



How to **increase** simplicity of **MES Automation** on a **large-scale** project

Thai Le
Sr. Automation Engineer
Novo Nordisk

Agenda

- Our Goal & Principles
- Benefits / Challenges
- Influencers and Stakeholders
- Our Results
- Key Message

SIMON MOGENSEN
Associate Manager
EPHREM RUDAHUNGA
Purification Support
Denmark



"The ability to simplify means to eliminate the unnecessary so that the necessary may speak."

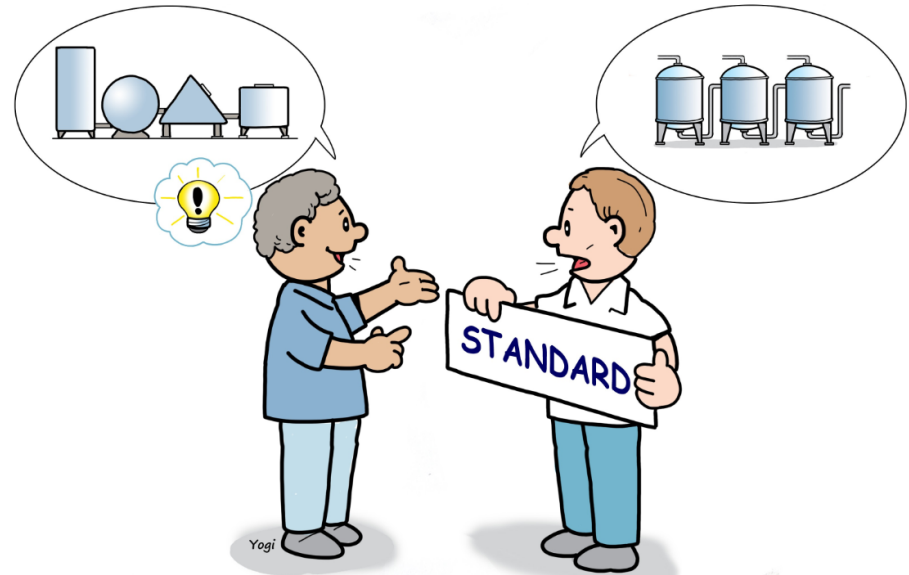


The goal of standardization in Automation can be felt in many areas of the organization

Identifying a common strategy or solution to be used across areas.

What are some examples of areas that can be simplified?

- Documentation
- Processes
- Recipes



Standardization is successful if founded on certain principles

What to consider in early stages to maximize benefits



Align with **corporate culture** and ambition e.g. think bigger, simplicity and agility



Simplify training, **easier to execute tasks** and stay within regulatory compliance

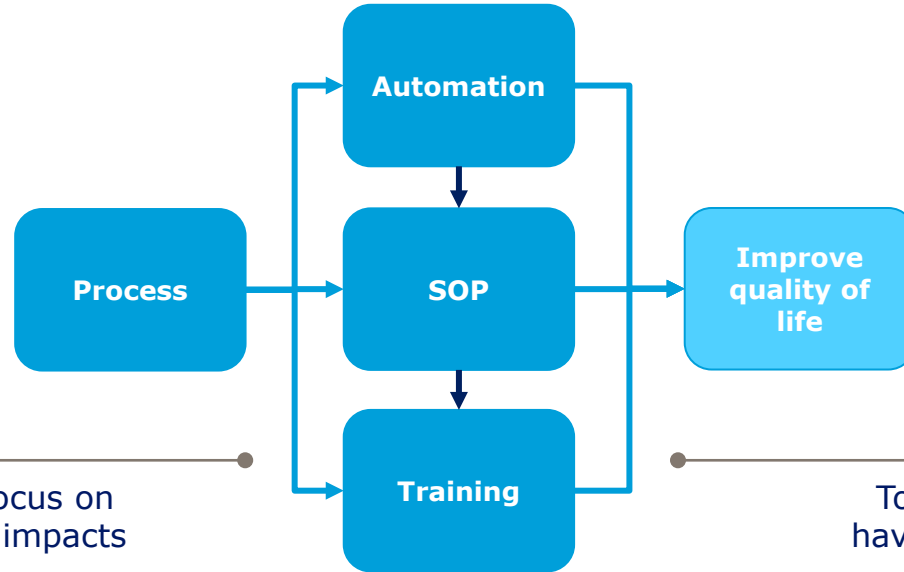


Agreement on **prioritization of critical tasks** requires stakeholder management and negotiation



Modularization can require more initial investment for long-term benefit

Standardization has many assumed benefits but also potential challenges in planning and delivery



Benefits

Standardization benefits focus on simplicity of design, which impacts many areas.

- Simplicity
- Cost savings
- Validation
- Process improvements
- Reusability
- More stable solutions

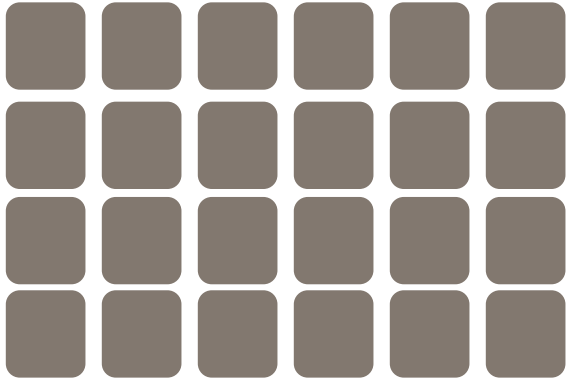
Potential challenges

Too much of a good thing can have some potentially negative impacts.

- Complexity
- Collaboration/ effort
- Re-validation
- Increased risk
- Generalization

Results of Standardization – Documents

Before standardization



Number of SOPs and JIs



After standardization

Approx. **40% reduction**
in SOPs and JIs

Results of Standardization - Recipes

Before standardization

Recipes



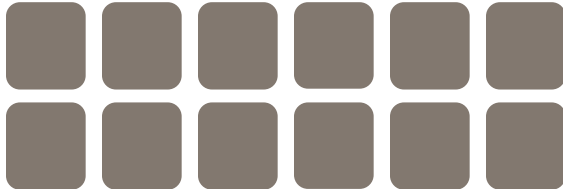
After standardization

90% reduction in
Recipes Objects

Batch Reports



95% reduction of BR
Objects



Time for an activity!

ALEXANDRA MARIA MARTINS FERNANDES COSTA
Portugal
Alexandra has type 1 diabetes



Batch Record I

Section A (color)

- Requirement 1 (shape)
- Requirement 2 (shape)

Section B (color)

- Requirement 1 (shape)
- Requirement 2 (shape)
- Requirement 3 (shape)

Section C (color)

- Requirement 2 (shape)

Sections:

- Red
- Green
- Blue

Requirement:

- Circle
- Square
- Triangle

Process 1

Process 2

Process 3

Process 4

What is your recommendation to create **a standardized batch record** that maximizes benefits and minimizes challenges?

?????

Batch Record I

Section Green

- Requirement 1 (shape)
- Requirement 2 (shape)

Section Red

- Requirement 1 (shape)
- Requirement 2 (shape)
- Requirement 3 (shape)

Section Blue

- Requirement 2 (shape)

Batch Record II

Section Green

- Requirement 1 (shape)
- Requirement 2 (shape)

Section Red

- Requirement 1 (shape)
- Requirement 2 (shape)
- Requirement 3 (shape)

Section Blue

- Requirement 2 (shape)

- Requirement 1 (shape)
- Requirement 2 (shape)

Section Red

- Requirement 1 (shape)
- Requirement 2 (shape)
- Requirement 3 (shape)

Section Blue

- Requirement 2 (shape)

Batch Record IV

Section Green

- Requirement 1 (shape)
- Requirement 2 (shape)

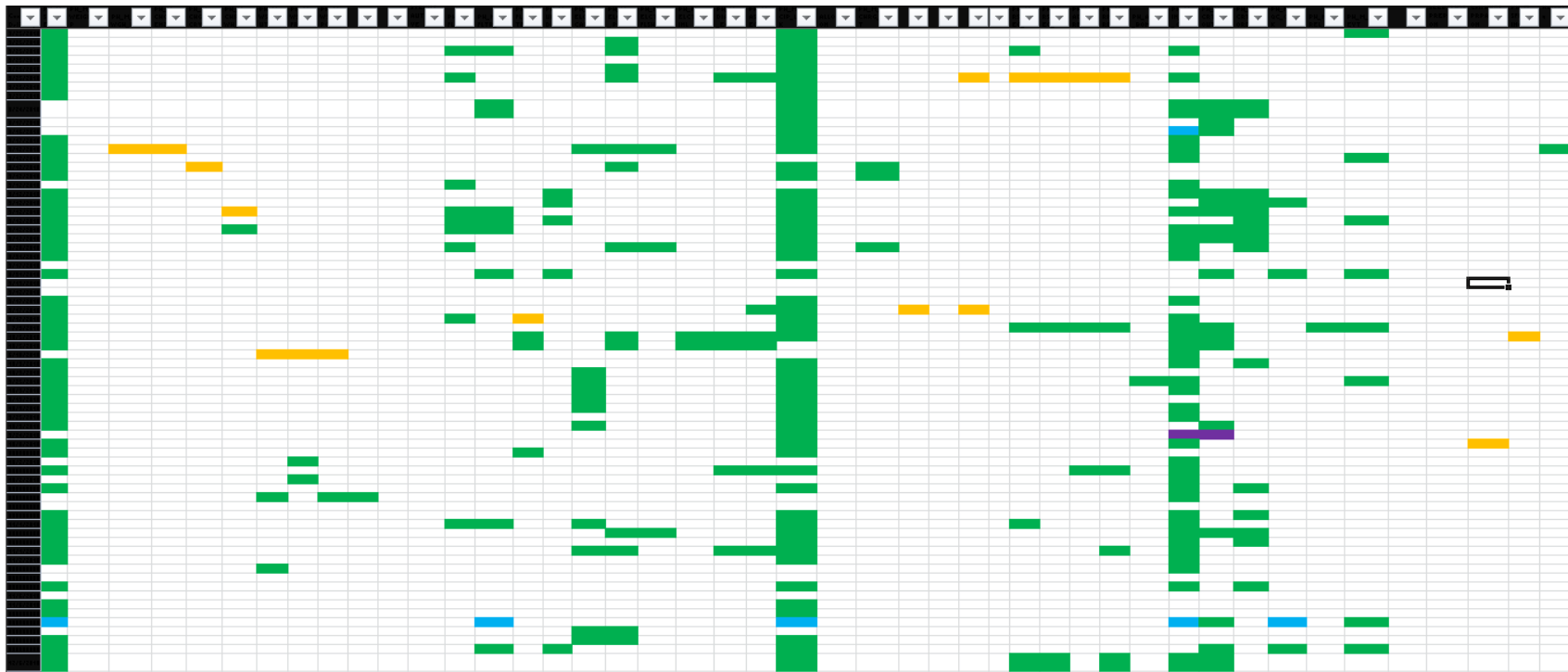
Section Red

- Requirement 1 (shape)
- Requirement 2 (shape)
- Requirement 3 (shape)

Section Blue

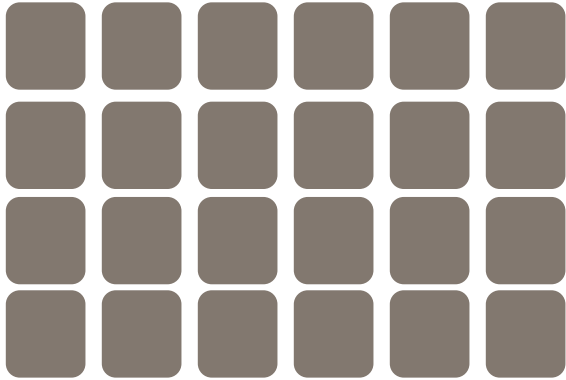
- Requirement 2 (shape)

Example Standardized Automation Process

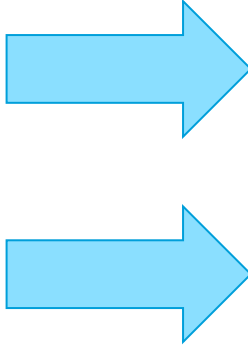


Results of Standardization – Automation Process

Before standardization



unique activities















After standardization

Approx. **85%**
reduction of manual
objects

Created few
automatic objects

Answer sheet

Batch record A (P1/P3)	Batch record B (P2/P4)
Green	Green
 	 
Red	Red
 	  
Blue	Blue
 	

Key Take Away

"The ability to simplify means to eliminate the unnecessary so that the necessary may speak."

Requiring early support across disciplines and systems to maximize benefits and overcome challenges.

- Thai Le