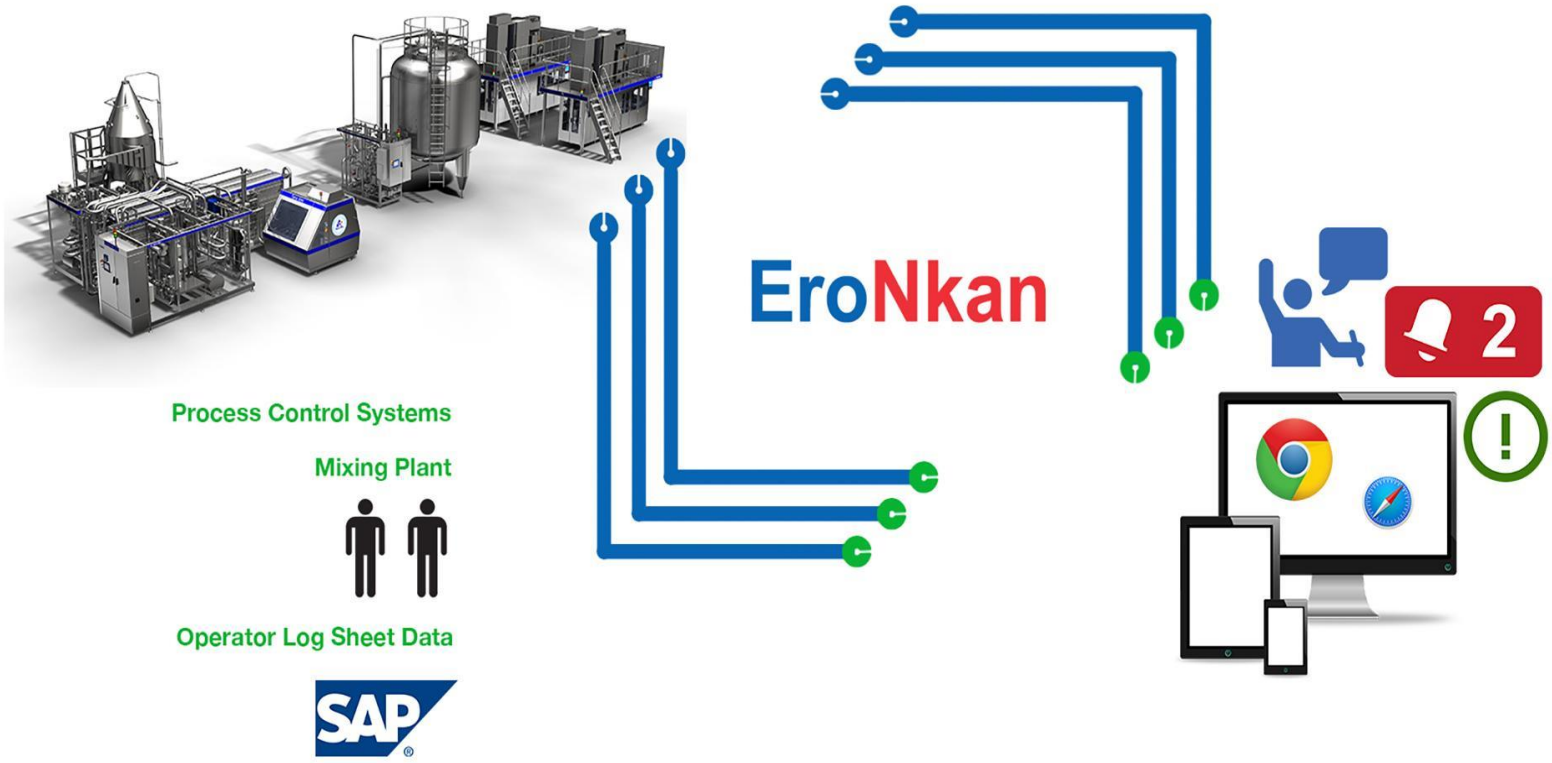
Industry 4.0 – Plant.Works Integration

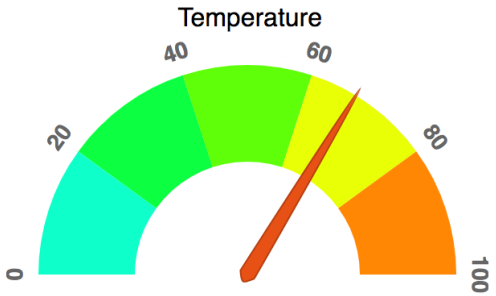


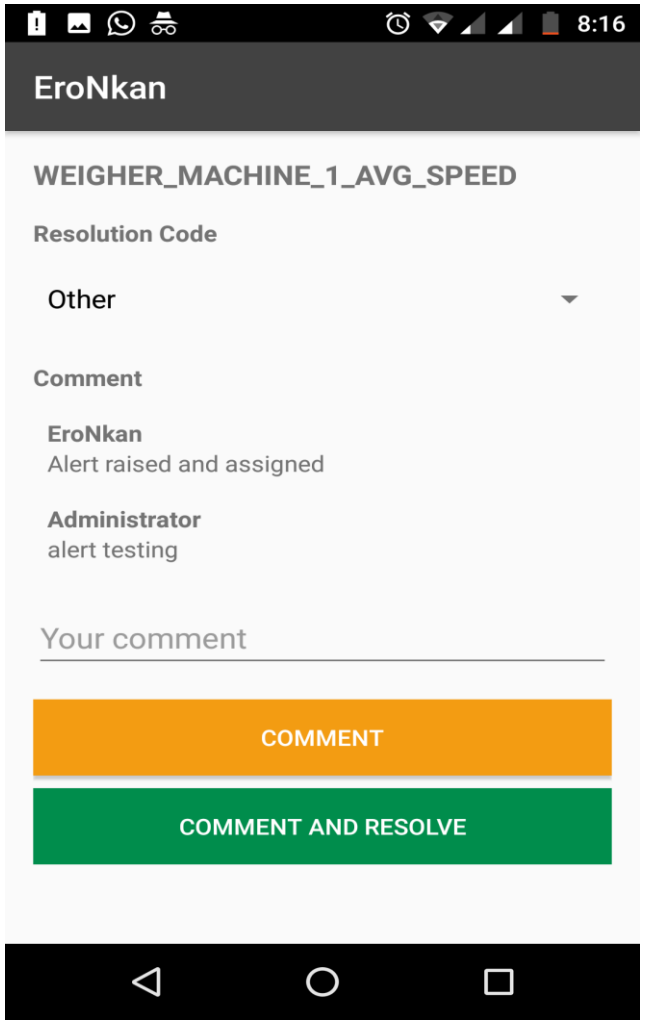
Example process integration for the EroNkan solution

PLATFORM FEATURES

Alerting and Resolutions

- Generate alerts based on rules defined against critical parameters
- Productivity Analysis can help provide root cause analysis data
- Benefits
  - Provides quick insight and resolutions to production problems
  - Helps maintain SLA requirements
  - Improves plant efficiency
  - Increases accountability





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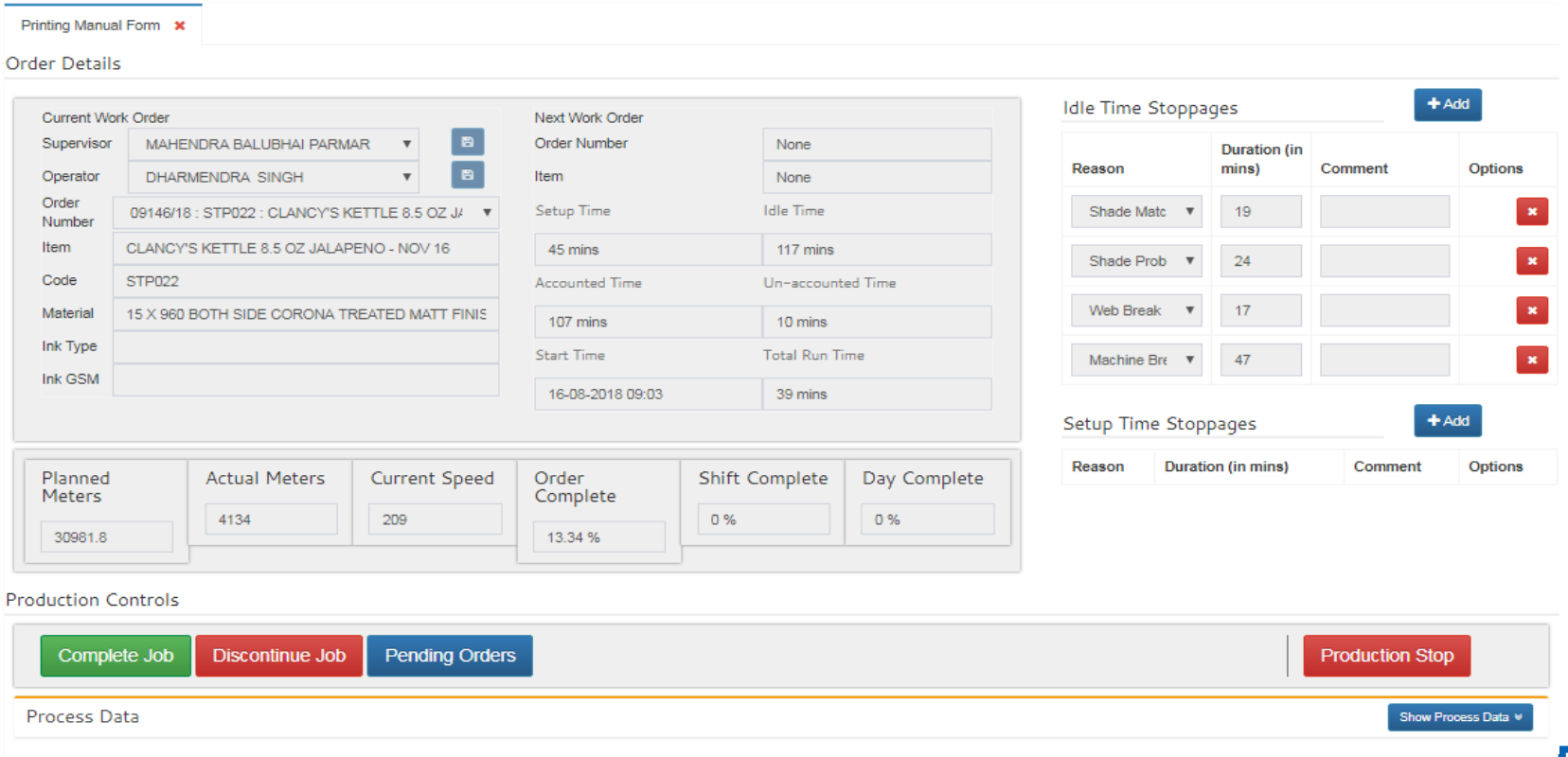
MIS Report Generation

- Customized MIS (Management Information System) reports detailing production performance and KPI's
- Generate custom timeframe (hourly, shift-wise, daily, monthly) reports
- Generate reports in Excel and PDF formats
- Automatic reporting sent out over email

							04 Aug 2018 09:00 AM - 04 Aug 2018 10:00 AM									
Balaji Wafers (Valsad Plant)			Aloo Line				30gm Gathiya				04 Aug 2018 09:00 AM - 04 Aug 2018 10:00 AM					
	Weigher C1								Weigher C2							
	Average Speed	Weigher Efficiency	Mean Weight	Kg / Hour	Overscale Dump Total Weight / Hour	Total Count	Overweight Dump Count	Overscal Dump Count	Average Speed	Weigher Efficiency	Mean Weight	Kg / Hour	Overscale Dump Total Weight / Hour	Total Count	Overweight Dump Count	Overscal Dump Count
Weigher M,N	57.24	99.79	30.44	156.7	0	5147	11	0	75.6	100	30.41	136	0	4472	0	0
Weigher O,P	57.06	97.72	30.42	156.5	0	5138	120	0	88.85	100	30.39	156.9	0	5229	0	0
Weigher Q,R	77.69	100	30.25	156.5	0	4506	0	0	85.95	100	30.27	150.9	0	4985	0	0
Weigher S,T	93.97	100	30.33	166.4	0	5450	0	0	78.67	100	30.62	139.7	0	4565	0	0
Weigher U,V	73.07	100	30.47	126.9	0	4165	0	0	64.56	100	30.45	112	0	3681	0	0
Total Weight/Hour (C1 + C2)	1440.1															
Total Count/Hour (C1 + C2)	47467															
Packaging Count	1186.67 Bunches															
							04 Aug 2018 10:00 AM - 04 Aug 2018 11:00 AM									
Balaji Wafers (Valsad Plant)			Aloo Line				30gm Gathiya				04 Aug 2018 10:05 AM - 04 Aug 2018 11:00 AM					
	Weigher C1								Weigher C2							
	Average Speed	Weigher Efficiency	Mean Weight	Kg / Hour	Overscale Dump Total Weight / Hour	Total Count	Overweight Dump Count	Overscal Dump Count	Average Speed	Weigher Efficiency	Mean Weight	Kg / Hour	Overscale Dump Total Weight / Hour	Total Count	Overweight Dump Count	Overscal Dump Count
Weigher M,N	104.04	100	30.44	171	0	5618	0	0	116.11	99.97	30.4	193.9	0	6376	0	2
Weigher O,P	110.15	100	30.41	180.9	0	5945	0	0	87.67	99.89	30.4	143.9	0	4734	5	0
Weigher Q,R	100.67	100	30.26	164.5	0	5436	0	0	110.55	100	30.27	180.4	0	5959	0	0
Weigher S,T	105.6	100	30.34	171.2	0	5605	0	0	98.78	100	30.48	162.6	0	5334	0	0
Weigher U,V	85.91	100	30.46	141.5	0	4659	0	0	95.44	100	30.44	156.9	0	5154	0	0
Total Weight/Hour (C1 + C2)	1666.6															
Total Count/Hour (C1 + C2)	54812															
Packaging Count	1370.30 Bunches															

Logbook Digitisation

- Record manual entries such as idle time or machine breakdown reasons and any other production parameters that are usually noted down in log books
- Fully customizable logbooks
- Seamless integration with ERP and real-time machine data
- Complex data analytics can be carried out, difficult with paper logbooks



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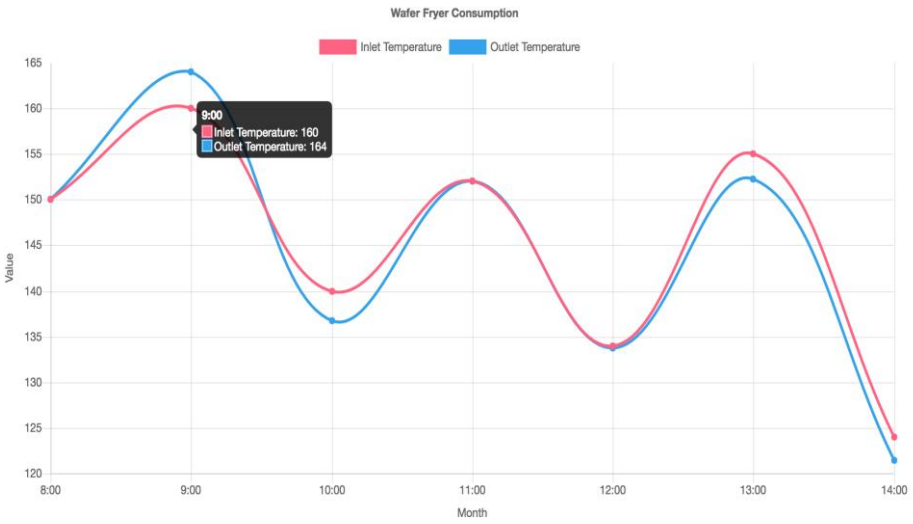
KPI (Key Performance Indicator) Dashboards

- Ability to combine data from various sources such as
  - Process Control/Plant Automation Systems
  - Manual entry through Desktop/ Mobile
  - ERP/ MRP systems
  - CRM systems/LAB systems
- Customised KPI Dashboards after data aggregation
- Information updated in real time as data comes in from the field
- Perform statistical and custom calculations

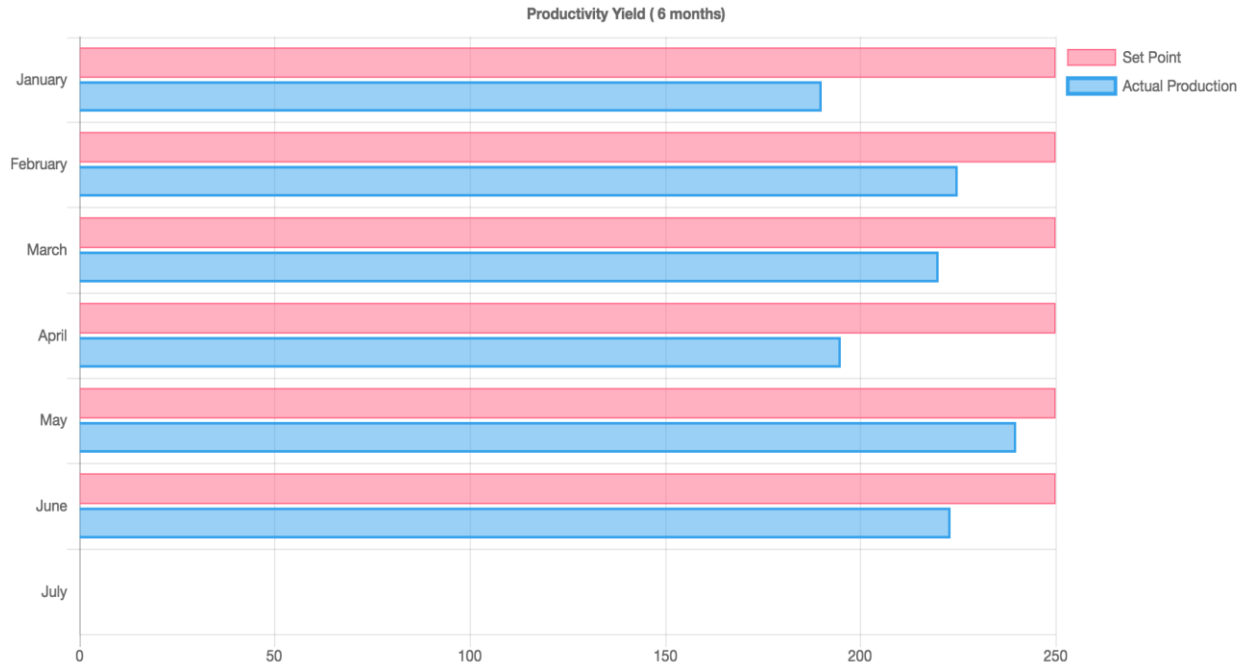


Images above show sample dashboards for a food processing company.

EroNkan

Productivity Analysis

- Calculate Productivity or Operational Efficiency data
- Explanations provided for any production gaps and root cause of issues can be entered for each Purchase Order or production batch
- Error free communication across all levels – transparent decision making
- Supports multiple plants/lines and data aggregation in real time to compare the performance of each production line & unit



Line Status	Start Time	End Time
	26/07/2017 06:56	
	24/07/2017 15:05	24/07/2017 17:20

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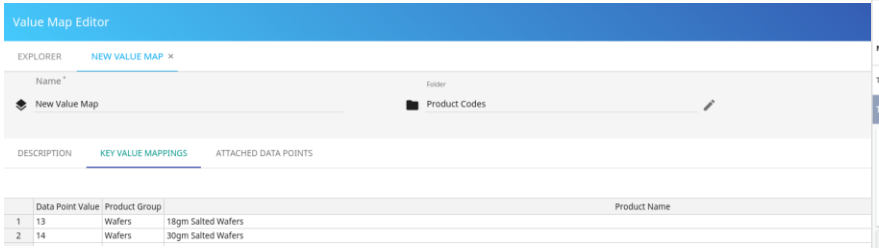
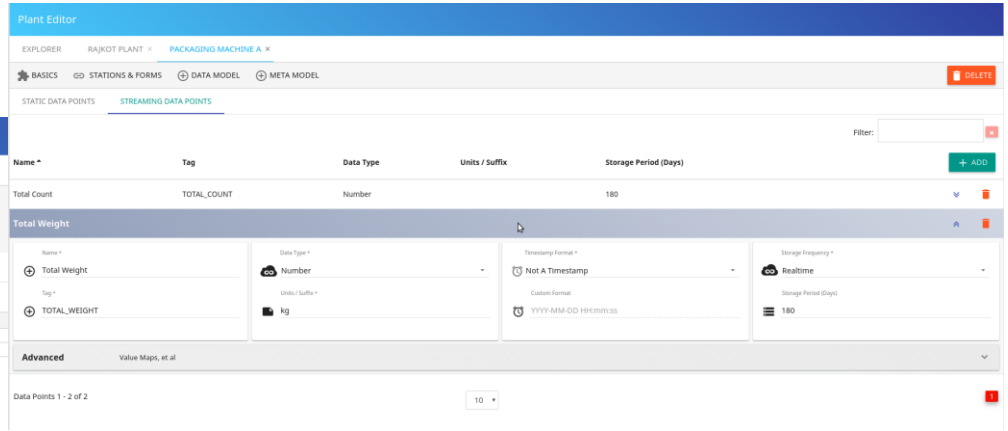
Enhanced User Access Control

- Multi-tenant architecture allows for granularity of access at Operator/Supervisor/Manager and Senior Management level
- Policy driven access control allows easy implementation of organisation access and data control policies
- Audit trail of actions with time stamps - allows auditing and compliance, making it easy to improve accountability and action items



Configure Rules



Configure Assets

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Types of IoT Implementations

- Warehouse Management System
- Real Time Production Monitoring
- Downtime Tracking
- Real Time OEE
- ERP Integration for Production Scheduling
- Manufacturing Loss Reductions
- Visual Factory Displays

INSTALLATION CASE STUDIES

Material Packaging Case Study

Customer Profile
Large packing material manufacturer based out of Gujarat, India

Existing Inefficiencies
1. Low asset utilization due to high idle times
2. CAPA analysis process missing due to lack of data on revival of stoppage
3. MIS reporting not integrated with Microsoft AX, leading to multiple sources of "truth"
4. Lack of visibility into the next job - leading to extremely high setup time as the required material is not available on the shop floor

Solution
Better utilization of expensive assets, leading to better ROA. CAPA to help improve OEE and culture of continuous improvement

Benefits
1. 10% increase in the output, resulting in top-line growth
2. 15% reduction in raw material wastage, resulting in bottom-line decrease

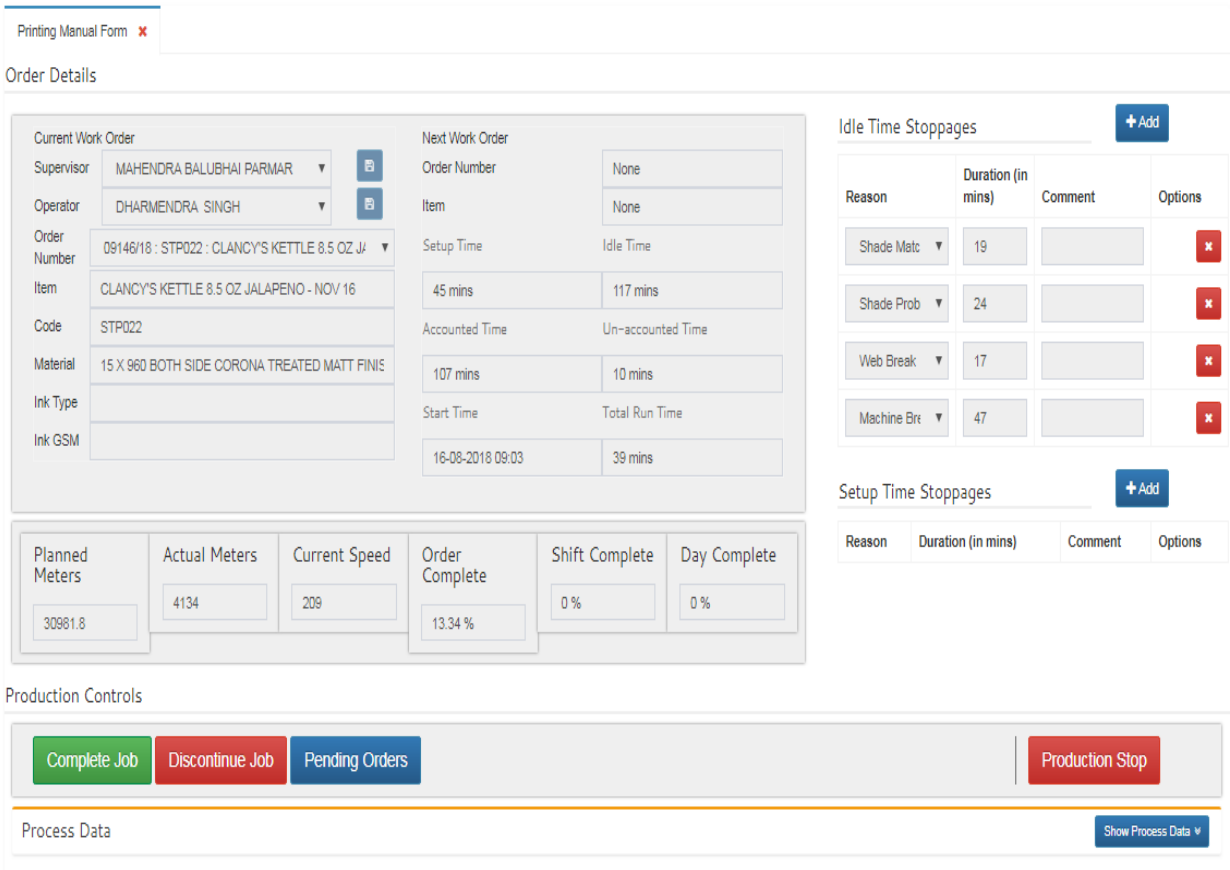
Implementation Timelines
- Started February 2018
- Completed July 2018

Ongoing maintenance and change request implementations

Huge potential for implementing this solution into other lines and production plants

Solution Sizing
- 300+ data points per minute
- 50,000+ data point operations per day

Physical Sizing
- 3 plants
- 12 process lines
- 48 machines



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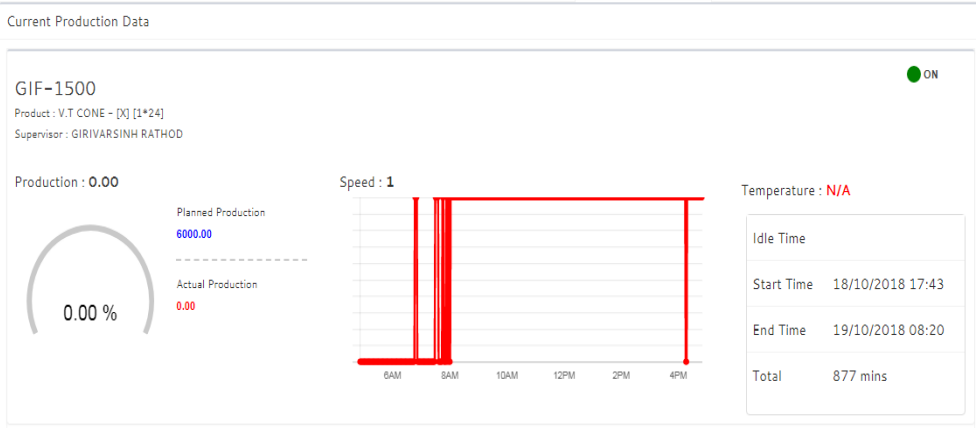
Ice Cream Manufacturer – Case Study

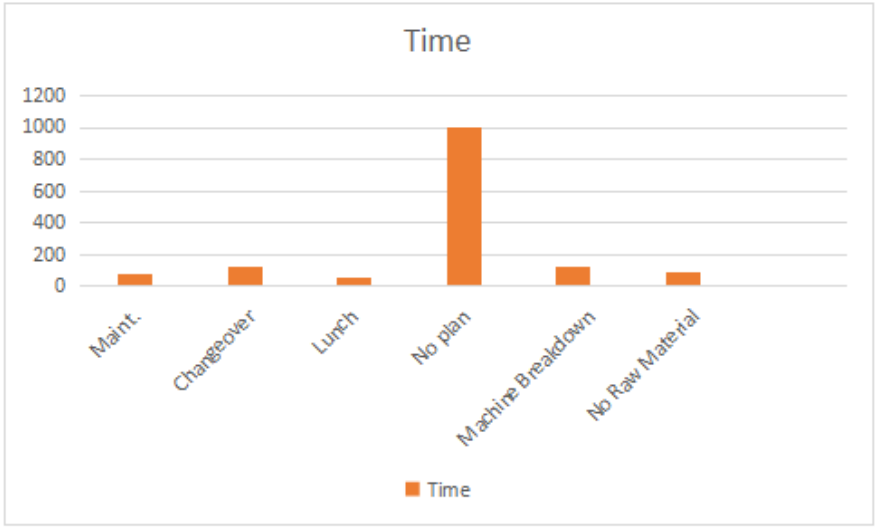
Customer Profile
One of the largest ice-cream manufacturers based out of Gujarat, India

Existing Inefficiencies
1. High idle time, low machine availability, no way to track downtime reasons across lines
2. Inability to track the start of production across different lines – critical loss of time and production capacity
3. Inaccurate icecream overrun tracking – critical function of manufacturing

Solution
Real-time data collection allied with custom dashboards, scheduled reporting, and alert notifications, Downtime and CAPA Analysis, Planned vs. Actual Production numbers

Benefits
1. Higher ice cream overrun – more productivity from the initial mix
2. Increased visibility into machine downtime reasons, proactive maintenance and trend analysis into issues with downtime





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Warehouse Management – Case Study

Customer Profile

Large processed food manufacturer based out of Madhya Pradesh, India

Existing Inefficiencies

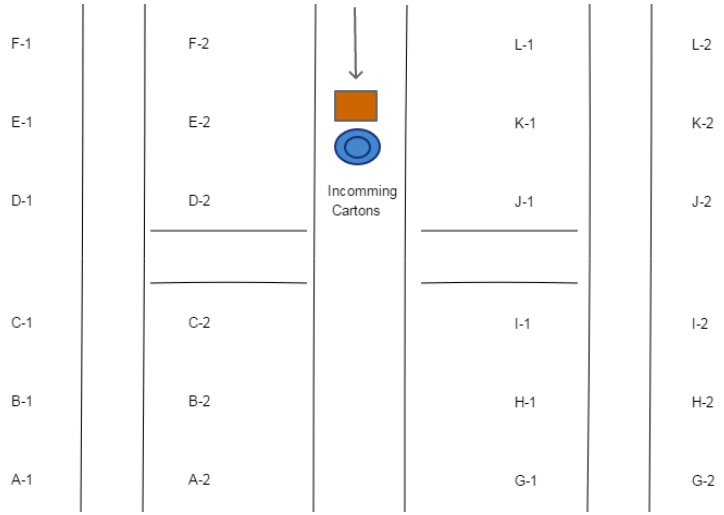
1. Inability to track inventory in real time
2. Losses incurred due to loss in inventory
3. Inaccurate production count
4. Inability to maintain FIFO in warehouse
5. Wrong SKU Dispatch – Customer complaints

Solution

Real-time product tracking using Barcode/RFID tracking systems. Each product identified using a unique ID and tracked from production to warehouse to final dispatch

Benefits

1. Consolidated real time monitoring of all warehouses (any location) on one screen
2. Seamless FIFO maintenance
3. Better customer satisfaction
4. Better product accountability
5. Overall wastage reduction



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Thank You!

www.eronkan.com

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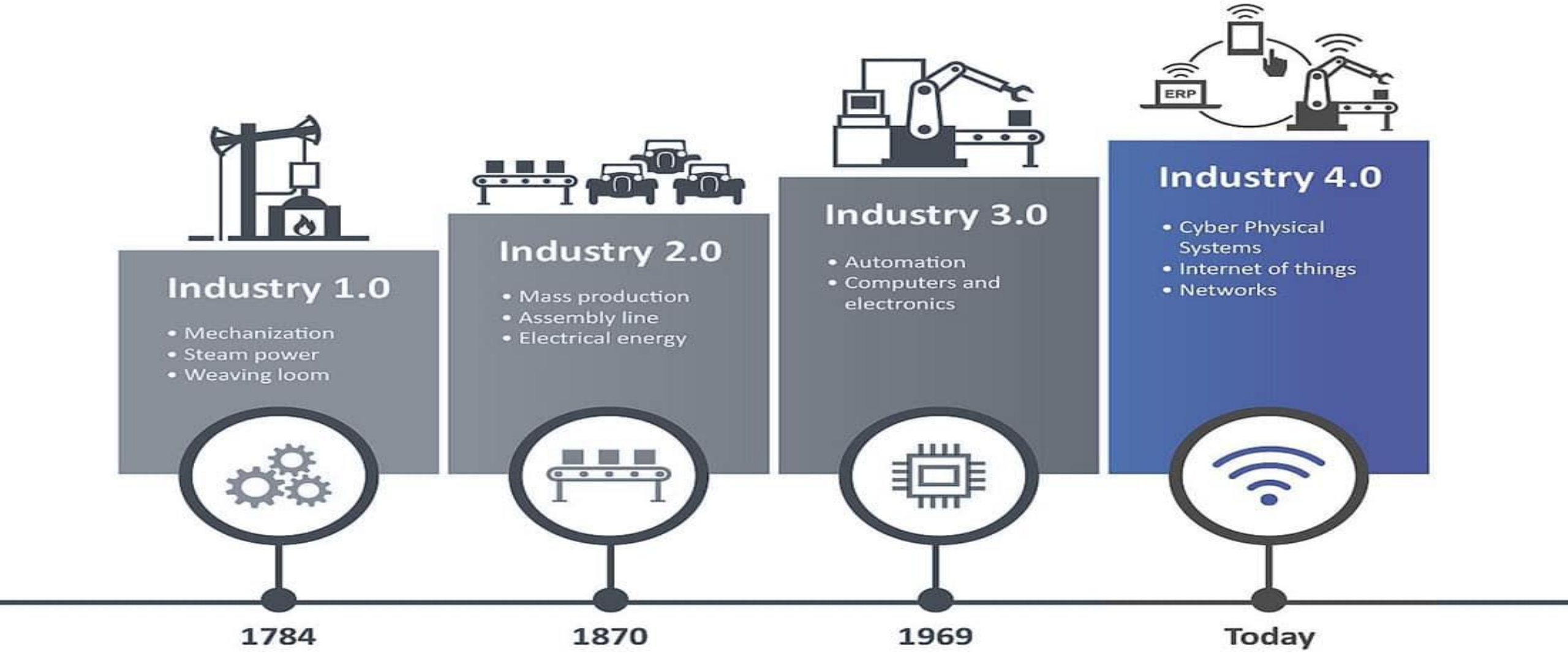
Pvt. Ltd.

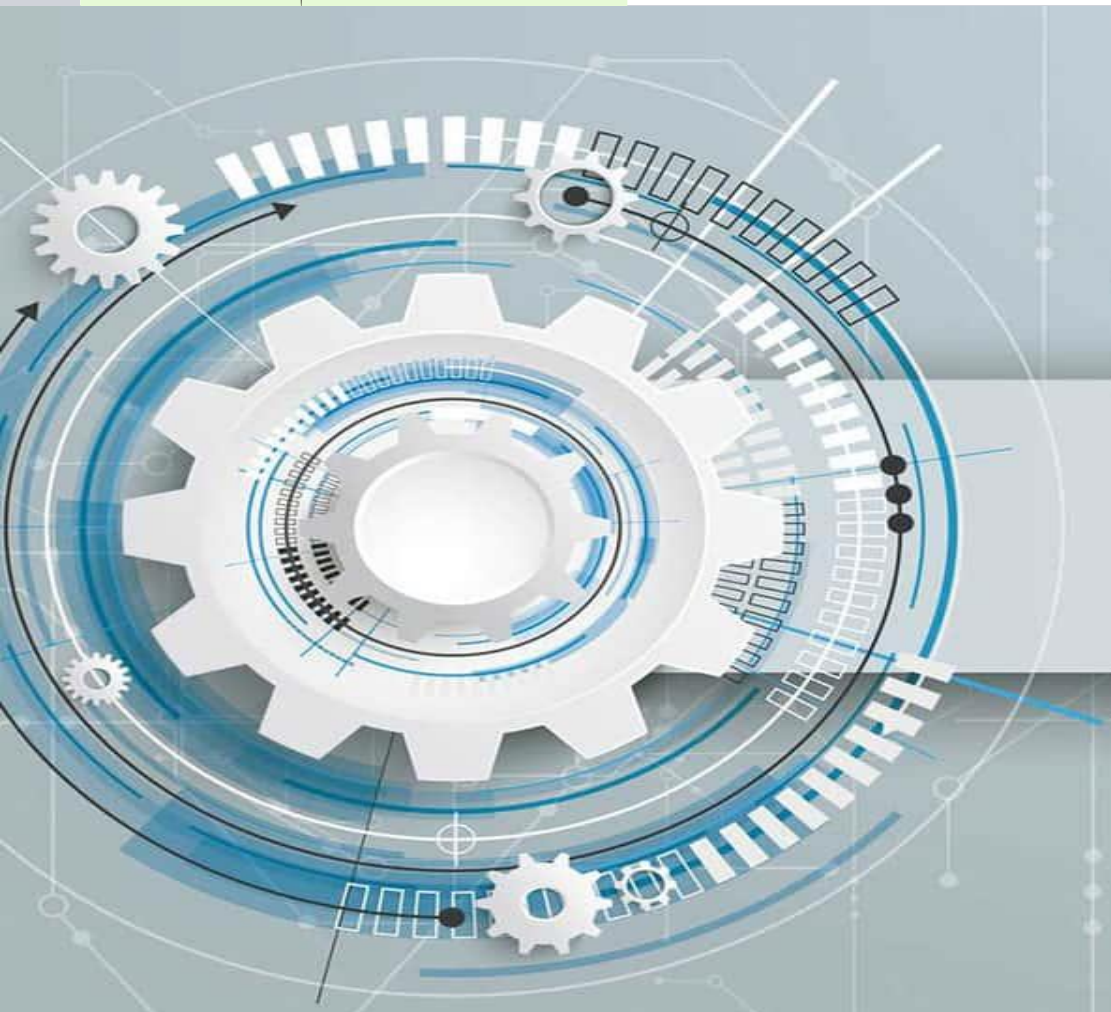
Challenges & Opportunities for MSMEs – Industry 4.0

What is Industry 4.0

History of Industry Revolution



Industry 4.0 for MSME



Industry 4.0

IIOT DEMO AND FEATURE

MSME for INDUSTRY – 40 % stack

CHALLENGES

- ✓ Inadequate access to technology
- ✓ Technical and business skills
- ✓ Markets and finance

Challenges for MSME

✓ Inadequate access to technology

- Real time monitoring system
- Energy Management
- MIS/ERP System
- Decision making tools

Challenges for MSME

- ✓ Technical and business skills

  - Communication Tools
  - Organization
  - Leadership
  - Time Management
  - Use of Technology

Challenges for MSME

- ✓ Markets and finance

  - Labor cost of skilled workforce
  - Access To Credit and Risk Management
  - Decrement in Profitability
  - Digital India as increase competitiveness

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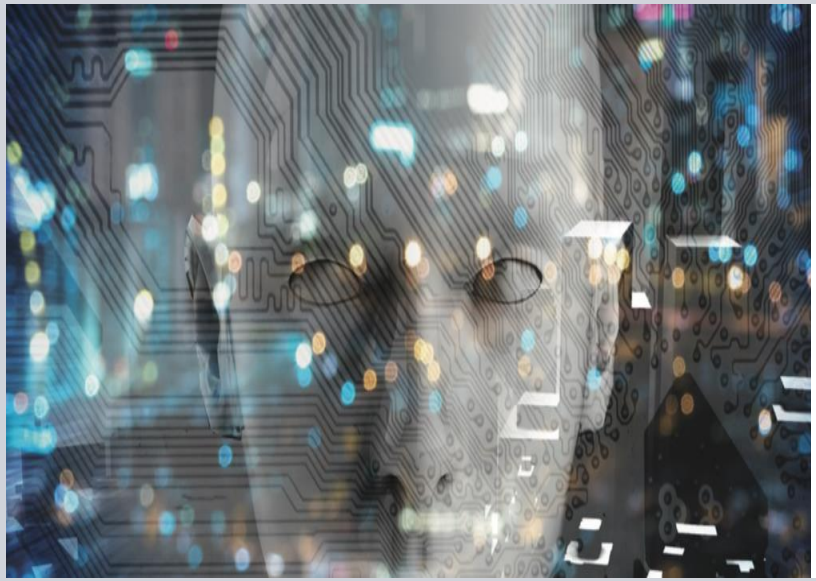
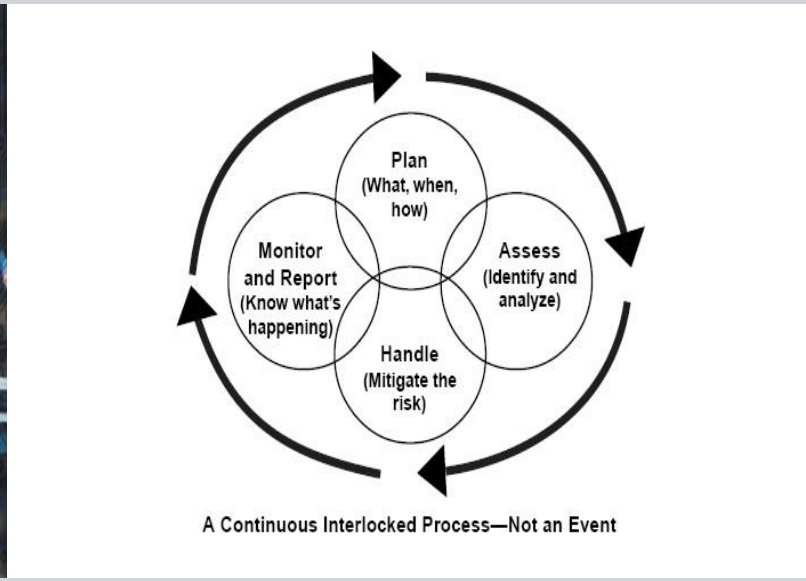
Opportunities for MSME

- ✓ New Technology for Mitigation measure for associated Risk
- ✓ Network of Industry, University, Government for Industry-led research.
- ✓ Training to adopt technology in challenging environment
- ✓ Entrepreneurship development in the form of policy interventions

Opportunities for MSME

✓ New Technology for Mitigation measure for associated Risk





- Artificial Intelligence
- Process and Operation Risk
- Cyber Security

Opportunities for MSME

✓ Network of Industry, University, Government for Industry-led research.

- University for Industry
- Digital Platform for MSME exporters
- CII Initiatives

Opportunities for MSME

- ✓ Training to adopt technology in challenging environment

- Automation Technology

- IOT Hardware and Software Training

- Modern Learner

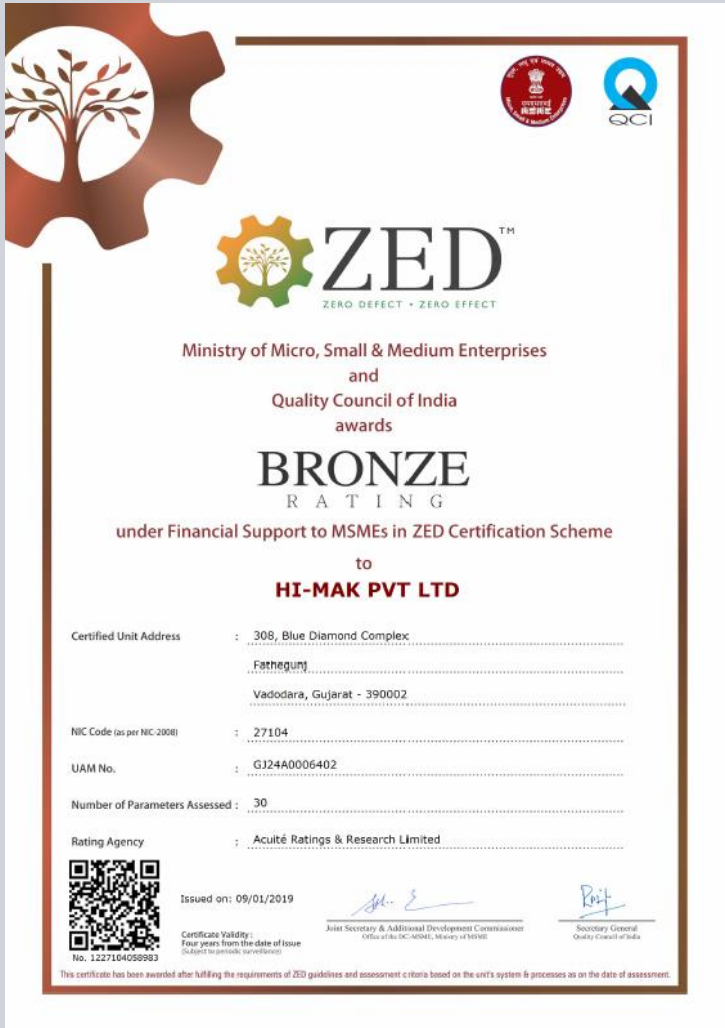
Opportunities for MSME

- ✓ Entrepreneurship development in the form of policy interventions.

Benefits for ZED Rated MSMEs

- 0.5% Interest Rate concession on Loans
- 50% concession in Processing Fee
- Rs. 25 Lakh for adopting technology
- Rs. 25 Lakh for setting up of new ETP
- Rs. 10 Lakh for domestic patent and Rs. 20 Lakh for international patent registration
- Rs. 5 Lakh for purchase of Testing equipment
- Rs. 10 Lakh for ZED certification and handholding
- Extra 80%, 60% and 50% subsidy on Cost of ZED certification in addition to the subsidy provided by the Government of India

These are specific incentives by Government of India, State Governments, Banks, etc. To know more click on “Benefits to MSMEs”



ZED™
ZERO DEFECT • ZERO EFFECT

Ministry of Micro, Small & Medium Enterprises
and
Quality Council of India
awards

BRONZE
RATING

under Financial Support to MSMEs in ZED Certification Scheme
to

HI-MAK PVT LTD

Certified Unit Address : 308, Blue Diamond Complex
Fatheguni
Vadodara, Gujarat - 390002

NIC Code (as per NIC-2008) : 27104

UAM No. : GJ24A0006402

Number of Parameters Assessed : 30

Rating Agency : Acuité Ratings & Research Limited

Issued on: 09/01/2019

Certificate Validity: Four years from the date of issue

Joint Secretary & Additional Development Commissioner

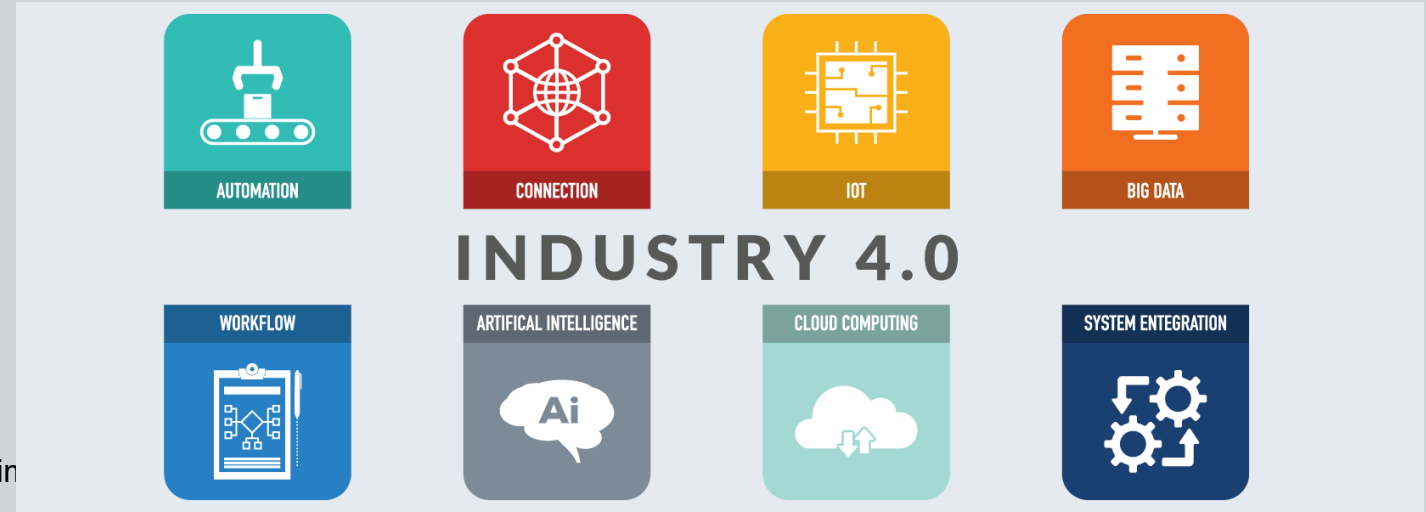
Secretary General

No. 12271040589B3

This certificate has been awarded after fulfilling the requirements of ZED guidelines and assessment criteria based on the unit's system & processes as on the date of assessment.

Action Plan for MSME

- ✓ Be Ready for new Technology and close existing gaps
- ✓ Real time Data monitoring system – Product, Energy
- ✓ SOP based system – ISO Guidelines and New methodology
- ✓ International standard adaptation for Digital Business Modelling
- ✓ Awareness of Government Schemes
- ✓ Networking for industrial practices and ideas for new customer access
- ✓ Trained Team – Ask talent from University
- ✓ Faster time to Market



Hi-Mak Pvt. Ltd.
201-209, Blue Diamond Complex,
Fatehgunj Cross Road,
Vadodara , Pin: 390 002
State: Gujarat , India.
Phone : +91-265-2795413 / 2795348
mail: info@himak.in/ sales@himak.in
Visit us : www.Himak.in

Technology Disrupts
The Manufacturing
Industry 4.0

Prashant Mamtora
Founder & CEO - Milople

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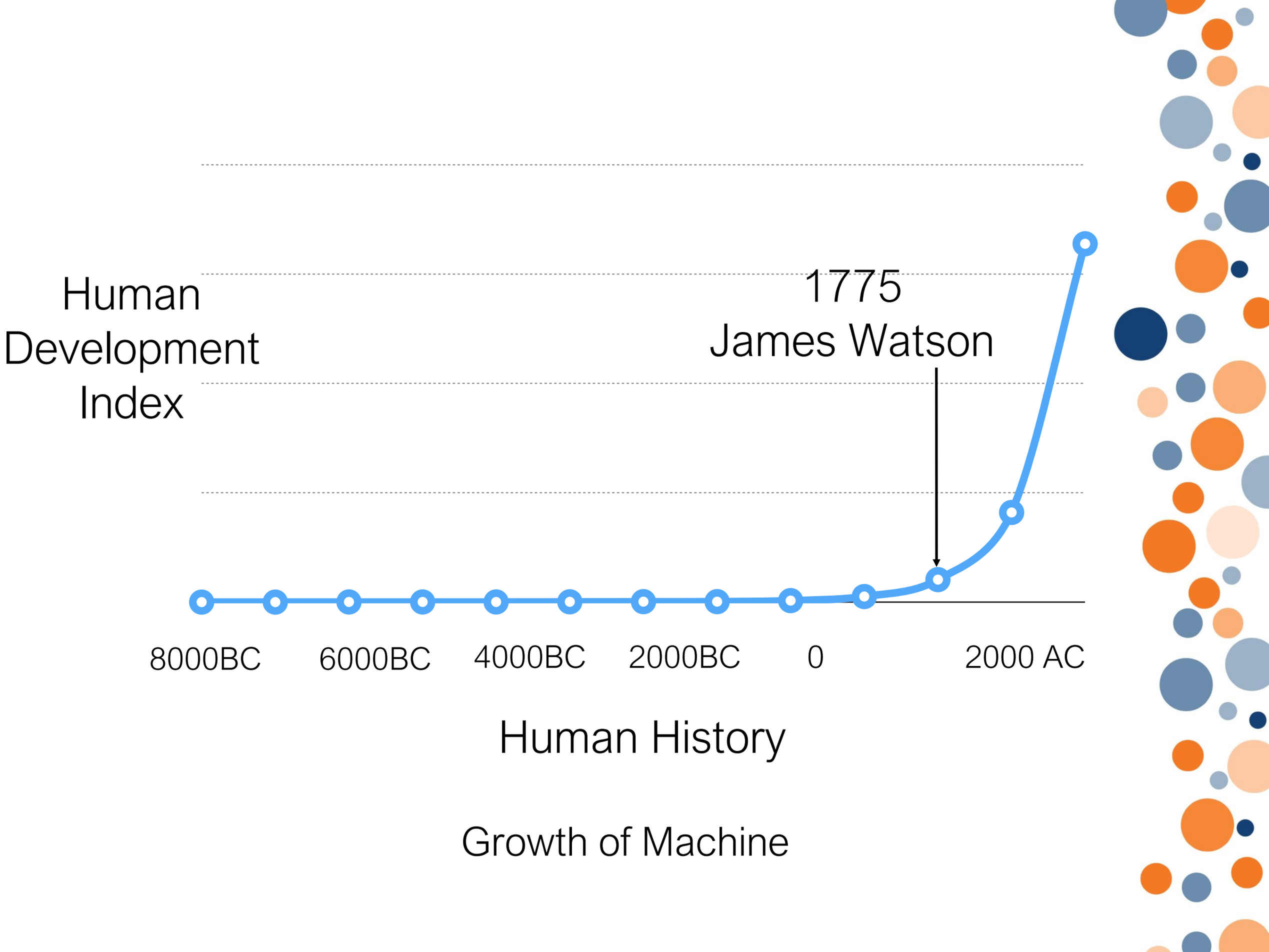
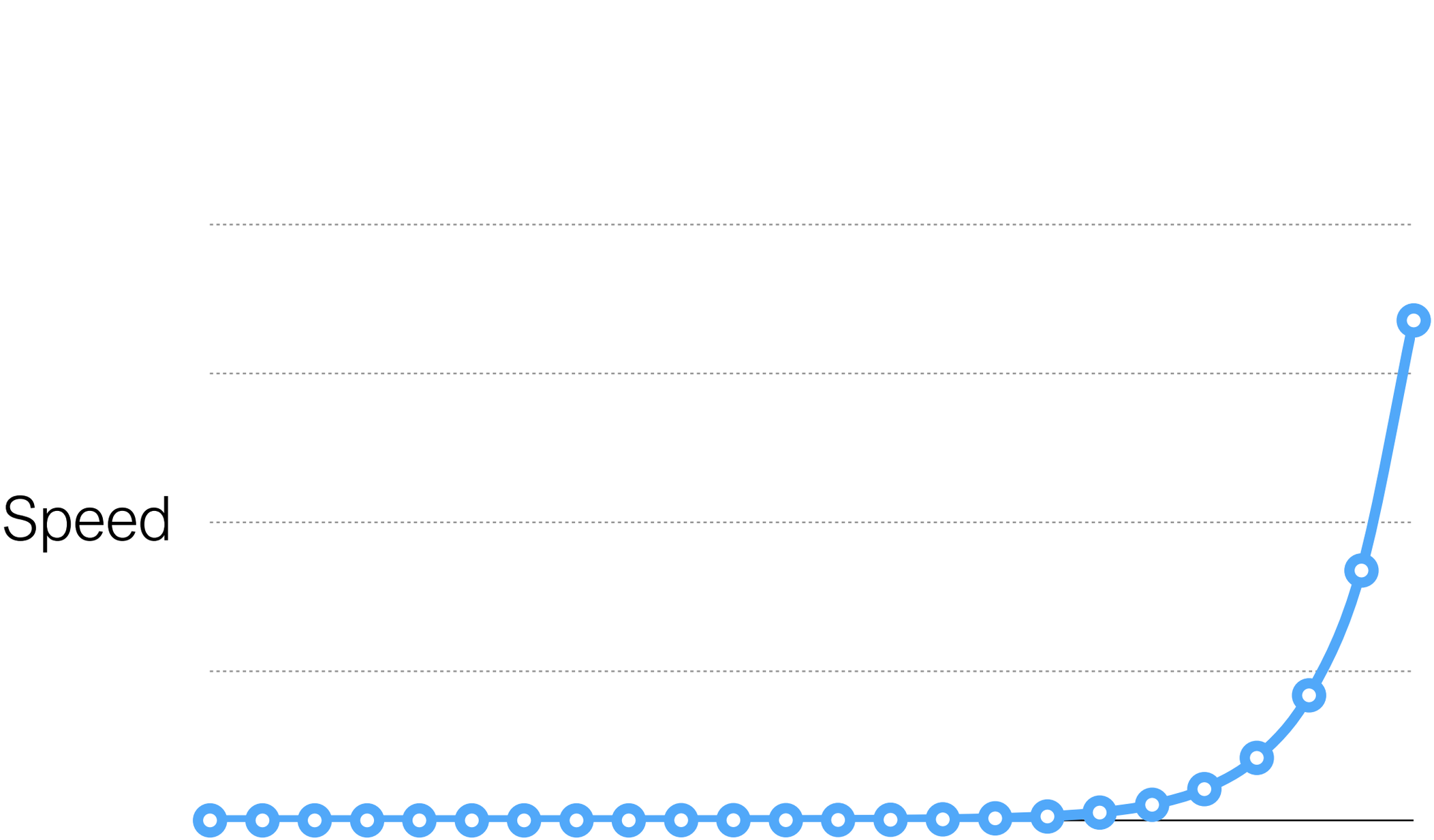
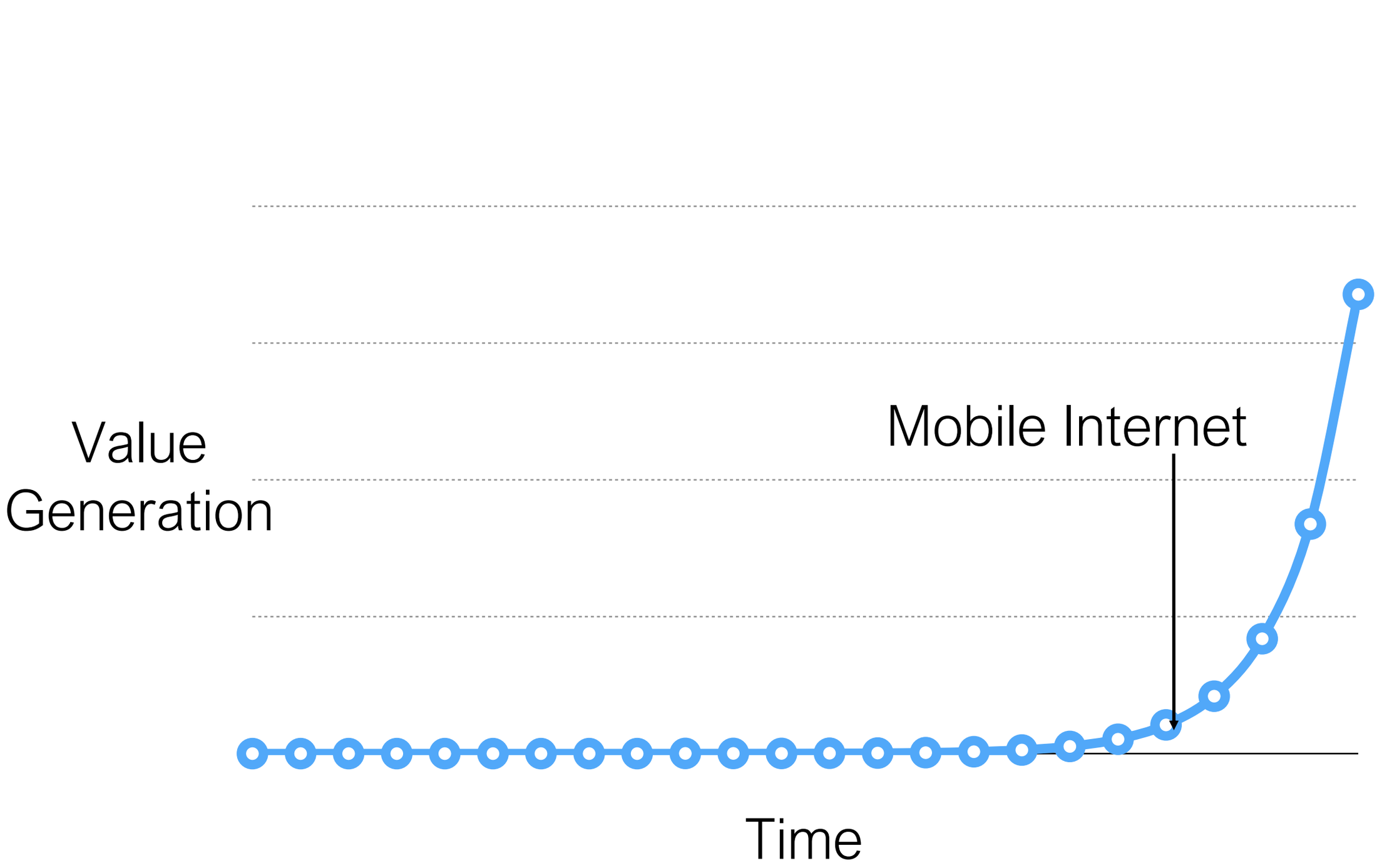


Growth of Machine



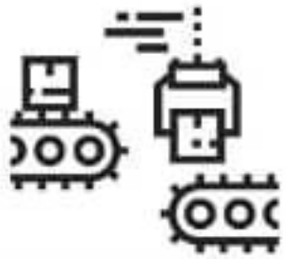
Growth of Computing Power



Growth Technology

INDUSTRY 1.0

Steam
Mechanization



INDUSTRY 2.0

Rail, Road
Telegram
Electricity
Assembly Line

INDUSTRY 3.0

Electronics
Computers
Robots

INDUSTRY 4.0

IoT
AI
3D Printing
Drone

1760 - 1820

1870 - 1914

1960 - 2000

2011 -

Disruptive Technologies

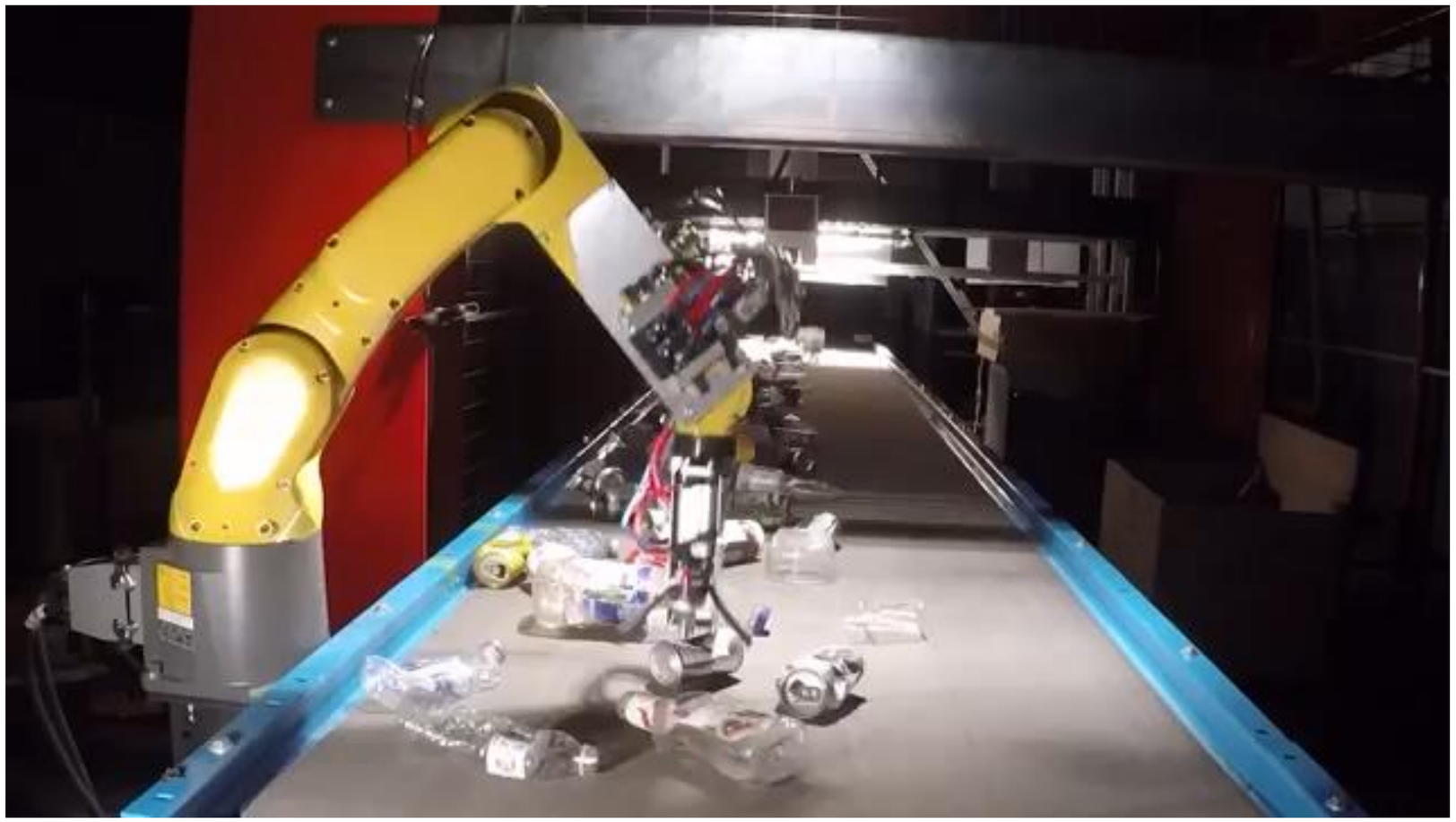
- Autonomous Robots / Artificial Intelligence
- Internet of Things (IoT, IIoT)
- Augmented Reality and Simulation
- 3D Printing
- Drones

Artificial Intelligence

- From Monotonous to Autonomous
- By 2025 Robots will start doing 25% of non-repetitive tasks

Artificial Intelligence

Artificial Intelligence



3D Printing

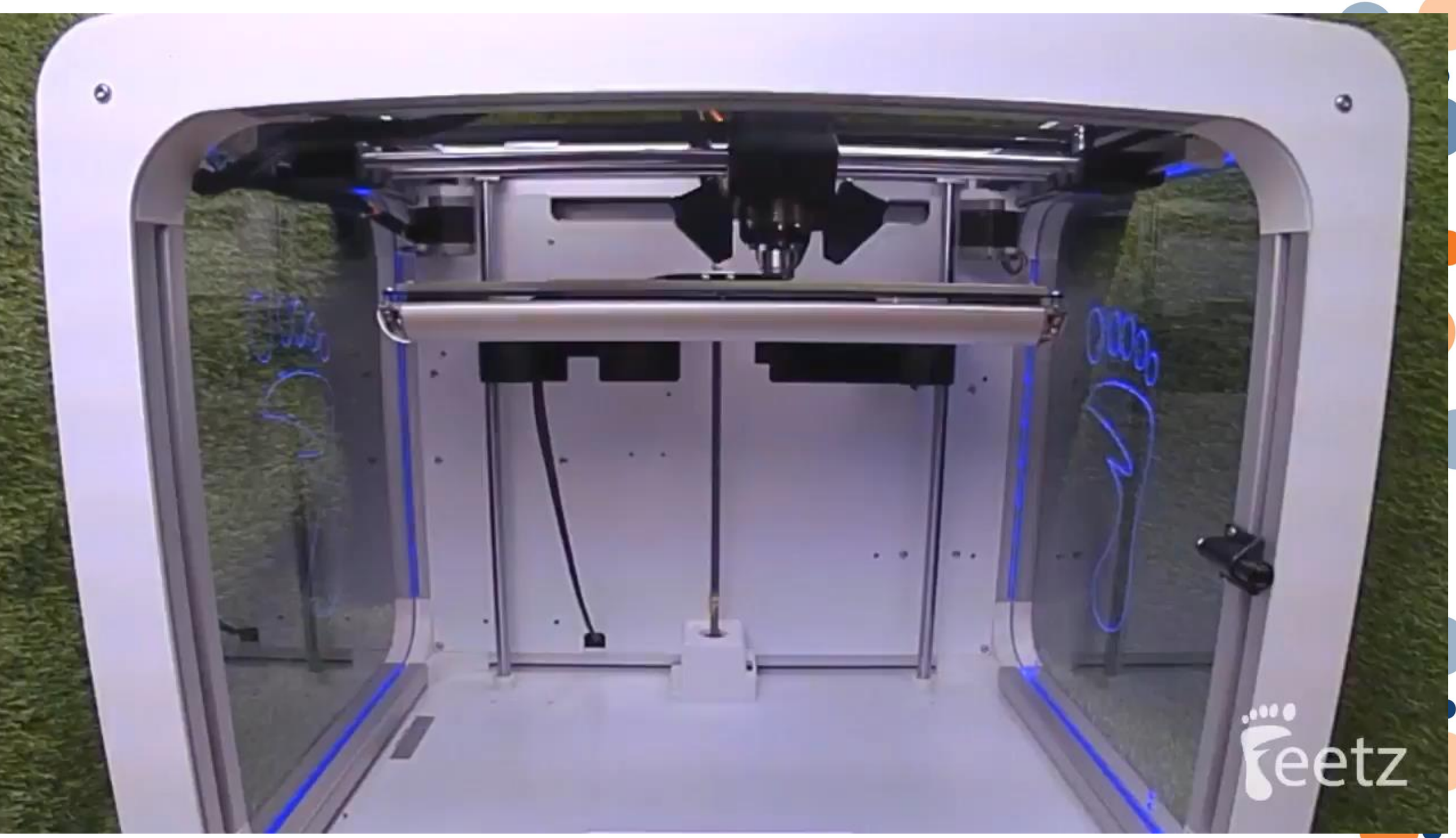
- Very good with Plastic. Metal is coming up.
- Manufacturing related to plastic and metal comprises 25% of total manufacturing
- Fuel Nozzle is the most complicated part of an air craft. Made of 20 different components. Now 3D printed.

3D Printing

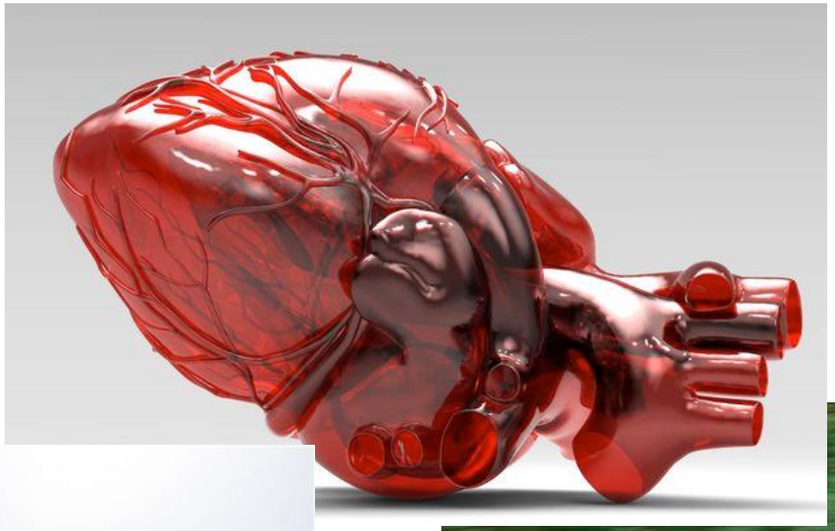

Feetz

Feetz : 3D Printing

- Deployed 100 3D Printers worth 3.3 Lakh Rs each
- Customers can come to their web site or mobile app
- Customize a Shoe and order
- Will be “Printed” in 12 hours
- Average cost of a Pair : 12000 Rs
- Significantly high profit margin


feetz

3D Printing



3D Printing

https://mpc-demo.milople.com/store/product/1/2

https://mpc-demo.milople.com/store/product/1/1

The drivers of I4

- Mobile Internet
- Cheap labor does not remain cheap forever
- Environmental challenges

Impact of Industry 4.0

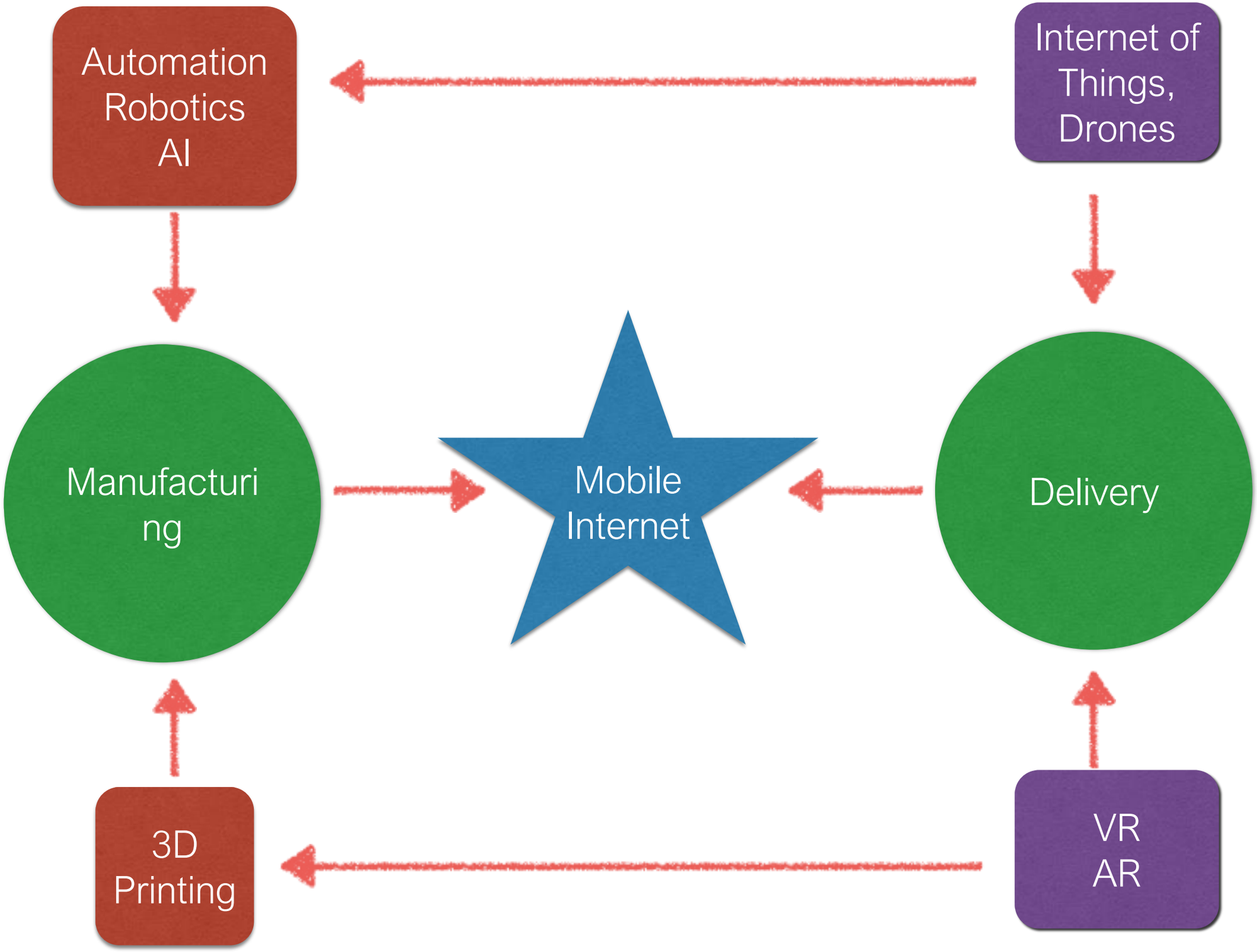
- On Demand
- Factory location
- Environment
- Mass Customization
- No light
- Direct to consumer
- No Transportation
- No Storage
- Job opportunities

Change your business model

Adapt to the impact

- On Demand
- Factory location
- Environment
- Mass Customization
- No light
- Direct to consumer
- No Transportation
- No Storage
- Job opportunities

Automation


Automation
Robotics
AI
Internet of
Things,
Drones
Manufacturi
ng
Mobile
Internet
Delivery
3D
Printing
VR
AR

THANK YOU !!!


prashantmamtora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