**Knowledge in projects:**
a collection of insights for improving project performance through knowledge,
across the temporary dimension of projects



## Introduction

Projects are the realm of knowledge. Every project is a unique and temporary adventure where current knowledge is unleashed, applied and transferred, whereas new knowledge is uncovered, shared and documented.

Projects and knowledge are strongly related: on the one hand projects should exploit current knowledge available within the project environment, for improving project performance. on the other hand projects should develop new knowledge throughout the project life cycle, to be used for carrying out the current project and to be reused for future projects.

The key assumption is that projects are unquestionably a dramatic source of knowledge. Every project offers many learning opportunities to generate knowledge and increase both individual competencies and organizational assets. However knowledge is too often not yet formally considered and well-managed like other project management topics, such as scope, cost, risk, schedule. This lack of focus leaves knowledge unaddressed decreasing the project value in terms of conformance to requirements, professional development, business results.

The term "project" is to be considered in the broad sense of term: it may refer to a stand-alone project, to a project as a part of a larger program, to a program by itself.

This collection of insights is aimed at addressing knowledge topics with respect to the unique and temporary dimension of projects.

# Insight 3 - "The seven knowledge management principles: do they work in projects?" - V1.0

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## 1. The seven knowledge management principles

In 2008 Dave Snowden, a globally recognized guru in knowledge management, presented the so called "seven knowledge management principles".

Dave stated that these principles are indispensable factors that must be taken into consideration in order to improve the effectiveness and the efficiency of knowledge management. Otherwise lacks in these principles (one, some, all) proportionally decrease the performance while the application of knowledge management remains a no value exercise.

This paper is aimed at evaluating if and how these principles might influence, positively and/or negatively the project performance with respect to objectives to be achieved. In other words if the application of knowledge management to the project environment may generate more value following these principles.

For each principle we will try to answer to three questions: *"what does the principle mean; to which project situations could the principle be applied?; with which consequences?".*

## 2. Principle 1 - Knowledge can only be volunteered, it cannot be conscripted

You can't oblige someone to share his/her knowledge. The most part of knowledge is tacit that to say strictly embodied into individuals. Therefore it's very difficult to determine the amount of knowledge really owned by a person and if he/she has truly shared this knowledge with others. Especially if an individual has a strong seniority in a specific field of specialization, gained day by day during a long period of time. Experts share tacit knowledge "on condition that" and not "regardless". Speaking about projects, experts make the difference in many complex situations throughout the project life cycle. They are usually named "SME - Subject Matter Expert" or, from a knowledge management perspective, KW - Knowledge Worker (a specific insight of this collection is focused on KMs as the key of project success). By the way the technique "expert judgment" is used in the most part of processes as defined by PMBOK® - Project Management Body Of Knowledge (PMI, 2017). Therefore this principle is strongly related to the world of projects. The more the project is crowded of KMs, the more knowledge sharing is volunteered. Thus a strong investment must be made for creating a trusted and collaborative environment within which KWs can find the right conditions for emerging relationships that enable knowledge sharing. If it happens complex situations could be better addressed in terms of options, decisions and actions. The project manager must not clearly ask KWs to share knowledge, but he/she must create an environment that implicitly inspires knowledge sharing. This environment is called *"Ba"* (Nonaka - Konno, 1998).

## 3. Principle 2 - We only know what we know when we need to know it

Dave argues that *"human knowledge is deeply contextual and requires stimulus for recall"* (Snowden, 2008). In other words knowledge doesn't exist by itself. Knowledge is a complex organic form that encompasses tacit, implicit and explicit elements. Data or simple forms of information may be available regardless the situation to cope with. On the contrary knowledge is created and used straight away, due to the situation to cope with. This knowledge management principle is certainly related to projects in that a project is a unique adventure that must cope with options, decisions and actions, partially or never met before. PMBOK® is worthless by itself. Its best practices worth only if the are combined with individual expertise owned by KMs and with collective patterns put in action by the project team against a common situation to address, for example "how to respond to a priority risk". Projects abound of "knowledge that isn't knowledge" leading to confusion, misalignments, entropy, lack of tangible response. For example the OPA "Project Information Management System" provides regularly a lot of reports, dashboards, statistics, shared files seemingly valuable. Dave states that *"small verbal or nonverbal clues can provide those ah-ha moments when a memory or series of memories are suddenly recalled, in context to enable us to act"* (Ibidem). For example scratching one's head calls to mind forgotten things, that might become the missing piece of the puzzle, the knowledge element that makes the difference for project success.

## 4. Principle 3 - In the context of real need few people will withhold their knowledge

This principle is strongly related to principle 1, in that they underline the social dimension of knowledge. For example a common problem fosters individuals to help each other through a genuine exchange of experiences, insights, disagreements, points of view. Dave states that *"linking and connecting people is more important than storing their artifacts"* (Ibidem). Too often knowledge management is considered an excellent way to transform tacit and implicit elements into explicit objects. This perspective is certainly misleading in that this conversion is very expensive, substantially impossible, needless, but first of all rejected by individuals. You can't ask me to codify in advance all I should know for some supposed future reuses. You can ask me to contribute to address a new complex situation making available what I believe to know. More focused the request, more engaged the answer. This principle should be applied as much as possible for guiding a project, particularly if the project is innovative, complex, large and expensive. As a consequence of this results improve: KWs will feel them more free to share knowledge, the knowledge effort will be focused on addressing key situations and not on formalizing artifacts, ongoing reality will rule over the upfront project plan, the cost/benefit ratio of sharing knowledge will be easier measured and communicated to project stakeholders.

## 5. Principle 4 - Everything is fragmented

By its nature knowledge is dispersed: tacit expertise lives inside individuals, implicit patterns follow temporary groups, explicit artifacts are scattered across repositories, websites, social networks. If you have to cope with a simple situation, for example how to prepare a precooked food, the knowledge you need is "off-the-shelf" in that it's already structured and condensed in a set of detailed instructions on the package. The simpler the problem, the more packaged the knowledge. Passing from a simple to a complicated and in turn to a complex situation, the required knowledge becomes progressively crumbled. For example for cooking

a haute cuisine plate the recipe is not enough: the considerable part of knowledge is owned by the chef and resides in the physical and social place where the plate will be cooked. Try to defragment knowledge into structured objects consumes a lot of effort, money, time, energy. That is not the right solution for managing knowledge in projects, in that the project environment is by definition ever-changing. Thus the challenge is *"how to explore, navigate, create connections as needed, within the project environment"*.

## 6. Principle 5 - Tolerated failure imprints learning better than success

Dave wisely argues that *"when my young son burnt his finger on a match he learnt more about the dangers of fire than any amount of parental instruction cold provide"*. A trial-and error approach fosters individual and collective learning better than an impersonal imitation of codified best practices. The most valuable and accepted lessons learned come from insights that may avoid future failures. The challenge is to create a safe failed environment where individuals can feel free to experiment and to make mistakes without fear of others' judgment. This approach is not-for-free in that requires an investment of effort and time without a guarantee of success. This principle should be taken into great consideration when managing a complex project crowded by KWs. The right perspective is the theory Y by McGregor because the key assumption is that KWs are proud, highly disciplined and engaged individuals towards project objectives. Thus they must be allowed in advance to fail today for learning and improving project performance tomorrow. The new process "Manage Project Knowledge" of PMBOK® (PMI, 2017) states that *"the lessons learned register may record challenges, problems, realized risks and opportunities, or other content as appropriate"*. Imposing fail safe rules and procedures doesn't work in knowledge-intensive projects: designing a safe failed habitat works better.

## 7. Principle 6 - The way we know things is not the way we report we know things

Speaking about knowledge reality rules. Formalized roles, rules and routines for collecting, structuring, sharing and transfer knowledge are illustrative but not determined. OPAs - Organizational Process Assets are an important input for many processes of PMBOK®, in that they provide structured systems the project can rely on. They can reduce noise and waste but the can't represent in advance what will really happen about knowledge during the project life cycle. For example a projectized organization can rely on a sound multiple criteria weighted scoring model for assessing its portfolio components and taking decisions about which components authorize for implementation. However these portfolio processes will be executed using mainly *"heuristics, past pattern matching and extrapolation to make decisions, coupled with complex blending of ideas and experiences that takes place in nanoseconds"* (Snowden, 2008). There is a relevant gap between the practice of knowing and the process of managing knowledge in projects. This gap must be recognized just at the outset of the project, in order to try to balance "to be" with "as is". An ethnographic approach might be very enlightening in order "to know how the project knows".

## 8. Principle 7 - We always know more than we can say, and we will always say more than we can write down

This principle derives from the famous quote by Michael Polanyi *"we can know more we can tell"*. It underlines that written artifacts, such as the rules for creating the WBS - Work

Breakdown Structure represent only the tip of the iceberg, whereas the iceberg entails storytelling about good and bad experiences an tacit expertise in creating WBSs. Project key roles such as project sponsor, project manager and project management office should be strongly aware about the meaning and the influence of this principle on project results. Moreover they must create a working habitat based more on behaviors and tales and less on documents. For example they must create a common space based on physical proximity, F2F interactions, learning by intrusion, PoC - Proofs of Concept, P2P development, T-shaped individuals, information radiators, visual planning, frequent retrospectives. This way the principle becomes a daily way to be and act. Very often KWs don't like to "lose" time to break down written pieces of knowledge; they prefer to talk in an informal way with peers and to observe or to be observed in a silent way.

## 9. References


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Snowden D. J. (2008) *The seven knowledge management principles..* www.cognitive-edge.com.

Villa T. (2015) *Knowledge: definition, types, application in the project environment - V1.3.* PMLAB.


## 10. The collection "Knowledge in projects"

- Insight 1 - Knowledge: definition, types, application in the project environment;
- Insight 2 - Beyond the DIKW model;
- Insight 3 - The seven knowledge management principles: do they work in projects?.

## 11. Contact me

Comments, suggestions, disagreements are really appreciated. Please send them to tiziano.villa@pmlab.it or find me on Linkedin (tiziano.villa).