

## Emerging trends in project management: the impact of ICT

Project management is a discipline that cuts across the professions and competences present in organizations. Projects, in fact, may concern objectives of any kind whatever. Consequently, exploration of how technologies impact on the profession of project manager necessarily involved examination of the changes in the contexts in which project managers operate and of the characteristics of the projects with which they are concerned.

As regards the context, the survey of the literature highlighted the need for flexibility distinctive of the *modus operandi* of modern organizations. This need links closely with the development of the new technologies, which on the one hand create an increasingly competitive environment (because it is “globally interconnected”), while on the other they enable the flexible use of diversified skills through the creation of networks (and the consequent partnership relations). Flexibility is achieved in organizations by the use of new forms of work, of which project-based work is an example, and these new forms in their turn use the new technologies as their tools. A project, in fact, enables diverse skills to be directed towards achievement of an objective within a given and controllable time-frame.

The field survey confirmed that changes of context do influence the characteristics of the projects which organizations activate. It highlighted the following trends in particular.

- Projects targeted on the new technologies and on communication are increasing. These projects involve several functions and competencies, so that project managers must acquire not only a better ability to interpret different interests but also different skills which are more management-oriented.
- Such projects are more complex to manage not only operationally but also relationally, because a greater number and variety of actors are involved.
- Increased complexity entails the proliferation of programmes, or the organization of several projects into a coordinated system which directs them towards achievement of an objective with which they are more or less correlated. In this case, therefore, project management shifts from “single” to “multi” project management and focuses on managerial aspects more closely than on technical/operational ones.
- These trends are flanked by another one which apparently contradicts them but in fact is complementary: the increasing frequency of small-scale projects. One observes some sort of downsizing of the concept of ‘project’. Without going so far as to claim that ‘everything is a project’, the field survey confirmed the existence of a phenomenon revealed by the desk analysis: a myriad of small projects, either free-standing or resulting from the break-down of complex projects into more manageable and short-term sub-sets. Small-scale projects are spreading as a strategy with which to govern complex projects, as a means to generate constant product and service innovation, and as the product of reutilized corporate know-how, which, thanks to information technologies, can now be conserved and spread.

The modifications induced in the projects system are also responsible for changes in the roles undertaken by project leaders. The trends outlined above emphasise the increasing importance of project-based work, and they are accompanied by the proliferation of professional profiles at the various levels of project complexity. The survey enabled the identification of three ideal profiles which take different titles in the field:

- Project Coordinator: the first-level professional in project management, s/he is responsible for some, and occasionally all, phases of a small-scale project, being often assigned to a project as a team member;

- Project Manager: in sole charge of a project, s/he has experience and knowledge of project management methods and connected disciplines;
- Program Manager: responsible for complex or strategically important projects, s/he also manages programmes consisting of multiple projects that s/he must integrate together.

The correlation between the development of I&CT and project management roles is not a direct one. It passes through the changes induced by technology at both the organizational level and at that of the type of project. Technology is more directly influential the more it is an integral part of a project, or the more it becomes one of the project's characteristics. The IT sector comprises all three of the above profiles, in fact. The boom in IT projects and their marked diversity entail that these organizations must simultaneously manage small projects, large-scale projects, and ones structured into programmes. Consequently, businesses in the IT sector require a variety of professional figures able to operate at different levels.

The survey prompts a number of considerations regarding the competencies and responsibilities of the above professional figures.

Although the literature regards technical competence on project content to be increasingly less important, in practice it is essential. However, it should not be understood as specialist competence in relation to the project's activity content, but rather as experience in problems connected with that particular type of project.

Managerial skills are the more important, the more the project is embedded in a state of affairs for which the context is relevant. The most significant of these skills concerns management of a specific stakeholder: namely the customer viewed as the set of actors which commission and use the project's final product.

Knowing how to handle customers is of crucial importance. In a system increasingly centred on product customization and service development, involvement of the customer is not only fundamental but also of critical importance for the definition of requirements, management of the variants that the customer may request, and the continuity of the relationship that may be created.

The strong customization of products and services means that the customer is coming to play a decisive role. The involvement of the final users, in fact, is so necessary that they become part of the project team. Customer and supplier increasingly work together on an interdependent and integrated basis.

The increased technological complexity of present-day projects diversifies the actors involved, each of which has interests and competencies specifically connected to its portion of the project, as well as objectives that may be in conflict.

The project leader must try to be less the 'boss' of the project's technical aspects. S/he should instead place more trust in the other members of the team, giving them greater weight in management of the project. This entails a reversal of tendency, in that experienced project managers find themselves performing a role scaled down with respect to the past: they must switch from being 'experts' to 'coordinators'.

Consequently, the proliferation of projects due to the increasing availability of new and sophisticated technologies often entails not only the downsizing of the project itself but also a reduction in the depth of the project manager's role, so that s/he becomes less of an entrepreneur and more of a coordinator and relational worker.

This hypothesis is strongly supported by the major importance that both the desk analysis and fieldwork attributed to communication skills. Because they must work closely with very important stakeholders, they cannot afford not to be able to communicate effectively, and they must devote a great deal of their time to relational activities. Their key competencies are therefore less and less vertical (specialist) ones, and increasingly more the horizontal ones of coordination and integration.

One of the characteristics of technological evolution is the accelerated time scale which it imposes. Communication technologies generate extremely rapid interactions and accelerate the flow of events. Above all, they evolve so quickly that both objects and habits soon become obsolescent.

This situation also impacts on project management, and on three aspects in particular: relationships with stakeholders, the project's life cycle, and the organizational structures of project management. As regards the first aspect, the interviewees emphasised the difficulties encountered by project leaders in handling the enormous load of communications that they receive. On the one hand, the use of web technologies, and of e-mail systems in particular, means that project managers can more easily communicate with the project stakeholders when necessary; but on the other, it entails that project managers are even more easily subject to demands of the most disparate kinds. Consequently, whilst technological progress may facilitate teamwork (enabling virtual collaborations, for example) and the immediacy of interaction, it gives rise to an overload which requires a lot of time and energies to select the crucial information.

As regards the second aspect, the pressure to accelerate project times induces an endeavour to optimize the design phases. It therefore often happens that, in seeking to obtain rapid results, the definition and planning of a project is done iteratively, with modifications to the structure of the project's life cycle which spread through its implementation phases. Projects are thus developed with the constant involvement of customers in order to verify their requirements.

Concerning the third aspect, it is significant that the need to deliver immediate (even if only partial) results to the customer, together with the fact that objectives become on average more complex (also because the technological dimension increasingly conditions them), means that an individual project is broken down into correlated but independently managed parts. The consequence is very often a proliferation of small-scale projects coordinated in pursuit of a single objective.

This situation increases the overall number of projects run by organizations, which consequently require more project leaders and must create structures dedicated to the coordination of the projects undertaken.

In the literature, these structures take the name of 'project management offices', although in actual practice they may be given other labels. These organizational entities assume different features according to the needs that they are intended to fulfil, and according to the type of enterprise in which they are embedded. The interviews showed that although a coordination function is always perceived as necessary, and always exists (although it is performed by structures not specifically dedicated to project management), the creation of a specific structure derives from a cultural predisposition. In an environment 'mature' from the point of view of the culture of project management (like, for example, the IT environment), the project management office may undertake numerous tasks, ranging from control and monitoring of the set of projects to support for the project manager. Instead, in organizations 'younger' from this point of view (for example those operating in the non-profit sector), monitoring and control are performed by other company functions, flanking but sometimes overlapping with the project manager, especially in the case of decision-making and control, thereby evidencing their loss of autonomy.