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Sustainable Manufacturing Maturity Model: Concept and Applications

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(article starts on next page)

Sustainable Manufacturing Maturity Model: Concept and Applications

Why

- Need for visual, intuitive internal **benchmarking of sustainability-related capabilities**
- Enabling **continuous improvement** in economic, environmental and social sustainability performance

GLOSSARY

- **Sustainability-related capability:** the ability to do something well in a way that improves sustainability performances
- **A maturity level** defines “how well” this ability is ingrained in the organization

RESEARCH GAP BEING ADRESSED

- Huge offering of sustainability maturity models in consulting
- Applications of sustainability maturity models in manufacturing companies being published are not widespread in the literature and do not rely on a solid method for distinguishing different components of capabilities

CONCEPT

Sustainability-related capability X	Maturity level			
	0	1	2	3+
Components of capability	Non existing or ephemeral	Novice	Solid but static	Thriving and optimizing
Governance	Capability not built, or difficult to establish	Capability is being built (testing and learning time)	Capability is fully built but static (no continuous improvement)	Capability is in continuous improvement
Competencies				
Processes				
Data and Information				
Techniques And Tools (IT)				

APPLICATION a)

Case study from a manufacturing company of material handling equipment

Components of capability	Maturity level			
	0	1	2	3+
Governance		●	● ●	
Competencies			● ●	●
Processes			● ● ●	
Data and Information			● ● ●	
Techniques and Tools (IT)	●	●	●	

Sustainability capabilities

- Economic sustainability – promptness of after-sales customer support
- Environmental sustainability – profitable remanufacturing of used equipment
- Social sustainability – effective communication between management and shop-floor workers

APPLICATION b)

Same case study of a), multi-stakeholder view

Current and next to-be maturity level.
One program for each stakeholder.



Example: From 0 to 1:
initiate a collaboration with university students in thesis projects at the factory

Collaborators



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