

Applying an Extension of Chester Barnard's Theory as a Contribution to the Understanding of Project's Nature.

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Abstract

The purpose of this paper is to contribute, through the provision of a conceptual basis, to a better understanding of the nature of projects, extending Chester Barnard's theory. This paper makes use of the concepts described by Barnard in his book *The Functions of the Executive*. These concepts are used as a basis for a discussion regarding projects and project management. The notion of an organization as a temporary cooperative system is extended to the concept of project. In the literature regarding Project Management many authors use to define project as a temporary organization. The objective is to link Barnard's theory with the current ones applied to project management and those that has been developed by important authors. Organizations are created due to the natural limitations of individuals. Projects are created due to the natural limitation of the organizations when they need to adapt and make changes required to its survival and growth in the environment. Projects are also required to allow the redefinition of the organizational purpose. This paper also explores the role of the project manager and his communication with the original organization and the project team in order to align different purposes. This paper establishes clear connection between Barnard's and Project Management concepts. A project is seen as a temporary cooperative system that results in an organization that is decoupled, in some extension, from the parent organizational. Its results are later used to redefine and change the organizational purpose. Project may also be created as a cooperation involving more than one organization. The informal organization has a special meaning in projects. It allows the communication and the creative process within a project. It also helps on reducing the uncertainty in projects, mainly the most innovative ones. Practical implication of this paper is the development of a conceptual theory regarding projects based on concepts such as cooperative systems, formal and informal organizations, and temporality. Not all organizations are equal. One size does not fit all. Not all projects are equals. Projects are unique and time limited. This paper is valuable to the Project Management science due to the rescue of the concepts of Chester Barnard and its extension to projects. The role of the Project Manager is also discussed in terms of authority, leadership, and responsibility. He needs to establish communication channels between project, project team members and related organizations. Projects and organizations demand more communication efforts. Its results may provide beneficial changes to the involved organizations.

1 Introduction

This paper is a theoretical essay and its intention is to provide an association between concepts regarding projects and project management and the management theory provided by Barnard (1938). As this theory was the basis for many other management theories the assumption of this article is that Barnard's concepts can provide insights in order to enhance our understanding about the nature of projects.

Author such as Shenhar and Dvir (2007) and Turner (2009) defines project as a temporary organization. Lundin (2003), Lundin and Söderholm (1995) and Lundin, Söderholm and Wilson (2001) discuss the temporary organizations named as projects and its relationship with the achievement of purpose and decoupling from the parent organization in order to achieve specific objectives.

Barnard (1938) concentrates his studies on the cooperative systems. These systems are based on the cooperation of individuals in order to achieve a common purpose. The achievement of an objective via interactions between the individuals performs better than the individual actions taken for each one.

The survival of organizations depends on the efforts realized by the individuals and associated resources. The communication is also essential to disseminate the purpose to all compound organizations. Its survival depends also on redefining and change the organizational purpose. This change may have a wide spectrum of variation, from incremental to radical, in terms of innovation. Organizations need projects to innovate (Davies & Hobday, 2005).

The parent organization creates a new organization, with some level of decoupling, with a specific purpose to be achieved. When this purpose is achieved the results (in terms of products, services or any other result of interest) return to the parent organization and may provide the elements that will allow the change of purpose. As this new organization is temporary it was created to help the parent organization to redefine its purpose and allow its growth.

Barnard (1938) defines that an organization is a cooperative system formed by two or more people with a common purpose. A project is formed by organizations (the project itself, the teams and stakeholders as organizations and associated organizations) and individuals.

A project manager is the CEO of a temporary organization (Turner & Müller, 2003). The functions of the executive, according Barnard (1938) involves to maintain the vitality and the efficiency of the organization and maintain the cooperative effort and define and communicate the purpose of the organization. All these functions should be performed by the project manager of the temporary organization.

In order to achieve the purposes of this paper the essential element is Barnard (1938). As this paper is a theoretical essay its foundations, besides Barnard (1938), were contemporary authors who research subjects regarding Project Management. Lundin (1993), Lundin and Söderholm (2005), Shenhar (2010), Shenhar and Dvir (2007), Turner (2009), Turner and Müller (2003) have valuable elements that are essential for these analyses.

Wolf (1961) and Wolf (1963) provide elements to understand how Barnard perceived his work some years later. In Barnard and Thompson (1948) it is possible to note Barnard's reflections on organizations with new structures, focusing on tasks, similar to which we use to name as project nowadays.

Andrews (1968), Gabor and Mahoney (2010), Mahoney (2002), Williamson (1995) show the importance of Barnard for the current scenario of organizations. To rescue his work and improve it and extend it to projects is a valuable contribution that this paper wants to achieve. The main goal of this paper is to provide the basis for further analysis of projects nature through the extension of Barnard's concepts, applying it to project management.

Following this introduction this paper has the following structure. Firstly this paper provides an overview on Barnard's concepts and some associations with other researches. Secondly this paper extends these concepts to projects. The creation and survival of organizations are expanded to include project management. In the sequence there is the conclusion regarding the findings and results achieved with this work.

2 Barnard's Overview

Barnard described his experience when working for USO – United Services Organization. The following text, extracted from Barnard and Thompson (1948) is useful to the discussion developed in this paper:

Indeed, even for practical purposes I found it an extremely useful concept in the work of developing and managing the United Services Organization, Inc. (USO), during World War II, the most difficult single organization and management task in my experience. It puts the emphasis upon organization as coordinated activities rather than upon the individuals who are the actors. The latter are often simultaneously "members" of several organizations, and their activities are not infrequently to be conceived as simultaneously functions of more than one organization. Moreover, the relationship of individuals to organization is frequently so ephemeral that they are not conveniently regarded as "members" of an organization, whereas, in my view, certain of their activities must clearly be regarded as a part of the "organized" activities associated with and, as I prefer to think, constituting organization. This concept of organization is a "field" concept in which activities take place in and are governed by a field of "forces", some human and social, some physical.

His analyses were derived from his perceptions about what was going on some companies. Besides his experience when working for Bell, he also worked for other companies. In the case described above, Barnard (1948) perceived the emphasis on activities and the relationship between individuals and organizations. Currently we would call USO as a projectized company.

Current researchers are rescuing Barnard's theory. To Fernández (2010) Barnard's contributions are as relevant now as they were more than 70 years ago. To Aupperle and Dunphy (2001, 157) "Barnard is quietly becoming the lost management bard". Most current management and organizational behavior textbooks do not cite Barnard or his contributions (Aupperle & Dunphy, 2001).

His wisdom came from a combination of intellect and experience, of an inclination for systematic thought and a generous exposure to responsibility and the necessity to achieve results through cooperation (Andrews, 1968, xxi).

In the literature concerning Project Managements projects are often referenced as temporary organizations. To Turner (2009), a project is a temporary organization to which resources are assigned to do work to deliver beneficial change. Shenhar and Dvir (2007) define project as a temporary organization and process set up to achieve a specified goal under the constraints of time, budget, and other resources.

Lundin (1995) discuss a theory regarding temporary organizations. In his framework there is a sequence of four phases representing the life cycle of a temporary organization: action-based entrepreneurialism, fragmentation for commitment-building, planned isolation and institutionalized termination.

There are some similarities with the initial creation of a temporary organization, since their start and their end can both be discussed in terms of bracketing. But termination includes another key component, namely bridging (Lundin, 1995, 449).

To Lundin, Söderholm and Wilson (2001) projects tend to be conducted by temporary organizations. He works on concepts regarding projects, temporary organizations and permanent organizations. Both Lundin (1995) and Lundin, Söderholm and Wilson (2001) do not mention the concept of organization from Barnard (1938).

To Turner and Müller (2003, 3), as a temporary organization, the project is an agency established by a parent organization (the principal) to achieve specific objectives. To Turner (2006) the concept of project as temporary organization is popular due to efforts of works such as Lundin and Söderholm (1995) and Garies and Huemann (2003).

Even mentioning that projects are temporary organizations Shenhar and Dvir (2007), Turner (2009), Steiner (1969) as cited in Pinto and Slevin (1987) miss to associate these definitions on theories regarding organization.

Many authors complain about the missing theoretical framework involving projects. Lalonde, Bourgault, and Findeli (2010) explore possible project management theories according characteristics of diverse types of theory-practice relationship as a way to find alternatives to fulfill this gap.

Barnard offers a systems approach to the study of organization, which contains a psychological theory of motivation and behavior, a sociological theory of cooperation and complex inter-dependencies, and an ideology based on a meritocracy (Gabor & Mahoney, 2010).

According to Barnard (1938), willingness to serve, common purpose, and communication are the principal elements in an organization or cooperative system. These elements should be present and working interdependently. Barnard viewed communication as an energizing force that bridges the natural gap between the individual's willingness to serve and the organization's common purpose (Kreitner, 2009).

A cooperative system is one in which individuals act rationally in the name of a common objective (Levitt & March, 1995).

According to Andrews (1968, xxi) Barnard's work remains today, as it has been since its publication, the most thought-provoking book on organization and management ever written by a practicing executive.

Barnard’s work inspires succeeding generation of scholars and practitioners, remaining a well spring for contemporary thinking (Bedeian & Wrein, 2001).

His work is a direct outcome of Barnard’s failure to find an adequate explanation of his own executive experience in classic organization or economic theory (Andrews, 1968, x).

Barnard and Thompson (1948) classified the contributions in Barnard (1938) in structural and dynamic concepts. The structural concepts relates to general aspects of the subject that are relatively stable, fixed. The dynamic concepts relates to the general ideas to “how it works”, of movement or change. Copeland (1940) as cited in Andrews (1968) also describes these definitions as explained to him by Barnard. The structural concepts are the individual, the cooperative system, the formal organization, the complex formal organization and the informal organization. Its definitions are described at Table 1. The dynamic concepts are free will, cooperation, communication, authority, the decisive process and dynamic equilibrium.

The definition of organization is related to the concept of system. This approach was used by Barnard (1938), before the General Systems Theory and its application on management. Barnard (1938) associates both the terms system and organization: “The system, to which we give the name organization is a system composed of the activities of the human beings” (Barnard, 1938, 77). All parts of an organization are inter-related, inter-connected and inter-dependent.

Barnard (1938) discuss the cooperative systems and two forces that are absent from individual action. The first one is the force that intends to facilitate the cooperation. And the other one intends to maintain the cooperation. An individual, alone, may try to pursue a purpose. Individuals working together on the same purpose via interactions are able to achieve it earlier. The effectiveness of the cooperative system is resultant from the efficiency of the individual efforts.

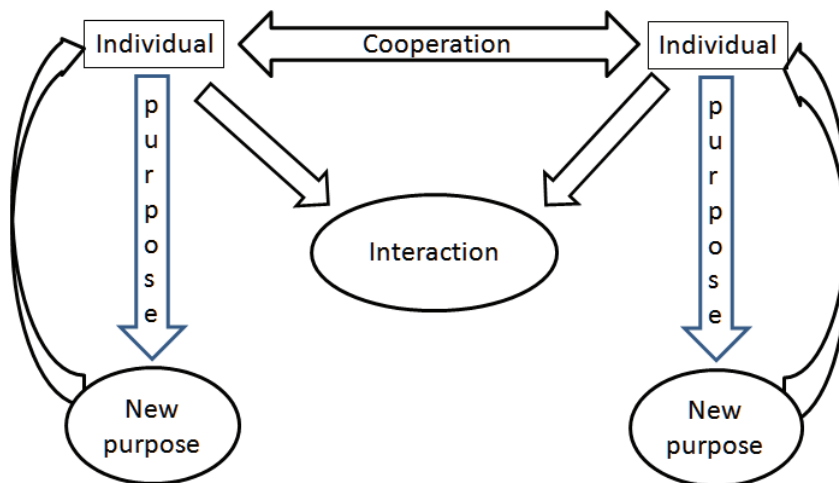


Exhibit 1
Purpose as the foundation for the cooperative system
Source: Authors.

At Exhibit 1 there is a representation of the concepts of Barnard (1938). An individual realize activities because of an objective. When two or more individuals have the same well defined objective in common, they have a purpose. And they can cooperate and develop interactions in order to achieve this purpose. This cooperation is within a cooperative system

aiming to achieve specific purpose. When the objective is achieved the cooperative system ends. New cooperative systems may be formed (based on the same or different individuals) according to the existence of common objectives.

Barnard (1938) explores the creation and consolidation of an organization. The cooperative systems are the foundation for this structure. Individuals interact together to achieve a goal, a purpose. The sustainability of an organization is based on the lifecycle of its purpose. The initial purpose may be transformed in order to maintain the cooperative system and the interaction of individuals.

The purpose is the element that motivates the action of an individual or a cooperative system (Barnard, 1938). The purpose joins different individuals in an organization. When there are consciously coordinated activities or forces of two or more person we have a formal organization. Many organizations working together for the achievement of a goal or purpose are a complex formal organization.

Table 1
Structural systems, from Barnard (1938), according Andrews (1968)

Element	Definition
Cooperative system	A complex of physical, biological, personal, and social components which are in a specific systematic relationship by reason of the cooperation of two or more persons for at least one definite end. (Barnard, 1938, 65)
Organization	One of the systems comprised within a cooperative system: the cooperation of two or more persons with a common purpose (Barnard, 1938)
Formal organization	A system of consciously coordinated activities or forces of two or more persons (Barnard, 1938, 73)
Complex formal organization	Built up from units of organization, and consist of many units of “working” or “basic” organizations, overlaid with units of executive organizations. The essential structural characteristics of complex organizations are determined by the effect of the necessity for communication upon the size of an unit organization. (Barnard, 1938, 113)
Informal organization	The aggregate of the personal contacts and interactions and the associated groupings of people (Barnard, 1938, 115), comprising of processes of society which are unconscious (Barnard, 1938, 116).

Source: Authors

A lesson of organization theory is the importance of cooperative adaptation. The organization theorist Chester Barnard (1938) understands that adaptation is the central problem of economic organization (Williamson, 2002, 175).

The success of an organization depends on its ability to attract resources (Carrol, 1995). According to Turner (2009) projects as an organizational form are very effective at attracting resources because they are an effective way of managing change in ways that cannot be achieved in the routine organization.

3 Extending Barnard's Concepts to Projects

Barnard's (1938) focus was to explain the process that drives the creation of organizations. Organizations are naturally temporary according to him but the successful cooperation allows its survival. From this perspective, it is possible to analyze another aspect of cooperative systems: the cooperation between two or more organizations.

Nowadays it is common to have different organizations working together to achieve common objectives. Barnard (1938) gave a lot of samples of organizations, such as countries, associations, churches and families. We can extend his definition by adding the alignment of purposes between two or more different cooperative systems.

Let's suppose for example a school formed by its classmates and teachers. This is a valid organization and Barnard (1938) used some similar samples. Next to this school there is another organization, a church for example. The church wants to realize a religious party and needs a place to do it. The school is able to offer a space to the church and its teachers and classmates can help working on the party. In this case the purpose of the school is to be part of the community. The church's purpose is to integrate the community. Both purposes may temporarily join both organizations.

During this specific period of time there is a new organization. There is a new cooperative system formed by two other organizations. This new organization has a specific purpose. This purpose is aligned with the other organizations' purposes.

As mentioned by Williamson (2002), a lesson of organization theory is the importance of cooperative adaptation. This adaptation is the central problem of economic organization (Barnard (1938) as cited in Williamson (2002)). This new organization helps the parent one in the process of adaptation.

If the organization keeps working this is a successful cooperative system (Barnard, 1938). Some authors (such as Lundin (2003) and Lundin and Söderholm (1995)) used to name these organizations as permanent ones.

A church, in this case, is a permanent organization. The school is also a permanent school. The new organization may be permanent or temporary. If this new organization is permanent this is similar to the formal organization and complex formal organization as defined by Barnard (1938).

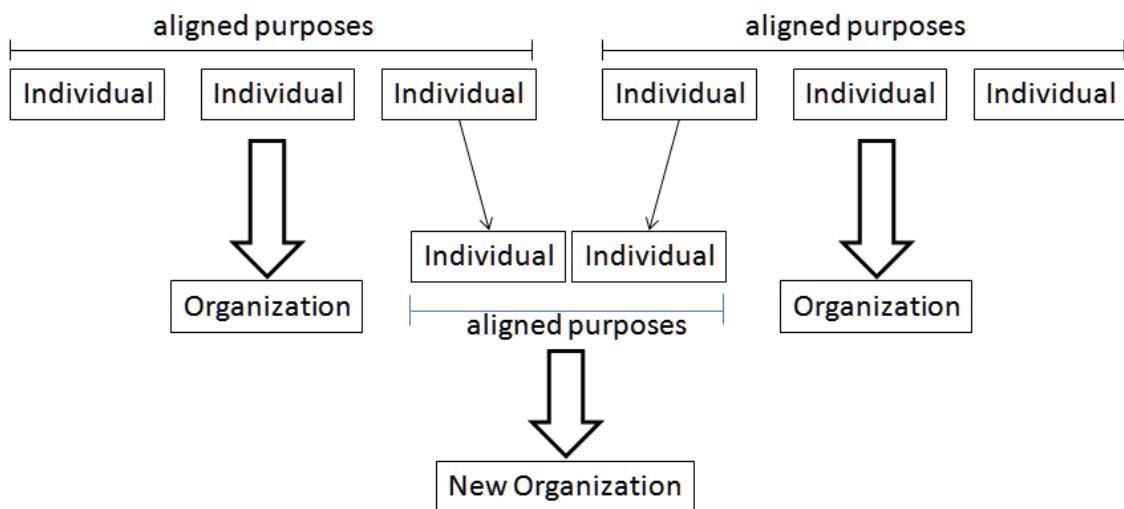


Exhibit 2

A new organization based on the alignment of purposes between organizations and individuals.

Source: Authors.

If the new organization is temporary it means that it will use resources from the other organizations during a specific period of time. These resources may be material, financial or even human. This new organization has limited existence in time. As described by Lundin and Söderholm (1995) temporary organizations need to be fixed in time with a specific start point. This new temporary organization is decoupled from the original organization and has its own identity.

This new organization is an extension of Barnard's (1938) organization. His theory is mainly based on the long term survival of organizations. But equally important is to understand the reasons for the creation of new undertakings in the form of temporary organizations. It brings a lot of questions regarding its creation, manageability and relation with the individuals and the parent organizations. Also questions regarding communication, authority and responsibility.

According to Lundin (2003) organizations are in constant change and they are dealing with these challenges by way a special form of structural configuration, namely projects.

In order to answer these questions the intension is continue using Barnard (1938) theory. His definitions continue making sense for the new organization (as we are going to demonstrate) and can be adapted to explain specific elements generated by this new organization form.

Limitation is the reason for organization (Smith, 1998, 50). The individuals look for cooperation when the achievement of purpose is limited by some reason. Individuals have physical and biological limitations. They need to cooperate in order to realize a purpose that they would not achieve individually.

This same thinking can also be applied to the new organization. If the organization has some limitation to achieve a specific desire or purpose (aligned with the overall purpose of the organization) it may transform itself or it may create a new temporary organization. Projects are created due to the limitations of the original organizations.

This new organization, possibly decoupled from the parent organizations in some extent (Lundin, 1995), intends to achieve a specific result. This is a new temporary cooperative system and its name is project.

Project is a new organization created by the parent organization. It may be formed by more than one organization. Projects, while being temporary organizations, serve long-term organizational goals (Turner & Keegan, 2001).

Turner and Müller (2003) refer to the parent organization as the Principal. According to them the principal needs to appoint a manager (the agent) to manage the project on their behalf. The principal needs to create structures, including information channels, to monitor the manager's decisions to ensure they are aligned with the owner's objectives.

At this moment we have one important association between projects and Barnard (1938). It is important to explain other involved concepts, as described by him, and relate them with other studies in project management. It is also important to notice that a project may be a coalition of organizations which extends beyond the boundary of the single firm, as described by Davies and Hobday (2005). At Exhibit 4 there is a diagram showing this possibility.

But there is a need to understand why organizations would create projects. Projects have a temporary nature. They should achieve a goal in a determined period of time. Organizations create projects to execute temporary and specific business requirements. Or they may create projects to allow innovation and the growth of the firm. Projects are the agents of change (Andrews & Hobday, 2005).

Barnard (1938) has defined other concepts regarding the organization and its types. The formal organization is a structured type of organization that is the basis for the complex formal organization. The need for communication and leadership grows according the growth of the organization.

According to Andrews (1968), Barnard (1938) describes the importance of purpose and commitment to purpose in organized activity. And it is really important. There are a lot of activities to be done within the organizations. The commitment of the individuals who form the organization is essential. It is important to plan these activities, to organize, to implement and to control their progress.

The executive functions serve to maintain a system of cooperative work. The functions of the executive involve providing the system of communication, to promote the securing of essential efforts and to formulate and define purpose (Barnard, 1938, p217).

When the purpose of cooperation is attained, then the cooperation is said to be effective (Barnard, 1938, 43). The achievement of this purpose may take a long time. And during this time the organization should be kept as a unit. This is the point where the executive is important. He needs to provide ways to keep all individuals working for the purpose of the organization and communicate what is expected.

The executive, as a role, is more important according to the growth of the organization and essential to coordinate the actions in the cooperative system. He has the authority to allocate resources and distribute activities within the individuals of the organization. The authority is the character of a communication in a formal organization and it must be accepted by the members of the cooperative system. According to Barnard (1938) individuals are able to exercise authority when they are acting officially for the organization.

Management's main challenge is achieving cooperation among the groups and individuals within this social system, in the interests of achieving organization goals (Barnard, 1938; Gabor & Mahoney, 2010).

There is the authority of position and the authority of leadership (Barnard, 1938). The determination of authority remains with the individual. If the individual accepts the communication from the executive he confirms his authority. Authority depends upon both a cooperative personal attitude of individuals and the system of communication or lines of authority.

Barnard presents a system approach for studying organization, which contains a psychological theory of motivation and behavior, a sociological theory of cooperation and complex interdependencies, and an ideology based on a meritocracy (Gabor & Mahoney, 2010, 10).

Purposeful cooperation is possible only within certain limits of a structural character, and it arises from forces derived from all who contribute to it (Barnard, 1938, 259). Cooperation is the creative process and leadership is the indispensable fulminator of its forces. The executive function of "moral creativeness" is the highest expression of responsibility (Barnard, 1938, 261).

An increasing degree of cooperation implies an increasing moral complexity or responsibility (Barnard, 1938). Authority and responsibility work together but represents different concepts. And especially for projects these are very important concepts.

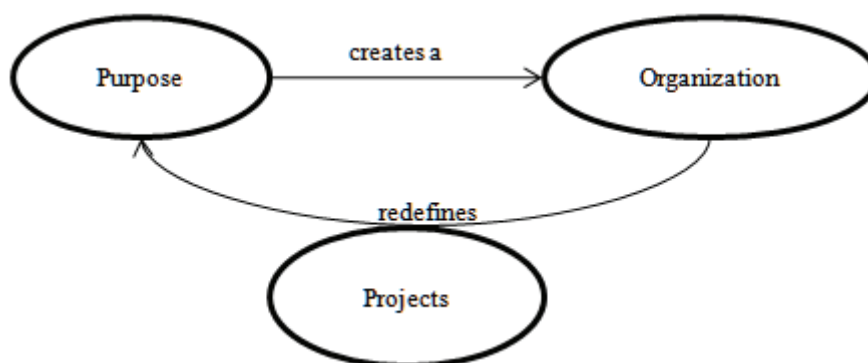


Exhibit 3
The redefinition of purposes in an organization is done via projects.
Source: Authors

Barnard (1938) identified two types of chief executive of companies: those who manage by process and those who focus on relationship and communicate its values (Müller and Turner, 2010).

One of the functions of the executive is to formulate and define purpose. During the decisive process the executive should also redefine or change the organizational purpose (Barnard, 1938). From Barnard (1938, 206) there are some insights about the purpose and its fragmentation and evolution:

Constant determination of new strategic factors is necessary to the accomplishment of broad purposes or any purposes not of immediate attainment. (...) In an organization it

requires a sequence of decisions at different times and different executives and person in different positions. A broad purpose and a broad decision require fragmentation of purpose into detailed purposes and of principal general decisions into detailed subsidiary decisions. (...) Purpose will have to be defined to practicable terms and conditions as they develop in time.

The fragmentation of purposes may be associated with fractal management. Turner (2008) describes it and specifies that project management is fractal management. If the purpose of organization is fragmented then the same will happen with the executive and decisive processes. The linkage between the purposes and the realization of processes to plan, organize, implement and control the organization in all sublevels of the hierarchy is named fractal management.

On smaller projects the project lifecycle and the management processes may be indistinguishable (Turner, 2008). But the management processes are applied many and many times during the project lifecycle. In special the management processes are applied to the entire organization a lot of times in a different level of resources aggregation. Even though, the management of organizations is fractal management. The renewal of purposes is realized through projects. At Exhibit 3 there is this representation. A set of aligned purposes of individuals creates an organization. The survival of organizations depends on the redefinition of purposes so projects are created to achieve this new result.

Lundin (2001, 3) linked the learning objectives of permanent organizations for its renewal (or purpose redefinition) with projects:

Permanent organizations can be expected to learn incrementally. Consequently, they learn to exploit existing knowledge embedded in work organizations, machinery, and individuals. Projects, on the other hand, might lead to leaps when new knowledge is developed (e.g. through product development). For this reason, organized renewal frequently requires projects.

The organization is dynamic and changing. The executive has to be sufficiently alert to recognize and deal with such changes (Wolf, 1963).

When an organization (or organizations) creates a project it is applying resources for realizing a purpose. These resources may be human, financial, material and so on. For projects, especially those involving radical changes on organizational routines, it is important to control and monitor the progress of its development. The sponsor is someone from the parent organization who is interested on the success of the project. In order to achieve the desired results the sponsor needs to be sure that the invested resources will be well used and also track them.

The new temporary organization (or the project) needs a special management. There are some differences on the way that a parent organization and a project should be managed. The project resources are much more limited than the resources from the parent organization. This situation adds more limitation on projects.

The sponsor needs an executive to manage the project. He needs to be aligned with the purposes of the parent organization. This executive is the project manager. The project manager is the chief executive officer (CEO) of the temporary organization named project (Turner & Müller, 2002).

Project Managers, as CEOs, are responsible for achieving the expected business results and inspiring and motivating the project team (Shenhar, 2010).

The project manager has the responsibility for the success of the project. He is the one who has the authority of position. The project team should obey his instructions. He needs to control the resources specified to the project. He needs to provide the system communication and promote the securing of essential efforts in order to achieve the desired results. These are the executive functions as specified by Barnard (1938).

Achieving the desired results requires some attention. Project managers should adapt their style to the right context and manage the project in a dynamic and flexible way (Shenhar, 2010, 3) and avoid the same approach to all projects.

Successful cooperation in cooperative systems is the abnormal condition (Barnard, 1938). The observed ones are the successful survivors among innumerable failures. To Barnard the organization is temporary and the common purpose is the glue that allows its survival for longtime. Projects have a similar problem. Many projects fail on achieving its objectives.

The project team members may have the complete authority on specific parts of the project but not the complete responsibility. The project manager is always co-responsible to the achievement or not of project's purpose.

Barnard (1938) gives attention to the role of the informal organization. The informal organization is found within all formal organizations, being essential to order and consistency. It establishes certain attitudes, understanding, customs, habits, and creates the condition the organization may arise. Formal organizations create and require informal organizations.

Hobday (2000) discuss the informal and formal aspects in projects. To him some types of projects require strong informal activities essential to success in uncertain environments.

Williamson (1995) has made some comments on Barnard (1938). One of them is that informal organization may be a mean by which collective dissent from authority is supported. The other one is that the informal organization may undercut the efficacy of internal organization.

Barnard (1938) also describes the role of the executive within an organization. According to him the strategic factor in cooperation is leadership. And the strategic factor in social integration is the development and selection of leaders. The extents and success of cooperation is proof that the executive arts are already highly developed (Barnard, 1938, 291).

Williamson (1995) emphasizes Barnard's contributions to the science of organization. This paper looks for associations between Barnard (1938) and project management hoping to contribute with the evolution of the theory for the discipline.

Besides the mentioned types of organization, Barnard (1938) also describes the informal organizational. This is the organization without formal boundaries. The organization maintained by the own individuals without considering the formal lines defined in organizations. The informal organization is created and required by the formal organization. Its functions are communication, maintenance of cohesiveness and the maintenance of integrity of the individual.

By reducing hierarchy and bureaucracy there is a better chance of keeping options open, coping with uncertainty and dealing with feedback loops from customers and regulators (Davies & Hobday, 2005).

We also can relate this concept with the Burns and Stalker (1961) structures. They describe the mechanistic and organic structures. They associate the low level of formalization with the organic one. This structure is more favorable for innovative purposes. Based on them is possible to say that the informal organization, and its relationship with the formal organization, determines the level of innovation being developed in the project.

Innovation is part of the answer of the organization in relation to the technological and environmental changes (Burns & Stalker, 1961). For many companies it is difficult to undertake the most innovative and radical changes. The company requires creating a parallel structure in order to achieve the desired results.

The most innovative companies, according to Burns and Stalker (1961) are organics. It means that they require low level of formality, decentralization, less supervision, on an unstable environment. This is the structure most suitable for radical innovation projects. The innovation is directly associated to projects. According to Davies and Hobday (2005) the organic approach is more suited to complex projects and project-based organizations than the mechanistic.

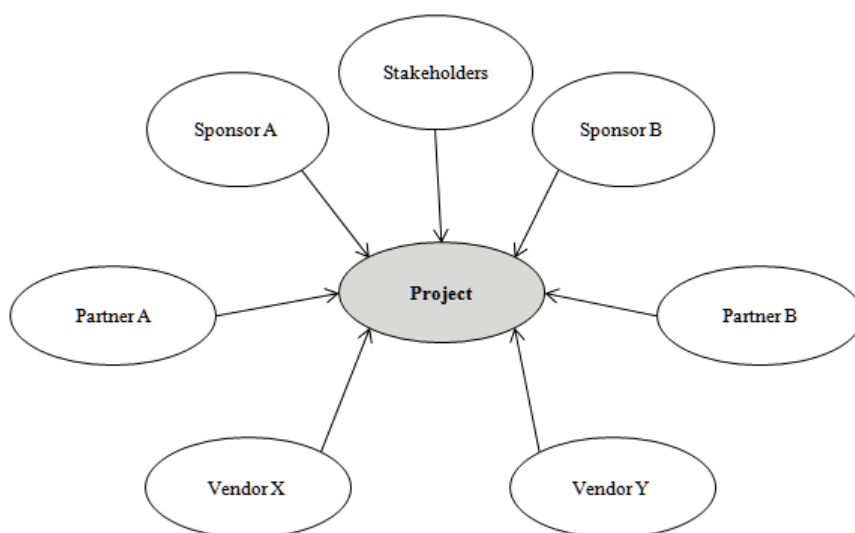


Exhibit 4
Project as an intersection of organizational purposes
Source: Authors

Project is a temporary cooperative system to achieve a specific purpose based on the goals and objectives of the constituent organizations. Its relationships may be very complex. At Exhibit 4 there is an example of a project that was created in a company. Davies and Hobday (2005) describe some similar structures for projects. The project is being funded by two different departments. There are partners (other consulting companies) working together for this project. And there are vendors offering its products and services for the realization of the project. Every one of these organizations has a specific purpose. But for the project the purposes were fragmented and consolidate one unique purpose for this new transient organization.

Barnard (1938) also analyzed the cooperative system formed by two or more organizations. According to him these cooperative were “not recognized as organizations,

since they have no name or common officials” (Barnard, 1938, 110). Mixing old and new theories we can conclude this unnamed organization is the project.

An aspect of the relationship between project and organizations is the increasing number of communications channels. There is also an increasing of the complexity of communication. According to Barnard (1938, 110) the size of an organization is restricted by the necessities of communication.

There is an important organization missing at Exhibit 4. This organization is the one formed by the customers. They are also important for the success of the project and have a special relationship with the project. If the project’s result is a product the customers will be its future users. This relationship is increasing until the point that the users are also participating of the development of the product. User lead innovation creates a strong relationship between customer and the organization and also with the project team. Some projects are extending its lifecycle to get feedback from the users. As an example there are the permanently beta organizations (Neff & Stark, 2003) and also the idea of perpetual beta (O’Reilly, 2005). New improvements are constantly added to a new product even after its launching.

Project has a purpose that is to achieve the objectives defined by a set of organizations. These organizations give resources, such as financial, personal or materials, to realize an objective. The objective of one project is shared by all involved organizations.

Each one of these organizations can participate in different levels and roles in a project. Some of them are responsible for defining the objectives and some others will be responsible for the execution of the project.

A project is a temporary organization but we shouldn’t see it as a simple internal organization. A project is formed by internal and external organizations. Even with these aspects Barnard’s theory might be applied. Organizations interact with other organizational structures, in a subordinate or associative way, but in both cases through a cooperative system, in order to achieve commons purposes.

Based on this we can define a project as a temporary organization formed by individuals or other organizations working as a cooperative system in order to achieve a specific business need.

4 CONCLUSION

This paper applied and extended Chester Barnard’s management theory to projects. The contribution of this article is relevant to a better understanding of the nature of projects. The notion of organizations as cooperative systems and naturally temporary is a foundation to the extension of Barnard’s work to a general definition for projects.

Projects are defined as a temporary organization formed by individuals or other organizations working as a cooperative system in order to achieve a specific business need.

There are some aspects of Barnard’s theory which is even more relevant to projects than to the general organizations. The accepting of communication in projects is essential to its effectiveness due to its temporary nature. Organizations with less time constraints may have alternative ways to overcome communications with authority shortcomings. The project

manager is always co-responsible for the tasks event if he delegates authority to someone else. That is extremely critical to the success of projects.

Barnard did not mention directly the term project, but it is possible to identify in his work the description of special managed processes that could be considered as projects.

Projects and its parent organizations are cooperative system and: both are created due the limitations to achieve the desired purpose, but they have a different order of magnitude of time constraint.

This study can also be extended due to the breadth of subjects in Barnard's work. For further studies we suggest the analysis of efficiency and effectiveness in projects, the extension of communication aspects to project managers, an association between the temporary nature of projects and aspects of time according current research. Using and applying Barnard's theory as a foundation on further analyses can provide valuable insights to the theory on Project Management.

This paper made a contribution to Project Management research rescuing Barnard's work and extending it to the concept of projects. Barnard's theory is still extremely valuable and suitable to a better understanding of the nature of the projects.

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