

Standaard  
aanpak

Waar is de  
waarde?

Organisatie  
Verandering

# Standaard Methode voor MES selectie

19 oktober MES4SME

13:00-13:45

# Agenda

- Introductie
- Context
- Aanpak selectie
- Veranderen en Waarde
- Vragen/discussie

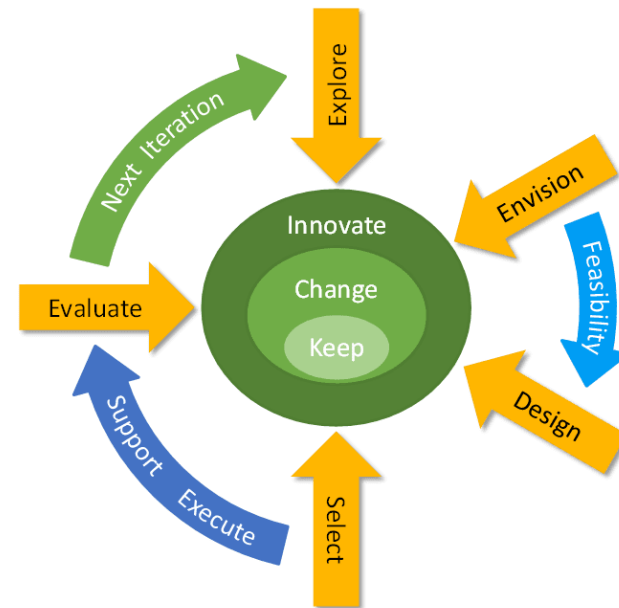
## De Samenvatting:

- Standaardmethode voor MES selectie
- Begin met de context om tot waardevolle projecten te kunnen komen.



# Introductie

- MOMi <https://www.mom-institute.org/>
- Mathijs Philips [mathijs.philips@mom-institute.org](mailto:mathijs.philips@mom-institute.org)



# MES selectie, start met de Context

MES: Manufacturing Execution Systems

- IT systemen die je op de werkvloer kan gebruiken om de productie stappen aan te sturen, de uitvoering ervan te registreren en het materiaal op de werkvloer te plannen en te volgen.

Vaak gaat het bij selectie van MES systemen al snel over interessante leveranciers, technische en functionele details.

Liever eerst een stapje terug (context), een geschikte shortlist bepalen en dan inzoomen.

Waarom?

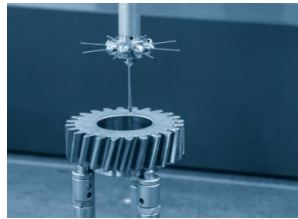
- Visie in algemene zin? Meer dan genoeg.
- Maar het pad naar die visie toe kan uitdagingen geven
- Daarom liever eerst:
  - Waarom is de fabriek succesvol? Bestaansrecht
  - Context aan de business zijde en
  - Context aan de IT zijde

# Context: bestaansrecht van de fabriek

Hoe wil je succesvol zijn?



Lage kosten,  
geen defects



Nauwkeurigheid  
klant specificatie



Op tijd  
leveren



Asset  
utilisation



Kwaliteit en  
vertrouwen

# Context aan business zijde

## Manufacturing Maturity matrix

Maturity level	Production	Inventory	Quality	Maintenance	Energy	Master Data
<b>5: Optimizing</b>	Lean is effective, plan connects to supply chain, change and innovation is controlled and agile	Optimize inventory movements	Optimizing master data, agile and controlled changes	Uptime, Minimum incidents, Predictions and optimization	Impact of plan and decisions to energy use and emissions	Maintenance and change of masterdata is optimized for quality, speed. Impact of changes on masterdata is assessed
<b>4: Quantitatively managed</b>	Waste and scrap are in view.	Manage inventory moment, Supply to plan	Timely questions market Limited incidents	Workorders and cost More planned less unplanned Less maintenance Machine supplier involvement	Energy use in plan and	Processes in place and KPI's to manage quality, cost, speed
<b>3: Defined</b>	Preconditions for start, differences and specifications	Inventory processes are managed Controlled movement	Specific targeted Traceability to suppliers	Major Planned	Energy use level	Procedure in place to manage data and specifications
<b>2: Managed</b>	There is a schedule with production order volume	Responsibility clear, stock managed, still searching	Repeatable process but not controlled No evidence	Responsibility and assets listed Controlled fire fighting, production volume	Energy use measured on site level	Ownership clear in general terms, inventory of which master data is there to be managed
<b>1: Initial</b>	Personal dependencies, high variability in efforts, "craftmanship"	No visibility Ad hoc supply to production	Specs not clear Incidents on the market Unknown quality: craftsmanship	Reactive, fire fighting Not connected Personal heroes	No notion of energy use, emissions, consumptions	No ownership for specifications or master data

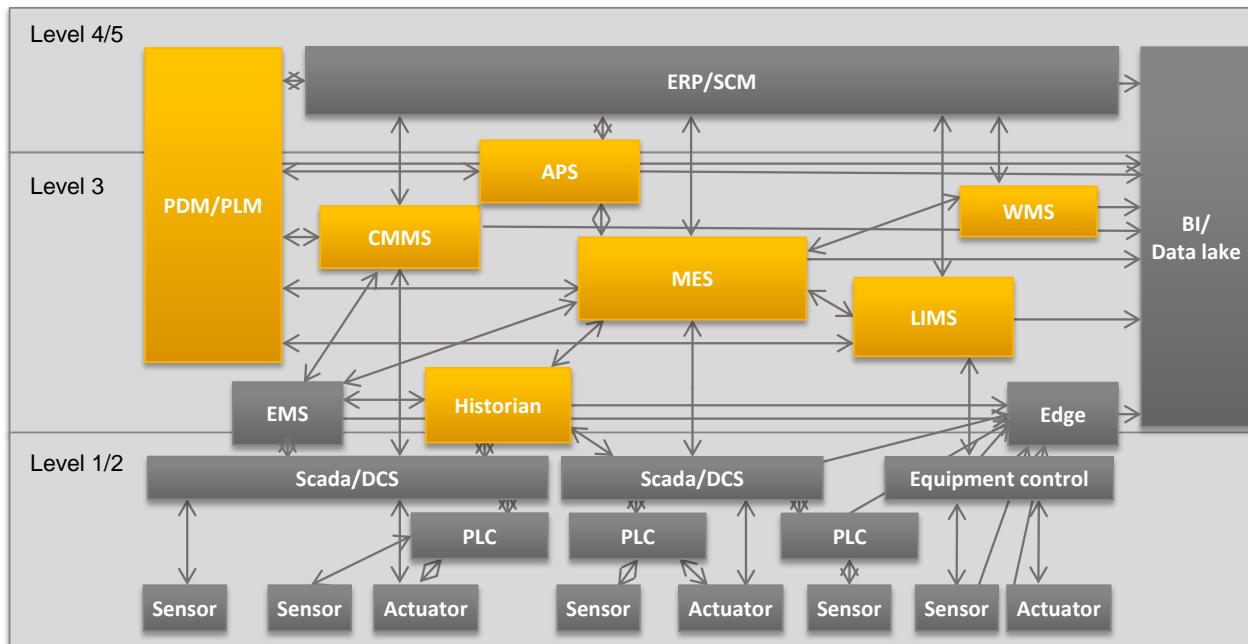
Organisation and working procedures

Technology use



# Context aan IT zijde

- De rol van IT systemen in Manufacturing Operations wordt steeds belangrijker
- De vereisten worden steeds hoger
- De verbindingen nemen toe
- Verantwoordelijkheden IT en OT sluiten aan of lopen over
- Hoe ziet het landschap er nu uit, en hoe maken we aanpassingen die we kunnen beheren en waarmee we kunnen doorbouwen?



ERP: Enterprise Resource Planning  
SCM: Supply Chain Management

PDM: Product Data Management  
PLM: Product Lifecycle Management  
CMMS: Computerized Maintenance Management System  
APS: Advanced Planning and Scheduling  
MES: Manufacturing Execution System  
LIMS: Laboratory Information Management System  
WMS: Warehouse Management System  
BI: Business Intelligence  
EMS: Energy Monitoring System

SCADA: Supervisory Control and Data Acquisition  
DCS: Distributed Control System  
PLC: Programmable Logic Controller

...and many many more

# Aanpak Selectie



Preparation:  
Explore,  
Envision,  
Design

Knock-Out  
Criteria

Initial List

A

Important  
Criteria

Short-list

B

RFI &  
Evaluation

Selection step 1: Create short-list

A

RFP &  
evaluation

site visit

MOM Demo  
(Vendor meeting)

Final Evaluation

Final  
Ranked  
List

B

RFP-2  
(add.reqs)

Selection step 2: Find the Champion!



# Veranderen en Waarde

- Waar staan we en waar gaan we naar toe?
- Niet alleen IT, ook organisatie verandering
- Verantwoordelijkheden (ownership) worden duidelijk.
- Impact:
  - Productie
  - Omliggende afdelingen
  - IT

**Manufacturing Maturity matrix**

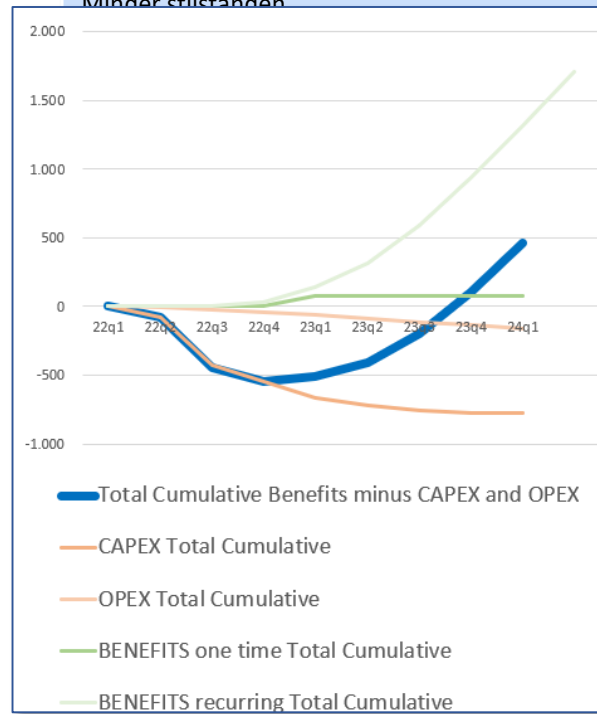
Maturity level	Production	Inventory	Quality	Maintenance	Energy	Master Data
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<b>4: Quantitatively managed</b>	Waste and scrap are minimized, process view, FIFO	Manage inventory movement, supply to plan	Timely quality control, Logical defects	Workorders and cost, Mean planned time unplanned, Loss maintenance, Machine supplier involvement	Energy use in plan and	Processes in place and KPIs to manage quality, cost, speed
<b>3: Defined</b>	Prerequisites for change are checked before start, differences are managed	Inventory processes are managed, Controlled movement	Specific request, Transparency to suppliers	Mean Planned Time Unplanned (MPTU)	Energy use on level	Procedures in place to manage data and specifications
<b>2: Managed</b>	High variability in effort, volume	Responsibility clear, stock managed, still searching	Repeatable process but not controlled, No evidence	Responsibility and assets listed, Controlled fire-fighting, production volume	Energy use measured on site level	Ownership clear in general terms, inventory of which master data is there to be managed
<b>1: Initial</b>	Personal dependencies, high variability in effort, "craftsmanship"	No visibility, Ad hoc supply to production	Spans not clear, Incidents on the market, Unknown quality or ownership	Reactive, Fire fighting, Not connected, Personal heroes	No notion of energy use, emissions, consumptions	No ownership for specifications or master data

# Veranderen en Waarde

- Welke doelen kan je verbinden aan een verbetering?
- Wat is de huidige performance en hoeveel verbetering?
- Hoe kunnen we die verbetering waarderen?
- Wat geeft dat voor financiële impact?

Manufacturing Maturity matrix						
Maturity level	Production	Inventory	Quality	Maintenance	Energy	Master Data
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Verbeteringen	“Waardering”
Meer output, mits verkoopbaar	Productiewaarde – var kosten
Sneller klaar met het zelfde volume	Installatie draai uren / energie / shift cost
Minder stilstanden	Minder ongepland maintenance werk



Stap	Eenmalige benefit	Terugkerende benefit per Q	Eenmalige investiment (CAPEX)	Operatieve kosten per Q (OPEX)
S00	-	-	75	5
S01	-	65	210	9
S02	-	75	140	1
S03	-	80	58	5

**Voor => Na in algemene zin**

Resultaat op de KPIs  
 Meer IT op de werkvloer  
 Meer structuur in data  
 Meer controle vooraf  
 Meer registratie achteraf  
 Meer data beschikbaar

**...de smaak te pakken...**

# Vragen/discussie

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- Aanpak selectie
- Veranderen en Waarde

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**Uw vragen / Discussie?**

**Dank voor de aandacht!**



Photo by [Rohit Farmer](#) on [Unsplash](#)