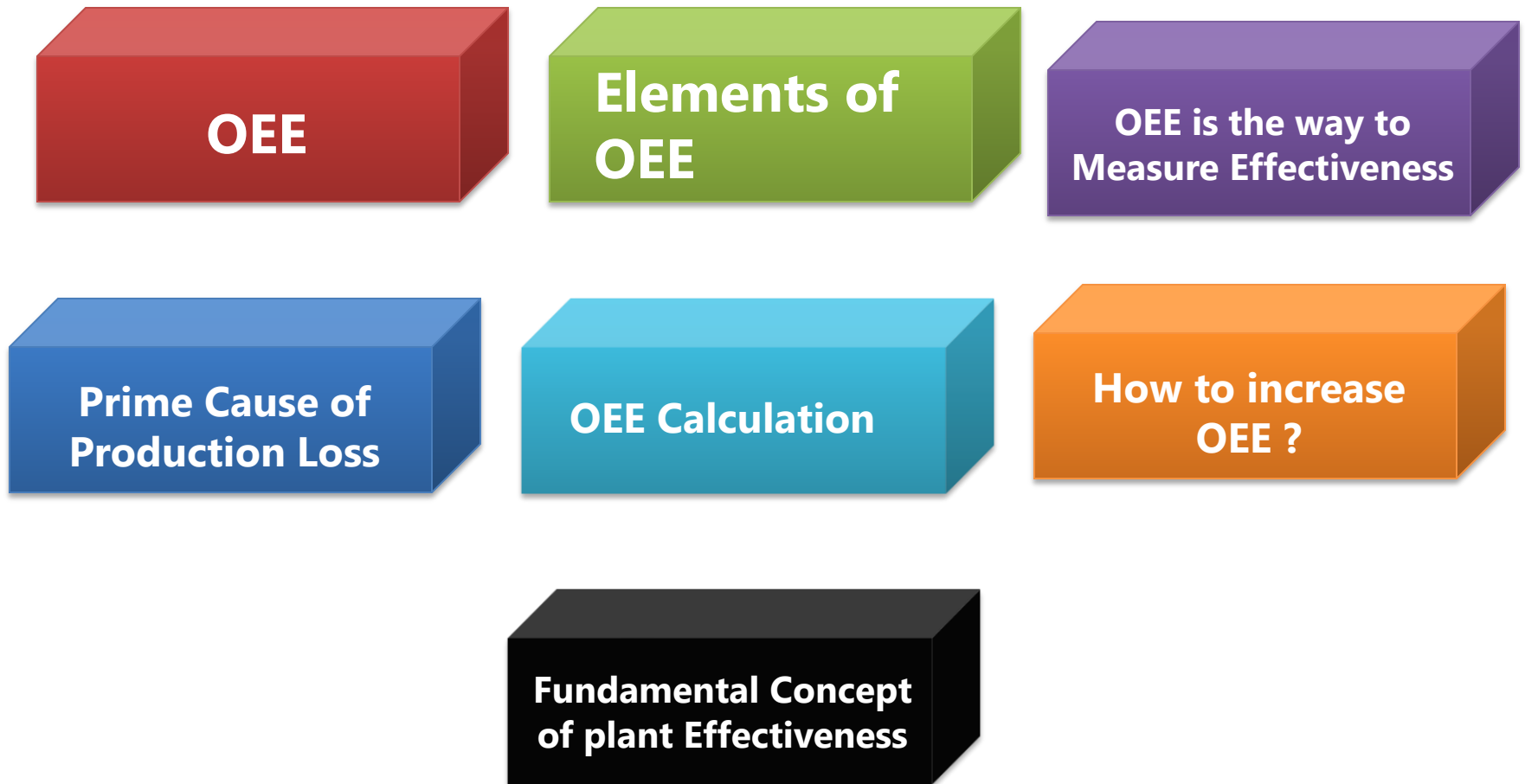


Overall Equipment Effectiveness (OEE)

OVERALL EQUIPMENT EFFECTIVENESS (OEE)

01-January-2014

Overall Equipment Effectiveness (OEE)

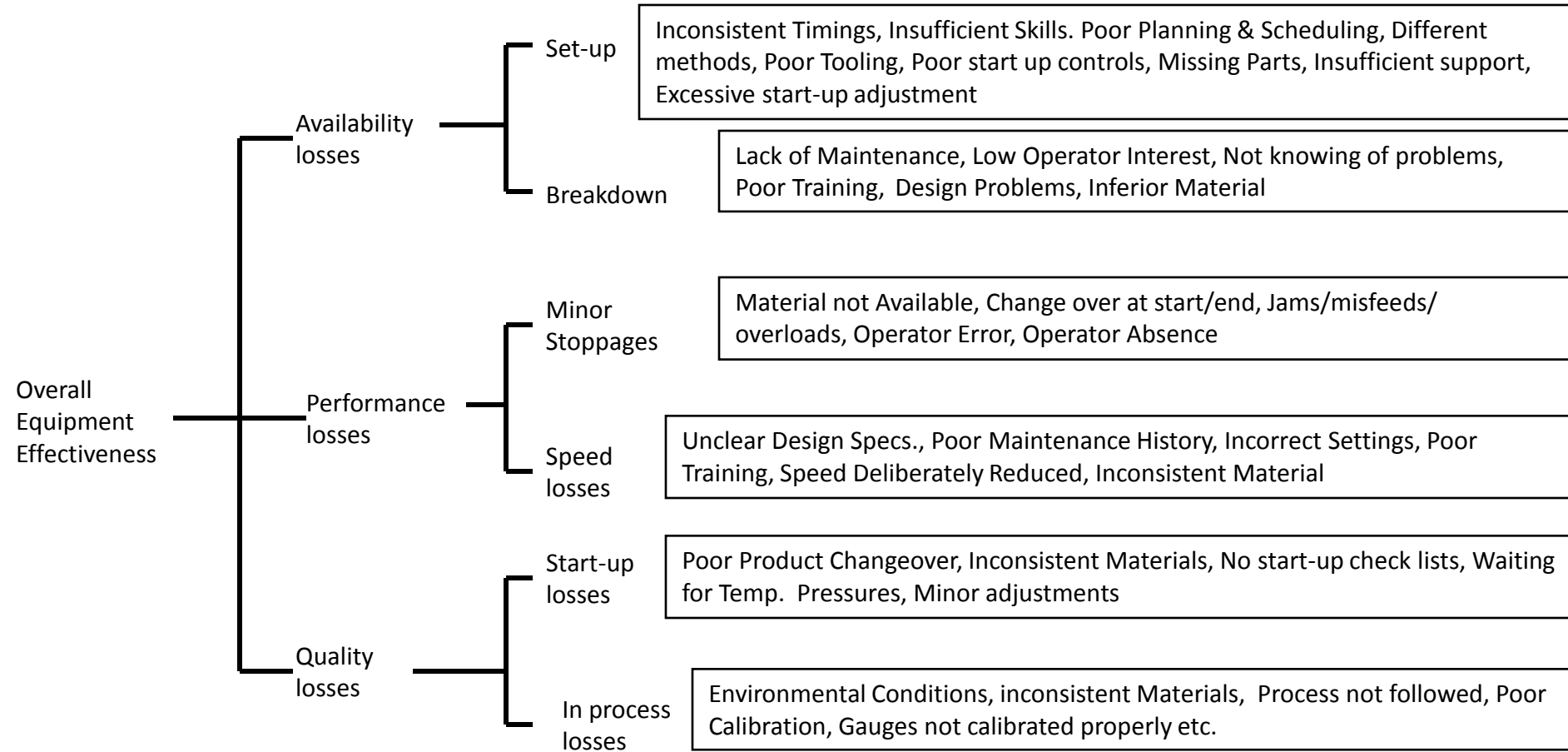


Overall Equipment Effectiveness (OEE)

Overall equipment effectiveness (OEE) is a hierarchy of metrics to evaluate how effectively a manufacturing operation is utilized.

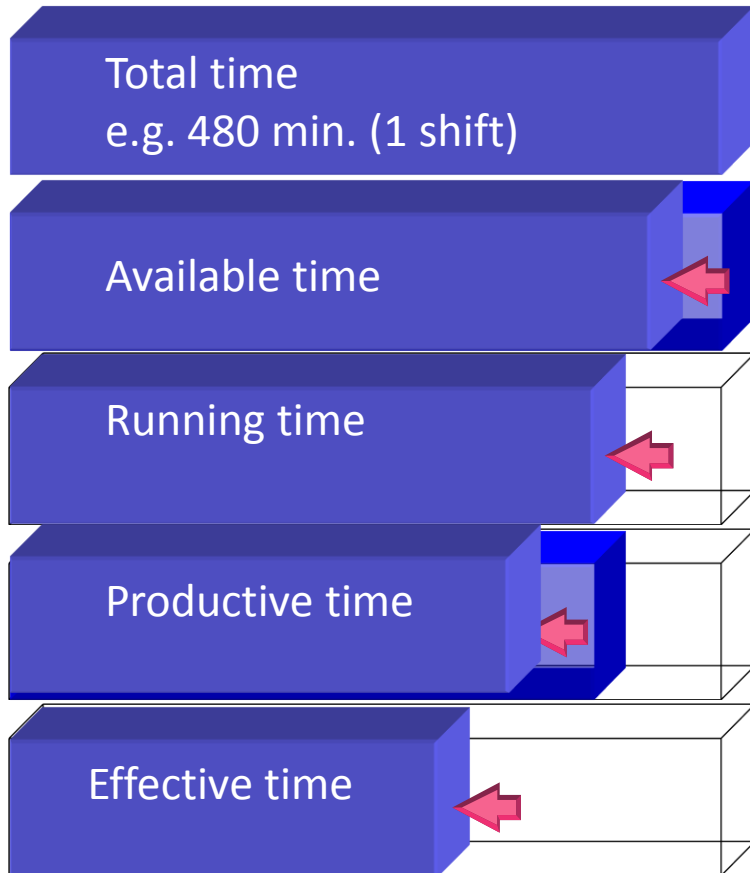
- In an ideal factory, equipment would operate 100 percent of the time at 100 percent capacity, with an output of 100 percent good quality.
- The difference between the ideal and the actual situation is due to losses. Calculating the **overall equipment effectiveness (OEE) rate** is a crucial element of any serious commitment to reduce equipment- and process-related wastes.

Elements Of OEE



OEE is the way to Measure Effectiveness

OEE is the way to measure how effectively Machine / Equipment hours are used.



OEE goes down due to following Losses

Planned
Downtime

- breaks, planned maintenance, training

Downtime

- breakdowns, repairs
- changeover
- adjustment
- start up

Performance
Losses

- machine speed
- short stoppages
- lower yield

Quality Losses

- scrap
- reject
- rework

Prime Cause of Production Loss

A production line seldom operates at optimum speed. A myriad of reasons or Negative Performance Impacts, mostly in combination, cause losses in productivity and therefore loss of money. These include:

- **Line Saturation**

There is no place for more output from the machine. For example, a filling machine of a bottling line is running at its max. speed.

- **Equipment Failure**

Machines break down, wear out, are not used properly and so on. All ends up in lost production time.

- **Product changes**

During the change over from one product to another the machine settings must be changed, breakdown may occur and speed must be reduced.

- **Short Stops**

For example, a bottle falls down in a bottling machine and the operator picks it up. These short but frequent events can be the reason for major time loss.

- **Operator Inefficiency**

The operators like to have it nice and easy. They run with lower speed in order to guarantee smooth operation.

Prime Cause of Production Loss

- **External reasons**

Sometimes, the production runs out of orders and the machines have to shut down. Or there can be a failure in the electrical power network far away from the factory.

- **Product Type**

Some products are more difficult to make. There are more breakdowns and quality problems.

- **Speed Losses**

For one reason or another, the speed of the machine is not optimum. In order to save costs, someone has purchased cheap but poor quality raw material.

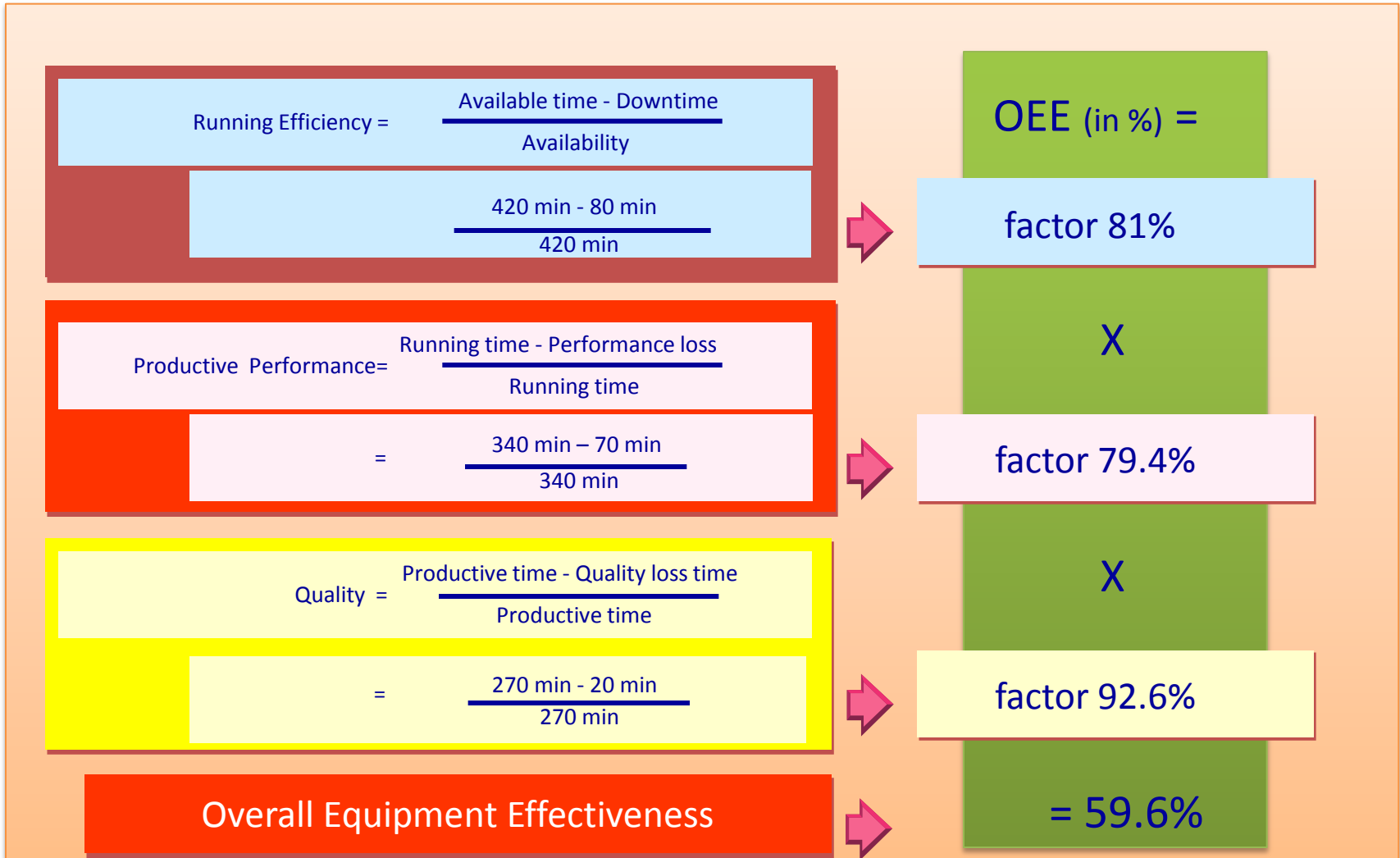
- **Quality**

Although the machine is running, the products are not good enough for the customers. These are the most expensive kinds of losses.

- **Missing Material**

The raw material storage is empty and machines can not produce any more.

Overall Equipment Effectiveness Calculation



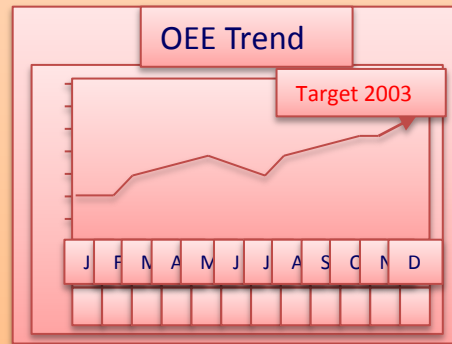
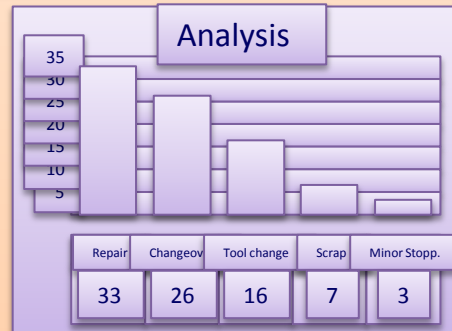
How to Improve OEE ?

Data collection is the most important action to increase OEE

Collect data for all downtimes and losses on the machine

- Repairs
- Change over, Adjustm.
- Tool change
- Minor stoppages
- Scrap, rework

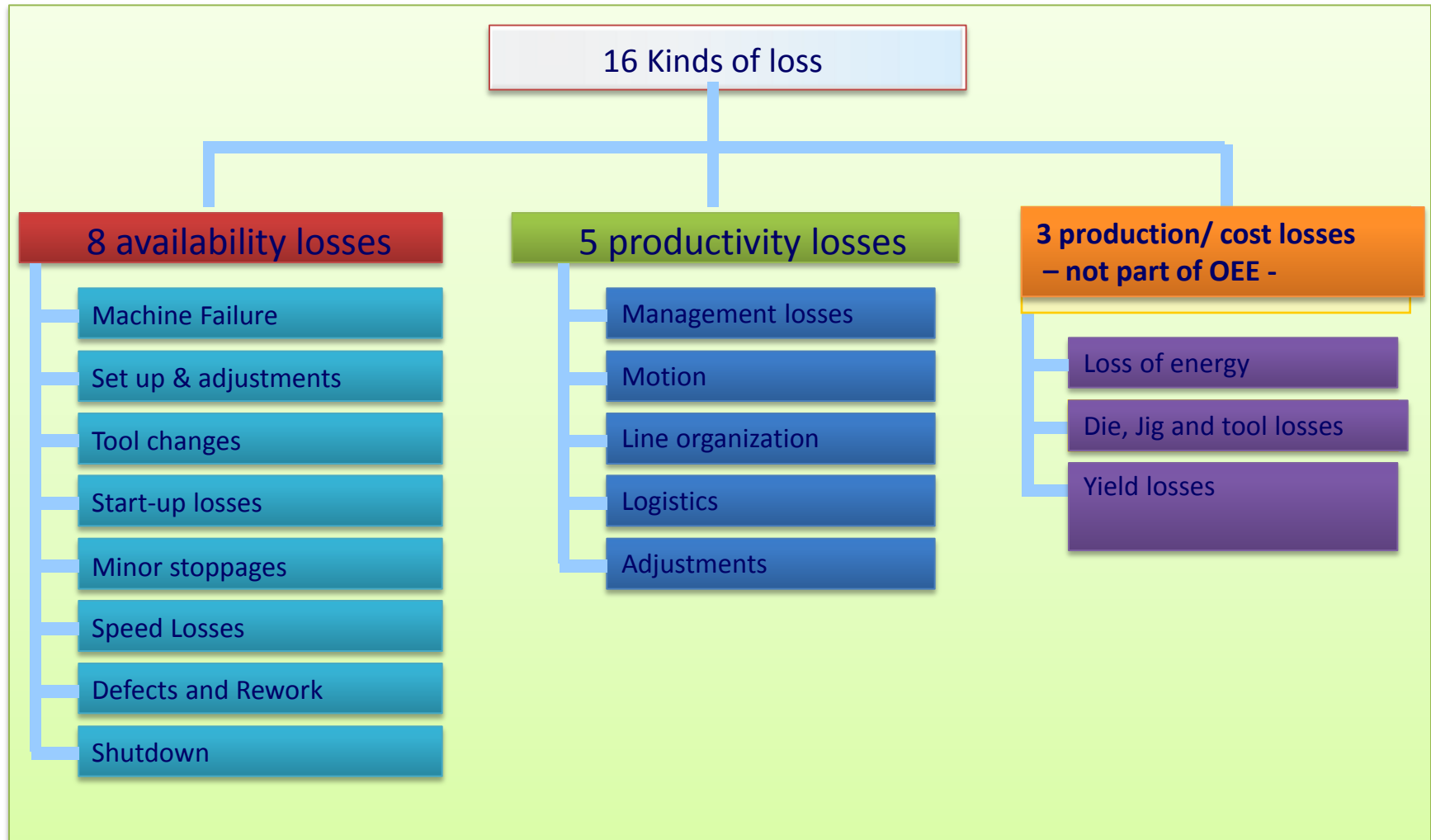
Data analysis and visible measure



Make improvements visible and implement

- Autonomous Mainten.
- Preventive Maintenance
- Changeover reduction
- Standardize tooling
- Improved machine reliability
- Standardisation

Fundamental Concept of Plant Effectiveness



OEE



Thank You

For more information on OEE or our
other services

Logix Automation Systems Pvt. Ltd.

Ph. +91-98140-35599; +91-92167-36975

Email : info@logixind.com; info@factorypulse.in

Website : www.logixind.com ; www.factorypulse.in