54th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE ACTIVITIES (D5)

Knowledge management in the digital trasformation (2)

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FOR A KNOWLEDGE MANAGEMENT OF DATA 2021

Abstract

Data are often thought of as elementary, mostly numerical descriptions of a reality. They are, for example, observations or measurements. Then comes the information that organizes and structures the data to make sense of it. The interpretation of information, as denoting facts, leads to the notion of knowledge.

In this paper, we will go in another direction, arguing that data are in the nature of knowledge. Data are not the building blocks or atoms from which information develops, and from which knowledge, in turn, emerges, but knowledge from the start.

This change in perspective is only possible by re-examining in a different light the way in which knowledge emerges. Today's conception of data, which we believe to be inappropriate, creates conceptual complications. It contrasts, for example, "raw data" and "information", or Big Data on the one hand and "smart data" and "small data" on the other.

It seems, for example, that spatial data fall within the framework of Big Data, but such a linkage does not make it easy to see how these data can participate in breakthrough innovations.

If we take the concept of "Smart Data", it means information that actually makes sense, and is actionable. In any case, these data could not be considered "raw".

Small data", on the other hand, refers to a universe of knowledge that humans can see, touch, analyze, and perceive without the assistance of supercomputing capabilities".

If Big Data tries to reveal correlations on what is captured, Small Data is on the side of causality, related to the why", i.e. the answers that individuals provide to problems they are faced with. Thus, Small Data is related to knowledge. This is illustrated by the case of reindeer herders' knowledge which was used in climate studies involving satellite observations by NASA.

Concerning the use of spatial data in innovation processes, this requires that these data be understood as knowledge, from which answers to innovative questions can be produced.

We will give an example carried out in CNES. The practical consequence of this change of viewpoint will therefore lead us to consider a new way of organizing ourselves to produce, use, transmit and store data.

And it is therefore to a knowledge management of data that we will come to at the end of this reversal of point of view, and that we will present in this communication.

(Intended for IAC2020, this proposal was finally cancelled)