

---

## The PMBOK standard evolution: leading the rising complexity

---

Marco Arcuri PMP<sup>®</sup>

Project Manager Professional  
Viale Le Corbusier 39, 04100 Latina  
E-mail: marco@marcoarcuri.it

Cristina Simone \*

Department of Management  
Sapienza University of Rome  
Via del Castro Laurenziano, 9 -00161 Rome  
E-mail: [cristina.simone@uniroma1.it](mailto:cristina.simone@uniroma1.it)

\* *Corresponding author*

Antonio La Sala

Department of Management & Innovation Systems  
University of Salerno  
Via Giovanni Paolo II, 132 - Fisciano (SA)  
E-mail: [alasala@unisa.it](mailto:alasala@unisa.it)

**Paper typology:** Academic Research Paper

**Keywords:** PMBOK; complexity perspective; requisite variety.

---

### Purpose

The aim of this work is to enlighten how the Standard for Project Management (part II of PMBOK<sup>®</sup> Guide) has evolved over the last 30 years as it has introjected the perspective of complexity. The several contexts (private firms, public institutions etc.) in which Project Management is applied become more and more complex (i.e. uncertain and characterized by unpredictable feedbacks among their own variables and their environments). This needs an enrichment (and perhaps a *new conceptualization*) of the endowment of information variety provided by the Standard for Project Management with respect to the *specific* requisite variety asked at a *local* level (i.e. the specific organizational contexts), to lead a project with efficiency, effectiveness and sustainability.

The traditional Standard for Project Management can no longer be considered as a “comfort zone” (i.e. a set of established and “familiar” frameworks, rules and tools aiming to ensure certain and predictable results). On the contrary, the Standard for Project Management should shift towards an open standard, that is able to consistently co-evolve with the increasingly complex contexts that even more ask for new tools, creative solutions and original combinations between exploitative and explorative knowledge.

### Design/methodology/approach

Through a deep and accurate content analysis, the paper analyzes the versions of the Standard for Project Management published in the last 30 years (from 1987 to 2017) together with the Practice Guide Navigating

complexity (2014), to highlight the progressive and systematic introjection of concepts, frameworks and methods provided by the complexity perspective.

### **Findings**

In recent years, Project Management has been profoundly influenced by the complexity perspective, absorbing its concepts, principles and methodologies. This led to the abandonment of the traditional waterfall approach, reductionist and sequential, and to the adoption of the *Complex Project Management*, characterized by iterativity, incrementality, adaptability and contextualization.

The paper highlights how urgent requirements for Project Management will be:

1. continuous enrichment with respect to intellectual, methodological and creative solicitations that may arise from the perspective of complexity;
2. integration and harmonization among the different standards to promote a consistent framework;
3. tailoring at the local level: project management must increasingly present itself as a meta-platform knowledge, whose modules should be selected, adapted and combined according to the variety and variability of each specific local context (contextualization).

### **Originality/value**

The originality of the paper mostly lies in the conceptualization of the Standard for Project Management, conceived as a provider of a huge, precious and evolutive endowment of information variety. This conceptualization leads to focus the attention on the level of fit between the exploitable information variety provided by the Standard for Project Management and the specific requisite variety needed at a local level to successfully manage the project. In so doing, the proposed conceptualization promotes helpful reflections also on the potential gap between the information variety provided by Standard for Project Management and the requisite variety asked by the local needs that, in turn, promote new solutions enriching the Standard for Project Management information variety endowment.

Moreover, adopting the perspective of complexity leads to original implications in the way to conceive a project itself. Each project can be viewed as a CAS (Complex Adaptive System), i.e. a reticular, open system whose components operate in parallel and with non-linear interactions. This highlights that a project co-evolves as a system that self-organizes and learns from the experience of positive and negative feedbacks. Considering a project as a CAS focuses the attention on the requisite variety to effectively lead a project: in an original way, the paper highlights how the requisite variety to lead a project will have to be provided by the project manager according to a tailor-made approach, creating original and emerging connections and combinations among modules of knowledge that heterogeneous standards make available.

### **Practical implications**

The world of projects will be characterized by ever greater context variability and by a growing variability of the scope, the requirements and the constraints to be respected. This will create an ever-increasing need to improve the capability in leading complexity. Trying to provide a useful framework for project managers, the paper presents an original matrix that crosses critical organizational dimensions and the related challenges of Project Management in complex contexts (see summarized version below).

**Table 1** – Critical organizational dimensions and challenges for project managers in leading complexity

<b>Critical organizational dimension</b>	<b>Challenges for project managers in leading complexity</b>
Functional integration and coordination	Increasing need for bridge capabilities
HRM	Increasing need for neghentropic human resources.
Relationship among vertical and horizontal dimension	Increasing stress on the horizontal organizational dimension
Quality management	Ensuring quality in a service society.

Relationship among managerial and entrepreneurial function	Ask for an entrepreneurial role of project manager
Learning	Increasing need to “learn to learn”

### **Research limitations/implications**

This research exclusively focuses on the PMI Standard for Project Management (part II of PMBOK<sup>®</sup> Guide); in fact, the analysis carried out did not consider additional international standards, such as the IPMA Individual Competence Baseline or the PROjects IN Controlled Environments (PRINCE2). To this end, future researches could be aimed at developing a comparative analysis to evaluate how each standard enriches itself introjecting the complexity perspective. Moreover, future researches may also be aimed at evaluating and measuring the fit between the level of complexity of one specific project and the (relatively) most appropriate standard to lead it.

### **References**

- Archibald R.D. (1985), *Project Management. La gestione di progetti e programmi complessi*, (ed. it.), Franco Angeli, Milano.
- Arcuri M., (2017), *Project Management: conoscenze, abilità e soft skill secondo le norme UNI ISO 21500 e UNI 11648*, Tangram Edizioni Scientifiche Trento, ISBN: 9788864581699.
- Ashby W.R. (1985), *Requisite variety, and its implications for the control of complex systems*, *Cybernetica*, ISSN 0011-4227, 1(2).
- Barile S., Saviano M., Simone C. (2015), “Service economy, knowledge, and the need for T-shaped innovators”. *World Wide Web*, 18(4), 1177.
- Bassi A. Tagliafico M. (2010), *Project Manager al lavoro: strumenti e tecniche*, Franco Angeli.
- Bianchi F., Shimizu T., Koudate A., Kondo S., Masut L. (1996), *Dall'idea al cliente: come sviluppare nuovi prodotti in minor tempo con le tecniche dell'high speed management*, Il Sole-24Ore libri, Milano.
- Calabrese M., Simone C., Magliocca P. (2016), “Going Away From the “Protocol Culture”: Innovation, Complexity and the Need for a Culture of Variety”, *China-USA Business Review*, April 2016, Vol. 15, No. 4, 194-204.
- Damiani M. (2011), *La gestione della complessità nei progetti*, Franco Angeli.
- Faggioni F., Simone C. (2009), *Le declinazioni della complessità. Ordine, caos e sistemi complessi*, Sinergie, n. 79.
- Folador M. (2014), *Un'impresa possibile. Persone e aziende che costruiscono il futuro*, Guerini Next.
- Folador M. (2017), *Storie di ordinaria economia. L'organizzazione (quasi) perfetta nel racconto dei protagonisti*, Guerini Next.
- Gambel E.L. (2010), *Management & organizzazione*, Franco Angeli, Milano.
- Kerzner H. (2005), *Project Management. Pianificazione, scheduling e controllo dei progetti*, (ed. it.), Hoepli.
- Manzoni P. (1998), *Multi Project Management*, Franco Angeli, Milano.
- Marino A., Posati M. (2008), *Nuove tecniche per progetti estremi. La gestione sostenibile dei progetti complessi*, Franco Angeli, Milano.
- Miscia S. (1997), in “Introduzione” a Archibald R.D., *Project Management. La gestione di progetti e programmi complessi*, (ed. it.), Franco Angeli, Milano.
- PMI (2004), *Guida al Project Management Body Of Knowledge (Guida al PMBOK)*, terza edizione (ed. it.).

- PMI (1996), *A guide to the Project Management Body Of Knowledge (PMBOK Guide)*, second edition (ed. eng.).
- PMI (2000), *A guide to the Project Management Body Of Knowledge (PMBOK Guide)*, second edition (ed. eng.).
- PMI (2008), *A guide to the Project Management Body Of Knowledge (PMBOK Guide)*, fourth edition (ed. eng.).
- PMI (2012), *Guida al Project Management Body Of Knowledge (Guida al PMBOK)*, quinta edizione (ed. it.).
- PMI (2017), *Guida al Project Management Body Of Knowledge (Guida al PMBOK)*, sesta edizione (ed. it.).
- Simone C., Arcuri M., La Sala A., (2017), *Be vicarius: the challenge for project management in a service economy*, Conference Proceedings of the 20th Excellence in Services International Conference, 7-8 September 2017, Verona, pp. 853-867.
- Simone C., Arcuri M. (2018), “I processi di controllo ne project management: variabili organizzative, economiche e indicatori di performance”. In Simone, C. (a cura di) *Il controllo manageriale e gli indicatori di performance dentro e fuori le organizzazioni*, Edizioni Nuova Cultura, Roma, pp. 125-152.
- Varanini F., Ginevri W. (2009), *Il project management emergente. Il progetto come sistema complesso*, Guerini Associati.
- West G., (2018), *Scala*, Mondadori, Milano.
- Zangrandi A., Borgonovi E., (1990), I differenti modelli di management, *Economia & Management*, 14.