External Stakeholder Analysis in Construction Project Management

Doctoral Dissertation, September 2006

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Key words

Stakeholders, stakeholder management, construction projects, project management, property development.

Published in 2006 by
Construction Management
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ISSN 1651-0380
ISBN 91-85257-95-8
Construction Management nr 06/1023

Printed by Media Tryck 2006

Preface and Acknowledgements

"At eight o'clock on Thursday morning Arthur didn't feel very good. He woke up blearily, got up, wandered blearily round his room, opened a window, saw a bulldozer, found his slippers, and stomped off to the bathroom to wash…Shaving mirror – pointing at the ceiling. He adjusted it. For a moment it reflected a second bulldozer through the bathroom window…The word bulldozer wandered through his mind for a moment in search of something to connect it with. The bulldozer outside the kitchen window was quite a big one. He stared at it. 'Yellow,' he thought and stomped off back to his bedroom to get dressed…'Yellow,' he thought. The word *yellow* wandered through his mind in search of something to connect it with. Fifteen seconds later he was out of the house and lying in front of a big yellow bulldozer that was advancing up his garden path…Mr L. Prosser was, as they say, only human…he was a nervous worried man. Today he was particularly nervous and worried because something had gone seriously wrong with his job – which was to see that Arthur Dent's house got cleared out of the way before the day was out. 'Come off it, Mr Dent,' he said, 'you can't win you know. You can't lie in front of the bulldozer indefinitely.'…Arthur lay in the mud and squelched at him. 'I'm game,' he said, we'll see who rusts first.' 'I'm afraid you're going to have to accept it,' said Mr Prosser gripping his fur hat and rolling it round the top of his head, 'this bypass has got to be built and it's going to be built. 'First I've heard of it,' said Arthur, 'why's it got to be built?' Mr Prosser shook his finger at him for a bit, then stopped and put it away again. 'What do you mean, why's it's got to be built?' he said. 'It's a bypass. You've got to build bypasses.' …Mr Prosser said, 'You were quite entitled to make any suggestions or protests at the appropriate time you know.' 'Appropriate time?' hooted Arthur. 'Appropriate time? The first I knew about it was when a workman arrived at my home yesterday…'But Mr Dent, the plans have been available in the local planning office for the last month. 'Oh yes, well as soon as I heard I went straight round to see them, yesterday afternoon. You hadn't exactly gone out of your way to call attention to them had you? I mean like actually telling anybody or anything.' 'But the plans were on display' 'On display? I eventually had to go down to the cellar to find them.' ' That's the display department.' 'With a torch.' 'Ah well the lights had probably gone.' ' So had the stairs.' 'But look you found the notice didn't you?' 'Yes said Arthur, 'yes I did. It

was on display in the bottom of a locked filing cabinet stuck in a disused lavatory with a sign on the door saying *Beware of the Leopard."*

The passage above is from Douglas Adams "The Hitchhiker's Guide to the Galaxy" and even if the reality is not this bad the passage gives some thoughts on the subject of how to handle external stakeholders in the construction process. If we continue the story, absurd as it is, the problem becomes clearer. An alien spaceship arrives on Earth with the following message. 'People of the Earth your attention please, a voice said…This is Prostetnic Vogon Jeltz of the Galactic Hyperspace Planning Council,…As you will no doubt be aware, the plans for development of a hyperspatial express route through your star system, and regrettably your planet is one of those scheduled for demolition. The process will take slightly less than two of your Earth minutes. Thank you.' The PA died away. Uncomprehending terror settled on the watching people of Earth…Observing this, the Vogons turned on their PA again. It said: There's no point in acting surprised about it. All the planning charts and demolition orders have been on display in your local planning department in Alpha Centauri for fifty of your Earth years, so you've had plenty of time to lodge any formal complaint and it's far too late to start making a fuss about it now… What do you mean you've never been to Alpha Centauri? For heaven's sake, mankind, it's only four light years away you know. I'm sorry, but if you can't be bothered to take an interest in local affairs that's your own lookout.

The point I would like to make in presenting this story is that it is important to know what to communicate, how to communicate it, when and where to communicate it, and most importantly to whom the communication is to be directed. Thus, before any external stakeholder management process can proceed, information needs to be obtained regarding external stakeholders and what their potential impact upon the project could be. The present research reflects some of the problems in analysing the needs and concerns of external stakeholder and their impact on the implementation of construction projects.

The research presented here has received financial support from SBUF, Development Fund of the Swedish Construction Industry (Svenska byggbranchens utvecklingsfond), the National Railroad Administration (Banverket) and the National Road Administration (Vägverket).

I would also like to thank various persons without whose help this thesis would not have been possible. First, I would like to thank my supervisor Professor Bengt Hansson and my assistant supervisor Dr. Anne Landin in the Division of Construction Management of Lund University, for their help and support. In addition, I would like to thank Dr. Birgitta Ericson and Dr. Britt-Marie Johansson in the Department of Sociology of Lund University for their important input to certain social scientific aspects of my work. I would also like

to thank my reference group for its valuable input to my research from the perspective of the construction industry.

I would like to thank as well my colleagues in the Division of Construction Management for the everyday support you have given me, and in particular to Urban Persson for the valuable inputs you provided me concerning sustainable construction and development.

Very special thanks go to Dr. Birgitta Henecke, my research partner from the Department of Sociology, who has played a major part in the planning and gathering of the empirical data, our discussions have been a major input to the results. Special thanks as well to Professor Brian Atkin, not only for the insights he has given me into the English language, but also for the inspiration he has provided me and his valuable inputs concerning structure and stringency of the research which have increased the quality of this thesis considerably and made it more accessible to international publication.

Finally, I would like to thank my family: my wife, Elin for your support and love my son David for your being an everlasting source of joy.

Summary

The planning and construction of a facility can affect several interests. Positive effects are, for instance, better communications, better housing and a higher standard of living. However, construction projects inevitably bring varying degrees of deterioration and change at the local level, not least at the construction site. Representatives of these interests are referred to as the project's stakeholders. A project stakeholder can be defined as a person (or group of people) who has a vested interest in the success of a project and the environment within which the project operates. Vested interest is defined as having possession of one or more of the stakeholder attributes of power, legitimacy or urgency for their claims upon the project. There are essentially two categories of stakeholders: internal, who are those actively involved in project execution; and external, who are those affected by the project.

The basic problem is that if a facility is to be built some external stakeholders will be negatively affected by that facility or by the implementation of the construction project leading up to it. It follows that, in the course of implementing a construction project, not all needs and concerns from external stakeholders can be fulfilled. The challenge for the project manager is then to plan and implement the project in a manner that fulfils as many external stakeholder needs and concerns as possible without compromising the purpose of the project. The role of the project manager must involve not just an understanding of the technical process, but also an understanding of the links between technique, the environment, the community and the people in it. For instance, a local community possesses unique information about local circumstances. The project manager should acquire knowledge about the location of the project using this competence and, furthermore, engage the local community in the planning of the construction project. Thus, an external stakeholder management process should, if managed correctly, be seen as a positive opportunity to improve the project.

The purpose of the research project is to contribute to, and increase, knowledge concerning external stakeholders for construction projects, and to develop methods and tools for the analysis of the influence of external stakeholders. The

aim is to formulate a theoretical and general model to describe the process of analysing external stakeholder needs and concerns for construction projects. The model will form a baseline for actions intended to improve the decision–making process for the implementation of construction projects.

The research process has focused on understanding the influence of external stakeholders. Models have been developed for external stakeholder analysis in construction project management. A systems approach has been adopted and a case study has been used as the main method of research in combination with literature reviews. The case study method was chosen because of the qualitative nature of the research. Five project cases were examined. The projects were chosen for their different characteristics, i.e. they differ in size, type (civil engineering or housing) and purpose (local, regional or national). The common feature is that all projects, proactively or reactively, have had to consider and commit resources to a process of external stakeholder influence.

From the studied cases and literature reviews the external stakeholder analysis process can be described as consisting of the following five components:

1. stakeholder identification
2. stakeholder needs and concerns
3. stakeholder impact analysis
4. evaluation of alternative solutions
5. level of acceptance.

The process is dynamic and iterative, where the different components interact across the project life cycle, and where every part of the analysis will have to be conducted several times over as the project progresses in order to provide sufficient information about the effects of different project decisions.

From the perspective of the developer and the project manager, the external stakeholder analysis must be conducted with respect to the project's purpose. The aim must be to complete the project according to the requirements of the project owner. The challenge is then to find trade-offs that fulfil as many external stakeholder needs and concerns as possible. The external stakeholder analysis should provide a basis for forthcoming project decisions. One clear reason for controversy and conflict is that decisions on a course of action for the project were made without analysing the consequences for external stakeholders. The result of this was that the project manager was not prepared for the possible conflict that might arise, and thus had no plan of how to resolve or handle them.

External stakeholder analysis is a relevant and neglected area of expertise. Four of the five projects studied had not conducted any analysis of how the project would influence external stakeholders or how the stakeholders could have influenced

project decisions. The research findings are thus important for construction project managers and facility development companies to help them understand the influence external stakeholders might have on the implementation of projects. The theoretical contribution of this research is increased understanding about the influence external stakeholders has on construction projects, and how construction project managers can analyse and structure information about stakeholders in the form of models and tools that support analysis.

Svensk Sammanfattning

Planering och genomförande av byggprojekt påverkar många olika intressen. Den positiva påverkan kan bestå av till exempel bättre kommunikationer, bättre boende och högre levnadsstandard. Problemet är dock att byggprojekt också medför lokala försämringar och förändringar. Representanter för dessa intressen kan benämnas som projektets intressenter. En projektintressent kan definieras som en person eller grupp med ett egenintresse i projektets framgång eller för den miljö som projektet genomförs i. Egenintresset kan vidare definieras som att inneha ett eller flera av följande attribut; att det finns ett legitimt krav gentemot projekt, att kravet är angeläget eller att det finns en maktbas hos intressenten för att driva igenom kravet. Intressenterna kan vidare delas upp i två kategorier, interna och externa. Interna är de som är direkt involverade i projektets genomförande, medan de externa är de som på något sätt påverkas av det.

Det grundläggande problemet är att vid genomförandet av ett byggprojekt kommer alltid några externa intressenter att bli negativt påverkade. Samtidigt kan inte alla krav och behov från externa intressenter uppfyllas. Utmaningen för projektledaren är således att genomföra byggprojektet på ett sådant sätt att så många externa krav och behov som möjligt kan uppfyllas utan att ändra det övergripande syftet med projektet. Rollen som projektledare bör alltså omfatta en förståelse för länken mellan teknik, miljö, samhället och människorna i det. Till exempel, närboende till ett byggprojekt har ofta unika kunskaper om lokala omständigheter som bör användas av projektledaren vid planering och genomförande av byggprojektet. En process för att hantera externa intressenter bör således ses som en möjlighet att förbättra det slutliga projektresultatet.

Syftet med forskningsprojektet är att bidra till och öka kunskapen om externa intressenter för byggprojekt, samt att utveckla metoder och verktyg för att analysera den påverkan som externa intressenter kan ha på projektet. Målet är att formulera en teoretisk och generell modell för att beskriva processen med att analysera krav och behov från externa intressenter vid genomförandet av byggprojekt. Modellen skall utgöra en grund för förbättring av beslutsprocessen vid planering och genomförande av byggprojekt.

Forskningsprocessen har fokuserats på att förstå den påverkan som externa intressenter har på ett byggprojekt. Modeller för analys av denna påverkan har utvecklats för ledning av byggprojekt utifrån ett systemangreppssätt. Fallstudien har använts som den huvudsakliga metoden för inhämtning av det empiriska underlaget. Fem byggprojekt har studerats. De var utvalda med grund i deras skiftande karaktär, i storlek, typ och syfte. Dock med den gemensamma faktorn att alla projekt proaktivt eller reaktivt var tvungna att hantera en process av påverkan från externa intressenter.

Utifrån de studerade projekten och en litteraturgenomgång kan processen för analys av externa intressenter beskrivas med följande fem komponenter:

1. identifiering av intressenter,
2. intressenternas krav och behov,
3. analys av intressenternas påverkan,
4. utvärdering av olika alternativ för genomförandet av projektet,
5. grad av acceptans från intressenter.

Processen är dynamisk och iterativ, där de olika komponenterna interagerar över hela projektets livscykel. Detta innebär att analysen av externa intressenter måste genomföras flera gånger under projektets genomförande för att kunna bidra med tillräcklig information av hur externa intressenter påverkar beslutsprocessen.

Från projektledarens och exploatörens perspektiv måste analysen av externa intressenter göras med byggprojektets syfte i fokus. Målet måste vara att slutföra projektet i enlighet med givna förutsättningar från projektägaren. Utmaningen är således att hitta det förhandlingsutrymme som uppfyller så många av de externa intressenternas krav och behov som möjligt, utan att förändra projektets övergripande syfte. En analys av externa intressenter bör ge en grund för den framtida beslutsprocessen i projektet. Ett tydligt skäl för kontroverser och konflikter är att beslut har tagits utan att beakta konsekvenserna för externa intressenters krav och behov gentemot projektet. Resultatet har då blivit att projektledaren inte varit förberedd på de konflikter som uppstod, och hade heller ingen plan för lösningen av dem.

Analys av externa intressenter är en relevant, och till viss del ignorerad, kompetens i ledningen av byggprojekt. Fyra av de fem projekt som studerades hade inte genomfört någon strukturerad analys av hur projektet skulle påverka externa intressenter, och hur dessa påverkades av projektet. Resultatet av denna forskning är viktigt för byggprojektledare och fastighetsutvecklare för att hjälpa dem att förstå den påverkan som externa intressenter kan ha på deras projekt. Det teoretiska bidraget är en ökad förståelse av extern intressentpåverkan för

byggprojekt, samt analysverktyg för att få strukturerad information om intressenter och dess påverkan.

Table of Contents

1 Introduction

1.1 Background

The planning and construction of a facility can affect a variety of interests. Various positive effects it can have are those of creating better communications, better housing, and a higher standard of living. However, construction projects inevitably bring varying degrees of deterioration and change at the local level, not least at the construction site. Representatives of these interests are referred to as the project's stakeholders. A stakeholder is any group or individual who can affect, or is affected by, the achievement of an organisation's purpose (Freeman 1984). Stakeholders can be divided into internal and external ones (Gibson 2000), external stakeholders being those affected by the project in a significant way, but not directly involved in execution of the project (such as neighbours, the community, the general public, as well as trade and industry)

There is a traditional view that the formal planning process, via rules and legislation concerning the design and location of a facility, represents the management of external stakeholder interests. However, there is a growing tendency for various stakeholder groups to try to influence the implementation of a construction project (Boholm et al. 1998). Henecke and Olander (2003) showed the formal planning process to be insufficient to deal with claims of external stakeholders, this resulting in conflicts and controversies. The inadequacy of the formal processes involved result in uncertainty for developers concerning their investment in a new project (Olander 2005). There are several examples of technically and economically well planned projects, managed in a formally correct way that were nevertheless stopped by political decisions based on the views and interests of external stakeholders, so that large amounts of resources that had already been committed became obsolete (Anläggningsforum 1998). Hydén and Baier (1998) argue that there is a conflict between the formal rules and legislation concerning the planning and construction of facilities and the frequent view of external stakeholders that they should be afforded a higher degree of participation in the decision processes involved.

The Hallandsås project (the construction of a 8.8 kilometre twin-bore railway tunnel in southern Sweden) is one example of a project in which controversy and

conflict have had an impact on project implementation. The project was started in 1991, with basically all permits that were needed being approved, and it was scheduled to be finished in 1996. To date, in 2006, the project is still not finished and the budget has been exceeded by a factor of ten, due mainly to bad management choices that have affected the surrounding environment and the people in it. There have been several studies that directly or indirectly use the Hallandsås project as a research case (e.g. Hydén and Baier 1998; Boholm et al. 1998; Bohom (ed.) 2000; Danielsson and Holmberg (eds.) 2002; Baier 2003). Experiences from the Hallandsås project can be summarised as follows:

- The local community felt frustration at not being able to influence the planning and implementation of the project.
- The information given to external stakeholders was not correct, timely and appropriate.
- The local community was inclined to form actions groups outside the parliamentary system in efforts to exert an influence over decisions made within the project.
- The project management did not fully address the needs and concerns of the external stakeholders.

The Hallandsås project is an example of a failed external stakeholder management process, due mainly to an inadequate analysis of how project decisions would affect external stakeholders, and how these would, in turn, affect those decisions.

If the potential impact of a proposed facility on external stakeholders is not adequately communicated in the early stages of a project (as was the case in the Hallandsås project) this may lead to controversy and conflict concerning the projects location, size and design. Community attitudes have been shown to be important factors in the planning and locating of facilities (Rogers 1998). Experience gained from the construction of the tunnel under the English Channel show the need to better address the interests of external stakeholders and that the management of external stakeholders should be considered as being an essential cost element in the implementation of any major civil engineering project.

“Poor public perception can damage or stop a project as surely as can bad ground or shortage of labour… The Channel Tunnel project is a classic example: for much of its formative period it existed in an often destructive climate of adverse public opinion. Most of this was avoidable, but it resulted in the project team spending much of its time fighting a rearguard action rather than simply getting on with the job” (Lemley 1996).

The Channel Tunnel and Hallandsås, are examples of major projects. The problems connected with external stakeholder influence are not, however, limited to projects of such size. Henecke and Olander (2003) show that the influence of external stakeholders is an important topic to consider in a variety of different construction projects. Construction projects, independent of their size, can become embroiled in a process of controversy and conflict with external stakeholders. The image issue is also a relevant aspect of many construction projects. The UK's Considerate Constructors Scheme (Barthorpe 2002; Barthorpe 2003; Olander 2004) is one example where external stakeholders and the effects they suffer 'at the hands of construction' are considered important.

One explanation for the difficulty of siting a facility can be the failure to recognise the weakness of providing a purely technical rationale rather than providing a cultural rationale as well, lack of success in defining and presenting the benefits and costs to basically all of the external stakeholders who are affected, and failure to reach equitable and fair agreements with the external stakeholders on the redistribution of the costs and benefits involved (Dorshimer 1996). Improper and arbitrary decision-making often becomes an issue when engineers make decisions on issues they believe to be purely technical and professional in nature, but which those affected regard as questions of political power (Connor 1998). Many of the sources of disagreement involve value trade-offs rather than technical issues (McAvoy 1999). Furthermore, civil engineers tend to explain problems in technical and economic terms, which may not be sufficient to address the needs and concerns of external stakeholders. In communication with external stakeholders, particularly as practiced by engineers, precision and clarity are often considered to be the primary values. The premise is that decisions are best based on data, the best decisions are based on the clearest, least ambiguous data. Those subscribing to this believe that when the technical facts are clearly communicated, all reasonable hearers will arrive at similar conclusions. Yet in public policy-making, engineers must present data to audiences that do not share the values of the technical culture that they represent (Hynds and Martin 1995).

1.2 Research question

The basic problem is that if a facility (e.g. a road, a railway, a housing development, a factory or an office space) is to be built certain external stakeholders will be negatively affected by the facility or by the implementation of the construction project leading up to it. It follows that, in the course of implementing a construction project, not all needs and concerns of external stakeholders can be met. The challenge for a project manager, therefore, is to plan and implement the project in question in a manner that meets as many needs and concerns of the external stakeholders as possible without

compromising the purpose of the project. To accomplish this there is a need of understanding the influence of external stakeholders in order to sufficiently conduct an external stakeholder management process (see figure 1.1).

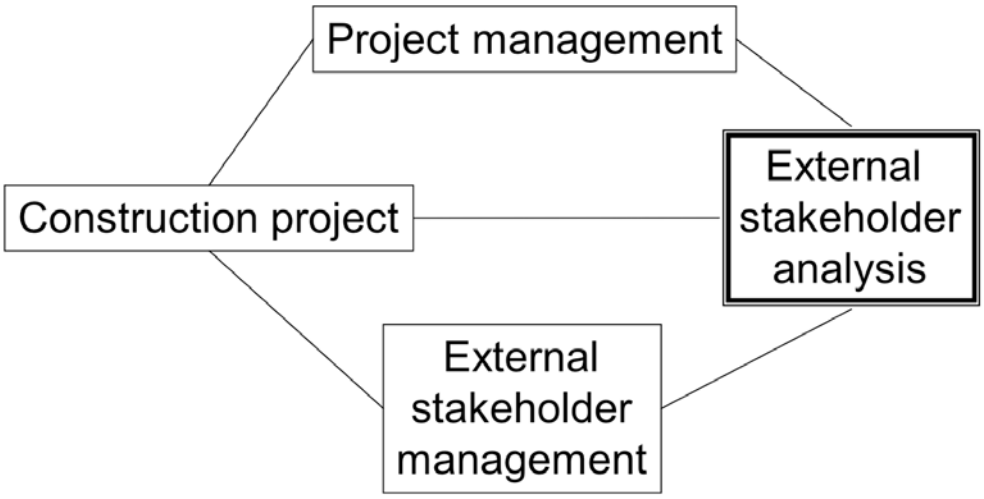

Figure 1.1. External stakeholder analysis in relation to project management and an external stakeholder management process.

The role of the project manager should involve not simply an understanding of the technical realities at hand, but also of the links between technology, the environment, the community and the people in it. For example, a given community possesses unique information about local conditions and circumstances. The project manager should acquire knowledge about the place where the project is located and engage the local community in the planning of the construction project. Thus, an external stakeholder management process should, if conducted properly, be seen as representing an opportunity for improving the project.

In order to perform an external stakeholder management process adequately, there has to be a thorough analysis of the needs and concerns of external stakeholders with regard to the purpose of the project. This involves questions such as: who are the stakeholders? This will include external individuals and groups, as well as those directly involved in the project, i.e. internal stakeholders. What are the needs and concerns of the various stakeholders? How can these be met without compromising the purpose of the project? Accordingly, an external stakeholder analysis should involve the following steps:

- Identify external stakeholders.
- Assess their needs and concerns.
- Analyse potential impact of external stakeholders on decisions concerning project.

- Evaluate alternative solutions for the implementation of the project, with respect to external stakeholder needs and concerns.

There is a lack of knowledge of how external stakeholders affect construction project management. In those cases where an external stakeholder analysis process is conducted it is often due to personal initiatives within the project, rather than a conscious strategy of the project owner.

1.3 Aim and objectives

The aim of the research project described here is to contribute to, and increase, knowledge concerning external stakeholders for construction projects, and to develop methods and tools for the analysis of external stakeholder influence arriving at a theoretical and general model of the process of analysing external stakeholders' needs and concerns for construction projects. The model will form a baseline for action intended to improve the decision–making process for the implementation of construction projects.

The specific objectives of the research are to

- Formalise the concept of external stakeholders for projects in general and construction projects in particular.
- Develop an analysis model of how the external stakeholders impact the implementation of a project during its life cycle.
- Increase understanding of the reasons for external stakeholders choosing to oppose or to accept a new facility.
- Develop and test a model that evaluates the project with regard to its purpose and stakeholders' needs and concerns.

The research overall does not have a hypothesis, but relies on the specific objectives above as the basis of scientific enquiry. Nonetheless, hypothesis testing is incorporated in the empirically-based parts of the research, where theory building is necessary: see, for example PAPER II and VII.

1.4 Limitations

The research is limited to the study of external stakeholder analysis for construction projects from a project management perspective. It does not aim at critically examining the project's purpose or, indeed, investigating the effects of alternative purposes. The focus is on external stakeholder analysis as an input to the external stakeholder management process. The manner in which this process proceeds is not studied in detail. Furthermore, the social implications of

managing external stakeholders are similarly outside the scope of this research: a related research project (Henecke 2006) has addressed this issue more closely. Rules and legislation have been investigated with respect to external stakeholder relationships. The reason is that the research is project-oriented; it is not the role of project managers to change rules and legislation, although working within the constraints of an existing framework is a relevant input to an external stakeholder analysis because it defines the formal impact that stakeholders have on project implementation.

The research is also limited to a Swedish context. Although the example cases are located in the southern part of Sweden, they can be expected to be representative enough for other parts of Sweden, since the rules and legislation are broadly the same. The geographical limitation is more in the way of a practical aid, and allows a more concentrated research effort instead of dissipating that effort unnecessarily. Moreover, there is enough variety and richness of information in the vicinity to obviate the need for distant travels. Even though there is a Swedish perspective on the research the results could in many respects apply generally to construction projects and facility developments in other parts of the world.

1.6 The author's frame of reference

I have a Master of Science degree in civil engineering and a Licentiate degree in Building and Architecture from Lund Institute of Technology, Sweden and I have worked as a production engineer for a civil engineering contractor, both before and during my Master's degree studies. I also have some experience in project management in large civil engineering projects, in which I to some extent encountered the problems of external stakeholder management and their consequences.

I have long had an interest in construction project management and in the problems connected with it. I see the management of stakeholder issues as a vital part of project management and linked to the success of projects. During my PhD studies, I have taken courses in areas of project management, the construction process, social aspects of urban planning, communication, and of research theory and methods. In addition close co-operation with a PhD student in the Department of Sociology of Lund University has greatly enhanced my understanding of the social aspects of the research problem.

In parallel with my PhD studies I have worked as a lecturer in the areas of construction project management, property management, real estate management and business economics. This has provided me insight into how the research area of external stakeholders is an integral part of the facility development process alongside the issues of economy and technology. As a

complement to my role as a lecturer, I have also taken a few basic courses in education.

1.6.1 Activities related to the research project

In the course of the research project the author has been involved in a variety of related activities including additional studies, teaching and seminars. The related activities have been aimed at disseminating the research and its findings to a non-academic audience.

The additional studies have been in form of reports written in Swedish with the Swedish construction industry as the target readership. Altogether, four reports have been produced:

- Olander, S. (2000) Förankringsmetoder i byggprocessen – En kunskapsöversikt [External stakeholder management in the construction process – a literature review]. This report aimed at describing different viewpoints concerning external stakeholder management. The report, which is basically concerned with conditions in Sweden examines external stakeholder influence from the perspectives of the actors involved, the environment, democratic processes the legal processes. This report was later developed into the licentiate thesis (Olander 2003) certain empirical data and a more international perspective being added.

- Henecke, B. and Olander, S. (2003) Missnöjda medborgares säkerhetsventil – en studie av överklagade detaljplaner [The safety valve of dissatisfied citizens – a study of appealed detailed community plans]. This study aimed at gaining knowledge of why external stakeholders opposed a construction project. Detailed community plans for constructions that had been appealed were chosen as the object of research because of the opportunity of obtaining relevant information from public documents. A total of 63 plans of this sort in the municipalities of Malmö and Lund were studied. In analysing the results it was evident that these had a higher purpose. There had been no similar study conducted in Sweden which, at this level of detail, described why detailed community plans were appealed, the extent to which this occurred and the effects of the appeals. The report attracted considerable interest from the construction industry, planning officials and politicians concerned with urban planning. A governmental investigation of rules and legislations concerning the construction process also used the findings of this study in its work and it is cited in the final report (SOU 2005:77).

- Olander, S. (2004) Den omtänksamme byggaren – en studie av ett Brittiskt handlingsprogram [The considerate constructor – a study of a British scheme]. The Considerate Constructors Scheme is a UK effort to manage external stakeholders during the construction phase of a project. The report is

based on a study visit to London aimed at examining how the Considerate Constructors Scheme worked in practice. The study was directed at gaining insight into the external stakeholder management process within the Considerate Constructors Scheme and the possible applications it might have in a Swedish context. The findings have contributed to the development of a Swedish scheme of this sort, Utmärkt Bygge (http://www.byggradet.se/utmarkt).

- Olander, S. (2005) Planprocessen, ett hinder för nyproduktion av bostäder? [The urban planning process, a constraint for the production of new housing?] This report is based on a survey conducted in co-operation with the Swedish Construction Federation. The aim was to study how housing developers perceived the urban planning process and how this affected their investments in new housing. The report has formed the basis for seminars surrounding these issues, and it has also been cited in the government's evaluation mentioned above (SOU 2005:77).

The above studies have resulted in five articles in trade publications:

- Olander, S. and Henecke, B. (2001) Överklagande av detaljplaner – tecken på bristande förankring? Vbyggaren, nr 5, 2001.

- Henecke, B. and Olander, S. (2002) Överklagande av detaljplaner – en empirisk studie, Planera, nr 1, 2002.

- Olander, S. Landin, A. and Hansson B. (2004) Byggprocessen ur intressentperspektiv, SFK-Bygg, Årskrönika, 2003.

- Olander, S. (2004) Intressentpåverkan i byggprocessen – exemplet Västkustbanan genom Lund, Vbyggaren, nr 2, 2004.

- Olander, S. (2005) Englands byggbransch satsar på bättre rykte, Husbyggaren, nr 1, 2005.

The research results have been used in the teaching and training of both undergraduate and practitioner (i.e. project managers) levels. Their use in undergraduate education has been in connection with lectures and exercises regarding stakeholder management in project management courses. For practitioners, education has taken the form of one workshop on stakeholder management in a series of project management workshops. Those participating in the workshop included project managers from a variety of industries (e.g. construction, IT and pharmaceuticals), who provided insights into the generality of the research question. The problem of analysing stakeholder influence (external as well as internal) was a reality for many of the participants.

1.7 Related research

The research topic of the role of external stakeholders in construction projects is a fairly new one when approached from a project management perspective. The main body of research on stakeholders concerns corporate stakeholders. Conceptions and theories there have been debated over the last twenty years (e.g. Freeman 1984; Donaldson and Preston 1995; Mitchell et al. 1997; Sternberg 1997; Post et al. 2002; Phillips 2003): research on project stakeholder management is less common. Bourne and Walker (2005) have addressed the issue of mapping stakeholder influence. This issue has been raised in connection with construction projects by, for example, Winch and Bonke (2002), and Newcombe (2003).

A greater amount of research has been undertaken on controversy and conflict. The NIMBY (Not In My BackYard) syndrome has been studied from a variety of perspectives, such as those of urban planning, economy and sociology. Negotiation and conflict resolution have been studied by the Consensus Building Institute. In Sweden, research in this area has been carried out by CEFOS at Gothenburg University – see, for example. Boholm et al. (1998) and Boholm (2000). The authors hosted a successful international conference in 2001 entitled "New perspectives on siting controversy". The Department of Sociology of Lund University has, in co-operation with this research project, undertaken a study on the controversies, democracy and power in the urban planning process (Henecke and Kahn 2002; Henecke and Olander 2003; Henecke 2006). The Department of Environmental and Energy Studies of Lund University (Kahn 2004) has undertaken a study focused on wind power and its impact and the Department of Landscape Planning of the Swedish University of Agricultural Sciences has undertaken a study into the acceptance of road projects (Hylmö 2005). The Division of Sociology of Law of Lund University, has also addressed this issue (e.g. Hydén and Baier 1998; Hydén et al. 2000; Wickenberg 2003, Baier 2003).

1.8 The Structure of the thesis

Chapter 1: Introduction. This covers the background to the research and the research question. It states the aims, objectives and limitations of the research, the frames of reference and related activities and research.

Chapter 2: Research Method. This discusses the rationale for the chosen approach to the research, together with methods for addressing the research question and the basis for gathering empirical data.

Chapter 3: External Stakeholder Analysis. Results of the literature review conducted and of the analysis of the empirical data are presented. The appended papers form the basis of the chapter and the results from them are structured to reveal connections with the research question.

Chapter 4: Discussion. The main findings of the research are discussed.

Chapter 5: Conclusions. This presents the conclusions drawn from the study and its contribution to science and practice; it also discusses how the research on external stakeholders should proceed to build on the work presented in this thesis.

1.9 Appended papers

PAPER I. Evaluation of stakeholder influence in the implementation of construction projects. Authors: Olander S and Landin A. Published in International Journal of Project Management, 2005, **23**(4) 321-328. A method of stakeholder mapping, together with the power/interest matrix, are used to identify stakeholders and their influence on construction projects.

PAPER II. Stakeholder impact analysis in construction project management. Author: Olander S. Accepted for publication in Construction Management and Economics, June 2006. The paper discusses the analysis of a stakeholder impact index to determine the nature and impact of stakeholder influence, the probability of stakeholders exercising their influence and each stakeholders position as a proponent or opponent of a construction project is illustrated.

PAPER III. Consensual approaches to siting controversy. Author: Olander S. Published in Proceedings of the 10th International Symposium on the Organization and Management of Construction, 2002, University of Cincinnati, CIB, CRC Press. A consensual approach to siting controversies in construction projects is described, involving on the analysis and management of project stakeholders.

PAPER IV. External stakeholder acceptance of construction projects. Authors: Olander S and Hansson B. Submitted to International Journal of Project Management, July 2006. Factors facilitating acceptance of a facility development by external stakeholders in the implementation stage of the construction project leading up to it are discussed.

PAPER V. Methods to estimate stakeholder views of sustainability for construction projects. Authors: Persson U and Olander S. Published in

Proceedings from 21st International Conference passive and low energy architecture, built environment and environmental buildings, 2004, Technische Universiteit Eindhoven. Methods of evaluating the views towards sustainability held by the various stakeholders in a construction project are examined, discusses the possible applications for these methods and how they may be adapted into suitable tools for construction project management.

PAPER VI. Evaluation of sustainable aspects in real estate management. Authors: Persson U, Landin A and Olander S. Published in Proceedings from the 2005 World Sustainable Building Conference in Tokyo, SB05. The paper addresses the need of methods useful in the construction and real estate process for identifying and then following-up on the goals of sustainability.

PAPER VII. Evaluating alternative solutions for facility development. Authors: Olander S, Persson U and Landin A. Submitted to Building Research and Information, August 2006. A model for sustainability analysis of construction projects is presented, one based on stakeholder theory and the concept of sustainable development.

2 Research Method

2.1 The research process

The research process employed in the study (see figure 2.1) aimed at providing an understanding of the influence of external stakeholders. Models were developed for external stakeholder analysis in construction project management. A systems approach was adopted, and a case study has been used as the main method of research in combination with literature reviews. The case study method was selected because of the qualitative nature of the research.

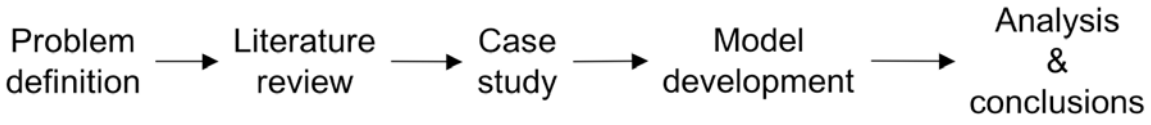

Figure 2.1. The research process.

2.1.1 Co-operation with the Department of Sociology

The problem of understanding external stakeholder influence is interdisciplinary in character. The research reported here was focused on project management issues whereas, largely parallel to this, sociological issues in this area were studied at the Department of Sociology of Lund University (Henecke 2006). Thus, an interdisciplinary approach was taken through two related research projects conducted simultaneously. The cooperative work was conducted in such a way that the two projects employed a similar problem definition and certain initial studies were conducted jointly. The gathering of empirical data was as a joint effort. However, the analysis of the data was conducted separately, from both a project management and from a sociological perspective.

2.1.2 The systems approach

The underlying assumption of a systems approach is that the reality is arranged in such a way that the whole differs from the sum of its parts (see figure 2.2). This implies that not only must the different parts of a system be studied, but also their relationships (Arbnor and Bjerke 1997).

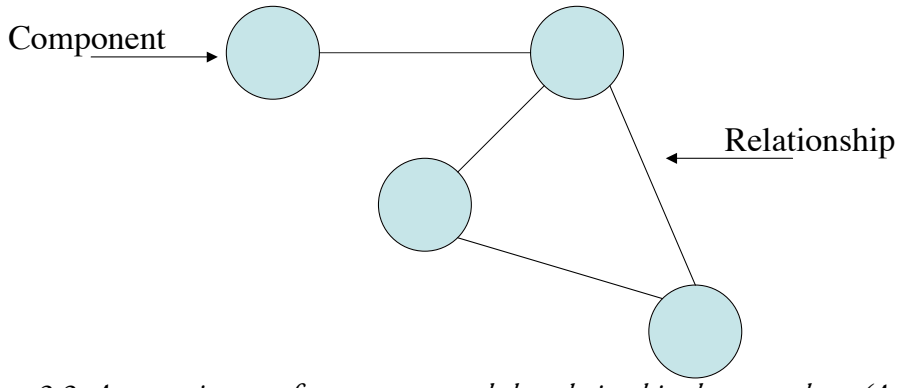

Figure 2.2. A system is a set of components and the relationships between them (Arbnor and Bjerke, 1997).

The systems approach achieved a breakthrough in business research during the 1970s. A factor contributing to development of the systems approach was the increasing complexity of society. There is now talk of different societal systems, such as the organisational, the educational, the production system and the like (Arbnor and Bjerke 1997).

The definition of systems demands some additions (Arbnor and Bjerke 1997):

- A systems approach involves studying components that are in inevitable interaction with each other, instead of simply having potential cause-effect relationships.

- In endeavouring to explain an individual component it often does not suffice to simply study the component in itself or to consider it in isolation, its being necessary instead that the researcher place the component in its own particular context. Efforts to do so make it possible to distinguish between open and closed systems. Open systems being ones that need to be studied in the context of their environment, closed systems not requiring this (see figure 2.3).

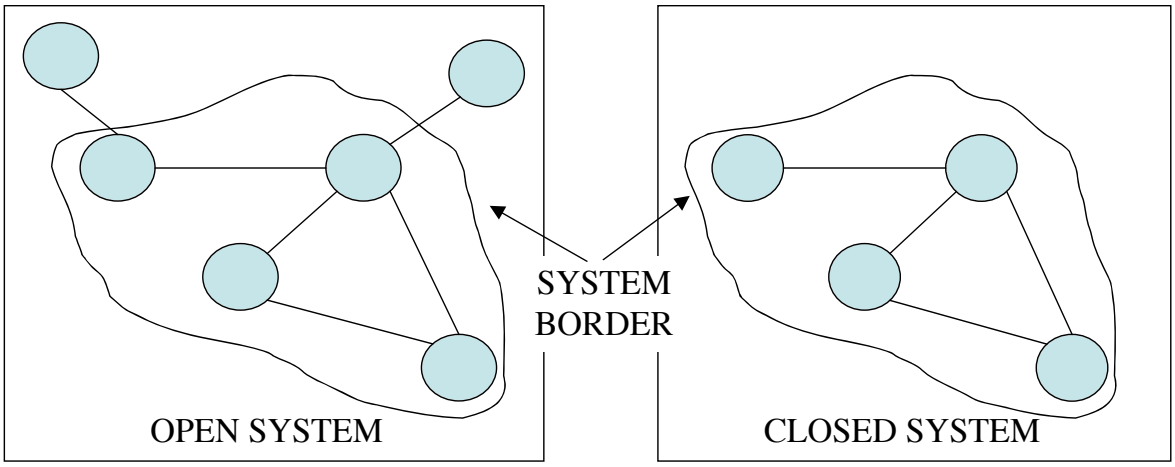

Figure 2.3. Open and closed systems (Arbnor and Bjerke, 1997).

The environment of a system is what lies outside the boundaries of the system. This environment is usually defined as involving factors that are important in terms of their influence on the system to be considered, but are beyond its control (Arbnor and Bjerke 1997). If this conception is applied to construction projects and their relationship with external stakeholders, the external stakeholder can be considered as representing factors that are important for the project to take into account. However, it is beyond the scope of the project.

2.2 Problem definition

The influence of external stakeholders in facility development and construction projects can be studied from a variety of perspectives. There is a democratic aspect that relates to the citizens' right to influence decisions concerning their local community. There are legal issues in relation to the rules and legislations concerning facility development, which cover the question of how good the legal process is at valuing the importance of different external stakeholder concerns. There is the sustainability aspect of how the development of a new facility affects the present and the future conditions of external stakeholders in terms of economic, ecological, social and cultural considerations. However, the focus of this research is the developer and the project manager from a project management perspective. The activities within project management that cover the influence of external stakeholders can be related to an external stakeholder management process. However, to conduct this process sufficiently, the project manager needs to obtain knowledge about:

- the external stakeholders,
- the nature of their claims,

- their influence on project decisions
- and the effect of project implementation on external stakeholder influence.

These questions are an integral part of the external stakeholder analysis process, the different factors involved interact with each other across the project life cycle. Thus, each of them can be viewed as being part of a system. This is why a systems approach was adopted. The basic system is presented in figure 2.4, which presents the components of an external stakeholder analysis as a closed system. Outside the boundaries of the system there are also other factors of interest that have been used as inputs to parts of the present research (see figure 2.5). The main results of the research are papers in scientific journals or in conference proceedings (PAPER I – VII). Figure 2.6 showing how the papers relate to the proposed system (figure 2.4.). However, a limiting factor for the systems approach is that every system is unique. Thus, there is the problem of generalisation in the sense that another set of system components may give different results.

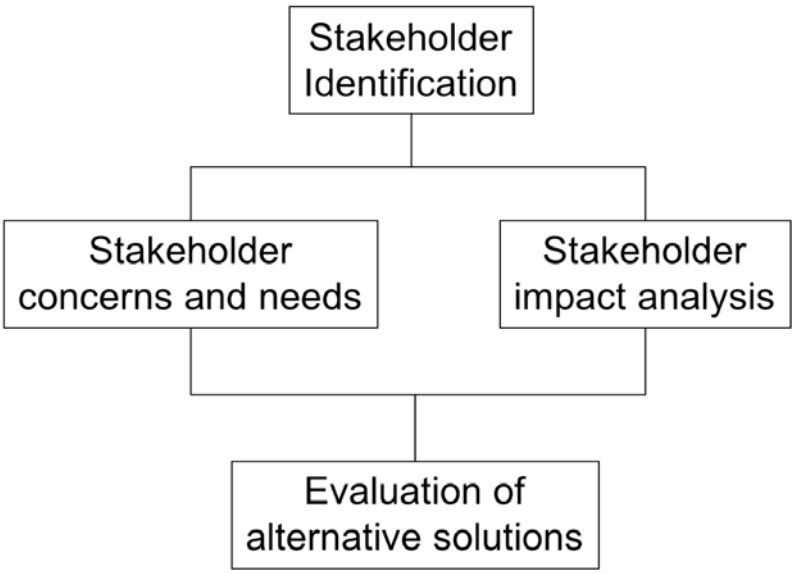

Figure 2.4. The basic system used for analysing the influence of external stakeholders.

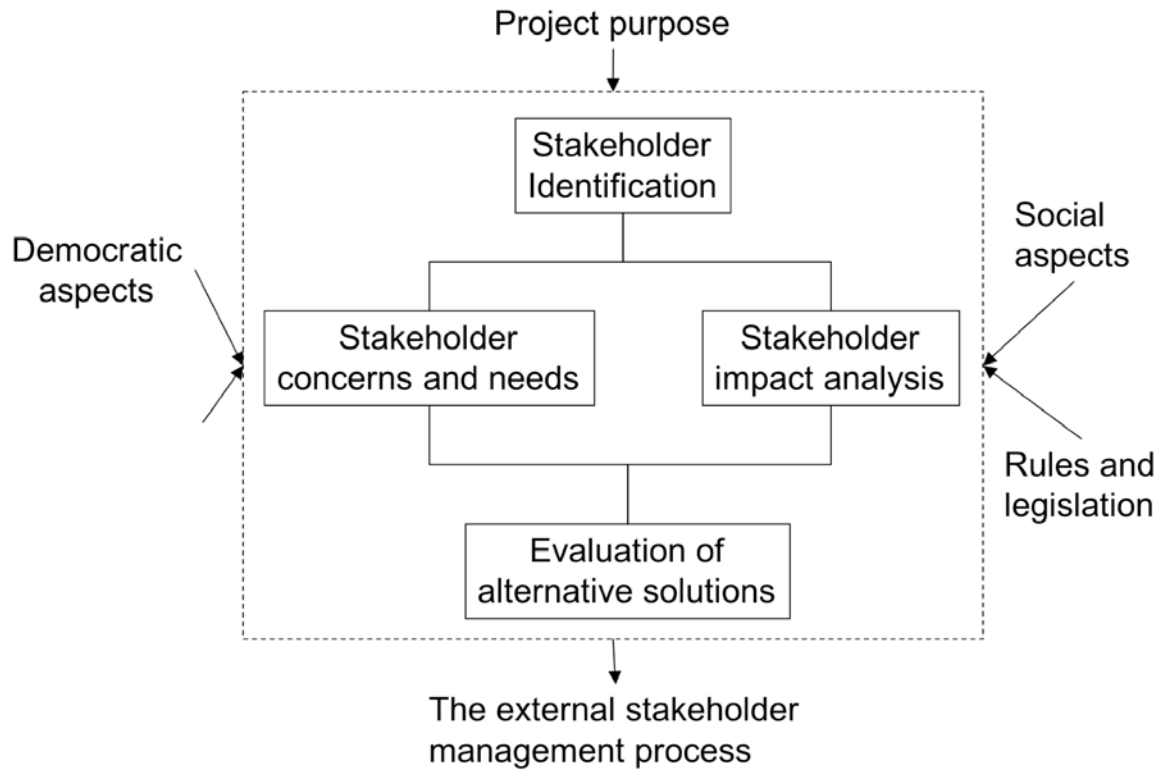

Figure 2.5. The basic system with boundary and adjacent aspects.

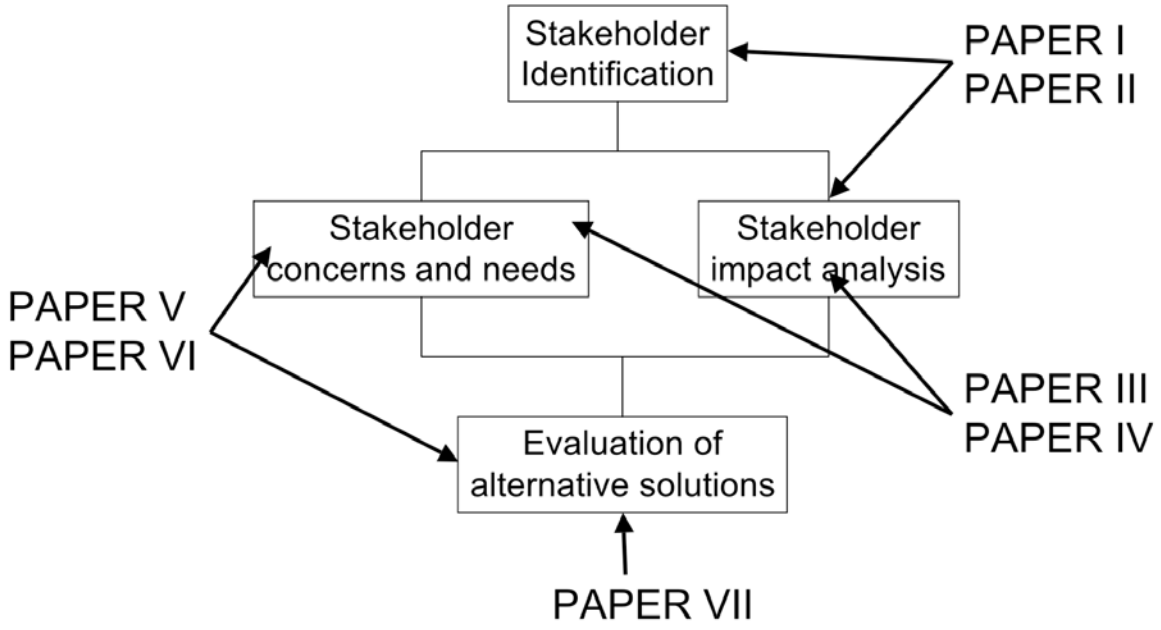

Figure 2.6. Connections between the appended papers (PAPER I – VII) and the basic system.

2.3 Literature Review

The literature review was conducted for the purpose of establishing the state-of-the-art concerning the influence of external stakeholders from the perspectives of:

- Project management theories and techniques.
- Stakeholder theory.
- External stakeholder management.
- Risk acceptance.
- Conflict management.
- Consensus building.
- Urban planning.
- Planning theory.
- Effects of planning on facility development.

The literature consists of papers, reports and books. In the search for literature the following databases were used:

- Byggdok
- LIBRIS
- ELIN

2.4 Case study

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin 1994). Case studies can be either quantitative or qualitative, in the present research, a qualitative approach was chosen. A qualitative case study focuses on matter of insight, discovery and interpretation rather than testing a hypothesis. A qualitative case study can be defined as an intensive analysis of a single phenomenon, at the same time as the whole is focused upon (Merriam 1994).

Qualitative research has a different basis from that of traditional science, which is often predicated on the assumption that there is one single objective reality that can be observed and measured. In contrast, qualitative research assumes there to be a multitude of different realities. It also assumes that values are not objectively conditioned, but rather they are a function of the interactions of people, and in addition that reality is subjective and needs to be interpreted rather than measured. Qualitative research is oriented more to processes than to specific goals and end-results. Qualitative case studies are based on information collected from interviews, observations and various documents (Merriam 1994). In the present research information was collected mainly from interviews and

documents. A limitation of case study methodology is that the information collected and the analysis performed depend on the researcher's own preferences. In the present case, two researchers (see chapter 2.1.2) from differing scientific disciplines have together discussed the different aspects and results of the case study approach. This cooperative work to some extent mitigates the subjectivity of the case study approach.

2.4.1 Description of the case study

The purpose of this case study was to examine how the influence of external stakeholders affects a construction project, and how the project managers for the projects had handled this influence. Five projects were examined. The projects were chosen for their different characteristics, i.e. they differ in size, type (civil engineering or housing) and purpose (local, regional or national). The common feature is that all projects, proactively or reactively, have had to consider and commit resources to a process of external stakeholder influence.

Case 1: The construction of a multi-family housing project consisting of about 60 apartments. This project attracted opposition for two reasons primarily. First, the location had intrinsic cultural value that needed to be considered. Secondly, the proposed development differed from its surroundings, which basically consisted of single-family housing. Alternative choices for the development were limited to development of about the same design and size, since the developer was bound to the location by the to resources committed in the process acquiring the property to develop.

Case 2: The construction of a multi-family housing project consisting of some 1,200 apartments. The main concern of opponents was not that of the development in itself, but rather its size and location. The local community would, if this project proceeded, nearly double in size within three years. This would negatively affect the social services in the community, which were already at the limit of their capacity.

Case 3: Expansion of an existing single-track railway into two tracks. The existing railway passes through densely populated areas, which would be faced with the consequence of significantly increased movement. The main argument from opposing stakeholders was that the railway could instead be rebuilt so as to pass along an alternative route, one leading through less populated areas.

These three projects have the common feature of a stigmatised and confrontational process having arisen between the developer and opposing stakeholders. The stakeholders in question mistrusted information the developer had provided them and engaged their own experts to support their standpoints.

There was a tendency in each case for the developer, whether rightly or wrongly, to portray the opposition as representing narrow concerns as well as self-interest rather than their trying to solve the communication deadlock in some way. Project 1 and 3 suffered cost overruns due to the considerable delays caused by the project in question being opposed. Project 2 had the problem of a forced process, having little or no communication with affected stakeholders. These projects are examples of a reactive and insufficient process of managing the concerns of the stakeholders. As a result, all of these projects have attracted a low public esteem and suffered a great deal from adverse media coverage.

Case 4: The construction of a grade-separated intersection for a highway. This is an example of a fairly normal external stakeholder management process. The opposition had no concerns about the project itself, since they agreed with the developer that the increased traffic safety that the project would bring about was necessary. The concerns of opposing stakeholders in the community had more to do with the question of where the intersection should best be placed in order to minimise the negative impact it would have on living conditions, local trade and industry, and recreation.

Case 5: A major civil engineering project involving the building of an 8km long railway tunnel under certain highly-populated areas. The size of this project might indicate that there would be problems in dealing with opposing stakeholders. However, there was little or no opposition to the project, even in the most affected areas. One explanation for this is that there was a fairly broad consensus about the need for the project, and the benefits of it within the community in which the facility was to be located. This is to be understood in terms of the developer having set in motion from the outset and having maintained a consistent and ambitious external stakeholder management process. Resources committed to communication with stakeholders and to efforts to build trust, along with open communication with stakeholders concerning all negative and positive impacts, could have had the effect of increasing the acceptance from otherwise opposing stakeholders.

2.4.2 Information gathering

The case study began with an examination of public documents and newspaper articles about the projects. The purpose of studying these documents was to obtain relevant background information about the projects in order to plan and structure forthcoming interviews with key stakeholders. A total of 37 persons were interviewed, and they covered a wide range of different functions in the project environment:

- project managers
- architects
- consultants
- politicians
- planning officials
- affected external stakeholders.

The choice of respondents and the actual interviews were determined in co-operation with a researcher from the Department of Sociology, Lund University (see chapter 2.1.1). Before each interview the relevant questions were discussed and agreed upon. The interviews were semi-structured with a set of open questions, which allowed flexibility to address eventual new questions that were not anticipated when planning the original set of open questions. The purpose of the interviews has been to obtain a description of the opinions of project stakeholders, and the interactions between them. The attitudes, values, strategies, actions and motives of the stakeholders, with respect to the project, have been of particular interest.

2.4.3 Analysis of the case study

Connections between the cases (i.e. case study projects) and the appended papers are shown in table 2.1. The cases have been used differently depending on the information gathered and the focus of the paper. Together they constitute the empirical base. In PAPER I [External stakeholder influence] and II [Stakeholder impact analysis], the cases were those that had the most information on how different stakeholders had impacted the project. In PAPER III [Consensual approaches], case five was used to exemplify a consensual external stakeholder ambition as a contrast to the consensus building approach described in that paper. In PAPER IV [External stakeholder acceptance], all the cases are used in addition to the literature to empirically ground the statements advanced. PAPER V [Stakeholder views on sustainability] and VI [Sustainable aspects in real estate management] are theoretical papers with the purpose of developing a model and, thus, only use the case study implicitly. PAPER VII [Evaluating alternative solutions] is a further development of the model presented in PAPER V and VI. This paper uses case 4 to illustrate a possible use of the model.

Table 2.1. Connections between the appended papers and the cases studied

Case	1	2	3	4	5
PAPER I External stakeholder influence	X	-	X	-	-
PAPER II Stakeholder impact analysis	X	X	X	-	-
PAPER III Consensual approaches	-	-	-	-	X
PAPER IV External stakeholder acceptance	X	X	X	X	X
PAPER V Stakeholder views on sustainability	-	-	-	-	-
PAPER VI Sustainable aspects in real estate management	-	-	-	-	-
PAPER VII Evaluating alternative solutions	-	-	-	X	-

2.5 Model development

The present research resulted in two models: one for evaluating stakeholder impact (see PAPER II) and the other for evaluating stakeholder needs and concerns (see PAPERS V to VII inclusive). The empirical base of the models was the theoretical framework and data gathered in the field. The model for evaluating stakeholders needs and concerns have also been developed in close co-operation with a research project on sustainable construction in the Division of Construction Management of Lund University (see Persson 2002).

The aim of both models is to translate qualitative knowledge concerning the influence of stakeholders into measurable units for structuring stakeholder analysis and for making it easier to follow up the analysis during project implementation. An experimental approach was used for testing the applicability of the model (see PAPER II and VII). The qualitative input from the case study results is interpreted via the models into measurable targets. However, no such measures can ever be better than the quality of the input.

In this part of the research, the approach has been largely analytical and the method employed has to some extent been experimental. The composition of the model's components has been tested to determine what appears to be the best combination of them. Different techniques for quantifying the qualitative data have been assessed and been tested in order to select the most appropriate. Beta versions of the models were formulated and then developed by adding information from the case study and relevant literature.

2.6 Conclusions

The reliability of qualitative research is sometimes questioned because of the lack of opportunity for other researchers to reproduce the same study with similar results. It is of importance, therefore, to have transparency in how the study was conducted and why certain choices were made, and to combine the different approaches to studying a phenomenon. The research presented here has addressed these concerns in three different ways.

First, a multitude of data gathering sources have been used. Public documents and newspaper articles have been analysed. Affected stakeholders from different backgrounds and positions have been interviewed about their actions and attitudes towards the cases. Second, the data gathering has been conducted in co-operation with a researcher from a different scientific field (sociology). This has supported discussions and interpretations from different perspectives, which have decreased the risk of being blind to a single perspective. Finally, the development of models has provided the opportunity, in some degree, to quantify the empirical data gathered from the case study.

3 External Stakeholder Analysis

3.1 Stakeholder identification

Stakeholder management is an essential part of the project management process. Both "Guidelines to the Project Management Body of Knowledge (PMI 2004), and "Quality Management – Guidelines to Quality in Project Management" (SS-ISO 1998) emphasise the importance of identifying and managing all relevant stakeholders in order to ensure the success of a project. Project managers need to identify and interact with key institutions and individuals in the project system's environment. An important part of the management of the project system's environment is to organise the process in order to be able to identify and to manage the probable stakeholders in that environment and determine how they will react to project decisions (Cleland 1999).

The most commonly used definition is that formulated by Freeman (1984), which states that stakeholders are any group or individual who can affect, or is affected by, the achievements of a corporation. PMI (2004) have basically adopted this definition of project stakeholders, by stating that they are individuals or organisations that are actively involved in the project or whose interest may be affected as a result of project execution or project completion. However, this approach has been criticised as being too broad (Phillips 2003; Sternberg 1997; Mitchell et al. 1997). The debate that has ensued has emphasised those who have a 'stake' in the firm [PAPER II]. Mitchell et al. (1997) address this problem by considering three main stakeholder attributes (power, legitimacy and urgency) in an effort to define a "stake". A stakeholder can thus be defined as having possession of one or more of these attributes.

McElroy and Mills (2000) propose an alternative definition of a project's stakeholders stating that they are a person or a group of people who have a vested interest in the success of a project and the environment within which the project operates. This is a more narrow definition than PMI (2004), since it clearly states that a stakeholder should have a vested interest in the project at hand. If the term "vested interest" is interpreted as persons or groups having a stake in the project, the definition of project stakeholders can be stated as:

> "A project stakeholder is a person or a group of people who have a vested interest in the success of a project and the environment within which the project operates. Vested interest is defined as having possession of one or more of the stakeholder attributes of power, legitimacy and urgency. There are essentially two categories of stakeholders: internal stakeholders, who are those actively involved in project execution; and external stakeholders, who are those affected by the project" [PAPER II]

3.1.1 External versus internal stakeholders

Freeman (1984) relates the stakeholder concept to different views of the firm. In the production view, the major concern is input versus output, which means that the stakeholders considered according to this view are the supplier and the customer (see figure 3.1). A more complicated model is the managerial view (see figure 3.2), where besides the supplier and customer, managers must also pay attention to owners and employees. These four stakeholder groups represent the internal change agents with the corporation. However, Freeman (1984) argues that the more difficult task is to understand external changes (see figure 3.3) that originate from the environment of a corporation and affect its ability to cope with internal changes. External change produces uncertainty, which cannot be readily assimilated into the relatively more comfortable relationship with suppliers, owners, customers and employees.

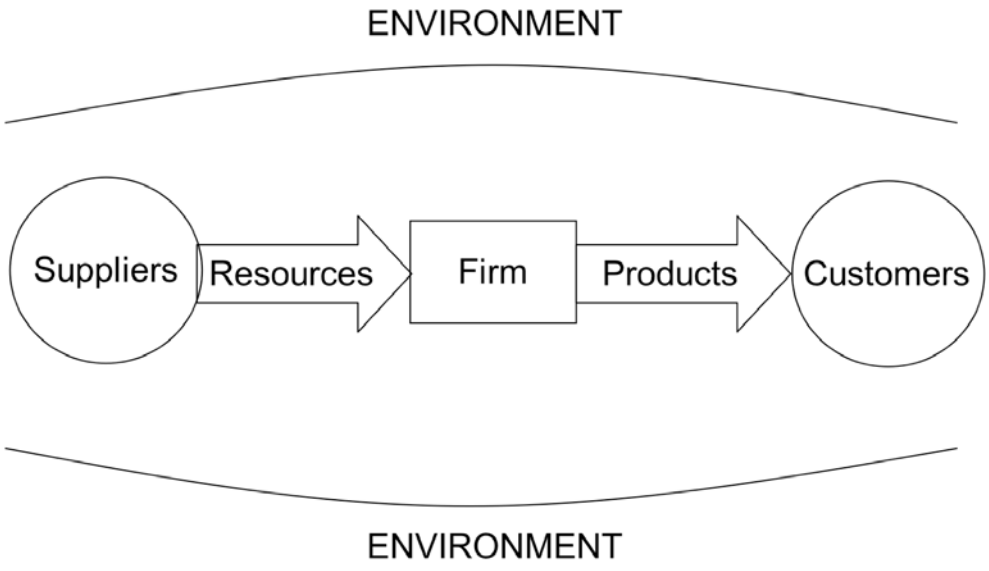

Figure 3.1 The production view of the firm (Freeman 1984).

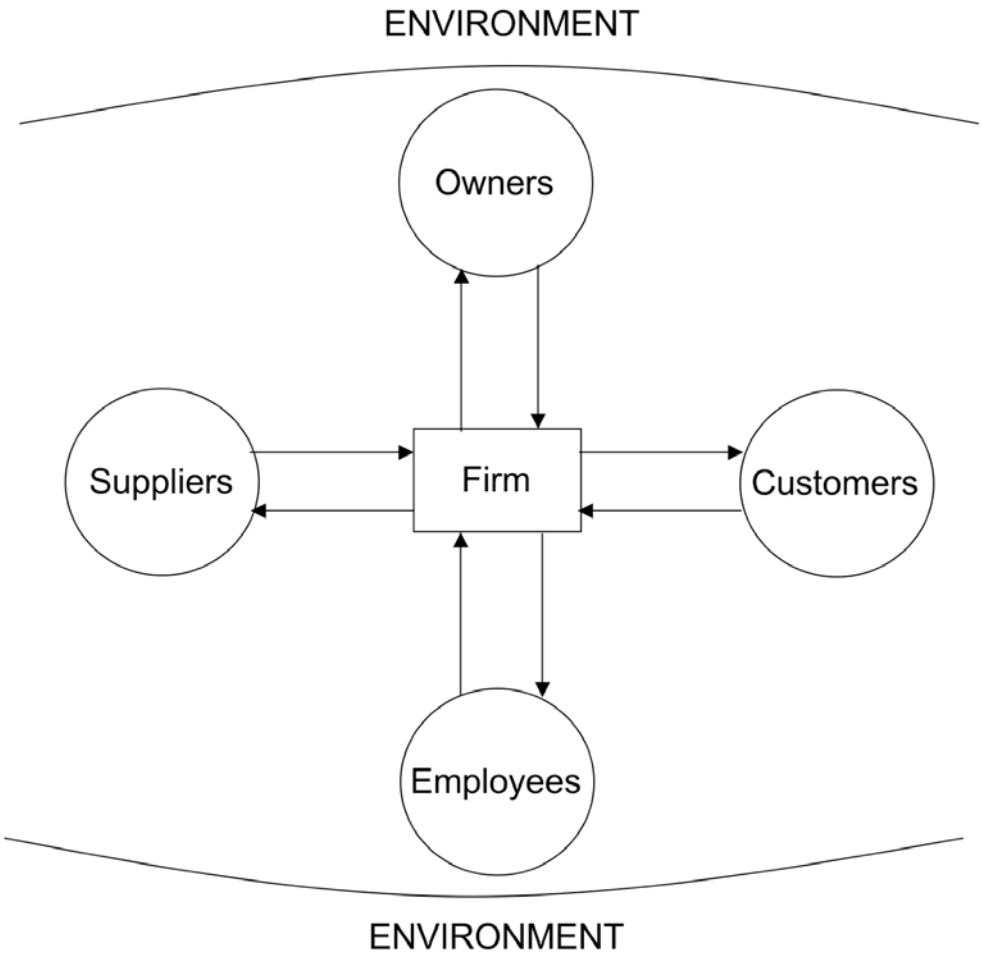

Figure 3.2 The managerial view of the firm (Freeman 1984).

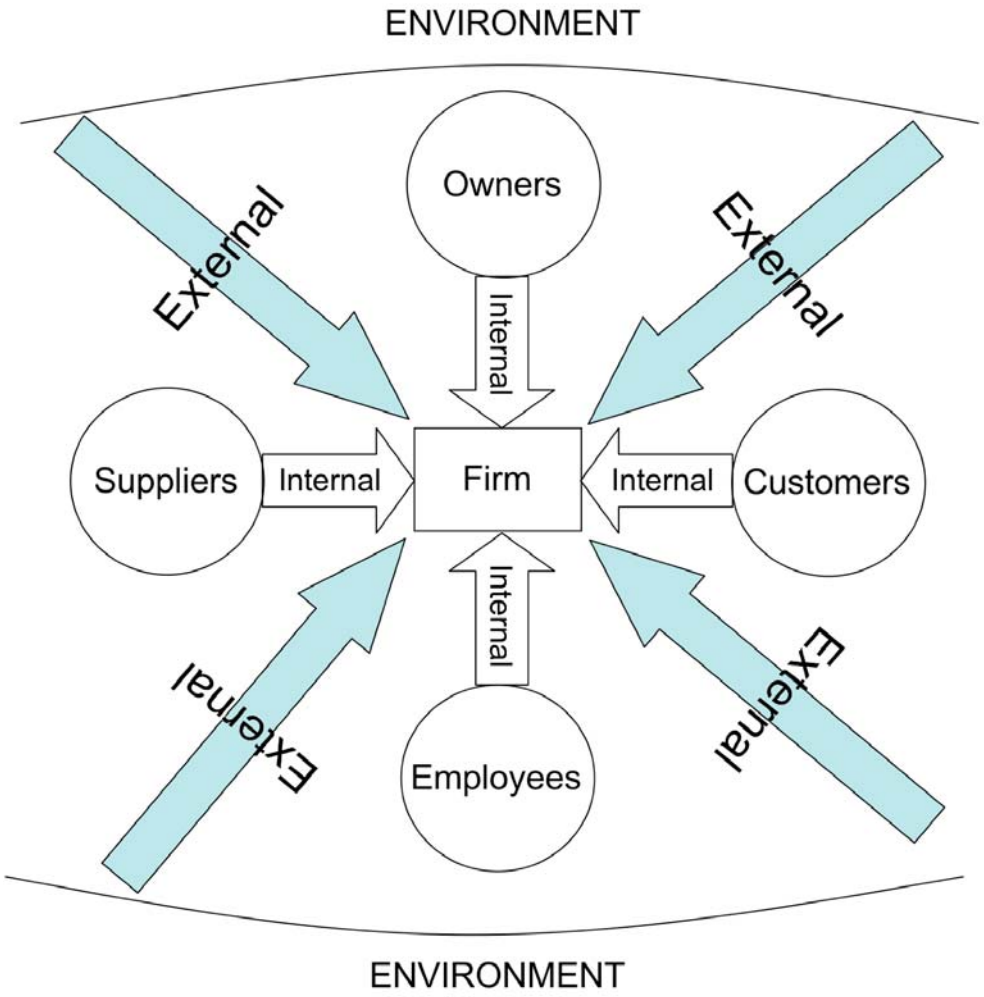

Figure 3.3 Internal and external change (Freeman 1984).

External change may have a particular strong effect on a project because of the environment within which a project operates changes from one project to the next. This is especially true of construction where the project is located on a specific site and where the environment of the external change that occurs can shift between projects and during project implementation [PAPER I]. There is a no strong tradition in the project management literature for discussing problems of the external environment (e.g. Engwall 1995; Crawford et al. 2006). There are, however some examples in construction (Winch and Bonke 2002; Newcombe 2003; Bourne and Walker 2005). Even so, the emphasis is still on internal processes involved. There is a need to emphasise the importance of the external environment both for projects generally and for construction projects in particular.

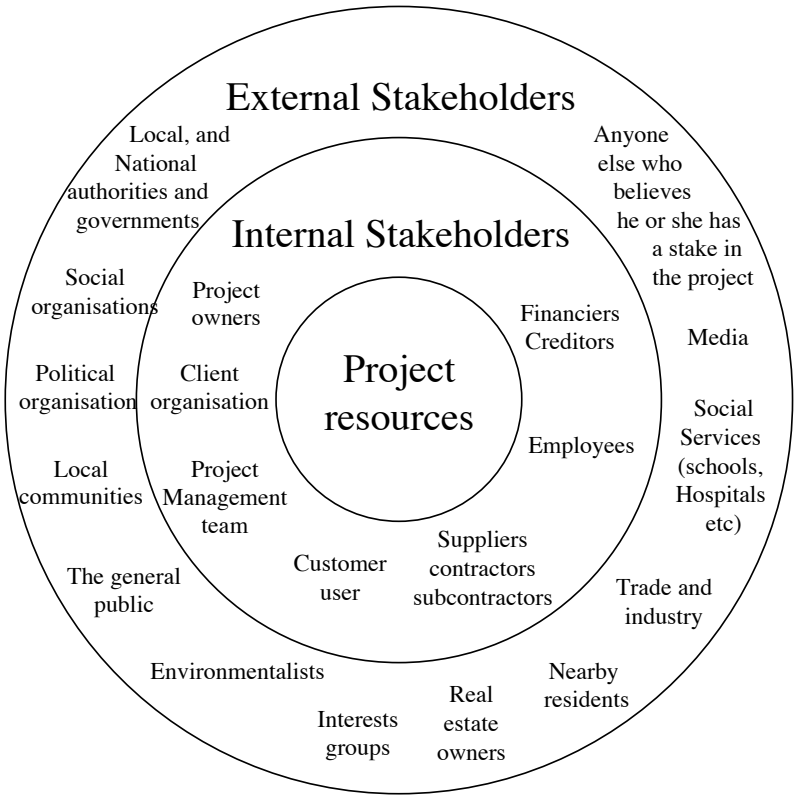

Figure 3.4. Potential stakeholders for construction projects (adapted from Cleland 1999).

Internal stakeholders can be defined as those who are formally connected with the project (e.g. owners, customers and employees), whereas external stakeholders are those affected by the project in some way (Gibson 2000). Figure 3.4 is adapted from Cleland (1999) and shows a schematic picture of the potential stakeholders in a construction project, divided into internal and external stakeholders. The present research is concerned primarily with external stakeholders.

3.2 Stakeholder impact analysis

In order to analyse the influence of external stakeholders adequately, it does not suffice to simply identify them, since the dynamics of the environment and the power of the stakeholder in relation the organisation (or project) need to be assessed (Mendelow 1981). Mendelow also states that the stakeholders who possess power relative to the organisation are liable to change due to the impact that the stakeholder environment can have on the stakeholders' power base. Johnson and Scholes (1999) developed, based on the work of Mendelow, a power/interest matrix (see figure 3.5), where the key questions are the following:

- How interested is each stakeholder group in impressing its expectations on project decisions?
- Do they mean to do so? Do they have the power to do so?

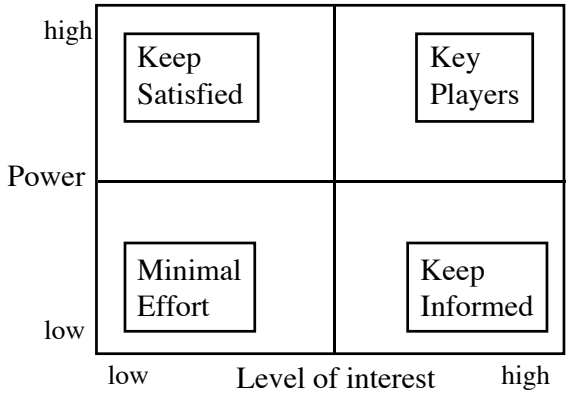

Figure 3.5. The power/interest matrix (Johnson and Scholes 1999).

By locating external stakeholders in the power/interest matrix, it is possible to understand how the influence of external stakeholders has developed in the course of project implementation (e.g. Winch and Bonke 2002; Newcombe 2003). Two of the projects that were studied were analysed by use of the power/interest matrix [PAPER I] across the different stages of the project. The analysis clearly showed how the influence of external stakeholders varied and shifted from stage to stage and the consequences of this.

Despite this being a useful model there are certain problems connected with it. First, in order to conduct a thorough external stakeholder analysis the relative levels of power and interest need to be evaluated on a finer scale than one of high or low. Either one has power or one has interest; it is hard assess them on a scale. Instead of assessing power and interest it can be more relevant to assess the level of the potential impact that external stakeholders have and the probability that impact of a given level will occur. Thus, the power/interest matrix could be translated into the impact/probability matrix (see figure 3.6). Bourne and Walker (2005) have developed this concept into the vested interest-impact index. The

parameters 'vested interest levels' (probability of impact) and 'influence impact levels' (level of impact) are assessed on a scale from 1 to 5.

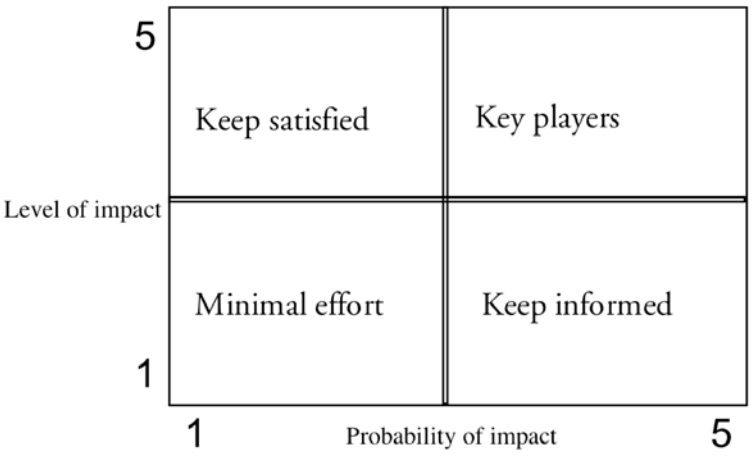

Figure 3.6. The stakeholder impact/probability matrix (adapted from Johnson and Scholes 1999).

Mitchell et al. (1997) propose a set of stakeholder attributes for assessing potential stakeholder influence of power, legitimacy and urgency. A stakeholder can have the power to impose its will on the relationship. The power of stakeholders may arise from their ability to mobilise social and political forces, as well as from their ability to withdraw resources from the project organisation (Post et al. 2002). Legitimacy can be defined in terms of stakeholders who bear some sort of risk in relation to the organisation, be it beneficial or harmful. The dynamic character of stakeholder influence is covered by the term urgency, which is defined as the degree to which claims (or stakes) call for immediate attention. At any given time, some stakeholders will be more important than others (Jawahar and McLaughlin 2001). Concerns and priorities change over time, new classes and configurations of stakeholders appearing in response to changing circumstances.

Based on the possession of one or more of the attributes described above Mitchell et al. (1997) divide stakeholders into seven different classes (see figure 3.7). **Dormant stakeholders** in principle possess the power of imposing their will on the organisation (or project), but their power remains unused through their having no legitimate relationship or urgent claim. Dormant stakeholders thus have little or no interaction with the organisation (or project). However, their potential to acquire a second attribute means that project managers should remain aware of them and their potential impact on the organisation (or project). **Discretionary stakeholders**, in turn, possess the attribute of legitimacy, but have no power to influence the organisation (or project) and have no urgent claims. The key point regarding these stakeholders is that, in the absence of power and urgent claims, there is absolutely no pressure on managers to engage in an active relationship with them, although they may well choose to do so, or even ought to do so. **Demanding stakeholders** have urgent claims but have

no power or legitimacy. When stakeholders are unable or unwilling to move their claim into a position of more salient status, the 'noise' of urgency is insufficient to move a stakeholder claim beyond latency. Dormant, discretionary and demanding stakeholders are labelled by Mitchell et al. (1997) as latent stakeholders, where stakeholder salience is low.

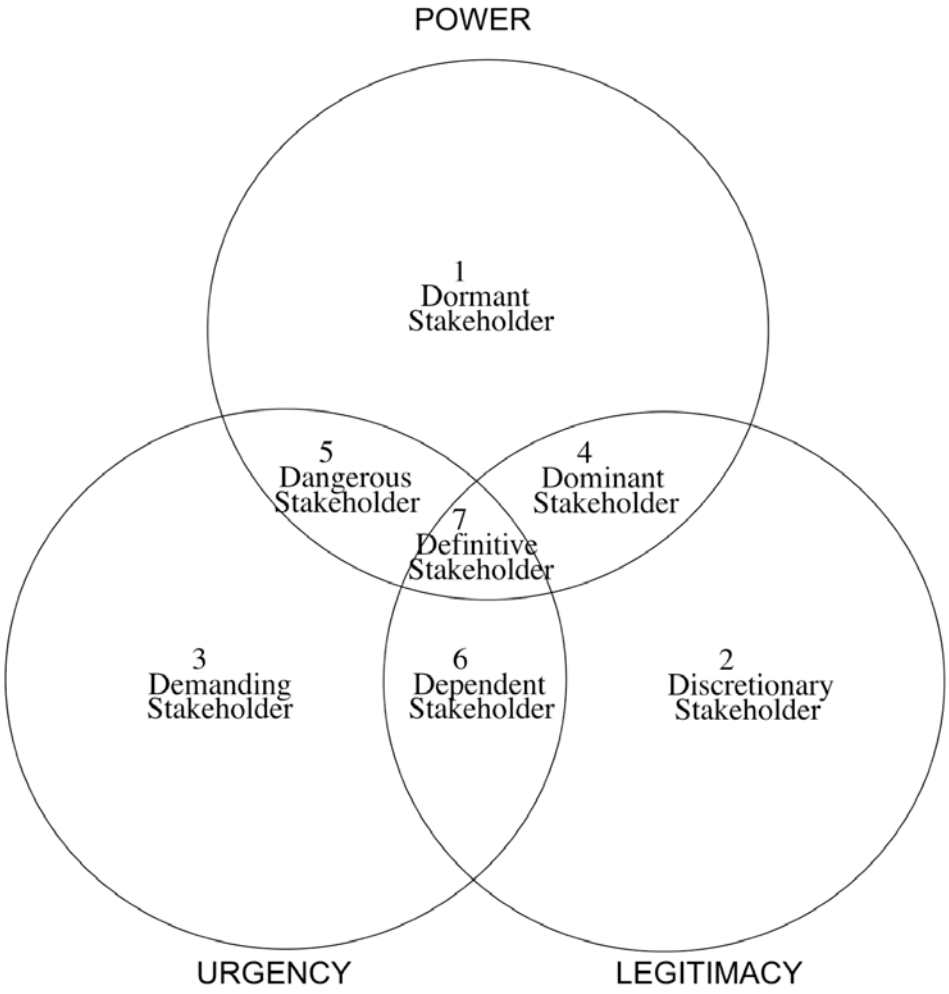

Figure 3.7. Stakeholder classes (Mitchell et al. 1997).

Dominant stakeholders are both powerful and legitimate. The expectations of any stakeholder perceived by managers as having power and legitimacy appear to clearly matter. Dominant stakeholders expect and receive much of a manager's attention, but they represent by no means the complete set of stakeholders to whom managers should relate. **Dangerous stakeholders** are characterised by the possession of urgency and power, but they have no legitimacy. Such stakeholders can be coercive, and possibly violent making them, literally, dangerous to the organisation (or project). The actions of these stakeholders can be dangerous to the stakeholder-manager relationship and to the individuals and entities involved. **Dependent stakeholders** are those who

lack power, but have urgent and legitimate claims. They are labelled dependent because of their depending on other stakeholders for the power necessary to carry out their will. Dominant, dangerous and dependent stakeholders are labelled by Mitchell et al. (1997) as expectant stakeholders, their stakeholder salience being moderate.

The final stakeholder class is **definitive stakeholders**. Here, stakeholder salience is high because of their possession of all stakeholder attributes, i.e. power, legitimacy and urgency. When a stakeholder who possesses both power and legitimacy has an urgent claim, managers have a clear and immediate mandate to attend to, and give priority to, that stakeholder's claim.

The third problem related to the analysis of the influence of external stakeholders to consider, apart from the vested interest impact index and stakeholder attributes, is that of the position each stakeholder has towards the project, in the sense of being an opponent or a proponent? (see, for example, Cleland 1986; Winch and Bonke 2002). McElroy and Mills (2000) propose there to be five different levels concerning the position a stakeholder can take towards a project: active opposition, passive opposition, not committed, passive support and active support. The position that each stakeholder takes towards the project determines the direction of the impact this stakeholder has on the project decision-making process. The position taken is mainly due to concerns from stakeholder needs in relation to the project and on how these have been treated by the project manager.

The vested interest impact index, the stakeholder attributes and the position towards the project have been combined and developed into the 'stakeholder impact index' [PAPER II]. This index can be used as a planning and evaluation tool to structure project stakeholders and their potential impact progressively, and to evaluate the outcomes of the influence of external stakeholders during implementation and after project completion.

3.2.1 Stakeholder acceptance level

The empirical data clearly indicated that the acceptance level sets the stakeholders position towards the project and defines the extent and direction of the stakeholders influence. The level of acceptance depends on two basic considerations: the needs and concerns of stakeholders and the stakeholder management process, i.e. how they have been treated. An analysis of the consensus building idea (e.g. Susskind and Cruikshank 1987; Susskind and Field 1996) as compared with the measures taken in the Citytunnel project (case 5 in the case study) provides an indication of the central points to consider in an external stakeholder management process [PAPER III]. Incorporating the other studied projects (case 1 to 4), allows an extended analysis of the concept of

stakeholder acceptance to be made [PAPER IV]. From this analysis the acceptance level towards the project is based on the ability of the project manager to acknowledge the concerns of stakeholders and maintain or increase the received acceptance level through an effective stakeholder management process. The main aspects of this process are:

- build and maintain a base of trust
- communicate all positive and negative consequences about the project
- implement the project in such a way that the potential negative impacts are minimised.

The challenge for the project manager is that of communicating and implementing the construction project in such a way that the perceived benefits and the negative impacts are presented realistically and to minimise the effects of negative impacts and, to the extent possible, maximise the benefits for all affected stakeholders [PAPER IV].

3.3 Stakeholder needs and concerns

As indicated above, one of the criteria for obtaining acceptance from stakeholders is to acknowledge their needs and concerns. It is important, therefore, to analyse these in the project's decision-making process. The STURE (Stakeholder Urban Evaluation) model (see figure 3.8) introduces a concept that creates a sustainability programme having objectives and measurable targets that are based on a stakeholder analysis and on the conditions referred to in the claims of the stakeholders [PAPER V to VII].

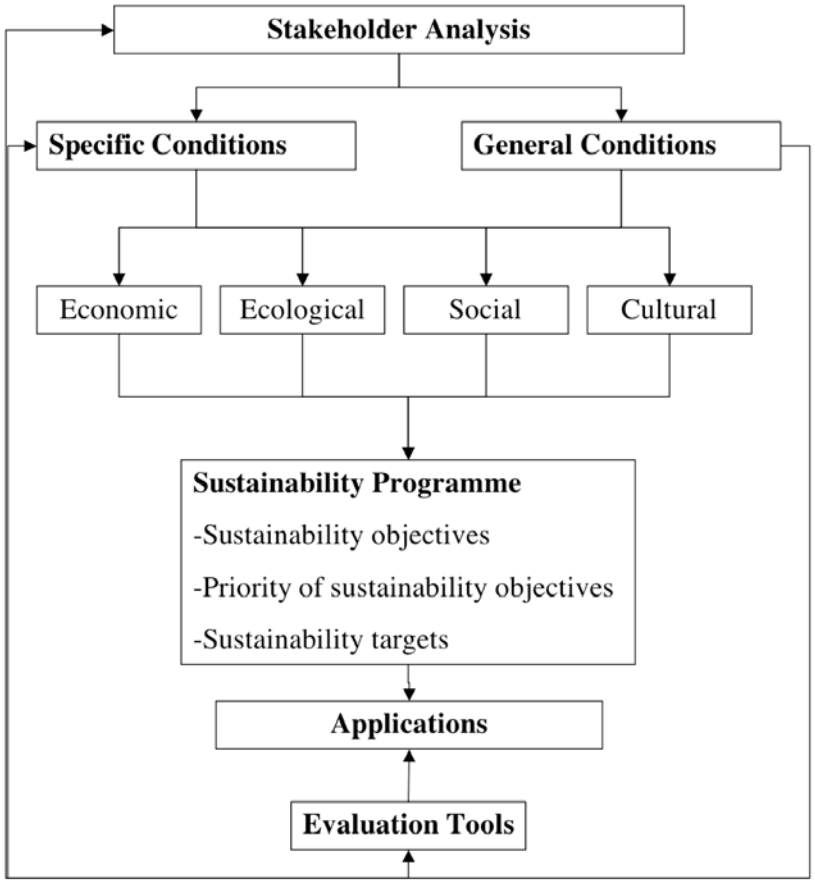

Figure 3.8 The STURE model.

The general principles of the STURE model can be described in terms of four steps [PAPER VII]: *stakeholder analysis*, *specific conditions* for the actual application, the *general conditions* that need to be addressed and the *sustainability programme* (see figure 3.8). The information gathered in these steps is then used as input to the application in question, such as a multi-criteria analysis of different alternative solutions for the design and siting of a new facility.

Stakeholder analysis: Managing stakeholder interests are not enough, since project managers must also identify the relative power different stakeholders have on the implementation of the project. A variety of methods can be used to map different stakeholders with respect to their potential impact on project execution (e.g. Mitchell et.al. 1997; Johnson and Scholes 1999; McElroy and Mills 2000; Winch and Bonke 2002; Newcombe 2003; Bourne and Walker 2005, and Olander and Landin 2005).

Specific conditions: These cover a review of the conditions, specific to the site and to the surroundings of the proposed facility is obtained described in economic, ecological, social and cultural terms. Inputs to it consist of the requirements of the project owner and the purpose of the construction project.

An evaluation of sustainability impacts is undertaken with review as its base. Significant sustainability aspects are set, which together with the general conditions define the sustainability objectives. Documentation of the procedure followed in the STURE process assures changes in the conditions of the application on a continuous basis throughout the project life cycle.

General conditions: One condition is the project owner's environmental policy and environmental management system. Another condition is the concerns raised by external stakeholders. A third is the economic climate for the developer with respect to the project at hand. The last condition is the legal and regulatory framework set by the government and by public authorities.

Sustainability programme: The different sustainability objectives are defined and prioritised with respect to the purpose of the project and the concerns of external stakeholders. A well-defined objective has three components: an object (what is being valued?), a direction of preference and a decision context (McDaniels 2000). In the STURE model, the basis of these components and the structure of objectives are set on the basis of the stakeholder analysis and the specific and the general conditions at hand. The objectives are then structured as being of economic, ecological, social and cultural character. The prioritisation of objectives is performed using a graded scale from 1=low priority to 5=high priority. In order to evaluate the objectives, they need to be described in terms of detailed and measurable targets.

3.4 Evaluation of alternative solutions

A clear and transparent evaluation of alternative solutions for the development of a facility based on needs and concerns of stakeholders would help project managers to establish the basis for trust. The STURE model emphasises all positive and negative aspects of the project for each option, which provides the project manager with a sound base for the impending stakeholder management process. Use of the STURE model as a planning tool for pre-evaluations, provides the developer with a set of conditions that need to be considered in implementation of the project. It can also help identify which in-depth evaluations are needed to obtain relevant data for further evaluations [PAPER VIII].

3.5 External stakeholder analysis process

By combining the results of all the papers together with a thorough analysis of the each of the projects studied, an external stakeholder analysis process emerges.

The project needs first and foremost to be aware of who the stakeholders are. This research has developed and refined the definition of project stakeholders [PAPER II] into:

> "A project stakeholder can be defined as a person (or group of people) who has a vested interest in the success of a project and the environment within which the project operates. Vested interest is defined as having possession of one or more of the stakeholder attributes of power, legitimacy or urgency. There are essentially two categories of stakeholder: internal stakeholders, who are those actively involved in project execution; and external stakeholders, who are those affected by the project"

Based on this definition a set of stakeholders can be identified for the project, external as well as internal. Stakeholders will impact the project differently according to their potential threat or benefit to the implementation of the project. The stakeholder impact index [PAPER II] is a means for structuring and analysing information about external stakeholder impact on project decisions. The stakeholder impact will also depend on the needs and concerns of different stakeholders, and the extent to which these can be satisfied without compromising the overall purpose of the construction project.

Acknowledgement of stakeholder needs and concerns will also affect the nature of the external stakeholder impact. The projects that were studied also indicate that external stakeholder analysis to be a dynamic process. The set of stakeholders and the nature of their impact can change considerably over time [PAPER I and II], which means that it has to be an iterative process, where one loop links stakeholder identification, stakeholder needs and concerns and stakeholder impacts (see figure 3.9).

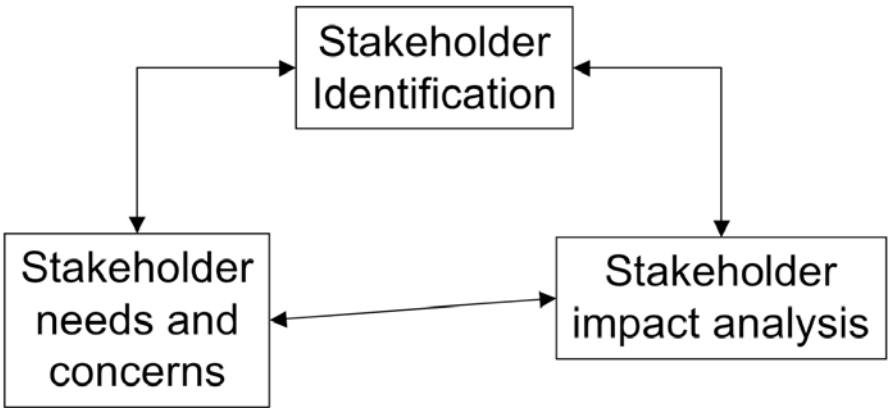

Figure 3.9. Relationships between stakeholder identification, stakeholder needs and concerns and stakeholder impact analysis.

The purpose of the STURE model [PAPER V to VII] is to combine the needs and concerns of stakeholders with the evaluation of alternative solutions for implementing the project. This allows a course of action to be chosen for the project: one that fulfils as many needs and concerns as possible. In studying the various projects, a further consideration also became evident, namely that the needs and concerns of stakeholders and the choice of alternative solutions affect the level of acceptance that each stakeholder has about the project. Depending on how the needs and concerns are fulfilled, and on how the project manager has addressed and acknowledged these, each stakeholder will choose to accept or not accept project decisions [PAPER III and IV]. The acceptance level also determines to a large extent the position that each stakeholder (of being a opponent or a proponent) takes towards the project, and thus the impact each stakeholder imposes upon the project. A second loop in the external stakeholder analysis process is thus relevant for consideration (see figure 3.10), consisting of stakeholder needs and concerns, the evaluation of alternative solutions, the level of acceptance and stakeholder impact analysis.

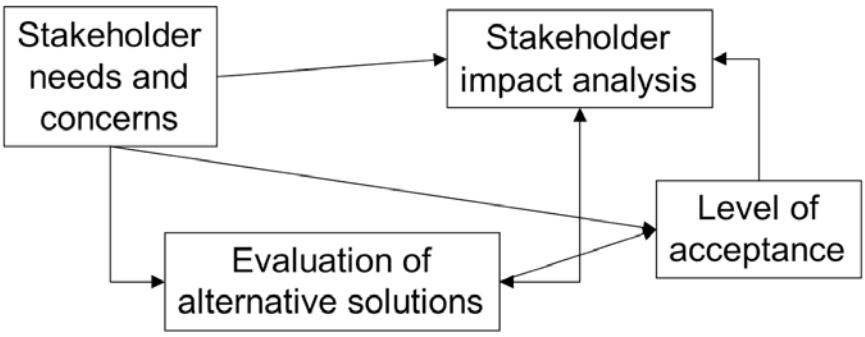

Figure 3.10.Relationship between stakeholders needs and concerns, evaluation of alternative solutions, level of acceptance and stakeholder impact analysis.

An external stakeholder analysis process consists of the following five components:

1. stakeholder identification
2. stakeholder needs and concerns
3. stakeholder impact analysis
4. evaluation of alternative solutions
5. level of acceptance.

The process is dynamic and iterative, where the different components interact across the project life cycle (see figure 3.11), and where every part of the analysis will have to be conducted several times over as the project progresses in order to provide sufficient information about the effects of different project decisions.

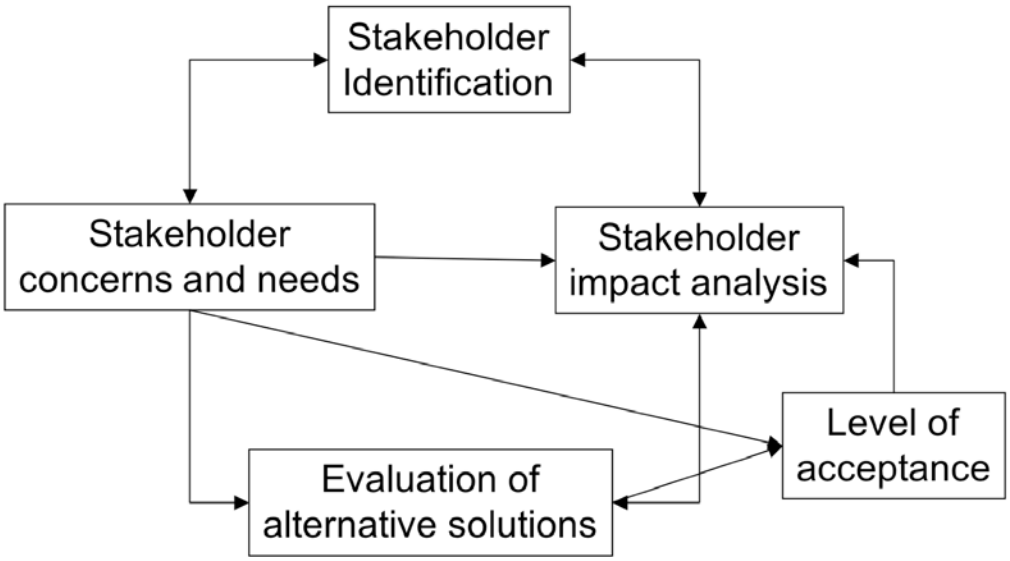

Figure 3.11. The external stakeholder analysis process.

4 Discussion

The relative importance different external stakeholders possess, and the influence they can inflict on project decisions can be described in terms of the stakeholder attributes as defined by Mitchell et al. (1997). Stakeholder attributes are also an integral part of stakeholder impact analysis. From a purely project perspective, it can be argued that stakeholders possessing the attribute of power are those most relevant to consider in the external stakeholder management process. However, stakeholders who possess attribute of legitimacy are in a sense more important, because they are the risk bearers in the project. Thus, it is important from a moral standpoint, to address the needs of the legitimate stakeholders fully. If not, they may try to achieve a powerbase by themselves or by forming an alliance with more powerful stakeholders. In either case, the project manager loses control over the external stakeholder management process. An external stakeholder analysis is essential for determining the obligations that the developer and project manager have towards the external stakeholders in a project.

For legitimate stakeholders, there is a moral obligation to incorporate their interests in the decision-making process. There is a necessary obligation, in turn, to take the interests of the powerful stakeholders into consideration. They also need to be monitored in the stakeholder management process in order to manage the potential impact that they can have proactively. Finally, there is a timely obligation to attend to the needs of urgent stakeholders. Thus, depending on the possession of stakeholder attributes, the project manager has a moral, a necessary or a timely obligation, as the case may be, towards various external stakeholders. In a comprehensive stakeholder analysis there is in addition the need of analysing the probable impact of different stakeholders and their position towards the project, in addition to attributes they possess.

The external stakeholder analysis presented in the present research context is, however, of a qualitative nature, which means it can never be better than the input provided by the project manager or by other agencies involved. Before each major decision in a project, a stakeholder analysis should be conducted in to obtain feedback regarding how alternative ways of proceeding will affect the positive input and the negative impact of project stakeholders. Stakeholder

impact analysis evaluates how external stakeholders influence project decisions; even so, it is equally important for the project manager to analyse how the project itself influences the needs and concerns of the external stakeholders.

Acknowledging the needs and concerns of the external stakeholder will improve the chances of a communicative stakeholder management process taking place. It is important, however, to define clearly both the goals and the framework of a project and to not promise anything that cannot be fulfilled. A broken promise can quickly tear down the trust that has been built up. Communicative approaches have the shortcoming of being too optimistic in efforts to overcome significant diversities in values and interests. Thus, a communicative external stakeholder management process needs to be conducted in such a way that project goals are respected and that possible trade-offs, in order to obtain agreements, can be realised.

Adequate methods are needed for evaluating different solutions to problems of project implementation with respect to stakeholder influence, stakeholder needs and concerns and the purpose of the project. In the research presented two models aimed at helping project managers to conduct such evaluations are suggested: the stakeholder impact index and the STURE (Stakeholder Urban Evaluation) model. A question arises: are these models are general ones within in a larger perspective than that covered in the present research? The stakeholder impact index has its basis in stakeholder theory and is thus not limited to external stakeholders. This would suggest that the model could be used for a variety of projects, not only construction, with differing sets of stakeholders. The STURE model is partly based on the concept of sustainable construction and development, which in a sense deals with the external environment, and thus external stakeholders are under the spotlight. The systematic gathering of sustainability objectives based on stakeholder needs and concerns could be used as an input to a variety of different evaluations and projects in which external stakeholder considerations are a relevant issue.

5 Conclusions

5.1 Final conclusions

The empirical findings obtained concerning the projects that were studied show that conflicts between external stakeholders and the developer of a facility depend to a large extent on their perceptions of each other. If the developer failed to acknowledge the concerns of external stakeholders, an environment of distrust would surely be the outcome. An effective external stakeholder analysis should identify the possible trade-offs that can be made without compromising the purpose of the project. Thus, the aim of an external stakeholder analysis process should be to identify the extent to which the needs and concerns of external stakeholders can be fulfilled, and analyse the possible consequences if these are not fulfilled. From the perspective of the developer and the project manager, an external stakeholder analysis needs to be conducted with respect to the project's purpose. The aim should be to complete the project according to the requirements of the project owner. A clear challenge is to find trade-offs that satisfy as many external stakeholders needs and concerns as possible. The external stakeholder analysis should provide a basis for forthcoming project decisions. One definite source of controversy and conflict is that decisions on a course of action for the project were made without analysing the consequences the decision would have for external stakeholders. This tends to result in project manager not being prepared for the conflicts that could arise, and thus having no plan of how to resolve or to handle them.

For sufficient performance of an external stakeholder management process, there needs to be an understanding of the complexity of the external stakeholder influences. The impact of external stakeholders changes throughout the life of the project and depends largely on the perceptions external stakeholders have of the project. The controversies that were observed were due mainly to miscommunication and to the mismanagement of the impacts and concerns of stakeholders. Developers should thus acknowledge the external stakeholder management process as an important task for which adequate resources should be committed. One main objective of the external stakeholder management process should be to communicate the various aspects of a project correctly, be they good or bad. The challenge for project managers is to communicate and to

implement the construction project in such a way that the perceived benefits and the negative impacts are realistically defined. Additionally, the effects of negative impacts should be minimised and, if possible, the benefits for all affected stakeholders should be maximised (see figure 4.1).

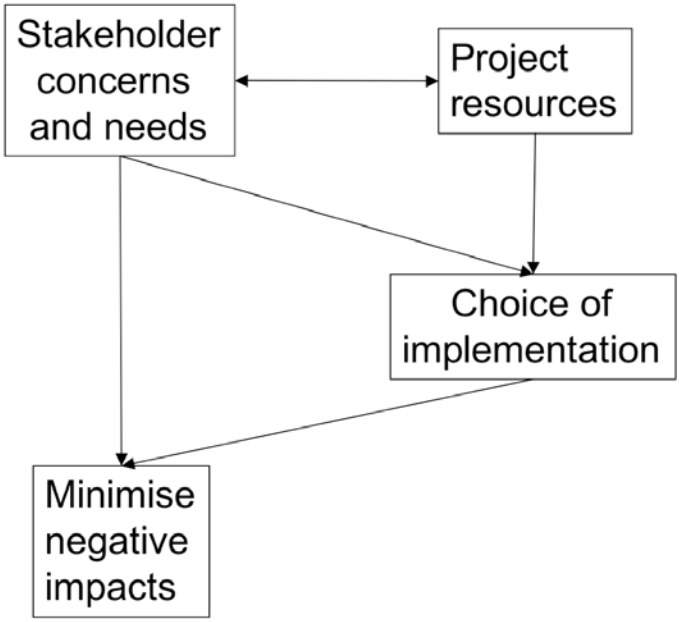

Figure 4.1. Elements in an external stakeholder management process.

It was also evident that the municipal planning officials were not able to act as mediators in the external stakeholder management process. Planning officials become a part of the relationship and thus act as yet another external stakeholder group, whose concerns needs to be addressed. Another reason for the inability of the planning process to resolve conflicts appeared to be that planning officials are bound to either approve or not approve the proposed alternative and have little or no opportunity of proposing or evaluating alternative solutions for the project. Thus, it is the developer and the project manager who have to evaluate alternative solutions for implementing a project. A thorough analysis of the options available is essential in order for a developer to have valid grounds for any choices made. Having clearly specified the purpose of a project and being familiar of stakeholder needs and concerns, decisions can be made that best fulfil both concepts. An external stakeholder analysis should be seen as an essential part of the decision-making process needed in a construction project and as an important input to the external stakeholder management process.

5.2 Contribution

External stakeholder analysis is a relevant and neglected area of expertise. Four of the five projects studied had not conducted any analysis of how the project would influence external stakeholders or how the stakeholders could have influenced project decisions. The research findings are thus important for construction project managers and facility development companies to help them understand the influence that external stakeholders might have on the implementation of projects. The theoretical contribution of the research is increased understanding about the influence of external stakeholders on construction projects, and how construction project managers can analyse and structure information about stakeholders in the form of models and tools that support analysis.

The concept of project stakeholders has been developed by using existing research on corporate stakeholders and on empirical findings resulting in an alternative definition of project stakeholders. This narrows the project stakeholder concept by addressing the aspects of claim and stake. Literature reviews and empirical data have also added to knowledge of why different stakeholders choose to accept or not to accept the implementation of a project.

A model for stakeholder impact analysis has been developed, which helps construction project managers analyse how different courses of action will affect the threat or benefit from stakeholders. This model is intended to be a practical contribution that can be used in construction project management. However, there is also a theoretical contribution in way that the model was constructed from a variety of theoretical and empirical data. The empirical data showed the need for such an analysis model and the different parts of the model are based on a combination of existing research on stakeholder theory and analysis.

The concerns and needs of external stakeholders can be described within the concept of sustainable construction. Thus, there is a contribution that combines the concept of sustainable construction with external stakeholder analysis in a model that evaluates the construction project from both these concepts. The STURE model developed here has in that sense both the practical contribution of a ready-to-use evaluation model and a theoretical contribution, which emphasises the importance of stakeholder analysis in sustainable construction. Furthermore, the research indicates that many of the conflicts and controversies surrounding external stakeholders are mitigated if the project manager adopts a sustainability focus when evaluating alternative solutions for the project.

5.3 Further research

The external stakeholder analysis presented in this research has been of an evaluative nature. Empirical date were gathered and used to describe the nature of external stakeholder influence, and to develop models for the analysis of this influence. Further research is needed to examine and evaluate the application of these models in the context of construction project management across different stages and levels of project execution with internal as well as external stakeholders. The main issue is to examine how the models will function as planning tools, preferably by real-life testing, and thus gain insights into how project mangers could use the information gathered from the analysis in an external stakeholder management process. Further research is needed to test how these models can be applied to other types of projects, apart from construction, with different sets of stakeholders.

The use of external stakeholder analysis and its effects on the formulation of project aims and objectives are other areas for further research. In addition, studies are needed on how the external stakeholder analysis affects the project decision-making process during the life of a project. To what extent is the external stakeholder analysis an important input in this process?

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Appended papers

PAPER I. Evaluation of stakeholder influence in the implementation of construction projects. Authors: Olander S and Landin A. Published in International Journal of Project Management, 2005, **23**(4) 321-328.

PAPER II. Stakeholder impact analysis in construction project management. Author: Olander S. Accepted for publication in Construction Management and Economics, June 2006.

PAPER III. Consensual approaches to siting controversy. Author: Olander S. Published in Proceedings from the 10th International Symposium on the Organization and Management of Construction, 2002, University of Cincinnati, CIB, CRC Press.

PAPER IV. External stakeholder acceptance of construction projects. Authors: Olander S and Hansson B. Submitted to International Journal of Project Management, July 2006.

PAPER V. Methods to estimate stakeholder views of sustainability for construction projects. Authors: Persson U and Olander S. Published in Proceedings from 21st International Conference Passive and low energy architecture, Built environment and environmental buildings, 2004, Technische Universiteit Eindhoven.

PAPER VI. Evaluation of sustainable aspects in real estate management. Authors: Persson U, Landin A and Olander S. Published in Proceedings from the 2005 World Sustainable Building Conference in Tokyo, SB05.

PAPER VII. Evaluating alternative solutions for facility development. Authors: Olander S, Persson U and Landin A. Submitted to Building Research and Information, August 2006.