

Lean maintenance initiative

Warschau, 22. February 2018, Sven Buhrmann

LEAN – Create more value for the customers...

... with less resources driven by an continuous improvement process

Customers first

- We adapt fast and constantly to market changes and customer needs

Power to Change

- We simplify processes and eliminate waste by using LEAN methods



We make the difference


- We generate profit and secure the future of our company, employees & investors

LEAN – Create more value for the customers...

... with less resources driven by an continuous improvement process


Lean Goals

Customer First



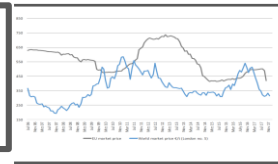
Generate Profit to
secure the future

Power to Change



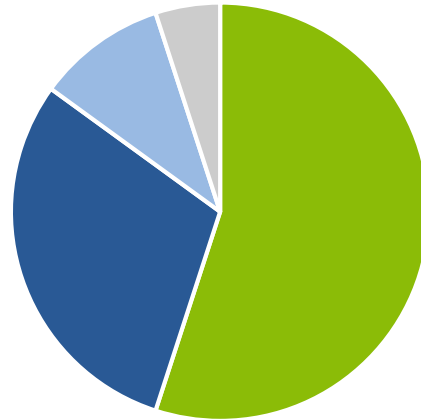
Success Factor

Revenue
(Volume x Price)



=

Costs



Driver

World Market and
EU Production

Yield and Logistic

Energy and Staff

Staff and Services

Staff and Services

Project Charter

Lean Maintenance Initiative (LMI)



Business Gap

- Nordzucker spends considerably amount of money for maintenance activities which makes the efficient use of maintenance expenses essential
- Enable the factories to **detect wastage** and to do the **right work** at the **right time** in the **right quality**
- The project is concentrated on **bottom-up** realization driven inside the plants **by the employees**

Problem

- **Change mindset requires strong improvement**
- Maintenance is mainly performed with traditional methods
- No “best of”-mentality

Goal

- Adjust maintenance activities to current technology
- Unify, share and benchmark maintenance practices
- **Increase OEE**
- **Decrease costs** for all factories

How will the implementation be done?

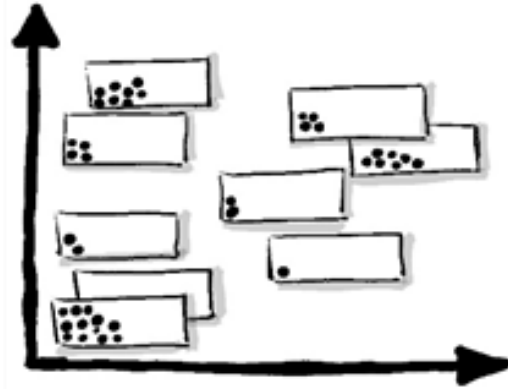
Bottom-up driven project approach supported by experts for change and maintenance

Project Duration: 12 – 18 months



Kick-off Workshops

Workshop with the masters and engineers to identify the potentials



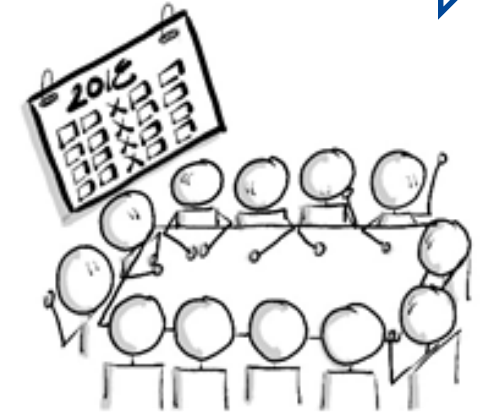
Rate and Prioritize

Joint rating of identified improvement actions based on importance and urgency and assignment of responsibilities



Change Mgmt. Training

Intensive training on change management and major soft skills like team work, feedback, communication, appreciation, etc.

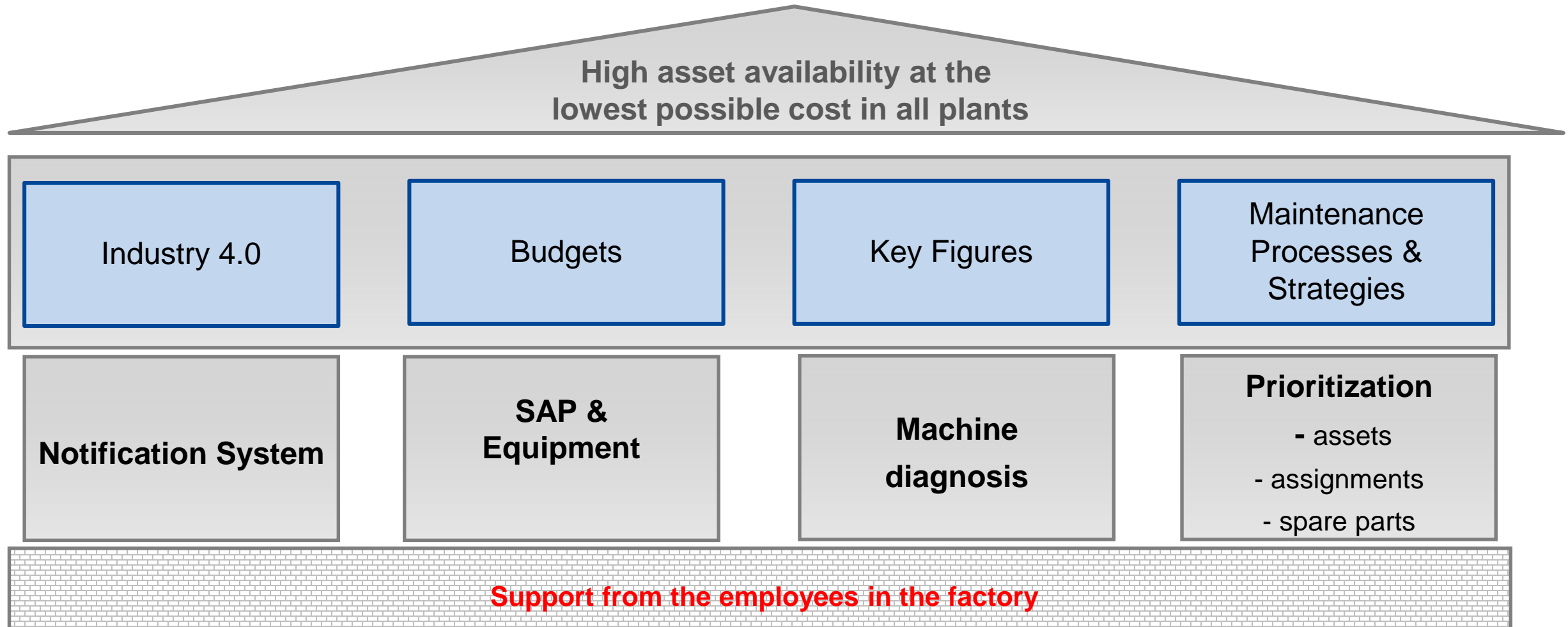


Weekly Workshops

Continuous meetings to develop solutions and track progress and results of implementation

New technical developments ...

... and the future market situation require to secure competitiveness



Notification System

Development of a harmonized reporting system which connects the incident with the costs to maintain

Handwritten notes



- Individual notes on incidents
- Scattered storage of notes
- Limited long-term documentation of knowledge and experience

Online Database

Logbuch – Suche

Standort: WZL Meldung: Hilfe

Bereich: (Alle Bereiche) Zeitraum: von bis Vorlage erstellen

Anlage: (Alle Anlagen) Benutzer: (Alle Benutzer) Suchen Neuer Eintrag

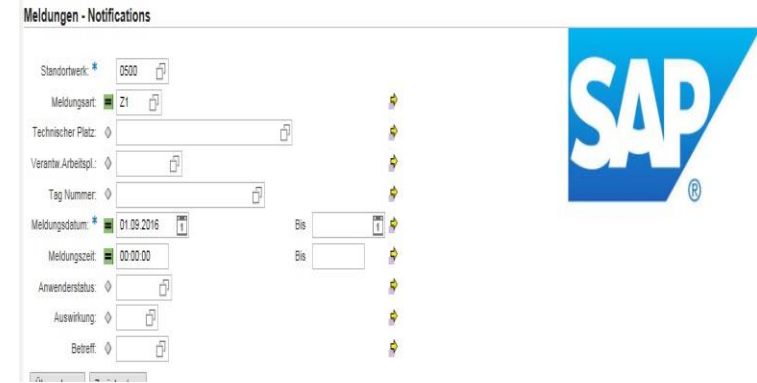
Anlagenteil: (Alle Anlagenteile) Status: (Alle) [weiter]

Ausfakursache: (Alle) MV:

ID	Zeit	Werk	Bereich	Anlage	Benutzer	Meldung	Bemerkung	Status	Deuer (h)	MV (t)	Ursache
141260	20.02.2017 14:29:05	F21	Maschine	44 Fermentation Maischelank		Begonnen Schaumöbehälter zu fertigen. B.A/B.B.		In fo			
141259	20.02.2017 13:26:23	WZL	NSC	32 Sortenfertigung Absackungen		Zahnradpaar vom Packschieber "A" gewechselt		gelöst			

- Central storage of notes
- Notifications and work orders are in different systems
- Development of multiple systems

SAP Online Portal



- Central, structured storage of notes
- Notifications and work orders are linked in one systems
- Development of one system

Prioritization

Risk assessment to create transparency about risks and priorities for maintenance

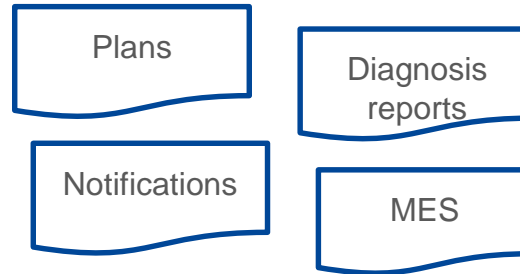
What has priority?

Risk Assessment

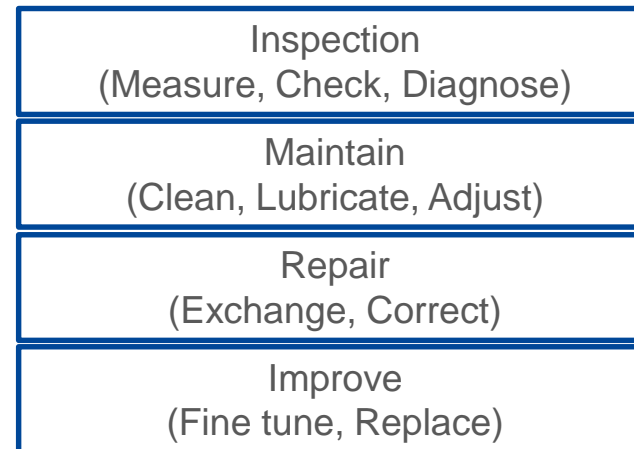
Failure Effect	A	B	C
Employees	Condition Based	Deferred	Run to Failure
Production			
Subsequent Costs			
Environment			
Quality & Customer			

What will be done

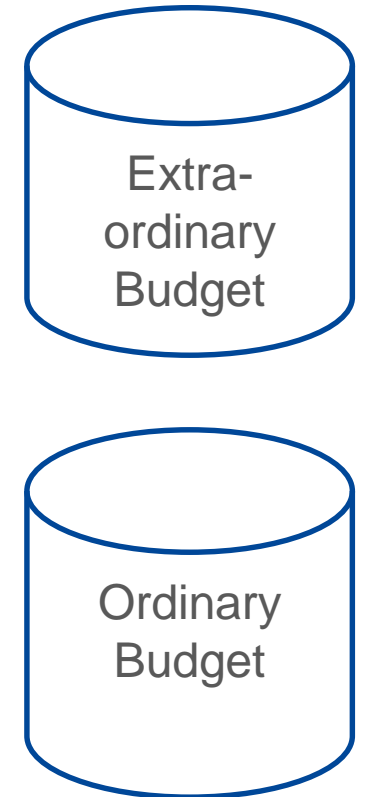
Condition of the equipment



Maintenance action

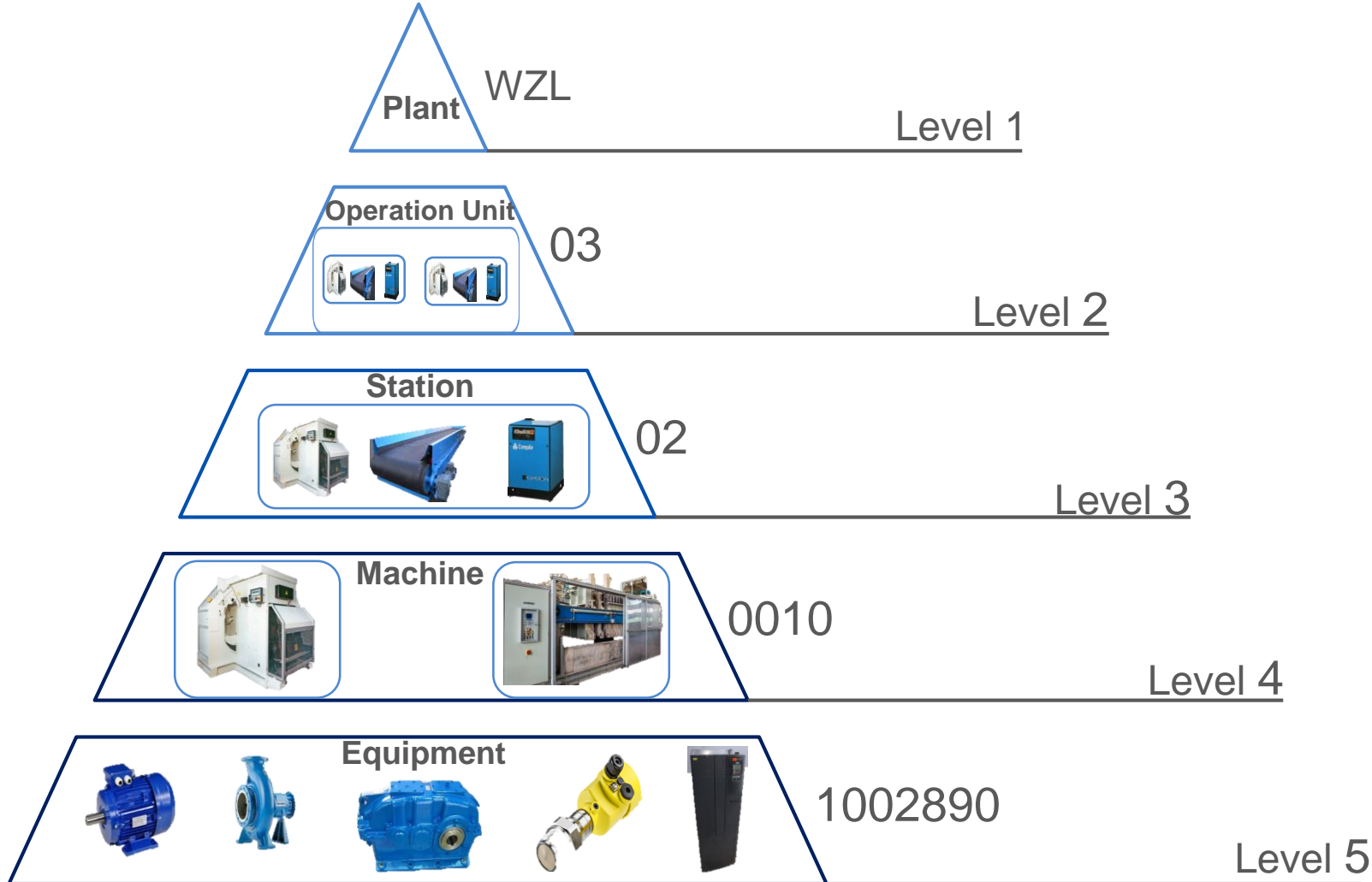


What can be done?



SAP & Equipment

An equipment is a centrally defined key providing technical and financial information



We are striving for ...

Higher transparency & knowledge from operation

Equipment history from failure notifications

Status of equipment by age, operating hours and stability assessments

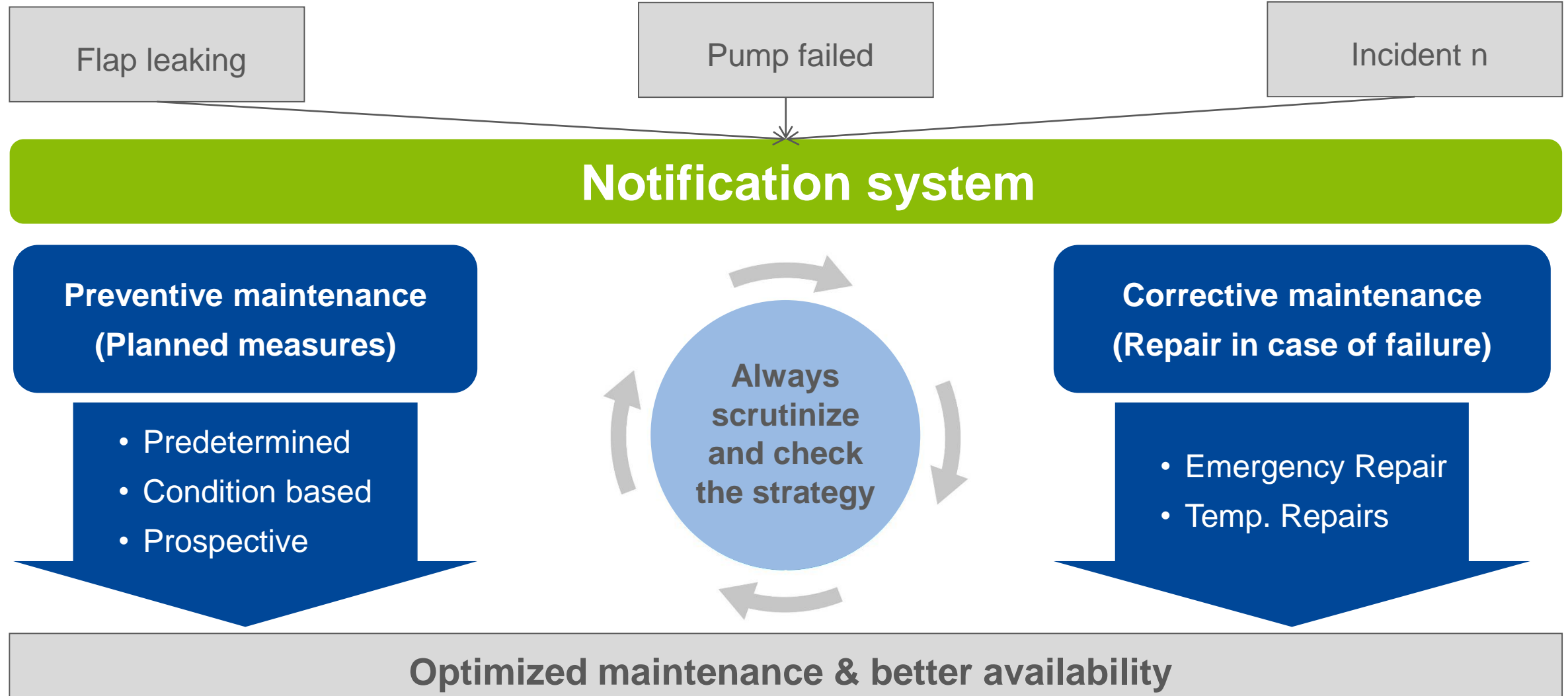
Correct attachment of spare parts

Tracking of warranty so no cost is spend of equipment

Thank you for your Attention!

Notification system

... serves to improve the maintenance and availability of our systems

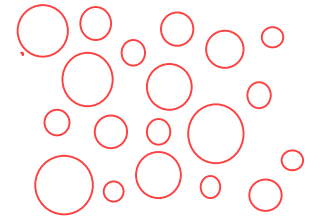


Prioritization

Risk classes to limit planned maintenance and increase condition as well as predictive maintenance

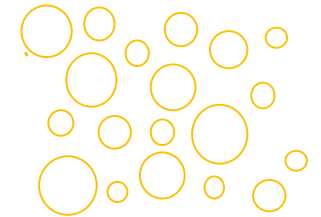
A

Focusing on **condition-based maintenance** (predictive and condition-based), that means only when needed which is **shown by indicators**. (Indication of failure or heavy drop in performance). Spare parts for those pieces of equipment must be kept in a pool at short notice.



B

As long as possible **postponement of maintenance measures**. Maintenance work on the equipment should only be carried out if its function is classified as important for the following campaign (case-by-case weighing of requirements). Short-term procurement of spare parts.



C

Operation of the equipment until it is inoperable and subsequent repaired. Spare parts are not kept in stock, but are generally readily available.

