# Lesson 6
# Industrial IoT

# Industrial Internet of Things (IIoT)

- The use of IoT technology in manufacturing

- Integration of complex physical machinery M2M communication with the networked sensors

- Use of software, analytics, machine learning, and knowledge discovery

# Examples of IIoT

- Refining the operations for manufacturing or maintenance
- Refining the business model of an industry
- Railways track maintenance
- Mining
- Agriculture
-  Oil and gas,
- Utilities, transportation, logistics and healthcare services.

# Bicycle Manufacturing

- Sensors at each manufacturing stage communicating the information on completion of stage

- IIoT application analyses that data on completion of each activity at each stage

- Data of breakdowns, work stoppages and failures at the stages.

# Bicycle Manufacturing Company Steps

- Synchronises various actions to remove the bottleneck
- Due to the components supply
- Manufacturing stage machinery failure
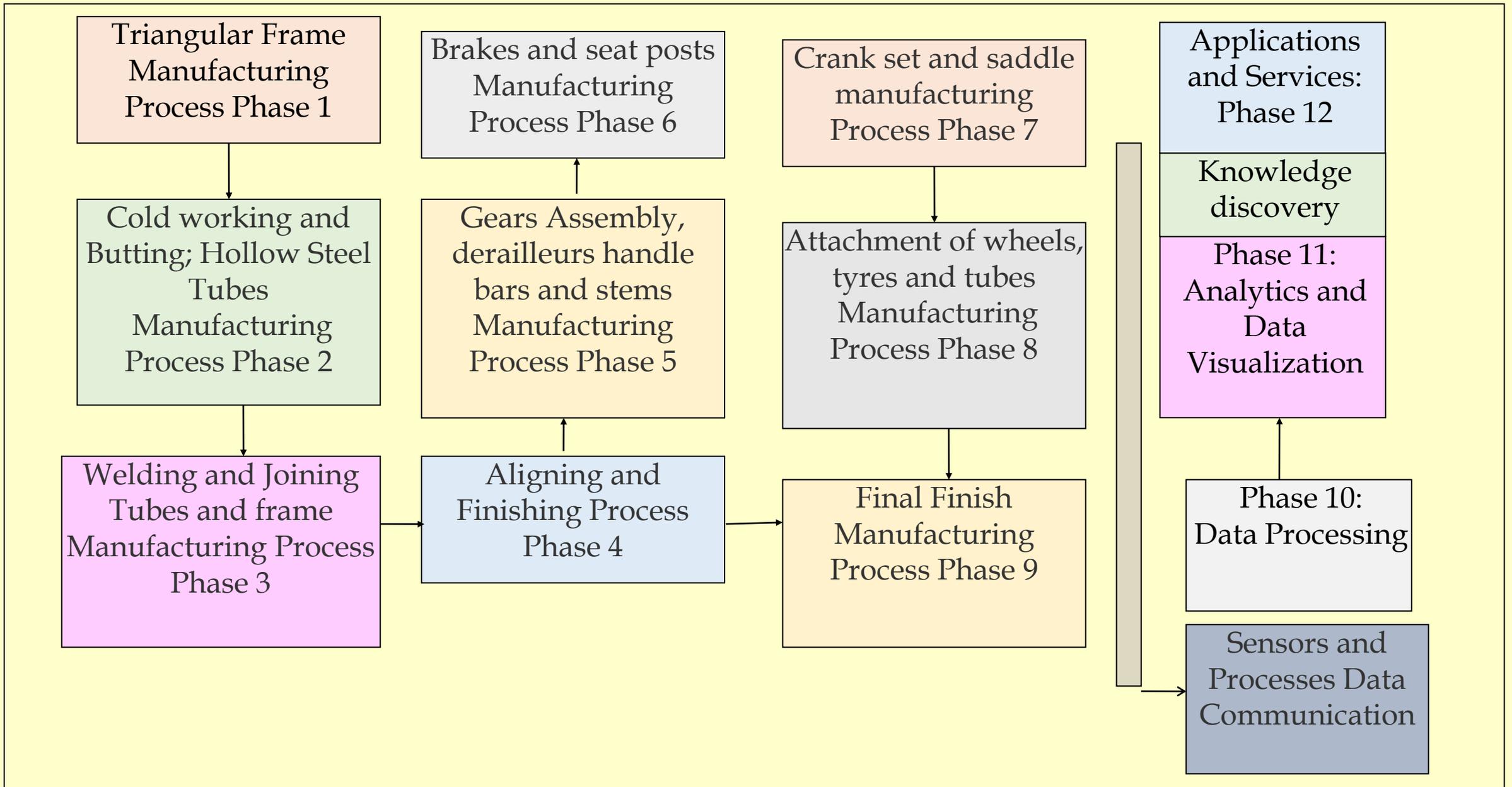- Human failures
- Manufacturing Process Optimisation

**Fig. 7.10** IIoT phases in bicycle manufacturing process

# Predictive Maintenance using IIoT technology

- Application for predictive railroad service centre
- Ultrasonic sensors, Infrared temperature sensors and microphone sensors along the railway tracks sensing and communicating the captured data for each train passing through each segment track
- The application predicts the failures
- Undertaking the preventive maintenances.

# GE Industrial Analytics Software Predix

- The platform provisioning for sensors based computing and predictive analytics

# Axeda Company advanced cloud-based service and software

- Manages connected products and machines
- Implementation of innovative M2M and IoT applications.

# OSI soft software for real-time data management

- Sensors data from the manufacturing processes, utilities companies such as electricity, phone and mining
- Sensor-driven computing

# Summary

We learnt

- IIoT
-  Bicycle Manufacturing Example for stages. Machines and machinery coordination
- Usage in Refining manufacturing
-  Maintenance
- Refining the business model
- Railways track maintenance
- Mining
- Agriculture
-  Oil and gas,
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# Summary

We learnt

- Refining the business model
- Railways track maintenance
- Mining
- Agriculture
-  Oil and gas pipeline faults prediction and detection

# End of the Lesson 6 on
# Industrial IoT