

BMA



A tecnologia alemã, produzida no Brasil.

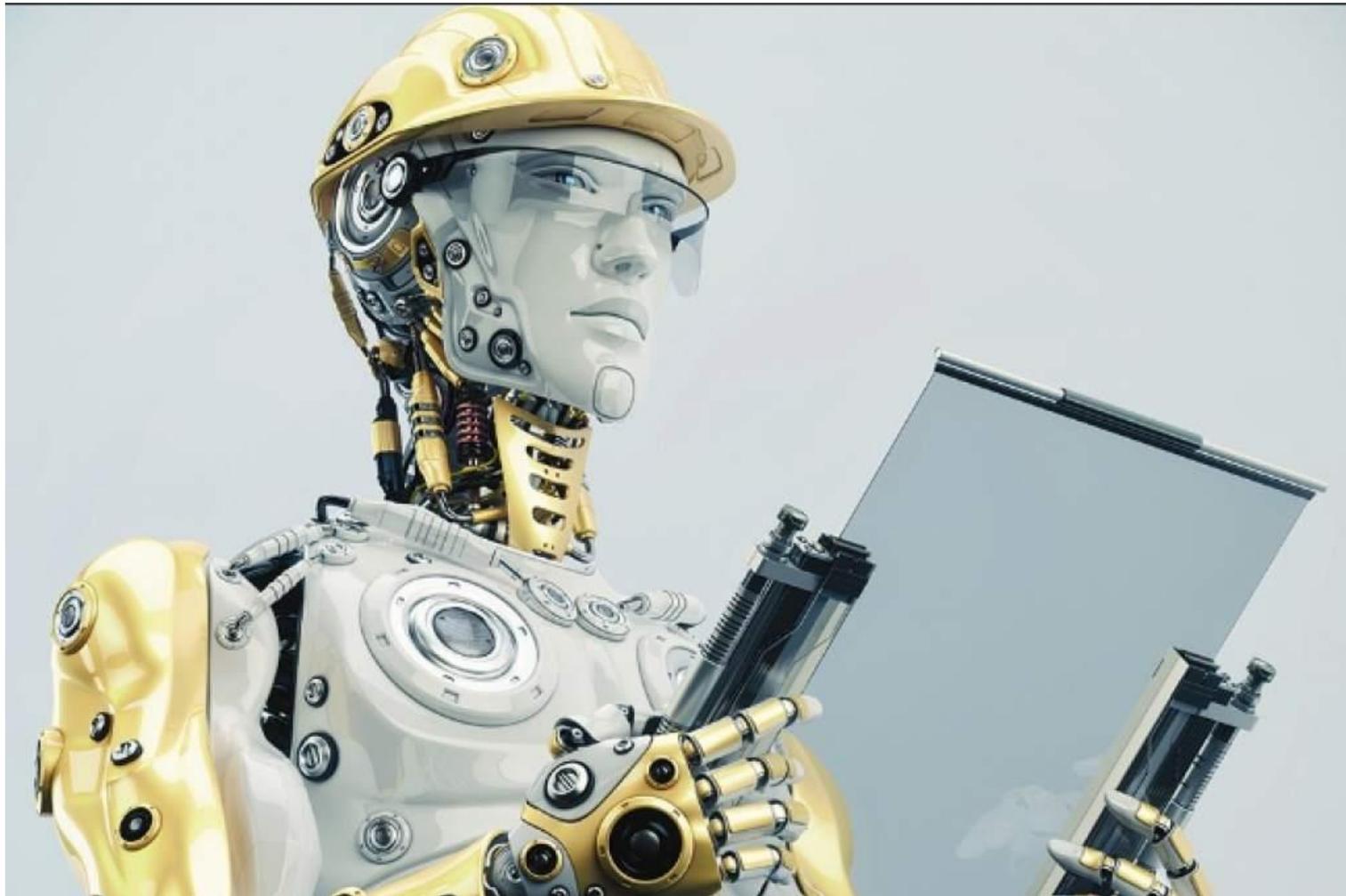
Drivers para Indústria 4.0

LCC

OEE

Carlos Vieira

Estamos prontos para Indústria 4.0?

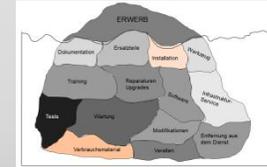


Estamos prontos para Indústria 4.0?



LCC

Life Cycle Cost



OEE

Overall Equipment Effectiveness

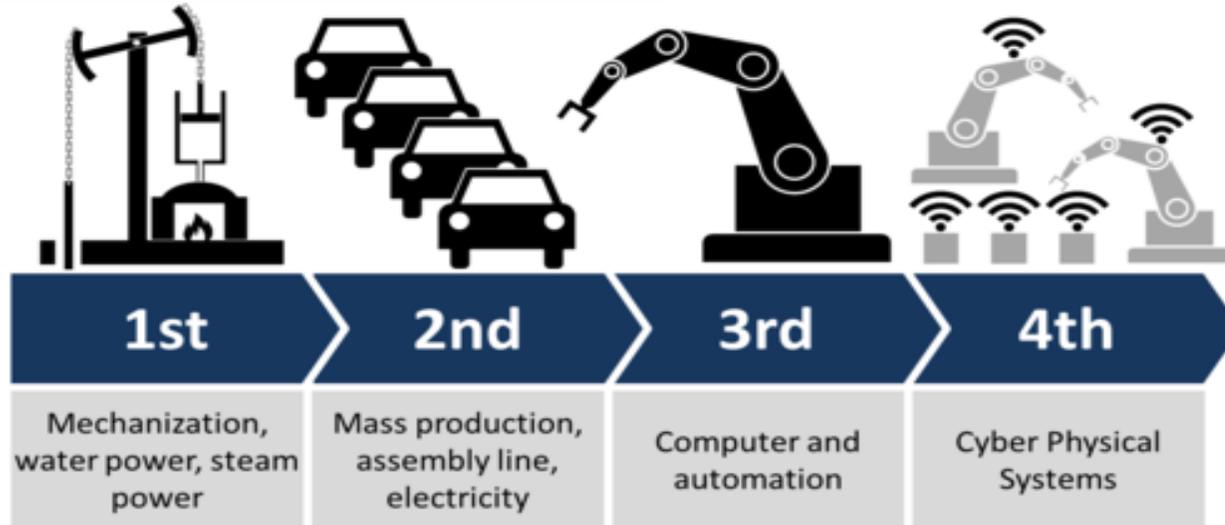


BMA na Indústria 4.0

Smart Monitoring



Indústria 4.0 - Conceito

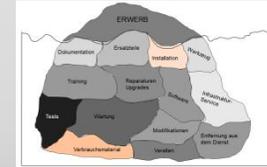


Hanover Fair (2011) – Smart Factory

- **Interconnection:** ability to connect Internet of Things (IoT) or the Internet of People (IoP)
- **Information transparency:** to make appropriate decisions.
- **Technical assistance:** First, the ability of assistance systems to support humans
Second, the ability of cyber physical to support humans by conducting a range of tasks that are unpleasant, too exhausting, or unsafe for their human co-workers.
- **Decentralized decisions:** The ability of cyber physical systems to make decisions on their own and to perform their tasks as autonomously as possible.

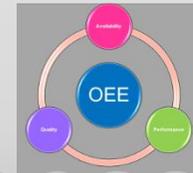
LCC

Life Cycle Cost



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BMA na Indústria 4.0

Smart Monitoring



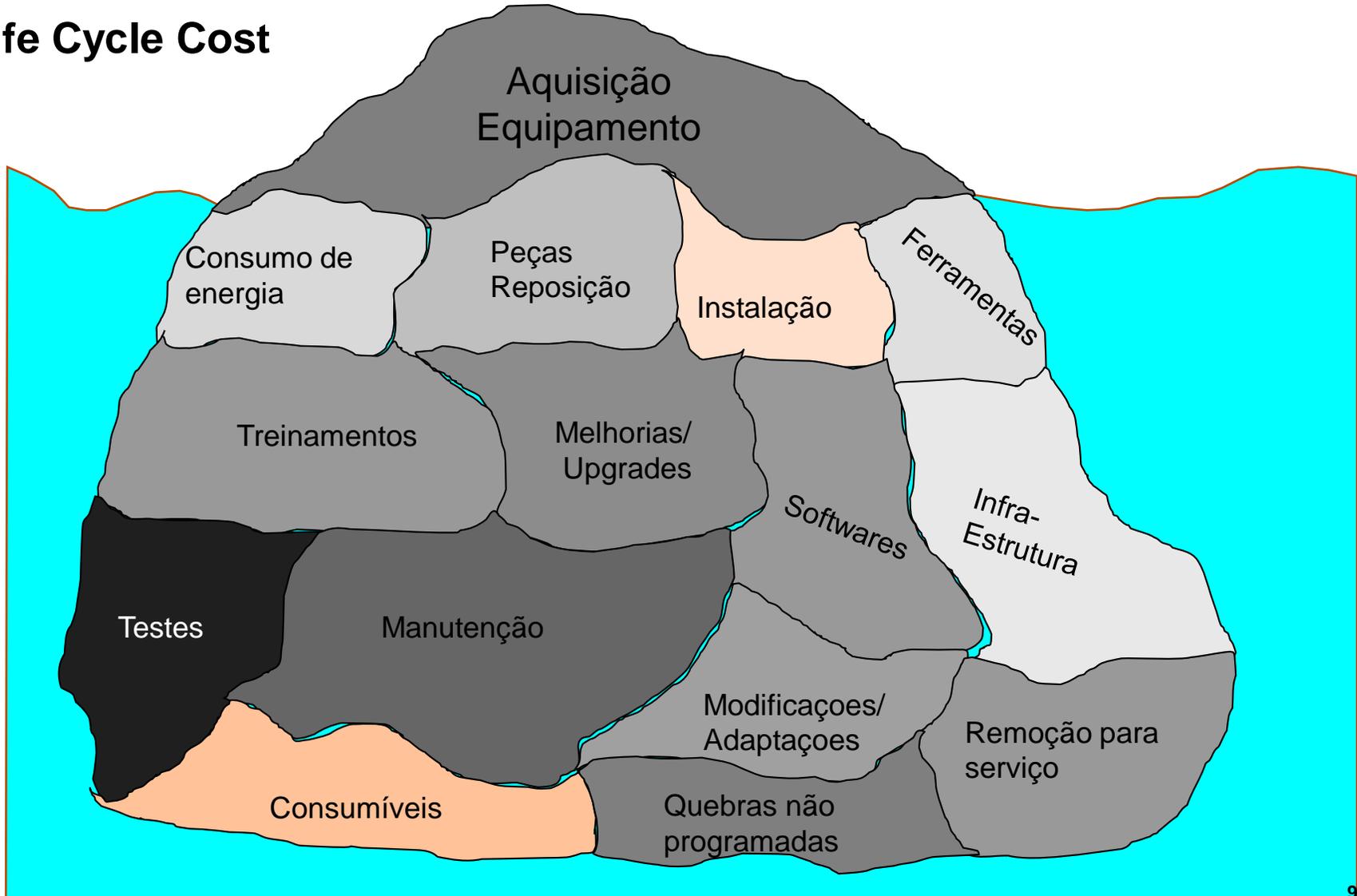


Você me vê

A large iceberg floats in a blue ocean under a clear sky. The visible tip is a jagged, snow-covered mountain peak. The vast majority of the iceberg is submerged, appearing as a dark, textured mass of ice beneath the water's surface. The horizon line is clearly visible, separating the sky from the sea.

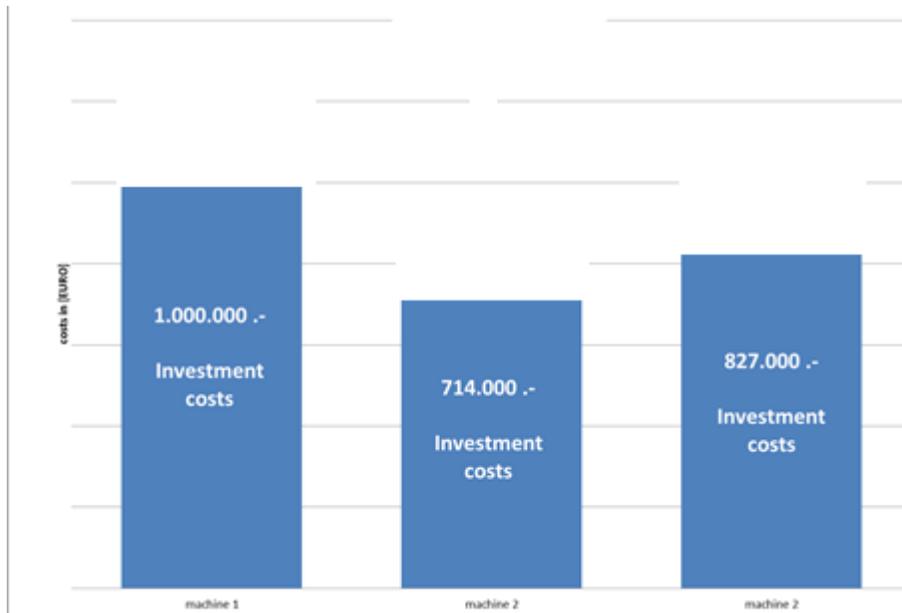
**Mas não sabe
quem eu sou**

Life Cycle Cost



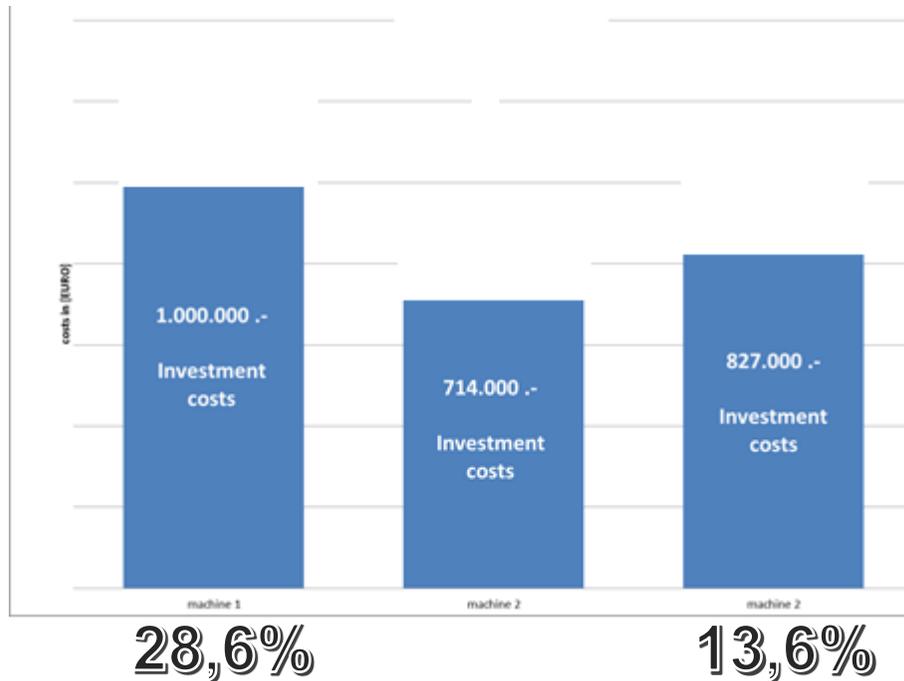
Estimativa de LCC – Caso prático

Exemplo de LCC considerando apenas o quesito manutenção para 3 equipamentos similares



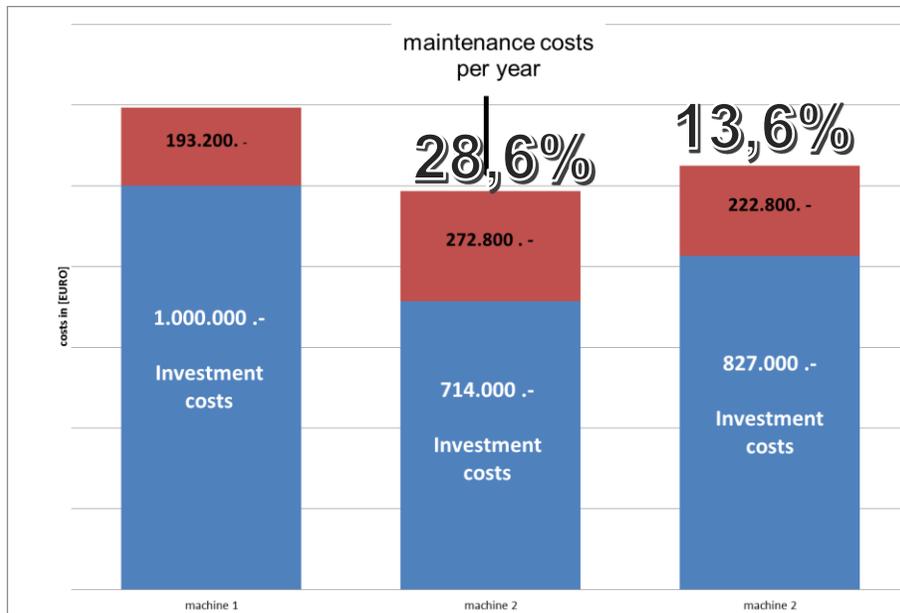
Estimativa de LCC – Caso prático

A diferença do custo de aquisição, considerando o equipamento mais barato como referência



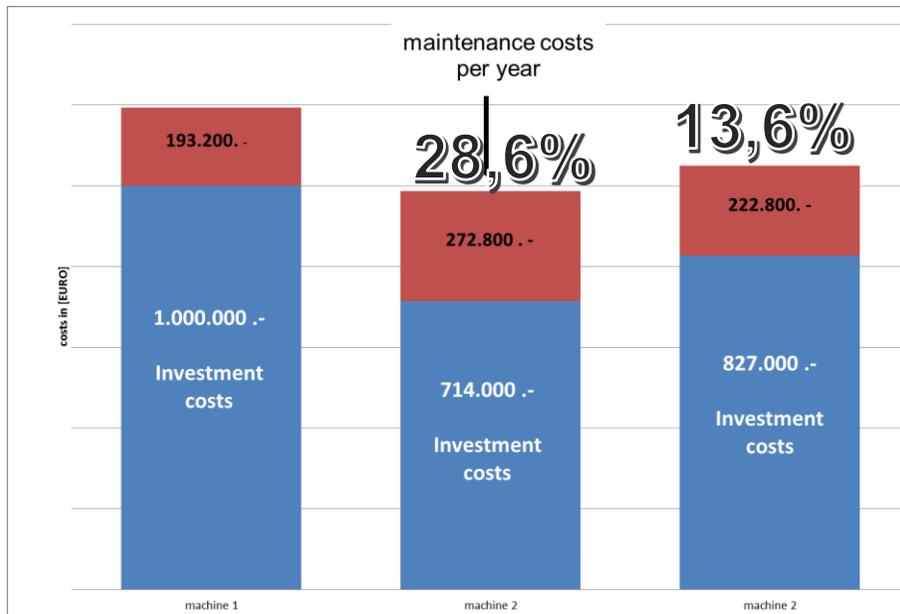
Estimativa de LCC – Caso prático

A diferença do custo de manutenção por ano, considerando o mais barato como referência

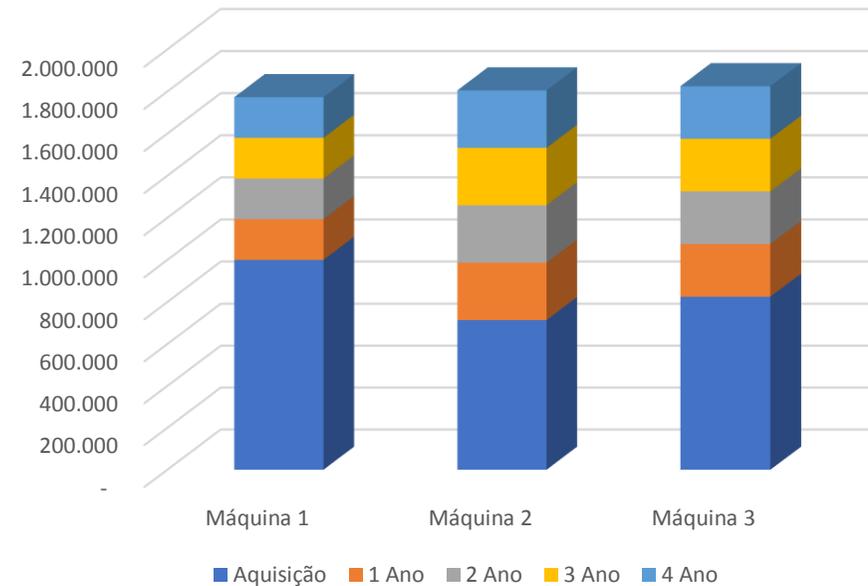


Estimativa de LCC – Caso prático

Custo total após 4 anos



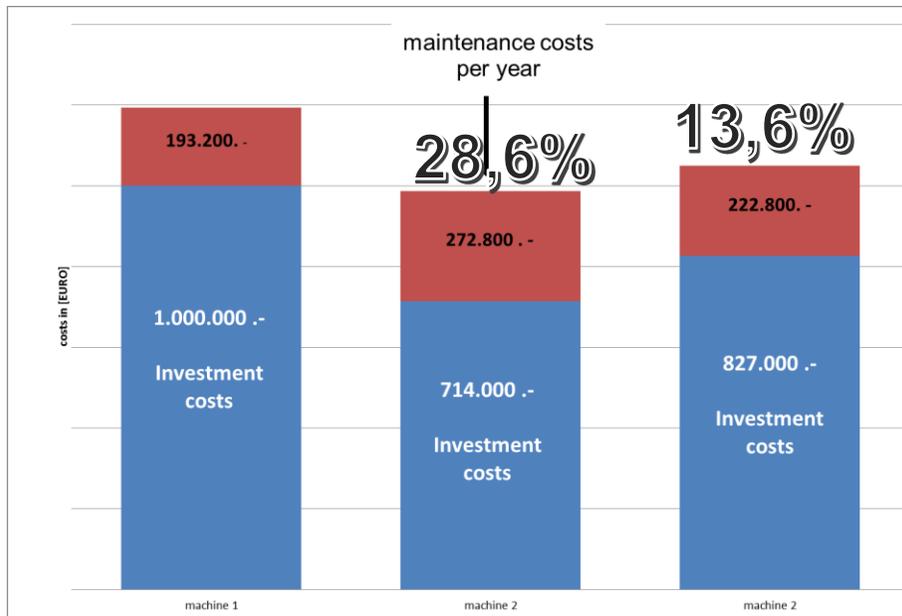
LCC - Exemplo Prático



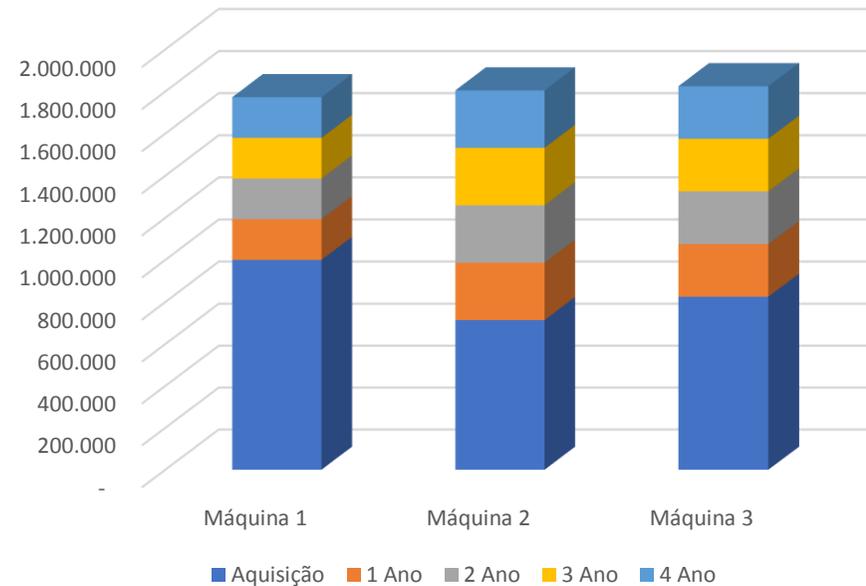
Estimativa de LCC – Caso prático

Custo total após 4 anos

*Centrífuga BMA Estimativa Vida – 40 anos



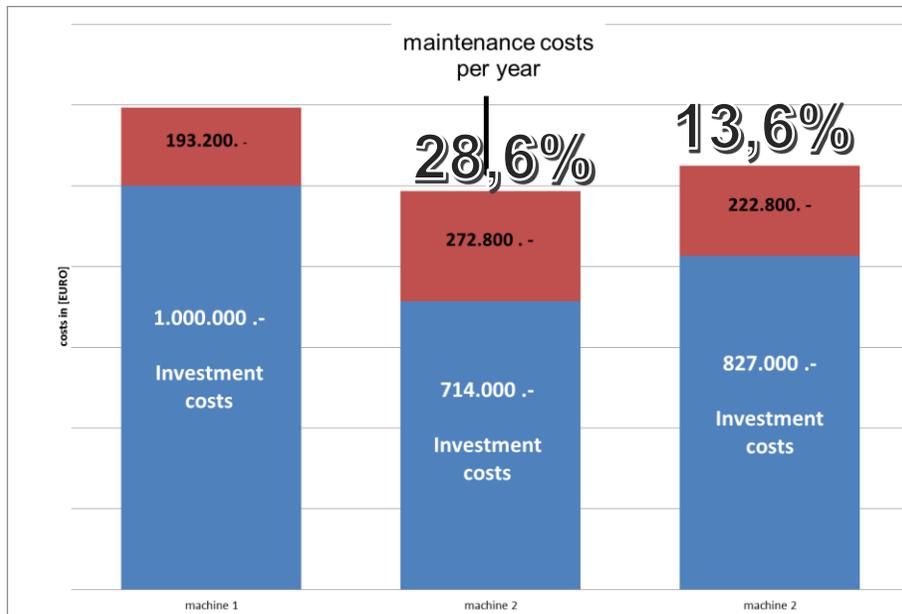
LCC - Exemplo Prático



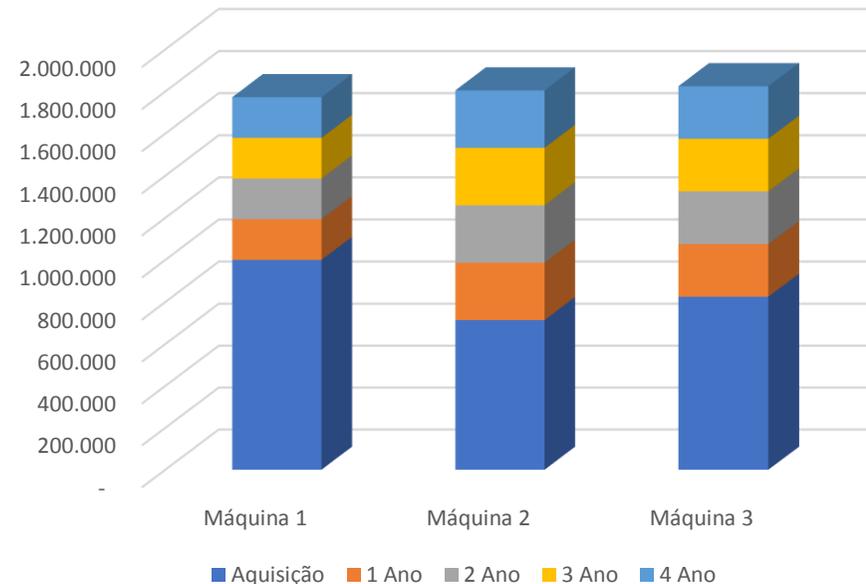
Estimativa de LCC – Caso prático

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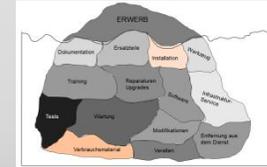
LCC - Exemplo Prático



Para equipamentos com capacidades de produção similares, somente o custo de manutenção ao longo de 4 anos excede o valor do investimento inicial

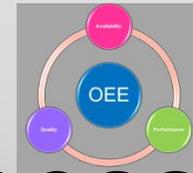
LCC

Life Cycle Cost



OEE

Overall Equipment Effectiveness

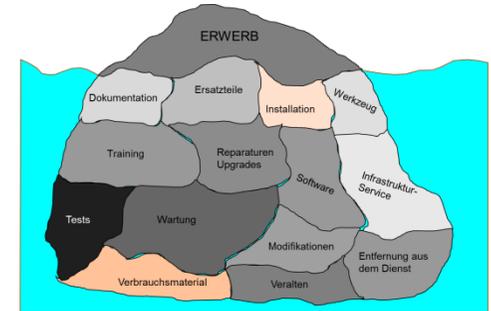
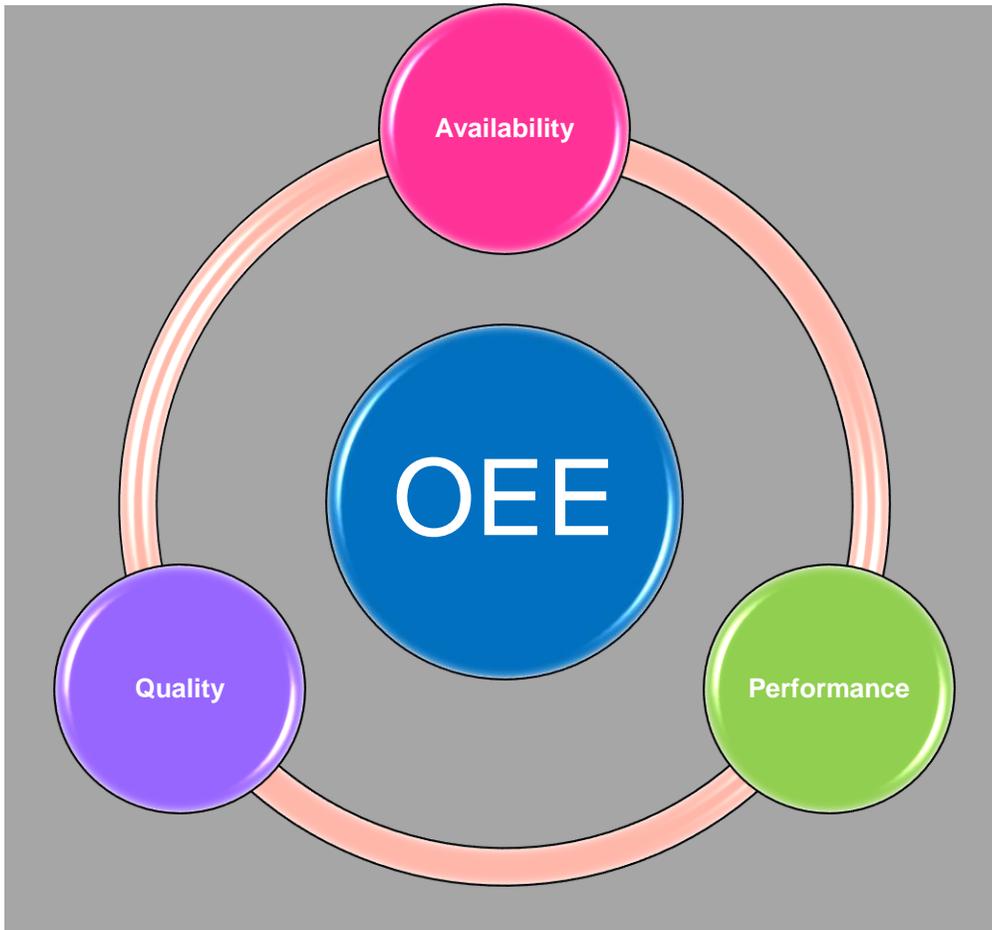


BMA na Indústria 4.0

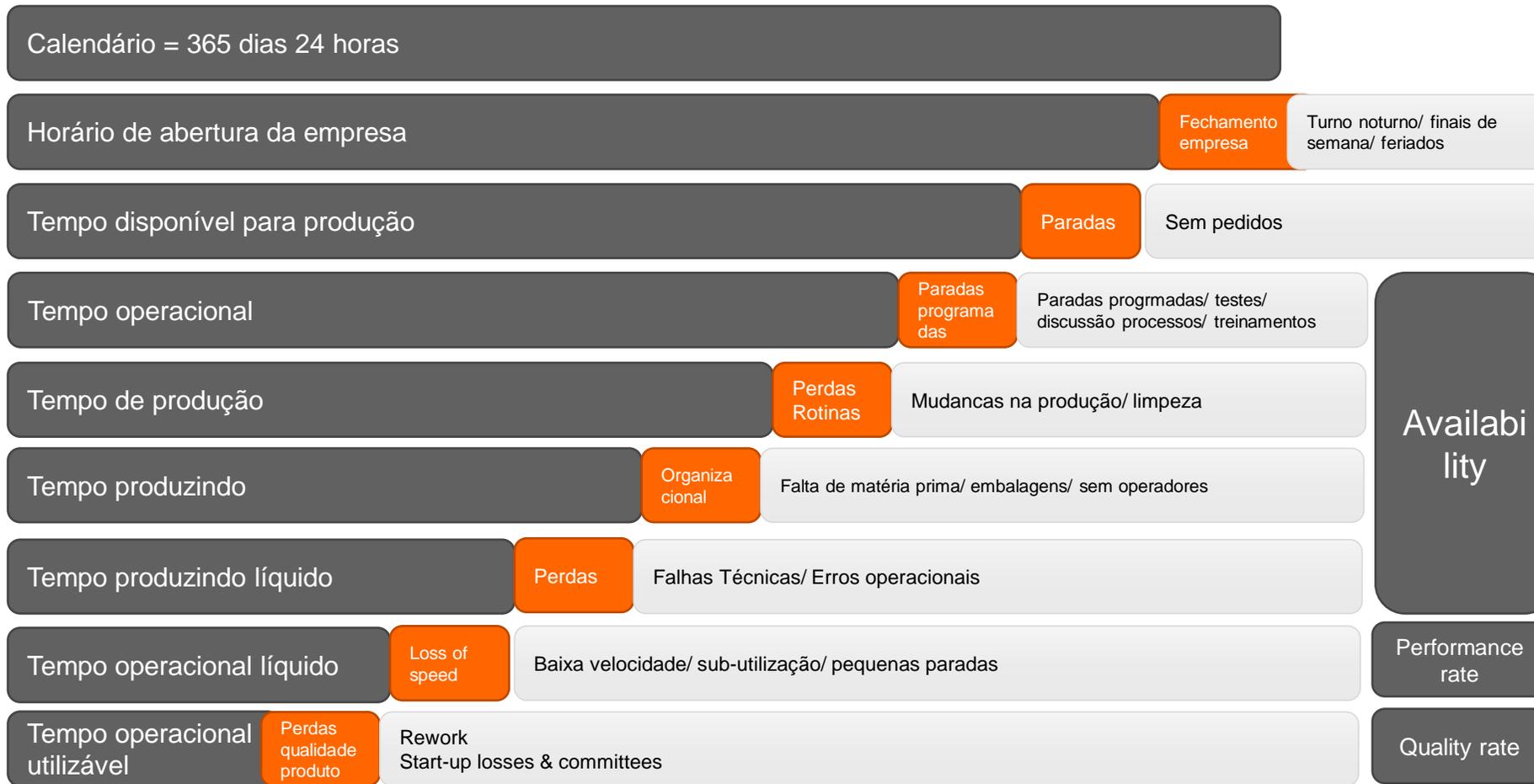
Smart Monitoring



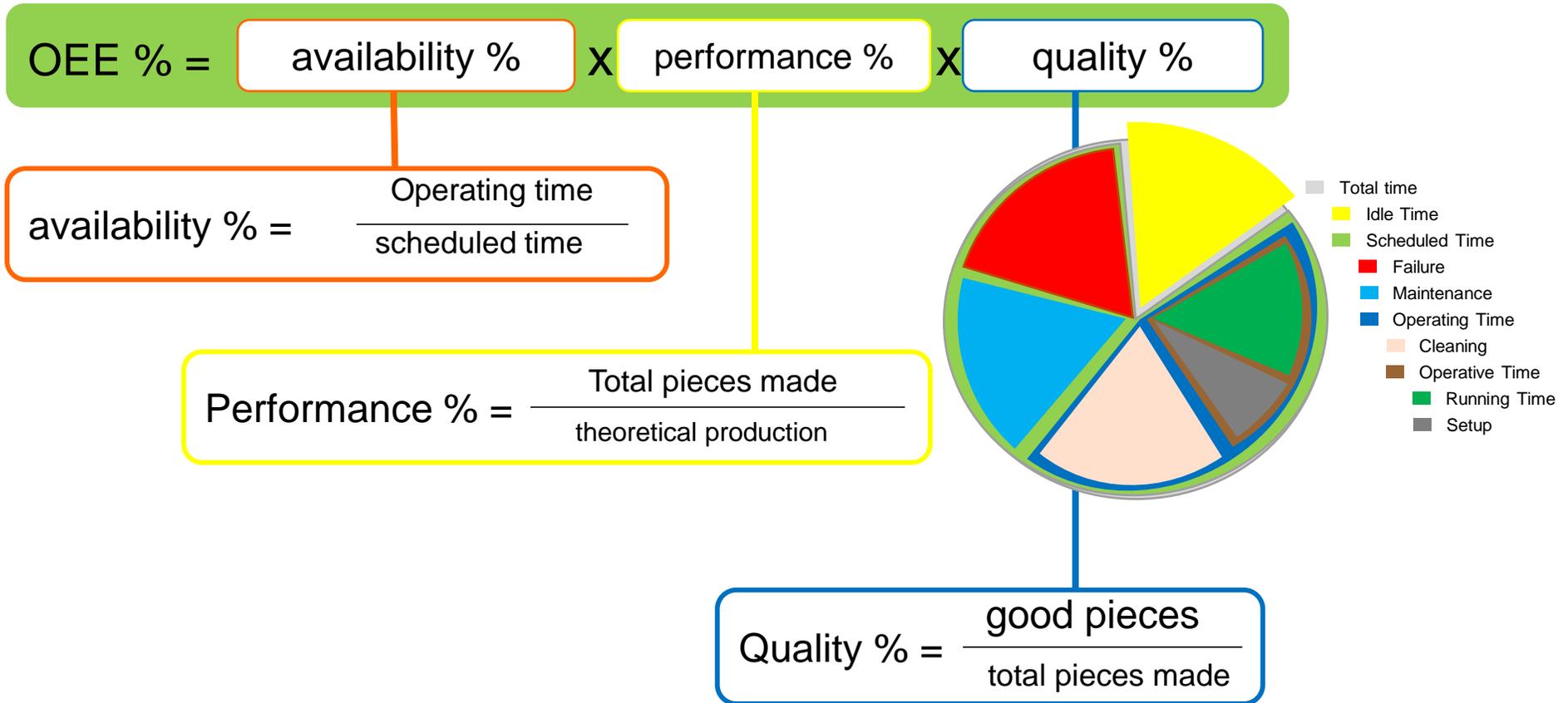
Investment driver in the industry



Overall Equipment Effectiveness



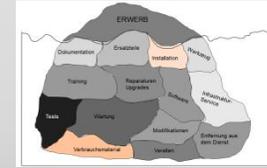
BMA na Indústria 4.0



Ø OEE accepted world figure = 40-60%
 Ø OEE best = 85%

LCC

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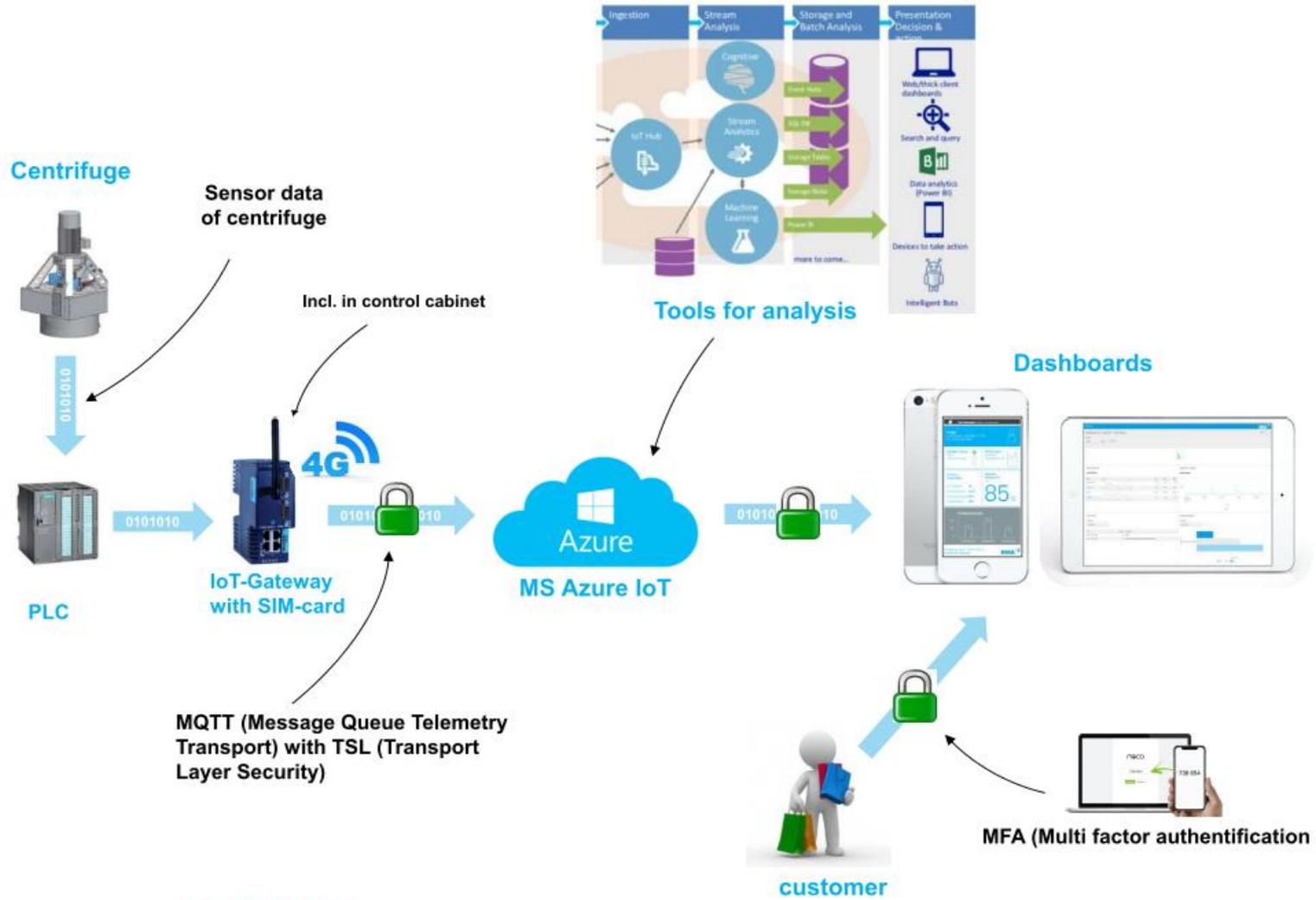
Smart Monitoring



BMA na Indústria 4.0 - Conceito

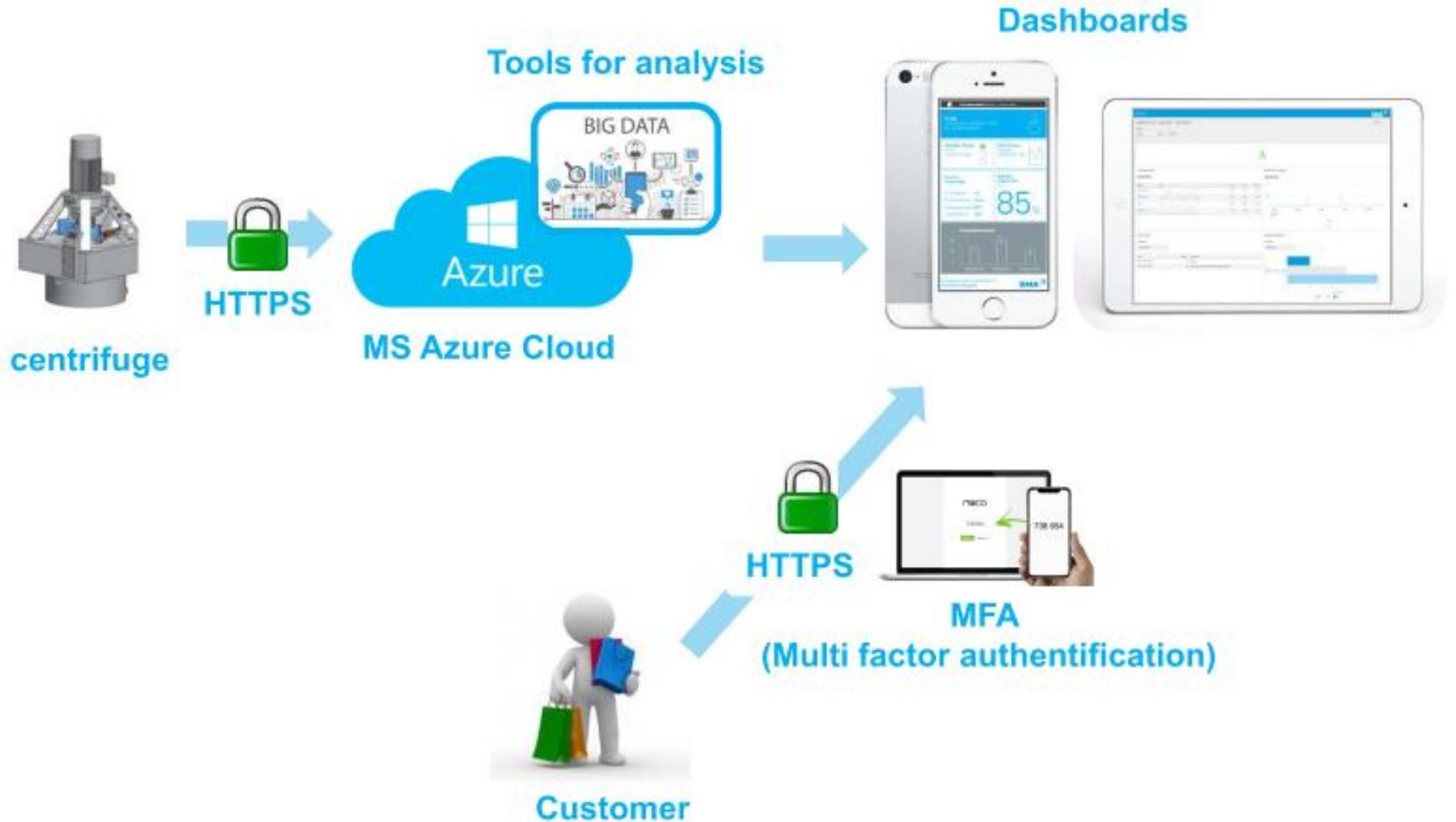


BMA na Indústria 4.0 - Conceito



PASSION FOR PROGRESS

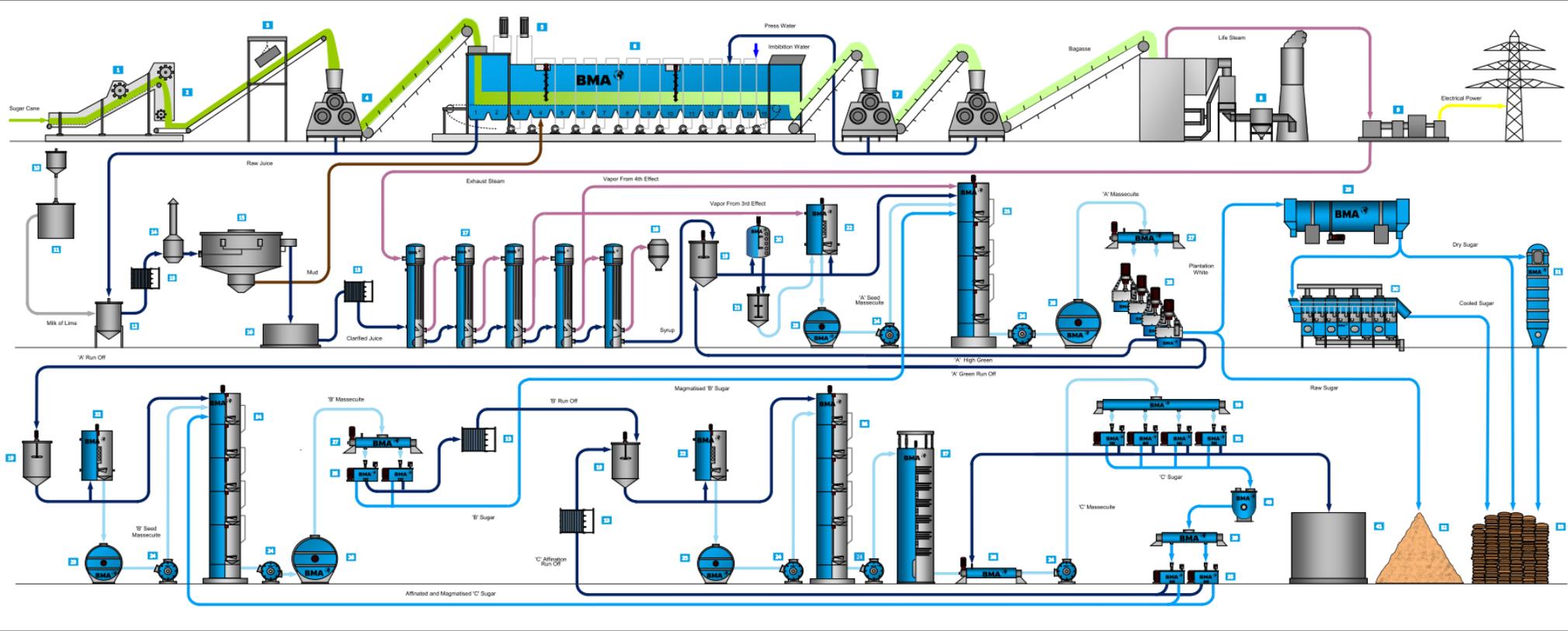
BMA na Indústria 4.0 – Conceito (Dados)



BMA na Indústria 4.0 - Dashboard



BMA na Indústria 4.0 – Portfólio Completo

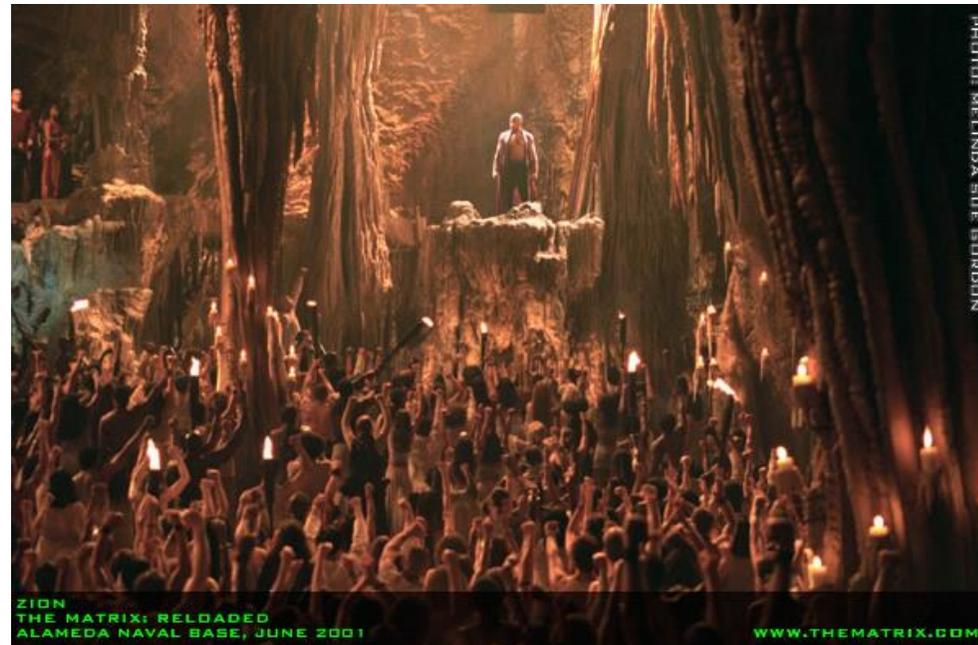


BMA na Indústria 4.0 - Dashboard



Prontos para
enxergarem a usína
desse jeito?

BMA na Indústria 4.0 - Dashboard



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