Technological and Relational Positioning : the main Dimensions of Belgian industrial Firms working on Projects.

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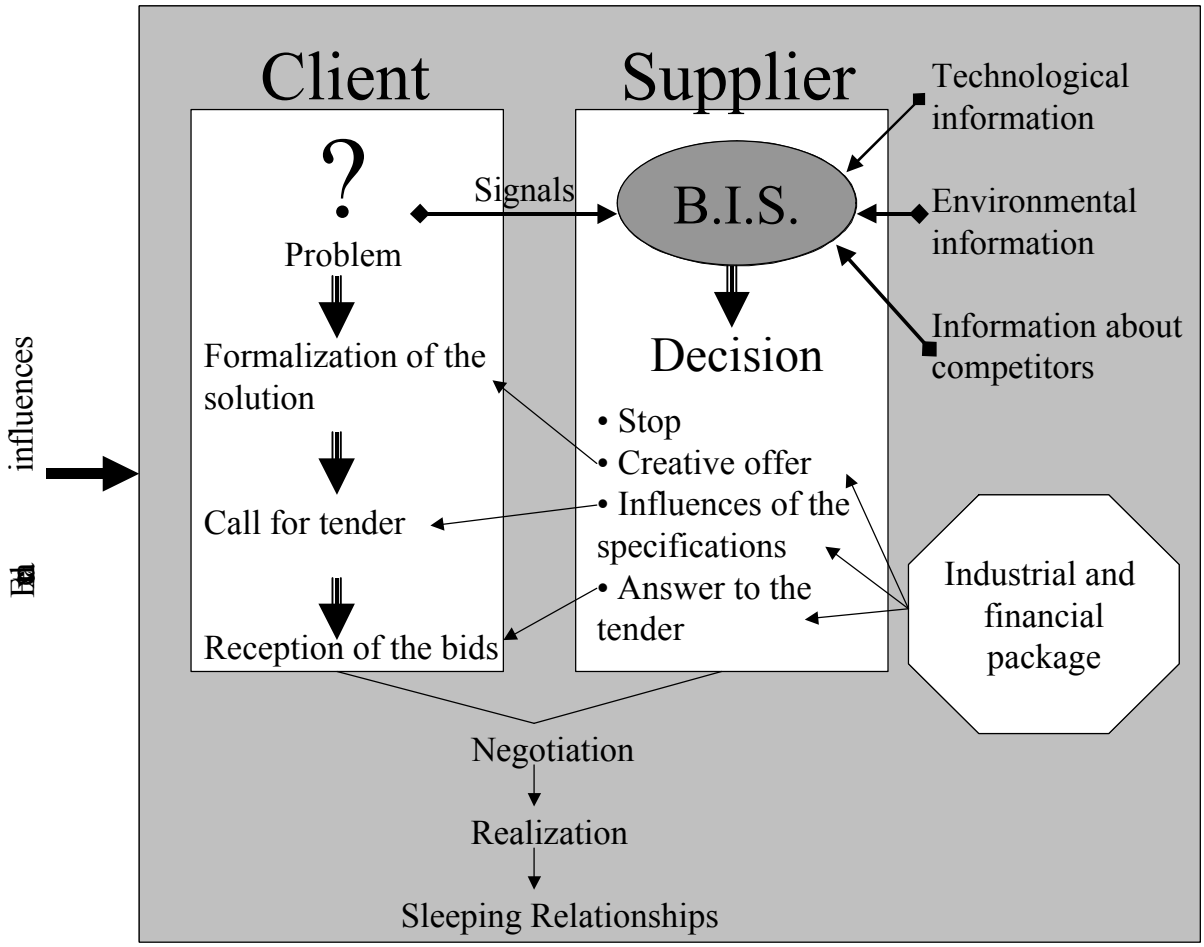
Abstract :
The purpose of this study is to analyse the behaviour of Belgian industrial firms working on projects in order to compare it to the theroretical and general background established in other countries and under other conditions. Via a multidimensional analysis mainly based on a first explorative qualitative step, it also pinpoints particularities of a national system in order to enlarge the applications and implications of the actual knowledge.

Introduction and background :
Different researchers contributed to a better understanding of project marketing at both theoretical and empirical points of view. Nevertheless, the situation in Belgium in that field still remains little known. The goal of this study is therefore to analyse the behaviour of a sample of Belgian firms working on projects in order to discover different aspects of the industrial reality of sectors concerned and more generally to approach, in the particular Belgian context, some theoretical recommendations and observations coming from empirical approaches in other countries.

For a start, considering our point of view, numerous contributions can be envisaged. We can identify among those various important dimensions : the concept of lifecycle of the project (Cova 1990, Holstius 1990, Janssons 1989, etc.), the impact of the relational network and the crucial aspects of the client-supplier relations (Tikkanen 1998, Hakansson 1994, etc.), the nature of the main actors in the process (Fraisse 1980, Benichou and Corchia 1996, etc.), the notion of "milieu" (Cova & Salle 1999, etc.), the influence of a Business Intelligence System (BIS) (Achard & Bernat 1998, Besson & Possin 1998, Dou 1995, Jakobiak 1998, etc.), etc.

Our research tries to gather these various notions in an integrated approach. To this end, we constructed a diagram allowing us to summarize the various considerations.

Diagram 1 : Evolution of the project



This diagram can be analysed as next : first, we find a client who has a problem. He is looking for a solution and sends signals to the environment (contact with potential suppliers, contact with authorities, etc.). Those signals are detected by the business intelligence system (BIS) developed by the potential supplier. This business intelligence system also permits to obtain information concerning the technological environment (substitution technologies, evolution of the technologies of the firm, new technologies, etc.), the competitors (strenghts and weaknesses, number and characteristics, new competitors, etc.) and the general environment (political and social aspects, legal aspects, etc.). With all this information, the supplier has to make a decision. If the project has no interest for him, he stops. If he discovers the project really at the beginning of its development by the client, he can try to develop a creative offer, which is the best way to avoid competition by the conception, with the client, of all parts of the projects (the influence of the supplier is then maximum). If he discovers the project later, he will try to influence the specifications often by the means of his relational network. And finally if it is too late to influence the project, the last solution is to meet the specifications established by the client (and unfortunately, often, by the client and a competitor !). In all the cases, the supplier needs to build a financial and industrial package with the help of engineers, experts, insurance institutions, financial actors and industrial partners.

All this leads to negotiations and sometimes to a contract. After this contract, the supplier has to realize the project. During this period he can also gain interesting information for a future contract. This is the same during the period of "sleeping relationships" when the supplier tries to maintain the relation by the means of after sales services, trainings, etc. Those contacts permit to obtain information to go back to the beginning of the diagram (signals detected by the Business Intelligence System).

Sample and methodology :

The previous diagram was, in a first step, confrontated to the behaviour of top managers of 21 Belgian firms in order to pinpoint the main dimensions of their way of acting and deciding. The goal of this first stage was to explore the still little known Belgian situation. Various sectors were thus contacted (construction, engineering, space,…)

The second step, developed around a questionnaire constructed and based on these qualitative results, concerns a larger number of companies (181 anwers (response rate 30,94 %)) located all over the country and coming from various fields of activity (finally grouped in three categories : building industry, hydraulic engineering and "others" (space, railway construction, engineering,…)) . After a checking of the sectorial and geographical representativeness (via χ^2 tests), the collected data allowed us to work on several basic dimensions. First, we considered one or two variables and, secondly, we used multidimensional technics (correspondence analysis, classification) which have, of course, their limits but which permit a more adapted vision of the global situation.

Table 1 : The Sample :

	Construction	Hydraulic engineering	Engineering and others	Total
Qualitative approach	8	2	11	21
Quantitative approach	152	10	19	181

Main results

- *Qualitative approach*

The first stage of this study enabled us to identify particular dimensions of the Belgian situation and specific aspects of the behaviour of Belgian firms. We compared those features to the theoretical background and identified, for a limited number of 21 companies, some significant differences between theoretical propositions and industrial reality. Those differences appear at various level. Firstly, companies adapt their BIS regarding their resources and their particular interests. Depending on the sector or on the maturity of technologies, on the type of clients and on the nature and importance of the competitors, the various aspects of the BIS are or are not developed. Moreover, the selection of the needed information does not seem to be present.

Some opportunism still remains in the research of information. Considering the managers' reactions, this situation is due to a lack of resources, of time and of valorization of this apparently unproductive work.

Secondly, at the screening level, this first qualitative step allows to identify two different behaviours. The first one consists in trying to obtain a maximum of projects without a real selection and the second one uses the experience of managers to select the best ones (sometimes, generally in the case of export projects, particular criteria are used).

Thirdly, the possible influences of the firms are linked to the detection period of the project. In case of private contracts, early in the development, firms which have the needed resources are able to realize a creative offer. Later, the relational network is used to influence the specification and if it is too late, the remaining solution is to respond to the tender. For public contracts, the influence of the firms appears via lobbying actions (the number estimated of lobbyers in Brussels and Strasbourg for the EC is about 10,000 (Nioche & Tarondeau, 1998)).

Finally, concerning financial and industrial packages, the main actors are prime contractors. For the other ones, the role of the firm remains limited to the help in the realization of the offer to the client. The presentation by a firm of a complete project allows to reduce the perceived risk by the client and constitutes thus a competitive advantage for the supplier. Moreover, this supplier often evaluates his partners and thus works with proven competences. This also reduces his own perceived risk. Problems appear on export projects when the supplier is obliged in order to gain the contract to work with local partners which often do not have the same way of acting and working. At this level, the relational network, allows to obtain information concerning the quality of the local actors.

This first step in our study pinpoints the importance of the BIS and the strategic influence of the relational aspect. These aspects will be detailed in the next phase of this research.

- *Quantitative approach*

The questionnaire used in the second step - mainly oriented on the topics identified before and on other general items which can influence the performance of the firm -permitted to identify differences between firms coming from various sectors and having some or no export activities. The nature of the technological environment induces, for example, differences at the technological BIS level (90% of the "others" companies develop a technological BIS versus 54,97 % and 60 % for the construction industry and the water engineering) and the environmental BIS is mainly developed by firms having an export activity (67,8 % versus 55,56 %). At the BIS level we can summarize the situation using the classification of Pere Escorsa (1999)

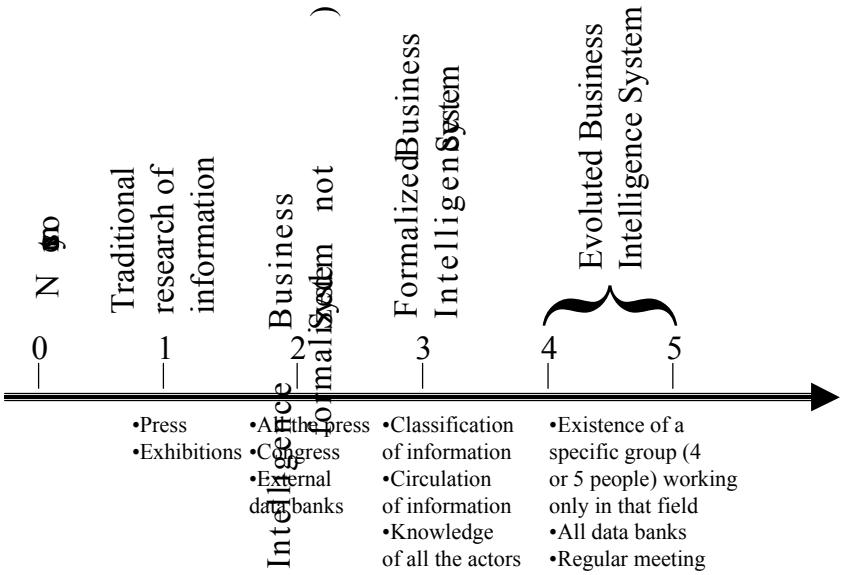


Diagram 2 : Classification of P. Escorsa (1999)

The Belgian firms can be situated between the second and the third level. In fact, even if some aspects of level three appear (knowledge of the actors, circulation of information) for some firms, for other ones, the position at the second level seems to be best adapted (not many data banks (only for +/- 30 % of the firms), no real formalization of the actions, no meetings,….). The people in charge of the intelligence activity are also actors at other levels (this represent the main activity for employees only in 18.10 % of the cases at the environmental level, 9.1 % at the competitive level and 37.14 % at the technological level) and are thus not really specialists in that area. Nevertheless, it seems that the Belgian firms become aware of the potential advantages of the concept. So, they begin to implement new behaviours (data banks (30.56 %), feedbacks (81.11 %)) but, of course, a change in the way of working can take a long time to be efficient.

Once the project detected and selected (by the general direction alone (66.85 %) or in collaboration with the commercial department (15.73 %)), only 38.32 % of the firms develop creative offers. For the others, the dimension of the firm (44.44 %), the needed resources (20 %) or a combination of both can represent a problem. The reasons for developing such strategies are numerous : possibility to obtain a better competitive position, influences on the client, better rentability, high fidelity of the client, reduction of the risk, demand by the client,… The more important items are thus linked to the relation with the client and a better rentability and risk management.

Considering the results of the questionnaire, the most important advantages to be developed by the suppliers are the adaptation capacity/rapidity of realization and respect of the delay (cited by 159 firms), the ability to realize the entire project (150) and the awareness/brand image (137).

Multidimensional analysis

Those preliminary findings were confirmed by a multidimensional approach allowing us to identify the main dimensions of the behaviour and to construct a classification of companies which shows different ways of working on projects regarding their type of activity, their international dimension, their relational behaviour or the stage of development of their BIS.

At this stage, we used two different but complementary methods : first a correspondence analysis and secondly a classification. The latter allows to complete and qualify the results obtained by the former and to correct the possible distortion due to the projection on the factorial plans. Moreover, we can use the gravity center to improve the graphical presentation. The software used is the SPAD 3.5.

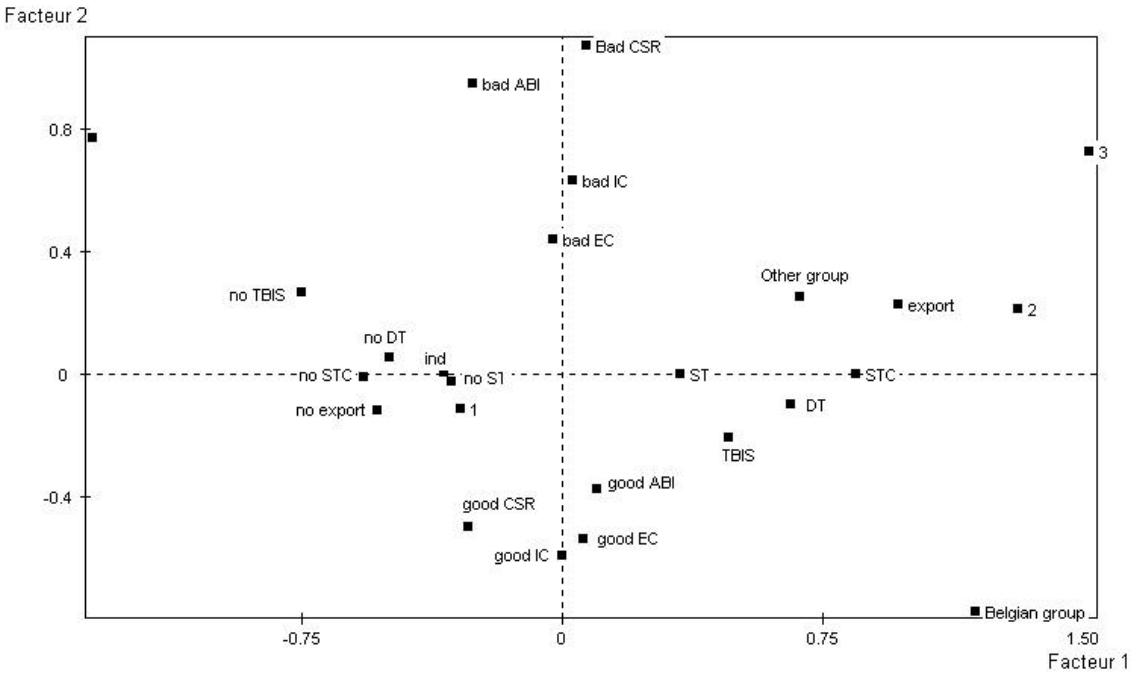
After a first analysis (on 29 variables), we finally maintained 19 variables which seemed to better represent the studied situation (the contribution in the construction of the main axis was not significant for the others) :

- Sector (1 = construction, 2 = water engineering, 3 = others)
- type of company (Independent, Belgian group, other group)
- existence of an exportation activity (export)
- existence of a global BIS (BIS)
- existence of a technological BIS (TBIS)
- nature of the competition (Belgian C, European C, other C)
- importance of the competition (low C, high C)
- sensibility to the foreign technological competition (STC)
- existence of differentiating technologies (DT)
- existence of substitute technologies (ST)
- clients-suppliers relations (CSR)
- external communication (EC)
- internal communication (IC)
- awareness/brand image (ABI)
- innovation capacity (IC)
- information system. (IS)
- middle financial dimension of the project
- middle deadline for a project
- part of a middle project in the turnover

On the base of a correspondence analysis, the main axes identified are relative, first, to the technological dimension (restitued variance : 16,57 %) and secondly to the relational dimension (9,07 %). This permits to confirm the theoretical approach which consists in developing a dubble positioning for the firms working on projects : a technological (or functionnal = technical response to the client's need) and a relational positioning (COVA & SALLE,1999). In fact, the technology is the unique common base of all the projects. The firms will use this technological knowledge to adapt their know-how to the particular situation of the client. The relational aspect will permit to garantee good client-supplier relations and then allow to reduce the perceived risk both for the client and the supplier. It also induces a better understanding of the client's needs and of its environment. The project is thus developed in connection with all the various needed

aspects of its integration . Moreover, a developed internal communication induces a better motivation of the employees and finally a more appropriate realization for the client (which improves the awareness/brand image of the company)

Diagram 3 : factorial plan (F1 (technology)-F2 (relations))



The analysis of the third axis (7,81 % of restitued variance), linked to the nature of the project, permits to detect that the biggest projects are developed by the construction or the hydraulic engineering firms (the others more often work on sub-projects) which are a part of a Belgian or a foreign group.

In order to complete this first multidimensional analysis, we also used various illustrative variables grouped in two classes : variables linked to the creative offer concept (existence of creative offers, adaptation capacity, mastering of the technologies, anticipation of the market's needs) and variables linked to the BIS (existence of a competitive BIS, existence of an environmental BIS, existence of feedbacks, existence of data banks). This allows to present the companies realizing creative offers as firms coming from a group, taking care of the technological environment, realizing exportation activities, having a good mastering of technologies and a good anticipation of the market needs, developing a good adaptation capacity and developing their BIS (at all levels).

In addition to this correspondence analysis, the classification method allowed us to identify five different groups considering the sector and the competitive and technlogical environment. Oppositions appear between the three considered sectors. "Other" firms (group 1) are working in a more competitive environment (with a lot of foreign influences) and often with export activities. This does not allow to develop big projects. Those firms are really interested in all

the technological progress and develop thus more differentiating and substitute technologies with the help of their technological BIS. They are sometimes implied in creative offers. Hydraulic eingineering firms (group 2) are also concentrated on the technological aspect but they work on bigger projects for the exportation. Finally, the construction firms present three various behaviours considering their export activities, their nature (independent or not) and the type of considered projects. Some of those firms (group 3) develop a behaviour which seems to be close to this developed by the "other" firms.

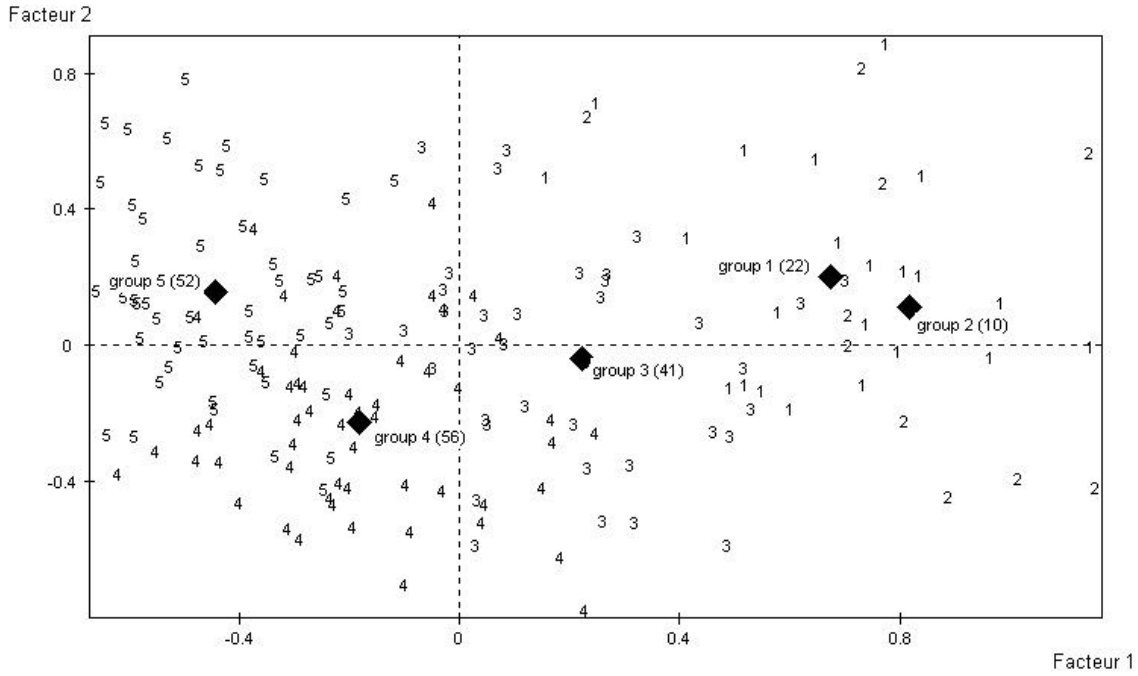


Diagram 4 : classification

Another group (5) acts completly with a different manner (no BIS, no substitute technologies, no interest for the foreign competition,etc.) and the last group (4) has an intermediary situation.

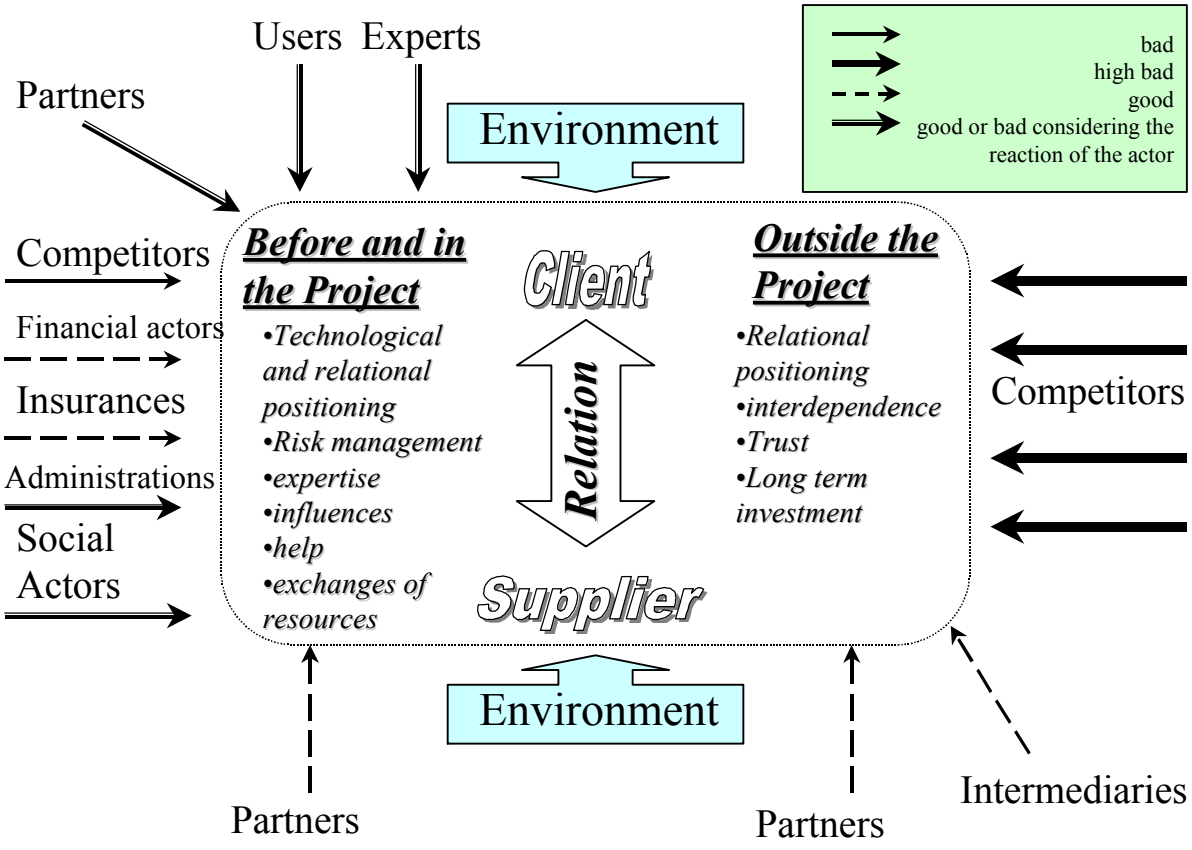
Regarding the influence of the sector, a particular analysis of the Construction activity (more present in Belgium than the other industries working on projects) allowed us to identify specific dimensions of firms working in that field. Once again, the fundamental aspects of their behaviour are linked to their technological and relationnal positioning so we will not develop this approach in this paper.

Discussion

Considering the importance of the positioning of the firm, it seems to be interesting to improve the development of a particular efficient BIS. In fact, this BIS can help to apprehend the characteristics of the clients and thus to favour better relations between the main actors. Moreover, it can help to analyse the technological evolution and to adapt the know-how of the

firms to the various evolution of its environment. We can also stress the relation between this BIS and the realization of a creative offer which can only be made if the position of the firm regarding the main aspects developed before is favourable to the company. The impact of this positioning during the unavoidable discontinuity period between projects can also be discussed at this level. If we consider the next diagram, we can detect the complementarity of both those positions of the firms.

Diagram 5 : Relation between Client and Supplier



In fact, during the realization of the project, it is really important for the supplier to stress the quality of his know-how and its ability to meet the requests of the client. The company develops thus a dubble positioning. The relational aspect allows to develop a trust atmospher which leads to a better comprehension of the client's needs, to a reduction of the perceived risk and to an influence of the specifications of the project. The technological positioning permits an adaptation of the knowledge of the firm in order to integrate the project in its general environment. In the period of sleeping relationships, there are no exchanges of resources. The relation between the two actors is thus shaky and it is particularly difficult to avoid the action of the competitors. A good relational management allows thus, by the way of after sales services, training,… to maintain a good contact with the client and thus an important source of information for the future development of the firm.

It can also be interesting to identify future possible research dimensions which could permit to study the Belgian situation more in depth. For example, considering our results concerning Belgium, it seems to be interesting to develop a way of or a process of installing an efficient Business Intelligence System which appears to be a major source of information for the manager in all the experimented situations. This system has to be adapted to the characteristics of the firm and of its activity. The first approach could also be completed by developing the behaviour of the second member of the diadyc client-supplier relation or by comparing the results to those of similar analyses in other countries. This could allow Belgian managers to position their firms regarding the potential competitors on the international markets and then to adopt the more appropriate strategies to be taken in a more and more complex and competitive environment.

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