



Industry 4.0 PPT / PDF IIoT for Smart Manufacturing

Smart Factory

Agenda

- Background
- What is IIoT for Smart Manufacturing?
- How to get started with IIoT?
- Enerco Specialization in IIoT

Annexure 1 - Sample IoT Architecture

Annexure 2 - Glossary

Background

Industry 4.0, Data, IoT

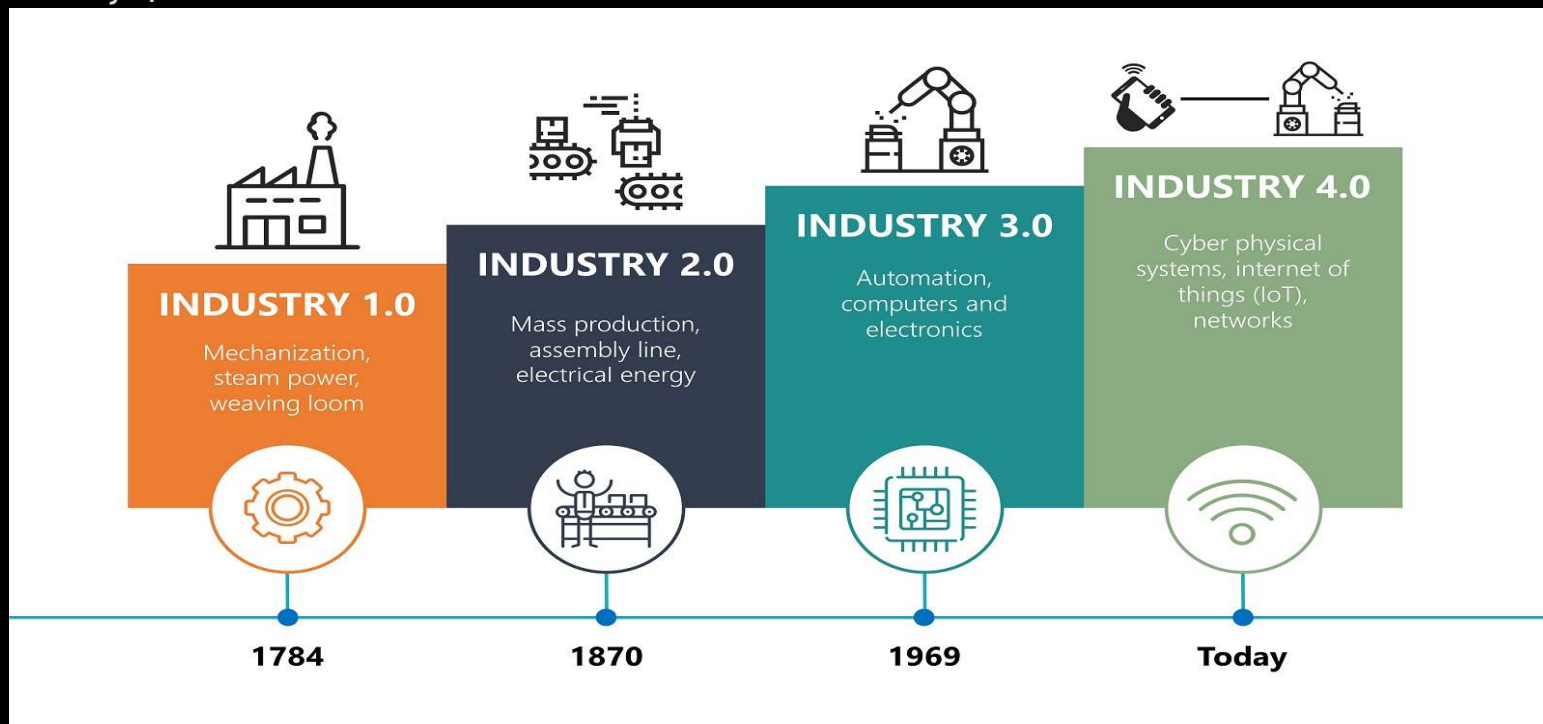


Background

- All popular technology Companies such as Facebook, Whatsapp, LinkedIn applications are FREE but remember there is **NO FREE LUNCH !**
- These Companies have realized the importance of data and how it could be used to generate revenue
- Data is useful – Simple !
- Data intelligence and application depends on the Company and if used correctly can positively and perfectly align with a Company's business goals
- In fact data can help a Company grow it's business in terms of revenues and profitability as well as help in introducing new products and services

Background

- Industry 4.0





Background

- In the manufacturing context Industry 4.0 is all about Smart Manufacturing (Smart Factory) achieved by –
 - Connected World – hardware implementation and upgradation
 - Data Collection and Analysis – software implementation
 - Intelligent decision making – software / cloud deployment through Artificial Intelligence
 - Closed loop system (control) – feedback to actuators
- In a nutshell an IoT project attempts to do one or more of the following –
 - **Monitor**
 - **Optimize**
 - **Control**
 - **Automate**

What is IIoT for Smart Manufacturing?

IoT, IIoT, Smart Manufacturing, Smart Factory, Connected Factory



What is IIoT for Smart Manufacturing?

- IoT stands for **Internet of Things** which stands for a totally connected world and smart decision making
- In a connected world all the equipment will be connected to a central platform and / or to each other for data transfer and / or control
- It is estimated that 50 billion devices will be connected to the internet by 2020
- Devices such as (**Smart Homes**) –
 - Lights
 - Ovens
 - Refrigerators
 - Air-conditioners
 - CCTV Cameras
 - Security Locks

Etc.



What is IIoT for Smart Manufacturing?

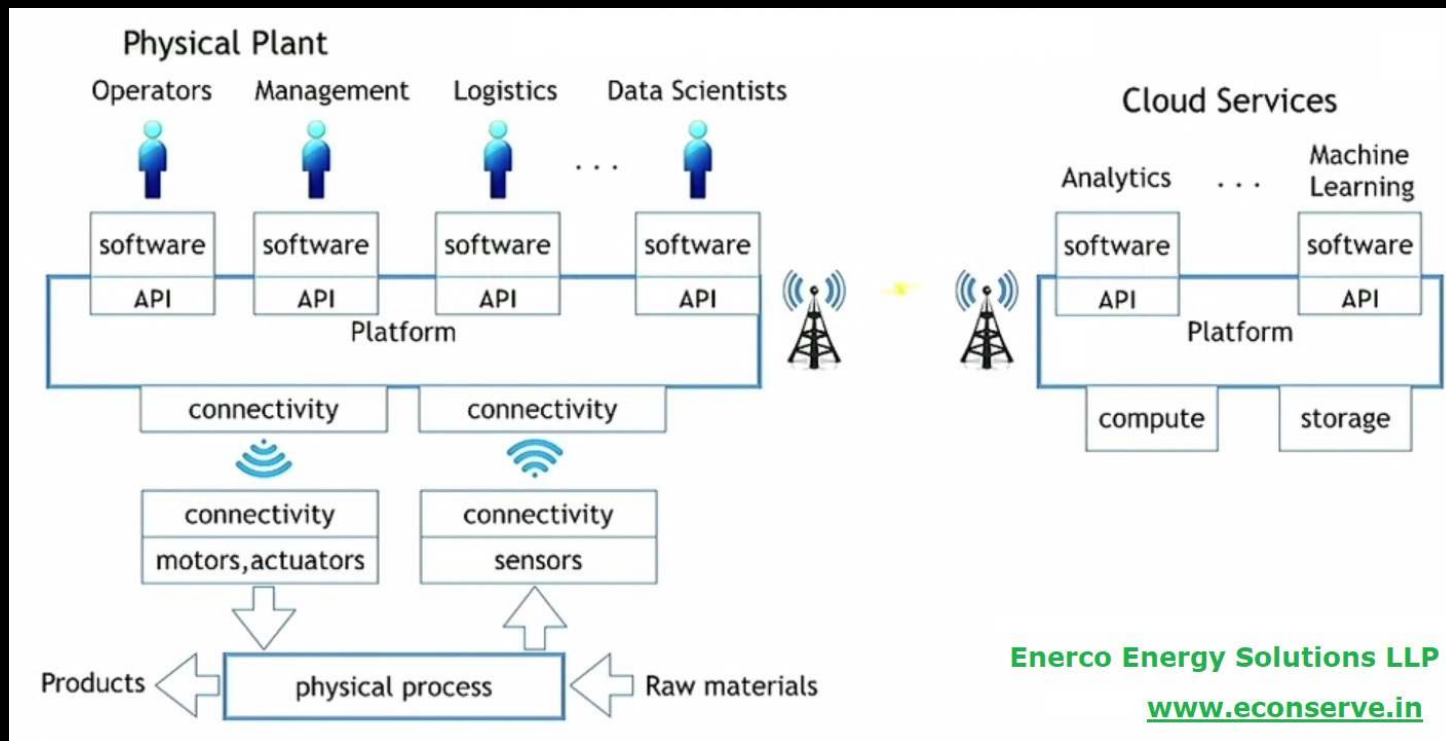
- Same principles are being extended to logistics and automobile industry (also a part of the overall umbrella of Industry 4.0)
- In fact some cars are already connected to their manufacturers, dealers and owners to ensure –
 - Safety – accident reporting
 - Security – tracking in logistics industry or kids tracking in school bus
 - Comfort – remotely switching on Car AC before you start driving
 - Efficiency – Fuel level monitoring in logistics

Etc.



What is IIoT for Smart Manufacturing?

IIoT stands for Industrial Internet of Things



Enerco Energy Solutions LLP

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What is IIoT for Smart Manufacturing?

- So IIoT in manufacturing means
 - All your plant equipment can talk to you by giving necessary data and by presenting insightful data for your action
 - Your plant equipment can talk to each other and present insightful data points and ideas to improve your productivity
 - An intelligent platform can help you with sound decision-making backed by data for important business decisions such as –
 - Resource Planning
 - Production Planning
 - Maintenance scheduling
 - Market Cycles (recession, slowdown)
 - Raw material ordering
- Etc.



What is IIoT for Smart Manufacturing?

- Smart Manufacturing in Industry 4.0 implies usage of –
 - Connectivity
 - Data handling and processing
 - AI (Artificial Intelligence) & ML (Machine Learning)
 - Platform & App Access
 - 24 x 7 Cloud Access
- Consists of top-down approach wherein IIoT can directly have a positive impact on the business

What is IIoT for Smart Manufacturing?



Your machines are trying to speak to you. Are you listening?

How to get started with IIoT?

Right Approach



How to get started with IIoT?

- IIoT is a solution and not a product – **PERIOD !**
- It cannot be thought of as a standard product which can be customized as majority of the products use proprietary technologies and coding
- Any manufacturing unit or plant should consider **IIoT as a solution** to the existing (*tangible and intangible*) problems
- The problem could be
 - Business problem (major use-case)
 - Technology problem (breakdowns, low OEE)
 - Planning & Management problem (resource, asset)
- So is IIoT about automation? No, it is **one-step ahead** of automation



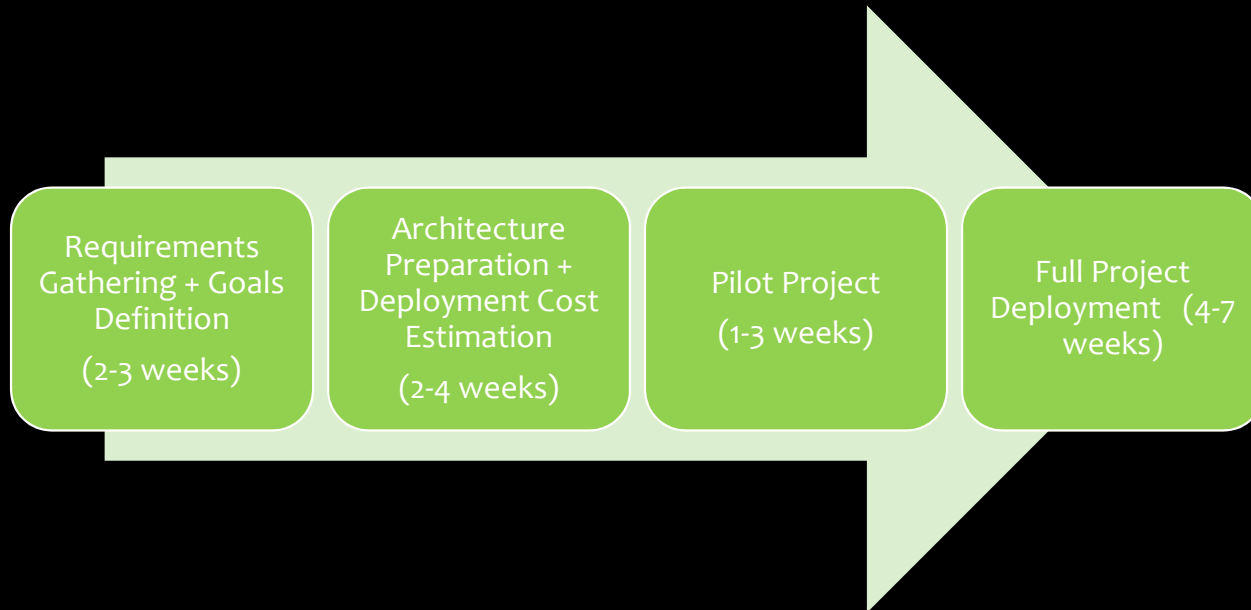
How to get started with IIoT?

- Each IIoT solution is unique as each plant or Company has its own specific challenges, goals and objectives
- Some of the common challenges or problems are –
 - Alignment of business goals with production
 - Business predictability and certainty
 - Resource planning challenges
 - Frequent Equipment breakdowns
 - Underutilized resources – human and machine
 - Equipment / System Underutilization



How to get started with IIoT?

Our Approach to a IIoT Project



(Timelines are approximate)



How to get started with IIoT?

Step 1 : IIoT Audit

- Hire a IIoT Expert agency to audit your plant to understand the existing system and setup for
 - IIoT Technical Audit
 - IIoT Business Audit
- Also consists of interaction with plant team to understand and freeze requirements

Step 2 : Architecture Preparation & Cost Estimation

- Plant simulation using our best-in-class software platform (globally recognized and used)
- Finalization of architecture, equipment vendor, communication protocols and system integration requirements



How to get started with IIoT?

Step 3 : Pilot Project deployment

- A pilot project meeting initial basic requirements is deployed
- Monitoring of pilot project for performance, utility and gaps

Step 4 : Full-scale project deployment

- Complete project deployment with cloud connectivity

Enerco Specialization in IIoT

Experience, Skill set



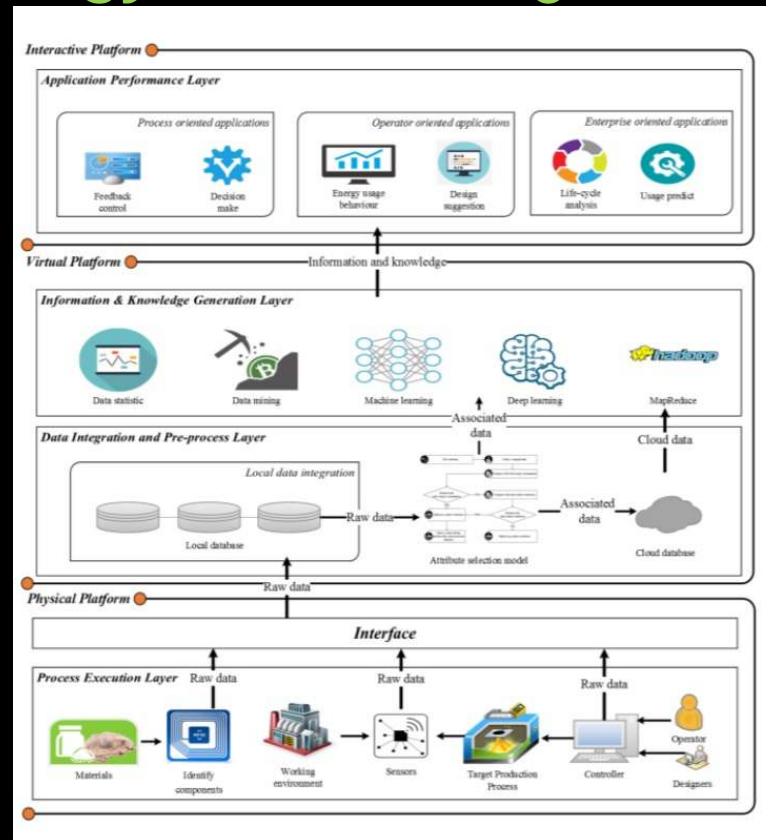
Enerco Specialization in IIoT

- Enerco Energy Solutions LLP was founded in 2009 by Technocrats with global experience in Power and Information Technology (Infosys Ltd. & British Telecom)
- Team consists of IIT-B Alumnus (B.E.E. Certified & Accredited Energy Auditor), Renewable Energy Experts and Technocrats
- Total team experience of 500+ Energy Audits & Renewable Energy Assignments (Consulting, Financing & Execution) across geographies and sectors
- Client include Fortune 500 Companies
- Engaged with global MNCs for IIoT Project
- New team consists of **Certified** IIoT specialists, Data scientists and IT domain experts

Annexures



Annexure 1 – Sample Architecture of a Smart Energy IIoT Project





Annexure 2 - Glossary

- IoT – Internet of Things, refers to a connected world wherein all the future devices and equipment would be connected to each other, to their platforms and to the internet
- AI – Artificial Intelligence, application of computer intelligence to present data and make smart decisions
- ML – Machine Learning, process of machines learning a trend based on a variety of factors including historic data, demographics, equipment specifics etc.
- IIoT – Industrial Internet of Things, refers to a connected factory or plant wherein all the equipment such as core process equipment, compressors, pumps, boilers etc. would be connected to each other, to their platforms and to the internet
- Platform – Group of technologies upon which other technologies, applications and processes are developed



Annexure 2 - Glossary

- Cloud – Refers to global network of computers on which data, application and services are stored and can be retrieved anytime (24x7) in real-time
- Architecture – A setup of hardware and software built for a specific purpose and goal



Get in touch :

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