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## Infrastructure as a way to measure the maturity of knowledge management in product development

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### Abstract

This research supports a master's degree thesis, seeking the associations between product development, knowledge management bases (People, Communication and Infrastructure) and maturity models for the definition of indicators of maturity level of knowledge management in product development. This part of the research focused on the study of the Basis 'Infrastructure'. The final objective of this research is to define indicators that will measure the level of maturity in the knowledge management of the products development of the organizations.

### Key words:

Infrastructure, Knowledge management, Product development

### Introduction

There are several studies that affirm that knowledge management is currently the main capacity responsible for gaining competitive advantage of organizations. Proof of this is the importance of knowledge in the modern economic landscape where, according to the World Bank, 64% of the world's wealth comes from knowledge.

The objective of this work is to identify the associations between product development (PD), knowledge management (KM) bases<sup>1</sup> and maturity models for the definition of indicators that will measure the level of maturity in the knowledge management of the products development of the organizations.

This work supports a master's degree thesis and this part of the research focused on the study of the Basis 'Infrastructure'.

### Results and Discussion

Chart 1 shows the Knowledge Management Maturity Model (KMMM) surveyed and the link with the proposed bases<sup>1</sup> (People, Communication and Infrastructure) and Chart 2 shows the relation between the dimensions of PD and the Bases of KM:

Chart 1. Different KMMM's and the bases that are related in their models.

Models	Bases <sup>1</sup>		
	People	Communication	Infrastructure
Knowledge Journey	X		X
KMMM (Infosys)	X		X
KMMM (Software Industry)		X	X
Knowledge Process Quality Model (KPQM)			X
5iKM3	X		X
KMMM (Technology)			X
KMMM (Siemens)	X	X	X
General Knowledge Management Maturity Model (G-KMMM)	X		X
KMMM (Nuclear Industry)	X	X	X

Chart 2. Relation between PD and Bases of KM.

Dimensions of PD	Bases of KM
Strategy	People; Communication
Organization	Organizational culture
Activities / information	People
Resources	Infrastructure

In the Resources dimension an important tool is the Product Data Management (PDM), it was observed that this tool involves all the bases of KM and can be used as an important means to evaluate the KM in the PD, as shown in Image 2.

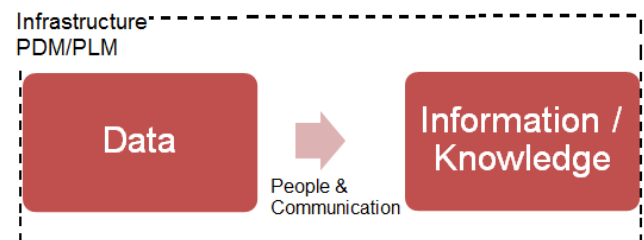


Image 2. PDM/PLM and the bases of KM

Thus, it was proposed indicators related to infrastructure, as shown in Chart 3.

Chart 3. Proposed indicators.

Function	Indicator
Organization and storage of data and information	Existence of an effective data and information management infrastructure
Distribution of knowledge	Existence of an effective infrastructure for information and communication technology (ICT).
Utilization	Degree of use of existing infrastructure

### Conclusions

It was possible to define linkages between the proposed KM bases, maturity models for KM and product development process, validating the relationship and, thus, it is possible to define indicators related infrastructure for measuring the maturity of KM in PD.

<sup>1</sup> De Marco, V.; Cooper, R. E. Pilares para a gestão do conhecimento. XXIII Simpósio de Engenharia de Produção. Bauru, SP, 2016.