

BUILDING PROJECTS

KEYWORDS

Licensing Management • License Management • Project Management •
Architecture Authorizations • Risk Management

Incidence in Licensing Management
Activities in Building Project Life Cycle

A STRATEGIC
MATTER OF
KNOWLEDGE

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• ABSTRACT •

The architectural project faces the challenge of the constant search of improving productivity, and the optimization of processes. This requires detailed analysis of processes, in such a way that we can identify where there are relatively more incidents, and of these, those that have the greatest impact on the development of the project. The purpose of this research was to evaluate the impact of the incidents of the Licensing Management activities in the phases of the life cycle of the building project. The data here in has been obtained from the analysis of projects carried out in the city of Madrid, taken specifically as a reference given the complexity of its regulations. The study identifies the degree of impact in each of the project phases, and the results justify the proposal of a new role in the project team, and because of its strategic importance, of a specific chapter in the reference standards.

1. INTRODUCTION

In an environment of market opening and promotion of economic activity in the European Union, the normative standard reference is made by the Services Directive of 2006 (Directive 2006/123 / CE of December 12, 2006), which eases the authorizations for the opening of establishments and barriers to service activity. In this context, the urban planning regulations of Madrid have incorporated a series of revisions that have led to substantial changes in the construction processes, adopting new procedures.

As a work of analysis and optimization of the processes of the Building Project, we focus on the aspects related to the Management of Licenses and Authorizations, taking as a model the City of Madrid. We identify a set of activities that represent milestones of sufficient importance to motivate their detailed study, and whose systematization and control substantially improves the possibility of success in achieving the final objectives.

Understanding the regulatory complexity associated with the development of the architectural project, within each project we identify the activities that are related to the knowledge and application of this regulation with a global perspective, This knowledge must be intimately related to the Management and Coordination of the different agents involved in the project team. We call these activities Licensing Management

The objective of this work is to study the impact of the activities of the Li-

censing Management processes in the different phases of the life cycle of the Building Project, within the framework of the application and determinations of the Project Management standards established by the ISO 21500. Initially we will define these activities in a generic way, while the interfaces and deliverables will be the subject of study for each particular building Project.

We begin by identifying the life cycle phases that we propose should be set forth as the method of analysis for the sampling projects, based on those contained in the main international standards of MPBoK, ISO 21500, and the Royal Institute of British Architects

Once defined the scope of the study, we analyze the conclusions of the various project studies carried out in the City of Madrid, taking as a measure the total impact of the incidents of activities of Licesing Management in the final result of the investment, stopping us in the impact on the different phases of its life cycle

We conclude that a successful Licensing Management execution, considered as a set of activities that must be considered with its own body within the Project Management, optimizes the final result, being able to include as strategic actions of clear incidence and responsibility in the Processes of Risk Management, and anticipation of contingencies, and therefore of optimization of the final results.

2. LICENSING MANAGEMENT - INCLUDED ACTIVITIES

Within the development of the Building Project, we identify the Licensing Management as a set of activities that affect the practicality of all the processes in its life cycle, and that prove essential for a correct definition of the configuration and the Scope of the Project, as well as for its development, especially in locations with processing procedures of great complexity, such as those required by the Madrid City Council

The objective of the building project is a unique product by it's very nature, which we can consider as a living entity in constant evolution, affected and influenced by its own environment, and by its respective planning. As put forth by Professors Soler Severino, M.J., Humero Martín, (2013), we apply management methodologies and practices to best ensure the proper course of the project. The application of Project Management techniques developed by the Project Management Institute (PMBok), and included in the International Standard UNE ISO 21500, allows us to establish procedures with the aim of anticipating and controlling the risks, and therefore allowing the activity to be developed in a controlled environment with lower degrees of uncertainty and therefore optimize the results of the investment.

Likewise, we could include these processes in the improvement of quality control (Mesa Fernández, JM, 2017), since they significantly reduce the complaints and claims of the end user due to delays in the delivery dates

and the presumption of costs not initially foreseen

Although influenced by internal or external factors, such as company culture, customer objectives, team members, or the environment, we can generalize, by establishing a series of model phases, the structure the life cycle of any building project. And defined these, we analyze the implications of the activities of the Management of Licenses in each one of them.

3. PROJECT PHASES - BUILDING LIFE CYCLE

In a preliminary way we briefly analyze the phases that we will take as a general schema of our study, always taking into account the model of development of the project in the Spanish territory, and with that we then approach a final justified method of procedure.

The life cycle of a project is the set of phases in which it is organized from its beginning to its conclusion and delivery, all to facilitate its management (Maury Ramírez, H.E., & Luna, C., & Romeva, C). A phase is a member set of interrelated project activities that, in general, concludes with the approval of a delivery, either partial or complete. The number of phases and sub-phases will depend on the degree of complexity of the project

Its definition allows the Project Director to plan the development of the activities in a coherent way, the control the time line and the allocation of resources of any types relevant to the Project (Soler Severino, M.J; 2013). In the building project, which generally involves a large number of subcontracts, it is a key tool to control outsourced work, and what is more important: its coordination, regardless of the size of the packages. Also it is very advisable for the verification of quality, to identify the phase changes with the control points of the deliverables

Although the PMBoK and the International Standard UNE ISO 21,500 establish that the life cycle of each project is defined by the phase model that is used, and influenced by the organization that undertakes the project, both indicate a generic structure of the Life Cycle, composed of the following phases

- Initiation of the project
- Planning and preparation
- Execution of work
- Project closure and deactivation

This structure of the life cycle, generic as it is, should not be confused with the Project Management Process Groups established in the International Standard UNE ISO 21,500 given that it is a basic model on the organization of the project phases and not the actual organization of processes

These generic phases are determined after identifying the project with the investment for the construction of the building, and culminating with its commissioning and the transfer of ownership proper for the beginning of its operation. We distinguish between the Life Cycle of the Project, as we understand it as the decision of an investment that, as a final result, will put into service a building project, and the Product Life Cycle, of the building whose meaning includes the analysis of the service phase and its operation (Soler Severino, M.J. 2012).

Also important is the view of the Royal Institute of British Architects (hereinafter RIBA), which establishes in its Plan of Work an eight-stage life cycle, whose greatest virtues are its simplicity and clarity. This proposes established milestones by default which serve as a guide to facilitate contractual agreements between participating stake holders involved in the design, construction and management of the building, such as determining the activities and times of deliveries, and establishing fee agreements and forms of payment .

On the other hand, according to the standard of the American Society for Testing Materials, usefull life "is the period of time after construction during which all essential properties reach or exceed the minimum acceptable value with a routine maintenance". Likewise, Charles W. Lamb and Carl McDaniel in his book "Fundamentals of Marketing" define it as a resource to identify the stage of acceptance of a product, the building, from its start up to the end of its operative capacity, to which we can add the estimated future life time of efficacy the building will have, in wich we consider the limits of economic efficiency and production of the company. That is to say, a concept more linked to the service life, which corresponds to the service life of a building or an installation or part of the building, and which is intimately related to the degree of exploitation, technological development, and fundamentally with the building maintenance.

The study and planning of maintenance starts from the early stages of invest-

ment decision making, and it is advisable to consider them as an important element for the exploitation since decisions made in that phase, with slight changes of focus, are translated into lower maintenance costs for several decades of building life, which we should not forget that is roughly between 50 and 75 years

Therefore, we can say that, optimizing the useful life of the building will depend on the maintenance of the systems, and at certain times, when its operational life comes to an end, in the investment decision of Rehabilitation and Reconditioning Projects, which may involve a regeneration of its operating conditions

In these aspects, Licesing Management is again a relevant element when considering the feasibility of the Project and the decisión making pertaining to the final result. This is especially true when we study particular cases of consolidated áreas, affected by a particular enviroment, and more so when we speak of buildings with some degree of protection, or in specially controlled areas, where are allowed just a limited range of works and uses

For these reasons, we extend the analysis of the building's life cycle, identifying the project objective in a broader sense, by including its sustainability and the optimization of its maintenance, with which we can identify a fifth phase, called "operating phase" or commercial exploitation phase. The building fulfills the function for which it was created, and it could well include each of the previous ones, to be observed as a project in itself, in which the importance of the correct performance of the License Management will condition the final result of the building project

So, in the work we will consider this phase of operation, and modify the phase called "Deactivation" in the PMBoK, for the "Put into Service", so that we provide continuity to the deliverable, assimilating Project with building

Compiling these ideas we propose a Life Cycle Phases model, adapted to the procedures of the Spanish territory, and extending the study to the "operative life" phase, which allows us to grasp the life cycle of the building or site, and understand the groups of Control processes, referred to in the PMBoK and in the international standard UNE ISO 21,500, as an integrating element in the phases of product creation as an investment model

In general, and in reference to LM, the phases of the life cycle will define the following aspects:

- The work related to the LM to be performed in each of the phases.
- The deliverables referred to the licenses and authorizations, their points of control and verification, and the condition to the rest of phases
- Stakeholders of each one of the activities
- Control and validation parameters related to licenses and authorizations, which may include parts of the project that, due to their incidence, are considered to be controlled and validated

The International Standard UNE ISO 21.500 establishes that the interfaces imply some type of transfer, and in the case of the Management of the Authorizations it will imply the possibility of its execution once verified the fulfillment of the applied regulations and where the deliverables are reviewed by the project team prior to the start of the next phase so that what is finally authorized corresponds to the objectives initially planned.

Therefore we can understand that each phase has a specific objective, a de-

liverable, whose delivery and acceptance marks the beginning of the next phase, although in the activities of Licensing Management, this acceptance does not correspond with the project team, but with the validation of the documentation submitted by the inspection services of the administration, whether municipal, or other higher authorities depending on the size of the building and the end use to be developed

The phases serve as the grouping of activities for the complete development of the project obtaining intermediate objectives, in a way that facilitates its management to the Project Team

Phase of Strategic Definition	Deliverable: Viability study. Scope Statement
Phase of Design and Procurements	Deliverable: Executive Project and Building permit
Phase of Construction	Deliverable: Final Certificate of Work
Phase of Handover / Put into service	Deliverable: First Occupation /Operation License
Phase of Operating	Deliverable: Viability study. Scope Statement

It should be noted that although the phases referred to for the present work are those mentioned above, in the study of the projects carried out, the project phases correspond to those determined until the delivery of the buildings to the final users, so the operation phase is not included

Likewise, in the study of the projects, the Design phase has been divided into two, this is one of Project Design proper, and another one of processing the mandatory license, since the uses of the projects analyzed refer to procedures of applicable licenses, for this reason the execution of the works is conditioned to the moment of its concession.

It is worth mentioning that among the procedures currently in practice, the so-called "responsible declaration" could be assimilated as a "fast execution" system, since it allows, in projects for the implementation of certain uses, to initiate the construction without waiting for the deliverable referred by the management of licenses in the prior phase. The risks intrinsic to this procedure will be discussed later

The complexity of the project will mark the degree of necessity for defining the content of each of the phases, and although each phase may be defined as an autonomous part, each and every activity must be conceived and controlled as part of a whole and linked in its development with the final objective, as defined in the scope statement.

Each type of organization, according to its culture and the format to focus the development of projects at a strategic level, can design different phases and sub-phases with certain control points, so in reality, the model we can analyze must be identified for each particular case.

We will see that the figure of the License Manager must be a necessary member within the project team whose existence must be founded at the same moment of the conception of the investment idea and therefore prior to the formation of the team, and, by virtue of his function, closer to the management of the company, and therefore to decision making.

For the licensing activities the phase of the project concludes with the granting of certain authorizations, after a period of control and adaptation, after which, the phase can be closed. The management may from this point consider adaptations or modifications, which must be validated by the License Manager in such a way as to ensure compliance with the licenses already granted. It will also be possible to initiate the project by dividing it into subprojects, with a common final objective, but always controlling its global implications for the licenses granted or for the execution of the process.

The information management must be verified by the Licensing Manager, in coordination with the risk management, so as to ensure controlling of communication flow between the stakeholders, and with the control processes, with a visible final objective from a joint baseline so that we avoid the dissemination of documentation of project changes

not properly evaluated and approved (Triviño Barros, G. 2003)

In building projects in which a final license is necessary in the deactivation stage, which authorizes the initiation of product operations and final rutine operations, as is the case of the city of Madrid, it is not convenient to speak of phase closure, with a effective control of deliverables. In this way the Licensing Manager must monitor the baseline by managing the incidents with a repetitive method, and always in coordination with the other members of the project team. We defend, therefore, that we should not consider the previous phases as "closed", since possible incidents or modifications produced during the development of the project may require us to reopen already completed processes, thus assuming outputs and phase inputs, and even cancellation points as seen from a more flexible point of view.

4. METHODOLOGY AND DATA USED

The study is carried out analyzing the incidents that have occurred throughout the development of the projects, and especially those that have had a significant impact on the final result, so we can include them in the following sections:

- Incidents derived from non-compliance with urban and technical regulations in the initial approach and throughout the scope of the project
- Incidents derived from deficient management of the previous work license, either due to lack of follow-up with the municipal authorities in charge of processing and control, as well as other deficiencies occurring in this period, among which may be the lack of due diligence in response to the requirements.
- Incidents derived from a poor management of stakeholders in the previous license management phases.
- Incidents derived from weak management of the stakeholders in the phase of final license management, or product occupation and operation.
- Incidents derived from the lack of monitoring and control during the development of the work and execution of the works.
- Incidents derived from the lack of control of management of changes and modifications, and their possible control points that may lead to non-compliance with regulations.
- Incidents derived from poor management of stakeholders in the phase of final license management, or occupation and product operation.

The complexity of the existing Licensing Management processes in the city of Madrid makes as a basis for the conclusions herein, which furthermore are based on relevant incidences of 27 project samples. They correspond mainly to new building projects of residential use, in some cases with specific authorization needs, with which we have studied the impact of activities related to the

Licensensing Management in the respective phases of the project life cycle, understanding this is important up until the very moment of its delivery to the end user.

5. LICENSING ACTIVITIES IN THE LIFE CYCLE PHASES

Licensing Management embraces the entire building process, assigning its activities to one of the phases of the life cycle is an error, since it affects, albeit unequally, each one of them; the greater the progress in its development the greater the impact of poor management will be. We analyze the phases of the life cycle of a generic project, understanding that each project has specifications that, although perhaps of little relevance, they motivate adaptations that make it unique. Following the idea of Hyvri, Irja (2006) that relates the actions of critical importance for the success of the Project, and in accordance with the expectations of the company, we should then briefly analyze the activities of the Management of Licenses in each phase of the project's Life Cycle In each of the phases we apply the conclusions acquired from analysing the work done in the 27 projects mentioned.

--- 5.1.- Phase 01- Strategic Definition ---

This first phase, which corresponds to the decision to undertake the project or reject it, commits the company in such a way that it must be undertaken from departments with high decision-making power. Identified in many cases as the preparation of the Project Feasibility Study, it is when the data surrounding the operation are collected in such a way that it is possible to determine the following aspects:

- Identify constraints and assumptions. (Risk management)
- Detect opportunities.
- Analyze whether it meets the strategic requirements of the Organization.
- Define the requirements that make up the project.
- Evaluate the different alternatives.
- Contribute to reaching an agreement on the line of action.
- Expected benefits of undertaking the project (or negative consequences if it is not).
- Estimation of costs, deadlines and schedules, and risks. This information will be taken from the project plan.
- Analysis and valuation of the investment.

Ultimately, its objective is to determine the viability of the project, specify and define its scope and propose to the team that will participate in its execution. This is a phase of great importance for the development of the project and its final result, and therefore should be especially meticulous (Cooke-Davies, T. J., Crawford, L. H. and Lechler, T. G., 2009), although balanced with the resources allocated to its planning. It is the case that some organizations tend to reduce its importance in eagerness to obtain the expected results, or at least intuited, when discovering a business opportunity. In fact, the PMBOK recognizes the possibility that the Project Director needs identify this first phase as a project in itself, in case the preliminary effort is not clearly established

In this phase, as developed by Professor Heredia, the basic parameters of

the project idea are formulated, and a detailed study of the risks are made, both internal to the project in itself and to those caused by its environment, providing an estimate of future incidents and sufficient information to enable the final investment decision, combining the location, the idea of the project and its capital. In short, to determine if the project is economically viable for the company or the investor, and if it complies respectively with its strategic line of business.

Since each site has sectoral regulations that vary within each municipality (Carrasco Pereda, A.; 2002), there is a multitude of cases where the crossing of parameters, of the site itself with the environment, that motivate the need for a correct interpretation of the applicable regulations.

It is not therefore a question of the automatic enforcement of pre-established ordinances, but of an in-depth analysis of the circumstances surrounding the project in question, where the antecedents are an important part in determining the possibilities of the project. Here we refer to the scope of the project and risk management analysis

From Risk Management we deduce the impact of the possible incidences of the Licensing Management in this phase, and this includes a lack of correctness in the weighting of the application criteria of the municipality's technical services or that of the processing agency, or even the lack of knowledge of the application with respect to some sectoral regulations, (Kedir Mohammed, H. & Knapkova, A.; 2016), such as being within a special protection area, such as archaeological, which obliges the monitoring of controls by agencies not initially foreseen, and which sometimes involve the obligatory reporting granted by bodies of great organizational complexity that lengthen the deadlines in an unforeseeable way to calculate, as it is the case of the Airport Authority in its area of influence in Madrid, since they are known to be completely opaque regarding information and refuse prior consultancy.

From this study we can observe the incidences correlated to a lack of observation of aspects related to the Licensing Management in the initial phase, presenting incidences of 3 months or more in 25.9% of cases and of these in 14.8% have incidences equal to or greater than 5 months.

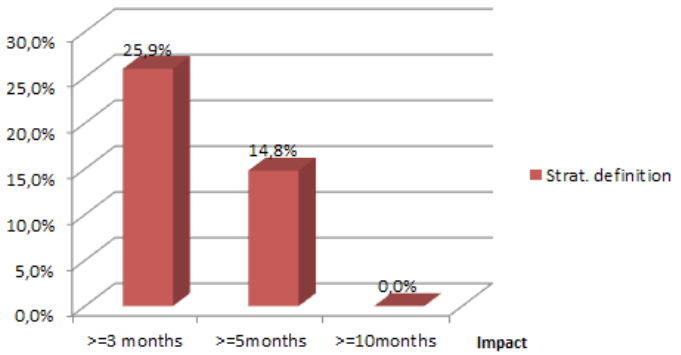


FIGURE 01. Projects with incidences in phase of Strategic Definition. Source: Self elaboration

We therefore identify the activity of the Licensing Manager in the processes of studying the feasibility of the project and the application of its knowledge for the determination, and in any case verification, of its scope, so as to anticipate the achievement of the future necessary authorizations meeting the deadlines set out in the basic document.

Scope of the Project

- Define the limits of the project in application considering the current regulations and the conditions of the environment, and limit possible deviations that may affect the expected final results, this is to limit the business opportunity
- Concrete project parameters to avoid confusion of the project team

Situation analysis

- Identify strengths and weaknesses of the company that condition or make it possible to take maximum advantage of the business opportunity, with the aim of reaching the limit of use of the building site and its urban circumstances

Definition of requirements

- Done in collaboration with the management departments of the company, in case the project team is not yet formed

Proposal of approach

- With the alternative of undertaking the project that best fits the objectives of the company within the framework of compliance with the urban planning
- Establish priorities and decision hierarchies

Evaluating the feasibility of the Project

- The possibilities of the project should be associated with an index of costs coordinated by the management resources of the company

Conduct the study of project risks

- Carry out the analysis of the risks of the project from the point of view of compliance with the application regulations and their relationship with the environment, taking into account the possible incidences such as possible third party controls because it is located in some special protection area

Review of the feasibility study of a project

- Justify rigorously the urban and technical feasibility of the project proposal
- Make a decision to approve or reject the project in light of the conclusions of the above points

Due to their training and knowledge of the objectives of the company, the processes in which the person responsible for the Licensing Management should be involved must justify the reasons why the project is undertaken, and must participate by answering the questions of: WHAT objectives they intend to achieve, WHY it is important to achieve these objects, HOW and WHEN they will be reached, and in coordination with Management, HOW MUCH it will cost to achieve them, proposing a baseline of the project that allows us to manage the possible deviations that could appear throughout its development, all this while participating as an integrated management system (Giacomello, H. & Gonzalez Stumpf, M.A. & Parisi Kern Andrea; 2014)

The Licensing Manager actively participates in the drafting of the Project Charter, whereby the organization officially initiates the project on behalf of the Promoter, and the Project Manager will rely on its role as one that is pivotal to the project team

--- 5.2.- Phase 02- Planning ---

Or Definition and Design, where we make the decision of the previous phase (such as renting or purchasing the premises or building), the designation and contracting of the technical team that will draft the project, and we can also include the request of bids for the execution of the works (for example the adaptation of the premises to the planned activity)

The study carried out in this phase is divided into two, the Design and Obtaining the License itself, understanding that the works are focused on a use whose licenses must be processed through the proper authorization procedures prior to the start of works

In this phase, incidences of more than 3 months are detected in 63.9% of the projects analyzed, and equal to or greater than 5 months in 40.7%

In this design phase, the impact of Licensing incidents increases with the expenses incurred and other contractual commitments if there are no resolution clauses that allow the derivation of the risks (Narváez Rosero, M.P.;). On the other hand, there is pressure to comply with the initially planned deadlines, since the marketing process is initiated simultaneously.

To do this, the Licensing Manager must know and manage with ease the different procedures maintained by the administrations (Cholbi Cachá, F.A.; 2002) in such a way that a detailed planning of the project can be established, avoiding surprise requirements that imply delays.

Given that the final deliverable of this phase corresponds to the issue of the License for the execution of the works, and therefore the possibility of starting the construction phase itself, it is worth noting the two main procedures for its attainment in the City of Madrid

Prior concession procedure

Or the so-called Ordinary License, this is the concept of prior examination of the documentation, that has prevailed until the entry into force of Directive 2006/123 / EC of the European Parliament of 12 December 2006, on services in the internal market, and of the subsequent legislations that develop it in each territory

In this procedure will be the deadlines for processing the determinants of the risks assumed, given that the reality of the processing of the files by the administrations allows us to anticipate that the deadlines set in the different ordinances are rarely met by the body of the administration, Resulting in deviations counted in months

The knowledge of the Licensing Manager should not be limited to the literal nature of the application procedures but to the format and dynamics of the functioning body responsible for processing the authorizations, as well as the existing relationship between the functioning body and the other administrations

In this procedure the process of contact with the responsible department does not usually offer greater complications since, once the file is opened, the responsible technician is assigned, and it will be the work of the Licensing Manager to have the necessary capacity to convey and explain the project to that technician, so that it goes from being a number and a street, to having a name and a face. From here it will be incum-

bent upon the Licensing Manager to anticipate the requirements that may arise, since it is rare for the project that does not have them, providing the possible solutions to the project editor team, and providing the Project Manager with any implications that may arise from the modifications or adaptations introduced

Responsible Declaration Procedure

This is a completely new type of procedure for the Spanish court, and concretely in the city council of Madrid, and it has conceptual implications of great relevance. The procedure has its origins from the directive of 2006, where it is of special relevance, to the detriment of ordinary procedure, of prior review for the granting of the license by the processing body. The procedure is limited to projects carried out on the premises where economic use is made, and its particularly relevant for buildings protected for cultural value of historical heritage

The procedure is based, as defined by Professor Fernandez Torres, in a statement by which the promoter, jointly with the technician who writes the documentation, undertakes that the documentation presented justifies sufficiently the implementation of a certain activity and whether works are necessary or not, while maintaining jointly that the documentation submitted is sufficient, and that the project respects the observance of urban planning and technical implementation.

In this way, with the mere presentation of the complete documentation, the investor is authorized to start the execution of the works contemplated in the project.

It is therefore a radical change in the philosophy of intervention. Where if the license application is changed by a manifestation, we postpone the control process to later stages, and this would then generate effective results for the investor.

the building, or that of the commercial premises, and therefore with great impact, since the planned investment has already in the comercial phase, thus all this should have been taken into account during the Risk Management processes due to its high impact

The costs of possible incidents are therefore manifested in the operating phase, and may become asymptotic, sometimes forcing the closure and decommissioning of the activity. This is the case of projects carried out in already consolidated buildings, where they are protected by some element of interest in its architecture, or protected by some element of value of historical heritage, or affected common elements where permission is required by the community of owners, and affected by unanimous majority regime, according to Horizontal Property legislation (such as smoke evacuation conditions)

--- 5.3.- Phase 03- Construction ---

In this phase the activity of Licensing Management will focus on the control that the works performed comply with the verification parameters that will be carried out by the municipal technical services with licenses that will be processed at the end of the Works.

In this respect, the potential impact of the aforementioned Responsible Declaration procedure should be noted, as the documentation submitted

initially has not yet been verified by the municipal technical services, and the Licensing Manager will have more control over any changes that may have occurred during the course of the work. Let us not forget that it is an act of manifestation in which the promoter and the signatory technicians are fully responsible in solidarity.

In the construction phase the main objectives of the License Manager would be the following:

- Check that the construction is carried out according to the license being granted
- Establish a procedure or list of control milestones that allows detection of posible incidents that could have and impact on the files processing during the development of the Project, or the processing of the future licenses, such as execution of works not sufficiently coordinated (for example : Pick-up of installations that cause floor to exceed heights limits)
- To carry out verification in the exchange control management process, regarding the possible impact these have on the licenses that have enabled the execution of the construction whilst in progress and thus anticipate possible incidences of future licenses that are mandatory, such as the license of first occupation and operating license. In the latter case, we analyze the possible need to update the technical documentation included in the file of the municipal body that processes the license, or even initiate the request for a License Modification that adapts the already granted to the new situation

From level 1 of the Kezner Maturity Model, the most basic, it becomes clear the importance of common terminology management by all stakeholders. At this stage, the main task of the License Manager will be to control changes, that is, to influence the elements that may evade change control, so that only reviewed changes, that have been analyzed and approved after a documented evaluation of their impact level in the baseline, may pass to further phases, following the objective of constituting the building process as an integrated information system (Tribiño Barrios, G. 2003)

Let's make clear that change control is a process that must be integrated into the Change Management Plan, which documents how changes in the project will be monitored and controlled. The change control process is part of the change management plan, which will reflect the expectations of the stakeholders, mainly those of the project promoter

The reality of building projects is that the changes are a matter of the project, such as cost or quality, and to which we are driven by the great complexity that makes each project unique, although they can be mitigated by increasing the level of dedication in the early phases of the drafting of the project and its planning

When a change is requested, even verbally, by any of the stake holders, it must be included in the Change Management Plan. The Lincensing Manager shall verify the posible impact of the documents contained in the Change Management Plan with those of the licensese granted in such a way as to assess the need for their incorporation or even the posible need to request a license modification. These can be processed during the course of the work, and avoid delays in the next phase, the impact of which has the greatest impact on the outcome of the Project

--- 5.4.- Phase 04 - Commissioning (Closure - Deactivation) ---

We could say that this phase begins with the conclusion of the construction work by the contractor, and the issuance of the Final Certificate of Work by the Facultative Directorate, and this ends with the delivery of the work by the construction company to the Promoter, after obtaining the licenses for operation, as a final approval. It's the phase where the incidences of the License Management have greater impact.

We are therefore in a scenario of "pre-delivery", with quite literally the whole investment made, and thus completely liable to the total financed amount; with a property that in this precise point is likely void of any professional uses. At this vulnerable point it is possible that the schedule may incur construction delays accumulated in previous phases.

When it comes to the operation of economic activities, the essential requirements are the processing of licenses of First Occupation for the premises, and that of the Operations of the installations. The reality of this undergoing reveals that although the former is validated by the very requirements of the contracting of the building's general services, this is not the case for the latter. Thus were there are delays due to the work overload of the responsible municipal departments together with the need of the promotor to commence generating income in order to amortize the investment, we arrive at opennings with no formal consents.

From the study we found incidences with a project impact equal to or greater than three months in 40.7% of the projects analyzed, and more than ten months in 7.4%.

In this last phase, the economic impact of the incidences is much greater, and correspond with an average of 3.03% of the investment, although in 18.5% of the projects this impact exceeds 7% of the investment.

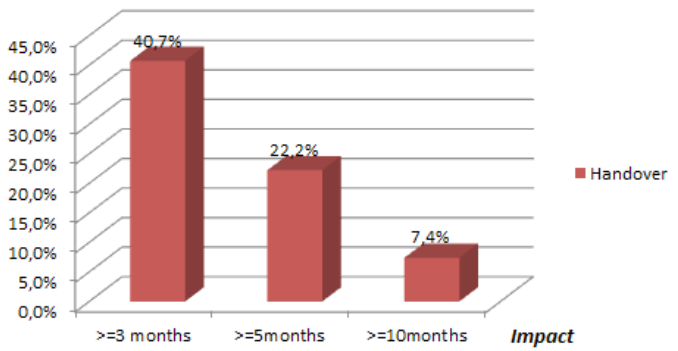


FIGURE 01. Projects with incidences in phase of Strategic Definition. Source: Self elaboration

Regarding the procedure of Responsible Declaration, being an act of manifest declaration, the property is enabled to start the activity after finishing the works, reserving the municipal services the power to review the documentation provided and to turn the corresponding inspection visit without marking a Deadline

At this stage the LM must arrive having full assurance that the work performed corresponds to the project for which the licenses was requested, and that the changes approved and made do not affect its terms. And otherwise, that the possible modifications of the license are already granted or in an advanced state of processing.

As we have already mentioned, incidents in this phase generate a high degree of impact on the final result of the project, in the least it will cause delays in the final reception of the building. This is a time when the works are concluded and the totality of the financial credit is liable, after the period of grace, the interest is in effect on the total capital. Likewise there maybe penalty clauses in contracts signed by the company, and as usual they affect directly against any benefits of the operation.

--- 5.5.- Phase 05 - Operating ---

Within the operational phase, or the useful life of the building, the license manager is linked to the successive conditioning and changes in the use of the building, or premises, and should not be confused with the activities carried out by the Facility Manager (Soler Severino, M.J., "El Libro del Facilities Management", 2012)

These actions, which can be defined as rehabilitation of use, enable the property to recover its value as a space of an comercial activity that the market demands, and thus require the implementation of works to adapt it to the current legislation, both urbanistic and technical regulations.

Likewise, the change of use of a building in the consolidated areas of the old town, for residential use or other (say for example hotel use), typically requires important adaptations in current regulations for the fire protection and evacuation of occupants.

In any case, the issue in itself can be framed as a distinct project in its inicial phase, being in the majority of cases as the criteria for the purchase of the building, and is thus a reason for beginning a new phase of feasibility study, as would merit the complexity of areas specially protected for their features of architectural heritage. This is the case of the City of Madrid which is subject to strict controls on Buidling Protection, which thus limits the actions to be carried out by an authorization of the work regimes in accordance to each of the levels of protection established by the General Urban Development Plan of Madrid (approved in 1997, and currenty under review).

6. CONCLUSIONS

After the work presented, we can deduce that the activities of License Management cover all the phases of the life cycle of the Building Project, including those of the previous phases or strategic decision, which we have included to understand that the role of the manager of Licenses should be performed by a team member with sufficient decision-making capacity, with direct communication with the management staff of the company, and directly involved with its objectives, unlike the classical perspective in the Spanish context, where License Management was enforced at specific times by assigning automatically their function to the technical writers of the project who, in addition to being external to the organization of the company and not sufficiently committed to the objectives of the organization, have not had adequate training for the management of processes and interpersonal skills that are necessary

It is important to take into account that of the study carried out, none of the analyzed projects had a nul incidence in the activities of License Management. And at the other extreme, if we join those that had an impact higher

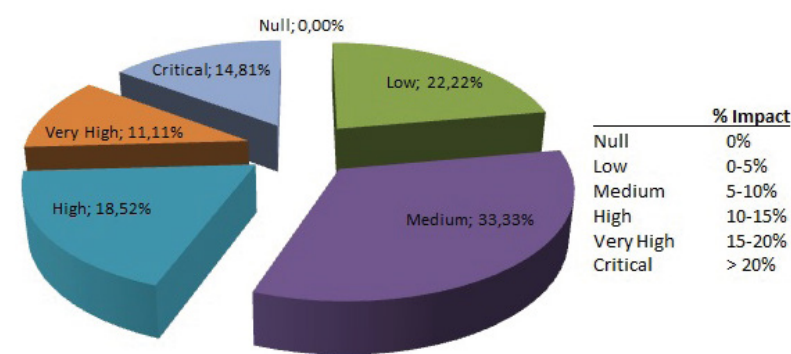


FIGURE 01. Projects with incidences in phase of Strategic Definition. Source: Self elaboration

than 20% of the investment, which we call as critical incidence, and those that had between 15 and 20%, which we call Very High, correspond to 25,92% of the total sample.

As defined by Cooke-Davies, TJ, Crawford, LH and Lechler, TG (2009), we study Project Management activities that are critical to achieving the final objectives of the project, inferred from the study of risk assessment and its management throughout it's development, where we see that the level of impact of the incidences in the activities of the Licensing Management make it worthy of being an object of specific control and general management of the project, conforming itself in activities of strategic importance, that we propose are embodied in procedures that serve as archetypes and management references for architectural firms (Bernus, P.; Nemes, L. ; 1989)

Also, given the importance of the final result of the project, we propose the Licensing Management be a distinct subject of study, which complements the new lines of research proposed by Chist Harty and Roine Leiringer (2017), as well as their inclusion in the guidelines that mark the processes standard of Project Management, such as PMBoK or UNE ISO 21,500

--- Cost and Management of Licenses ---

From the study carried out we can deduce the estimation of the costs of the incidents since this is motivated by the activities related to the License Management, as we defend in its scope, and thus in such a way that we use its monetarization as a parameter of control and comparison

Throughout the development of the different phases the costs and resources assigned usually correspond with a Gauss-type graphic, they are initially low, and reach their maximum level in the intermediate phases and decay as we approach their conclusion

This graph can be contrasted with the costs of the resources (Barrie,D. & Paulson, B. 1992) assimilated to the impact of the possible incidences that have a relation with the activities of the license management. This relation increases exponentially as we advance in the project, when it produces such impacts that can put at risk the final results of the Project

The occurrence of unexpected or, rather, uncontrolled incidents in the final phases of the project may lead to the assumption that stakeholders related to the Management of Licenses can have a significant influence on the final result

The work environment is changing in each country, with Licensing activities becoming more important the greater the level of impact of incidents, which increases in environments with a large amount of relevant legislation.

It is worth mentioning the difference between the committed investment and the realized investment, since in the initial phases the future realization of the investment is determined. Authors such as Nevis and Withney claim that 70% of the total costs of the product life cycle are committed in the initial stages (Rocha, L.A. & Gama Ponce, T.; 2006). It is therefore

important to affirm the interest that must be taken to guide the efforts in these initial phases of strategic decision and planning

-- Stake Holders in the Activities of the Licensing Management --

The PMBoK contemplates a decreasing incidence of stakeholders over time and as we progress in the development of the project. In the development of the activities of Licensing Management, the influence of the stake holders differs in this respect, being an activity that can become decisive in the final result

In the processes of Management of Licenses we can consider deliverables in the phases of Definition and Put into Service with concrete control points, this is the License for the execution of the building, and once finished this in the phase of putting into service,

If we analyze the behavior of the LM from the point of view of Risk Management we get a growing incidence in the definition phase, but especially in the deactivation or Put into Service

In the building project, we can not conceive the study of the investment, its viability, the decision making for the allocation of resources, a certain profitability, or a period of return of an operation, if a specific final objective is not established. Without this we admit as a general criteria that it is very unlikely phases be identified within projects. Another hindrance happens when specific objectives are put forth by individual stakeholders without them being linked to the overall objective, as can be the case of the construction company that focuses its project on the execution of the building

The Project Management makes sense in the overall coordination of stakeholders, and in this integrative context appears the methodology of BIM (Building Information Modeling)

The growing importance of the proper management of the Stakeholders (L.Crosby, B. 1991) has motivated that both in version 5 of the PMBOK and in UNE ISO 21,500 be separated from the group of communication materials, and considered as a group of subjects with their own relevance, being Identified as a factor of great importance in Risk Management (Rasmussen, J. & Svenung,I.) Also this 5th edition of the PMBoK has added a specific area of knowledge, increasing the importance of involving stakeholders in key decisions

The Licensing Manager shall identify the stakeholders involved in their own activities (L.Crosby, B. 1991), and determine the requirements and expectations that correspond to each of them, being identified in the procedures of the processing of the expedient in the different administrations, which normally have a decisive factor in the development of the Project

License Management should also be responsible for making the other stakeholders, and especially the members of the project team, aware of the importance and impact that the activity of each of them can have on the final objective of managing licenses, especially those produced by the changes introduced in the development of activities

Failure to identify all stake holders can have major repercussions (De Heredia Scasso, R.), however dubious it may seem to us to be the basis of their interest, for example: the identification of a landowner whose sum of the share of landholding represents a total excess that exceeds 100% of the pro-indexed property quotas, and which appears at the end of the project, and has not yet been delivered

Particular emphasis should be placed on stakeholders who may have a negative influence, (eg small business in the event that we apply for permits for a project of midsize commercial center)

The content of the stakeholders management plan by the LM should be coordinated with the administrative management procedure and include the following aspects :

- Procedure for processing authorizations, stakeholders directly affected and degree of relevance of their decisions (reports binding, necessary or whose action simply streamlines the processes)
- Interrelation of stakeholders
- Transmission of information by stakeholders requirements
- Planning and response times
- Impact level of each stakeholder's incidence
- Strategies to follow

We therefore see that the information and conclusions should be reserved for access to a project team whose personnel are sufficiently qualified, since the conclusions are too sensitive. ♦

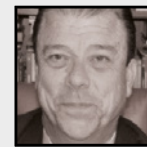
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