

Human Resources Management in the Context of Projects

Potoko Silas Moraba

Abstract:

The introduction of projects into the organization poses multiple problems of human resource management both in projects and at the organizational level. These vary due to a number of contingency factors.

Key words: project management, project management, human resources management, contingency, organization.

More and more companies are calling, more or less intensively and more or less regularly, on the organization of projects to maintain or improve their competitive positions. This transformation has serious organizational consequences and poses specific problems for Human Resources Departments (HRDs). This development of project organizations can be understood through the classic contribution of Lawrence and Lorsch (1967). According to them, the structure of each subsystem of the company (research, production, and marketing) varies according to the uncertainty of its environment (the more the environment is uncertain, the less the structure is formalized) and if the organization has differentiated subsystems, it must use means to integrate them. Their works tend to show that the most efficient companies are those with the best integration for differentiations consistent with their environments. For these authors, the hierarchy is not a sufficiently effective coordination mechanism and they engage in a detailed analysis of the integration or coordination mechanisms: mutual adjustment, committees and liaison services, interdepartmental rules, matrix structure and define integrative roles that largely foreshadowed the functions of project leader or director that would appear later (Lawrence and Lorsch, 1967).

This differentiation - integration issue can be mobilized in two ways in project management:

- From the point of view of the company, it is a question of integrating a specific activity, the project, into more "routine" modes of operation, such as operating activities. The company which simultaneously manages several projects must maintain the difference between its projects while seeking the integration of each, both in the strategy of the company and through the sharing of certain resources (Muntu et al, 2021).

From the point of view of the project, management is based on the integration of different professionalisms. Project management organizes the convergence of professional expertise that is different and complementary to each other by building the relationship between specialized professions and not by seeking an illusory mobilization of individual expertise across the spectrum multidisciplinary (Heagney, 2016).

Human resource management



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However, the name of project covers a wide variety of situations which correspond to specific responses to different economic and industrial problems, not involving the same personnel management. Good human resources management (HRM) presupposes an understanding of the economic issues, the mechanisms put in place and the roles hold on. It is in this perspective that this text is situated, to allow the reader to better understand the scope and the contingency of certain specific responses and to better adapt certain tools conventionally used in HRM, knowing that we can note the relative mutual ignorance in which can be found the academic writings of GRH and those concerning project management. We will not deal here with the numerous but scattered developments, local and often registered in the world of the specialized press which values project experiences in all their dimensions (Kalimullin, Yungblud and Khodyreva, 2016).

- The performance of projects depends on the very demanding involvement of actors, generally very qualified, whatever the form of organization and the management procedures in place.

However, project management work is only marginally interested in HRM. Professional writings on standardization and certification (PMBok, 76, 1996 & 2000, Afnor's X50-107 standard (1992) revised AFITEP dictionary, 2000, 2, and IP-MA, 1998, 46) address these problems from a project point of view, through job profile description and procedures that can be used in the project (on this very procedural approach, see also, Kliem & Lundin, 1992, 50). What happens before and after the project, as well as the effects of interactions between projects and services are "out of scope". However, a few rare academic works focusing on management cross the border and tackle the problem of project management from the point of view of HRM. Leaving aside the contributions on the human effects of matrix organization (Reeser, 1969,79), which we will see that does not necessarily overlap with the project organization, the contribution of P. Leclair (1993, 56) in the work of ECOSIP (Giard and Midler, 1993, 30), is one of the first notables of its kind in France (see also the first problematized syntheses of Baron and Couvreur, 1992, 11, and Baron, 1993, 12). More recent productions are characterized by the diversity of approaches. Most often, the angle chosen is organizational (like the collective work of AFITEP and ANACT coordinated by Bossard, Chanchevri, Leclair, 1997,1 or Dinsmore, 1990 29, as well as the work of the IRNOP research network coordinated by Lundin and Midler, 1998, 61), socio-organizational (like the synthesis of Trépo and Zannad, 1997, 83 and the thesis of Zannad, 1999, 86) or oriented towards team management - projects (Picq, 1999, 74) joining in this a current of work specific to R & D projects (Badawy, 1995, 10). We can also cite the acts of the AFITEP 2000 Convention,⁷ devoted to team management problems - projects and writings on the human dimension of project management, based on claims of generalizing pretension (Sizemore House, 1988, 80), specific approaches such as the human factor and the failure of IT projects (Thomsett, 1980, 82) or the PMI statistical survey on salary practices in project management (PMI, 2000, 77)

- Likewise, HRM productions have not yet taken a real interest in this not yet stabilized field of project management, where practices continue to transform and where companies' experiments are ahead of academic production. Some recent works point to a specific reflection (for example, Paraponaris, 2000,73). Contributions on the psycho-affective aspects linked to involvement in project activities and its consequences in terms of stress, burnout, even consumption of doping products should also be highlighted (for example Flannes & Levin, 2001, 31).

Project Management and HRM

Project Human Resource Management Processes



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If the productions are not yet very numerous at the intersection of the field of project management and HRM, many issues are superimposed on this field:

- How to adapt HRM policies and tools those have historically developed in and for functional organizations, whether in terms of recruitment, integration, mobility, remuneration, training, evaluation of results, etc.? In this functional perspective, it is more formal knowledge that is valued and not the ability to disseminate and capitalize on them.

- The missions of the HR function are directly questioned or even called into question by the development of “project” logics. Can the HR function remain a centralized function, in its own right, and take charge of the contradictory demands of operations and project activities, and up to what point? On the contrary, should it be decentralized in certain large projects, for example with the establishment of an independent HR project manager, to take their specificities into account? By breaking down the coherence of the functional organization, project management questions both the missions of the HRM function but also the very existence of this function (Muntu et al, 2021).
- The very management of the main project managers, "insecure" in relation to functional functions, poses many specific problems:
 - in training, since it is a question of exercising a new profession for which these people have not been prepared;
 - in recruitment, since it is for individuals with high potential to move away from structures where their future seems assured;
 - in performance evaluation, in particular in the event of strong conflicts between functional structures and projects;
 - Building up project teams, reassigning people at the end of the project and disseminating project management learning within the company.
- As soon as a “project” identity is constituted, developed and displayed how to manage the inevitable tensions between professions and projects? This confrontation experienced as a zero-sum game is ultimately a hopeless prospect. Business departments, at least in large companies, have experienced the emergence of major projects as competition from their own area of influence. On the other hand, breaking the trades would amount to dissolving the raw material of the projects (Heagney, 2016).
- The transformations of professional practices in the face of the development of project management are reflected in particular by a questioning of the traditional divide between design and execution, the appearance of new transversal functions, permanent negotiation between professionals different, mobilization on the results of the project rather than on the application of business know-how (Kerzner, 2017).

These questions multiply when they are considered in a contingent fashion. Thus, the question of the place of the HR function will obviously not be the same depending on whether you are in a 10-month start-up with full growth in its workforce or in a large automotive company (Muntu et al, 2021).

The ambition of this article is to outline an analytical framework, a set of principles and tools allowing the development of efficient management systems taking into account the unique identity of projects and their variety and strong impacts of this contingency on the roles and operating principles of the HRD. The privileged point of view here will be rather that of HRM as seen from the project than that of HRD as an established profession confronted with new questions (Heagney, 2016). After having characterized the projects, we will examine the project structures, management and their implementation in terms of HRM. Finally, we will present some procedures that can be mobilized in the internal management of a project to ensure its performance and which, through the skills associated with them, have an impact on the management of human resources (Kalimullin, Yungblud and Khodyreva, 2016).

Project characterization

Understanding project management problems involves both identifying all the characteristics shared by projects that distinguish them from recurring activities and to identify the wide variety of possible uses of the organization. This variety is linked to that of the problems encountered and results in a plurality of structures and procedures. It follows that the approaches and instrumentations that can be mobilized by HRM managers are varied and their performance is contingent, which this article will endeavor to underline (Muntu et al, 2021).

Definition

The project is a very old form of productive organization: when a pharaoh decided to build the pyramid under which he would be buried, it was necessary to carry out a work of precise technical specifications, in a short period of time, with

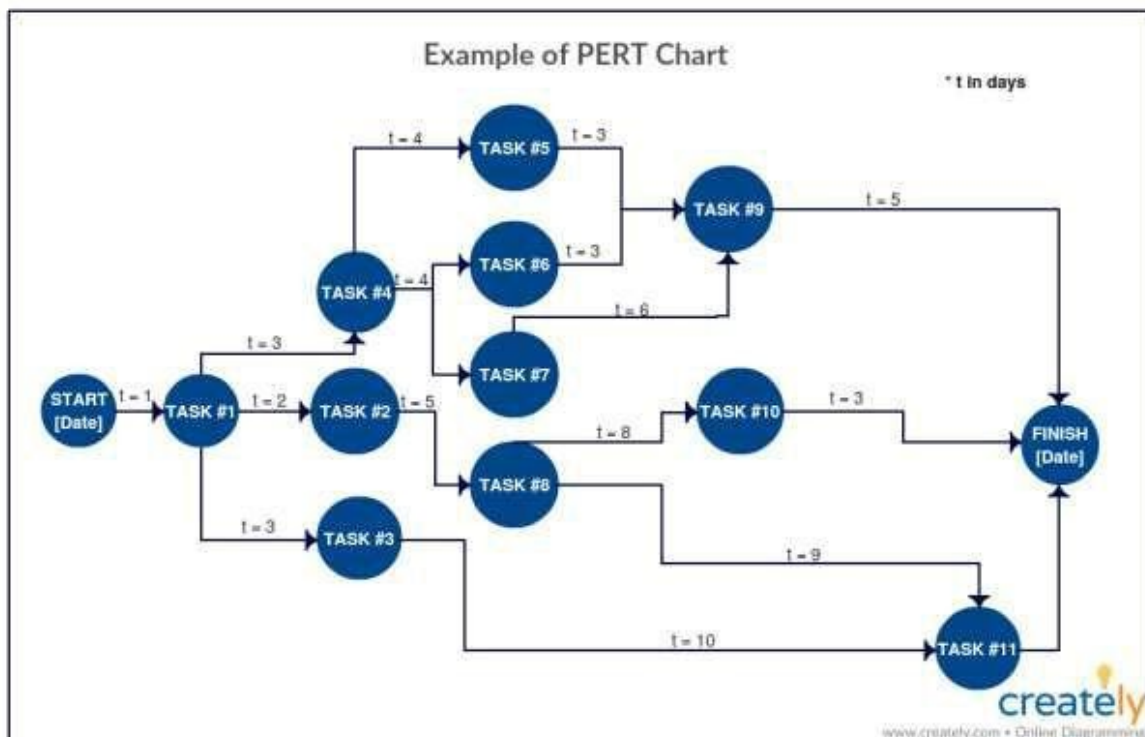
material and human resources limited. In any project, we find this simultaneous consideration of these three categories of constraints (time, resources and technical specifications) to achieve an object or a service, which has never yet been carried out under these precise conditions and which is of a certain complexity. Afnor's X50-105 standard¹ firstly emphasizes the project considered as a process by defining it as to structure methodically and gradually a reality to come "before focusing on the result and the resources mobilized, adding that" a project is defined and implemented to develop a response to the needs of a user, a customer or of a clientele and it implies an objective and actions to be undertaken with given resources" (Heagney, 2016).

Certain substitutability exists between these three categories of constraints: it is easier to meet technical specifications if the time limit is long than if it is short, or to meet a time limit with significant resources than with reduced resources. Consistency between these constraints, the relative weight of which varies from one project to another, is essential to the success of the project, but it should be noted that there is no reason for this to be the case at the genesis of the project, the first difficulty being to quickly converge on a coherent definition of the problem posed (Kerzner, 2017). Each type of constraint is subject to specific instrumentation to ensure that the project will respect its specifications, but the possibilities of substitutability mentioned above require rigorous coordination of technical, time and economic management (Muntu et al, 2021).

- The technical specifications, which include those of quality, can consist of a detailed description of a product or of a service to be performed, which is the case when the project is the subject of a contract between a customer and a supplier. They can also relate to functional (needs to be satisfied) and technical (reliability, maintainability, ease of use, etc.) specifications, which is often the case for pre-projects whose purpose is to provide a detailed description of the project a product or a service as well as the definition of a budget and a deadline, and that we meet each time we aim to satisfy a potential clientele. When the project concerns the development of a new product, the assumptions relating to the size of the potential market are part of the technical specifications because they strongly condition certain choices. This technical management remains fundamentally an engineering affair (Heagney, 2016).

All projects must be completed before a certain date. The time available is an important constraint because, in general, project execution contracts contain late penalty clauses and, for projects to launch new products, a delay can irreparably jeopardize the operational interest of the project or its economic viability (Dotsenko, 2019). The temporal management of the project is carried out using scheduling techniques *Potential-Tasks* or PERT.

Pert chart



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- The constraint of resources mobilized can result in an overall budget but this valuation does not always correctly reflect the room for maneuver available to the project director who will have to deal with the resources that will have been allocated to him that is to say men of competence and motivation sometimes far removed from those desired and equipment of sometimes insufficient technical characteristics. Economic management is carried out using specific management control techniques (Muntu et al, 2021).

The specificity of these characteristics can only be understood properly by contrasting them with those of the recurrent and stabilized production of goods or services (stability of technical specifications, time available and resources mobilized), which corresponds to this is often referred to as an “operation” activity, as opposed to the “project” activity. Declerck, Debourse and Navarre (1983,27) proposed a positioning of project management based on highlighting a few essential differences between the “project” activity and the “operation” activity.

Some other specificities can be highlighted. The project mobilizes experts from different departments of the company, or from other companies, according to a scope that varies over time. We observe a strong initial heterogeneity of points of view based on different logics and reinforced by the uncertainty weighing on detailed specifications. The evaluation of the validity and the relative importance of the arguments present, and their integration, is based on a very specific collective learning and arbitration process which must take into account that at the start of the project the knowledge that we have is low but the degrees of freedom are large, unlike what happens at the end of the project (Muntu et al, 2021).

Typology of projects

The characteristics common to the projects, introduced above, should not lead to consider them as being homogeneous. To understand the variety of issues encountered⁴, and therefore that of instruments and organizations that can be mobilized, it is useful to call on three typologies based respectively on the object of the project, the economic place of the project in the company and the client of the project (Kalimullin, Yungblud and Khodyreva, 2016).

Typology of projects according to their purpose

Historically, the project was created to solve unit production problems. It then saw its scope extend to the design of new products in mass production industries. It is now used in all kinds of companies to manage exceptional, complex operations of a certain size and involving several departments (Dotsenko, 2019).

Unit production projects

Project management is old, but it is in the United States that it will be formalized as an autonomous body of doctrine on the occasion of major military or space programs and major development work in the sixties, under the impetus of American professional circles, gathered in the Project Management Institute. This “standard model” of the engineering of large unitary projects includes an organizational and instrumental dimension. From an organizational standpoint, it defines a framework of responsibilities based on the triptych of “client, contractor and person in charge of work packages”. The client is the owner of the future structure. He is responsible for defining the objectives (in engineering terms, he defines the program or the specifications). The project manager has two roles: a role of architect, designer (responsibility for the overall design choices and breakdown into work packages) and a role of coordinating the execution of the work (organization of calls for tenders on the lots, choice of contractors, planning, monitoring and control of the realization of the batches) (Browne, Dreitlein, Ha, Manzoni and Mere, 2016). The persons in charge of the batches ensure the realization of the elementary tasks of the assembly; the model can work, for large projects, in a nested way: each lot can be considered in cascade as a sub - project. The persons in charge of the batches ensure the realization of the elementary tasks of the assembly; the model can work, for large projects, in a nested way: each lot can be considered in cascade as a sub - project. The persons in charge of the batches ensure the realization of the elementary tasks of the assembly; the model can work, for large projects, in a nested way: each lot can be considered in cascade as a sub – project (Dotsenko, 2019).

In terms of methods, the “standard model” of engineering brings together a range of tools aimed at project breakdown, planning and cost control. This model will assert itself in the engineering of large unit projects until the end of the 1970s, which marks the beginning of a serious crisis for the sector marked by an increase in international competition and a questioning of certain excess in the use of this standard model (in particular in the level of detail retained for project management and control). We then begin to seek to complete this approach by adapting the concurrent engineering approach (see below), which has developed in industrial companies, to the issue of developing new products (Kalimullin, Yungblud and Khodyreva, 2016).

For example, this unit production is found in major military, aeronautical or space programs, in the civil engineering sector with both large engineering structures (channel tunnel, large bridges, etc.) and more modest projects (real estate

programs, construction of private houses) or in the electrical engineering sector (construction of power plants, etc.) (Muntu et al, 2021).

New product design projects

The emergence and development of the concept of project management in mass production industries began in the 1970s, when the number and complexity of projects required better coordination and integration of different logics. We then see the creation of project manager roles, formalized reviews and, more generally, the adoption, within large series production companies, of certain tools of the "standard model". But this model was to experience a new breakthrough at the end of the 1980s, when it became clear that the performance of Western companies in terms of the design of new products was not up to the level of Japanese competitors, particularly in a marketplace. an economic battle which is increasingly being played out over variety,23). New approaches to project management are emerging which give greater weight to the project manager, now referred to as the "project manager" (Clark and Fujimoto, 1991,22, Midler, 1993, 65), and aim to ensure more effective cooperation of the various contributors within the design process (see below). In addition, attention is increasingly focused on the life cycle of a product which, in project management, is defined as the time interval between the start of the design of a product, the end of its production, and by all the events and decisions that affect this product during this period. This perspective allows us to show that decisions taken very early have significant consequences on the recurrent costs which are, in fact, incurred by these decisions, even if their disbursement is spread over time. This results in a desire to control costs incurred during new product design projects, which results in the development of additional instrumentation (design at target cost) used in the economic management of this category of projects (Giard, 2002 and Gautier & Giard, 2000,38).

Finally, we will insist on the preliminary draft, which is dedicated to a preliminary definition because it treats in a somewhat particular way the triptych "specifications-time-cost", which has an impact on the management of this type of projects. We are then in the presence of an absence of specifications, even coarse, of the object of a project. It is then a question, in a determined time and with a given budget, of defining a few scenarios endowed with a minimum of functional attractiveness and technical consistency. In this case, the intermediate control is of limited interest and effectiveness and the management of human resources rather particular. Today we are witnessing a growing attention to these upstream exploration phases in the context of an intensive and repeated innovation strategy (Chapel, 1996,19, Hatchuel & Weil, 1999, 45). The result is a redefinition of the management models for these upstream explorations (Lenfle, 2000,58, Lenfle & Midler, 2001, 59), which emphasizes the management of knowledge produced and innovation trajectories (Lemasson & Weil, 1999, 57).

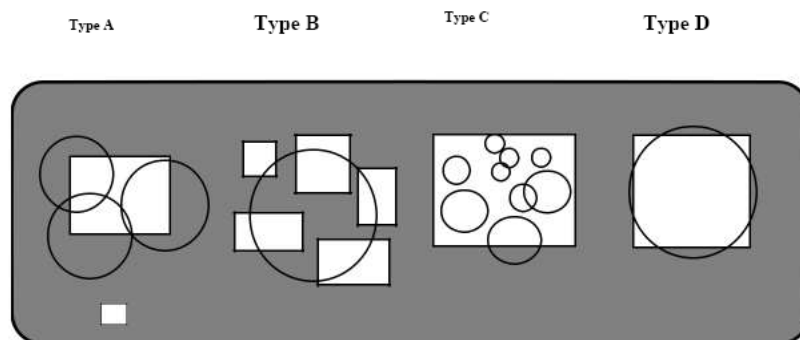
Management of exceptional, complex and large-scale operations

The "project" approach is used more and more in organizations to manage exceptional operations, that is to say non-recurring, of a certain complexity, in particular because they mobilize stakeholders different departments of the company and, possibly, other companies, and of a certain size. Of course, we must find for these operations the constraints of technical specifications, resources and time that characterize any project. The organization of a large participation in a trade fair or a change of computerized management system illustrates this type of possibility (Vafakhah, 2018).

Typologies of projects according to their economic importance in the company

This typology, proposed by Midler in ECOSIP (1993, 30) and subsequently supplemented by it, is based on the economic weight of the project in the company. Four categories are retained and illustrated by the figure 1.

Figure 1: Typology of projects according to their economic importance in the company



- Type A corresponds to a configuration where a dominant company, able to mobilize other companies, is involved in a few very "big" projects that are vital for its survival, which will be broken down into sub-projects. This is typically the case in the automotive industry. The regulations in place in the company will then strongly structure the organization of the project. The key problem is the question of the autonomy and the specificity of the organization of the project in relation to these regulations (Dotsenko, 2019).
- With type B, it is the project that is at the center of the regulation: it is the strongest identity, endowed with a legal and financial personality. The companies involved report to the general management of the project whereas, in the previous configuration, it is rather the project that reports to the general management of the dominant company. The companies and actors that the project coordinates are not used to working together. The project is the occasion, sometimes unique, of this cooperation. It is in this second type that the standard model of engineering is most significant: no organization or corporate culture imposing itself on the others, all must adopt the "managerial specifications" of the project in order to be able to coordinate properly. Contractual relations are much more developed,
- In type C, which can be illustrated by the case of pharmacy or that of fine chemicals, we are dealing with a company which manages a large number of "small" projects, relatively independent of each other, and of which none, on its own, calls into question its sustainability. In this case, the projects are part of the procedures in use in the company, the autonomy of the project is less than in the first type. There is not necessarily a specific organization; the function of project manager can be combined with another. One of the important problems here is managing the portfolio of projects, stopping some to speed up others or introduce new ones. In some cases (manufacturer of specialized machines, for example) (Hornstein, 2015).
- Type D corresponds to the particular case of the start-up that is to say to a scenario in which the company merges with the project at the origin of its creation and this as long as the perpetuity of the company, linked to the conquest of a market, does not seem certain. Even more than in the type A project, the death of the project is synonymous with the death of the company: it is doomed to succeed, with limited resources and in a limited time, to impose itself, by products or specification services with some original features, on a market. It is obvious that the moment when the start-up changes status to become a "banal" company is difficult to define and that the instruments to be mobilized come from project management and "classic" management (Vafakhah, 2018).

Typologies of projects according to their clients

Project management is necessarily influenced by the way in which its constraints are negotiated and the possibilities of subsequent renegotiation, which is not without impact on job profiles, organization and project management. From this point of view, projects with controlled costs are distinguished from projects with controlled profitability (Dotsenko, 2019).

A cost-controlled project is characterized by the existence of a well-known client with whom the technical specifications, budget and deadline are negotiated. When the whole is contractually locked, the profit margin of the project manager will depend above all on its good control of costs (and therefore of time) and the reasons for questioning by one of the partners of the conditions of the contract are generally limited to technical difficulties which were initially poorly appreciated and which may require a revision of certain specifications. Two types of contracts are conventionally used. The fixed price contract corresponds to an obligation of results at a non-revisable price. The regulated market corresponding to an obligation of means: disbursements are invoiced to the client as the work progresses and the service provider's profit is determined independently of the final cost; control is exercised by the client on the reality of the expenditure and the achievement of the negotiated objectives of productivity; in this type of contract, the customer has the possibility of changing specifications more easily. Therefore, but for different reasons, the managers of these projects pay particular attention to monitoring costs. There remains the problem of defining the basic referential (Hornstein, 2015).

Generally, the cost-controlled project is defined within the framework of a call for tenders, where the constraints of technical specifications and often of deadline are rather fixed, a certain margin of maneuver being generally left at the level of the usable processes. To have interest respond to this call for tenders, it is necessary that the cost estimates lead to a budget lower than the price quotation, which is judged to be acceptable by the customer, taking into account the competition in this operation. This phase is based on the expertise of the estimators, on an assessment of the risks of the contract, on a good knowledge of the competition and the customer and, finally, on the ability of the company to differentiate itself positively from its competitors, when it is not very well placed in terms of price (Vafakhah, 2018).

A project with controlled profitability, which one meets mainly for the development of new products to be sold in a competitive market (such as, for example, the development of an automobile), is characterized by the existence of

potential customers. In this case, the definition of the technical specifications, the cost and the deadlines assumes that there are actors in the company playing the role of spokesperson for these unknown customers. This client representation work is difficult because the size of the potential market varies depending on the technical specifications retained, the final selling price and the date of launch on the market of a product that will fit into an offer where other manufacturers are involved. The trade-offs between specifications, costs and deadlines are then more delicate, because they are based on opinions that are not always easy to substantiate and because as the project progresses, the competitive context can change to the point of calling into question the initial trade-offs. In this category of projects, we distinguish drift control when we know, from the outset, that the project has a very good chance of success (for example, development of a replacement vehicle for a range in the automotive industry), the question being where and when, of the stop-or-go piloting that one encounters when the project can be abandoned during execution (for example, the development of a new molecule in the 'pharmaceutical industry) the competitive context can change to the point of calling into question the initial trade-offs. In this category of projects, we distinguish drift control when we know, from the outset, that the project has a very good chance of success (for example, development of a replacement vehicle for a range in the automotive industry), the question being where and when, of the stop-or-go piloting that one encounters when the project can be abandoned during execution (for example, the development of a new molecule in the 'pharmaceutical industry) the competitive context can change to the point of calling into question the initial trade-offs. In this category of projects, we distinguish drift control when we know, from the outset, that the project has a very good chance of success (for example, development of a replacement vehicle for a range in the automotive industry), the question being where and when, of the stop-or-go piloting that one encounters when the project can be abandoned during execution (for example, the development of a new molecule in the 'pharmaceutical industry) (Dotsenko, 2019).

This distinction, which implies different approaches to management problems and the call particular skills, is not always so clear cut. First of all, contractual agreements seeking to integrate the logic of controlled costs and controlled profitability are starting to spread; for example, there are practices of negotiating a "larger" initial budget, in return for sharing productivity gains between the two parties, as well as practices calling on the skills of a project manager in the definition of the project owner's specifications. Then, a large number of pre-projects are part of a "controlled profitability" approach, before moving, once all the constraints have been defined; to a "controlled costs" approach (Dotsenko, 2019).

It is necessarily a heterogeneous grouping that requires the success of the project activity. In practice, we are far from the image of the fusional and undifferentiated team, sometimes associated with project teams in the literature on "team building" or "coaching". The team - project, in the case of a coordination or project management type organization, can be defined, in a restrictive and stable manner, as all the actors - projects or, in an extensive and variable manner over time, such as the meeting of all the contributors involved in the project at a given moment, whether they are actors - projects or actors-trades, it being understood that the possible existence of co-contracting relationships can lead to further extend the scope of the project. In addition, as the business actors involved and (Dotsenko, 2019) or the representatives of the partners are not necessarily the same depending on the timeframe of the project, longitudinal cuts at different times of the project can lead to different team profiles. . In the case of projects that have been released, the scope of the team - project includes, at a minimum, the actors - projects and the actors-trades permanently seconded to the project and may include a more or less substantial set of actors belonging to companies contracting. From the point of view of the HRD, the project team will rather be seen in its restrictive sense insofar as the business actors working on the project come under conventional management (Vafakhah, 2018).

Conclusion

In the 1980s and 1990s, we witnessed a spectacular and general development of the notion of project in the economic world but also the appearance of varied project management models adapted to the diversity of contexts. This dynamic has led to profound transformations in the internal organizations of firms as well as in relations between companies. This has resulted in a series of new questions in practically all the compartments of human resources management that we have sought to analyze in this article. The few principles and analytical grids that have just been proposed cannot claim to be valid everywhere, at least for two reasons. The contingency factors put forward in this article are undoubtedly not sufficient and they are only partially exploited; a number of adaptations are trivial but may not always be so. A second reason is linked to the fact that some companies say they want to quickly manage themselves completely by projects when very few experiments of this type have been carried out. It seems realistic to think that this trend, if it is confirmed, will lead to new human resources management problems and the development of new instrumentation.

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