

# KNOWLEDGE SHARING IN A COMPLEX ECOSYSTEM (SPACE): THE CASE OF THE HUBBLE TELESCOPE



**STREAMING  
7.10.2020**

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ore 19.00



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Knowledge sharing is an activity through which knowledge (namely, information, skills, or expertise) is exchanged within and/or between organizations. Most of the work on knowledge sharing has been focused on the implementation of enterprise, either industrial or financial, social networking site. As most of the work conducted in today knowledge intensive organizations is largely invisible, numerous studies conducted over the past two decades have shown that successful organizations create the conditions under which employees can effectively share knowledge with one another (Argote et al. 2000, Hansen 1999, Tortoriello et al. 2012).

Our research focuses instead on a complex ecosystem such as space, in which numerous stakeholders participate: government institutions, both civil and military, and industries. In this context, timing and knowledge transfer issues are important. However, the decision on when to acquire knowledge and how it can be applied to completion of tasks and problem solving would likely be impossible in the absence of accurate organizational metaknowledge. Organizational metaknowledge refers to knowledge about who knows what and who knows whom within the organization.

Today, we will present a case in which the lack of metaknowledge affected the development of the Hubble Space Telescope. Those who like the universe, not only professional astronomers and astrophysicists but also the numerous amateur astronomers, have seen the Hubble Space Telescope's gorgeous images of galaxies and nebulae. What is not well known is the fact that early in his post-launch life Hubble exhibited a bad case of jitters, preventing the telescope to track a target for more than ten minutes at the stretch. These technical problems were well known in government organizations and within the industry who built the telescope. Lack of metaknowledge in this complex ecosystem resulted in delays in the timing and transfer of this knowledge causing a delay in the operation of the telescope and quite a substantial amount of money for the taxpayers.

- # **How an efficient management of knowledge sharing, including the meta knowledge sharing, affect the efficiency of a complex ecosystem and its main obstacles?**
- # **What are the solutions for an efficient management of the Hubble Telescope?**

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