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# The Effect of Stakeholder Consideration in IT Investment Evaluation on Business Value: Evidence from Sweden

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## ABSTRACT

Investments in Information Technology affect key stakeholders, such as employees, owners, customers, and suppliers. According to prior studies, many of the Information Technology investments fail to deliver the expected results because stakeholders' interests and motivations were not adequately addressed. Based on data collected from 70 companies in Sweden, we examine how consideration of key stakeholders in the pre-investment phase may influence the business value obtained from investments in Information Technology. Our findings indicate that a stakeholder view influences the choice of methods and also, at least indirectly, the chances of achieving business value. Nevertheless, a strong key stakeholder consideration does not automatically guarantee successful IT investments, if not backed by proper evaluation methods. Therefore future research may explore the issue of how a portfolio of methods could be assembled considering a company's unique stakeholders' characteristics and interests.

## Keywords

IT investment, evaluation, business value, stakeholders

## INTRODUCTION

Evaluating investments in Information Technology (IT) is an apparent challenge for corporate decision-makers. Frequently, weaknesses in evaluation procedures are attributed to lack of pay-off from IT investments and to the emergency of so-called "Productivity Paradox of Information Technology" (Brynjolfson 1993). Many of the existing IT evaluation procedures follow economic and technical views while stakeholders are not sufficiently considered.

Key stakeholders, such as employees, owners, customers and suppliers, often directly or indirectly affect the outcomes of investments in IT. In turn, because of their operational and strategic importance, IT investments determine the corporate business value. Therefore, many authors recommend taking into account the perspectives of multiple stakeholders (Stylianau and Kumar, 2000; Jurison, 1996; Jones and Huges, 1999; Ballentine et al., 1998; Lubbe and Remenyi, 1999; Willcocks and Lester, 1997)

In spite of many publications related to the topic of stakeholder consideration and involvement during the IT-related projects, there is not much empirical evidence on how this consideration may affect the IT evaluation procedures.

The purpose of the study presented in this paper is to examine how considering the stakeholder interests may affect the selection of IT evaluation methods, satisfaction with these methods, and perception of obtained business value. Our findings are based on a survey conducted in Sweden, a country known for its tradition in balancing multiple stakeholders' interests (Bansler, 1989).

Our paper is structured as follows: in Section 2 we present a literature review, our hypothesis and our research model; Section 3 describes data collection; Section 4 analyzes the collected data; Section 5 presents the discussion, findings and implications to support our hypotheses. Finally, we conclude with a summary of our findings.

## THEORETICAL BACKGROUND AND HYPOTHESIS

It is well documented that many of the investments in IT failed to deliver expected results since the responsible decision-makers followed a too narrow perspective and did not consider stakeholders (Jurison, 1996). On the contrary, IT investments tend to be more successful when interests of various stakeholders such as customers, employees, suppliers and

owners are taken into account. This claim is supported by Jones and Huges (2001) who recommend that because the IT evaluation is a complex process, the views of various stakeholders need to be considered. Furthermore, Hamilton and Chervany (1981) argue that the effectiveness of IT system implementation depends on involvement of developer, management and internal personnel in the feasibility phase. This suggests the following hypothesis:

**H1: The level of stakeholder consideration during the feasibility phase is positively related to the level of perceived satisfaction in achieving business value from investing in IT.**

IT evaluation is a complicated process because it covers different aspects of business. In addition, it is highly dependent on a given situation and is, therefore, often highly subjective. Furthermore, in many situations, use of traditional financially oriented evaluating techniques can be problematic since they tend to disregard intangible benefits. In contrast, other IT evaluation methods focus on intangible benefits while putting less weight on financial advantages.

In general, decision-makers can choose among numerous methods or models (Renkama and Berghout, 1997). Some methods apply financial focus (Bacon, 1992; Ballentine and Stray, 1999) primarily benefiting investors and owners. Total cost of ownership also primarily focuses on owners, while the other methods, such as the IT scorecard, use multi-perspective and qualitative models to cover a wider span of possible values to benefit various stakeholders (Greaser et al., 1998; Willcocks and Lester, 1996). For all these reasons, it could be expected that considering stakeholders' interests would influence IT evaluation process and choice of IT evaluation methods. This leads to the following hypothesis:

**H2: The stakeholder consideration during the feasibility phase will affect the selection and usage of IT evaluation methods.**

Ballentine et al. (1998) argue that IT evaluation is difficult because of the multi-dimensionality of cause and effects and multiple, often divergent, evaluator perspectives. Therefore, other authors have argued for the importance of using multiple methods since the different methods and models support different perspectives. For example, Renkama and Berghout (1997) emphasize the importance of using different methods since different views should be considered. Also new approaches have been presented which include frameworks in which a number of methods and techniques can be combined in order to achieve success in the area (Willcocks and Lester, 1997).

The majority of the current IS/ IT evaluation methods is highly focused (Cronk and Fitzgerald, 1999). Therefore, in order to attain a broader view, usage of different methods tailored to the character and purpose of the IT investment seems to be necessary. In order to become successful in evaluating IT investments and to derive value from these investments, there is a need to use various methods which address different issues. This suggests the following hypothesis:

**H3: The intensity in usage of IT evaluation methods during the feasibility phase is positively related to the level of perceived satisfaction in achieving business value from investing in IT.**

Hallikainen (2003) observes that firms with explicit procedures for IT evaluation report a higher rate of success. Therefore, it could be assumed that companies using intensively different IT evaluation methods would tend to believe that they achieve a higher rate of success, as compared to those companies which use only a limited number of methods. Accordingly we propose:

**H4: The intensity in usage of IT evaluation methods during the feasibility phase is positively related to the level of perceived success in evaluating IT investments.**

A survey conducted among IT managers in medium and large European and U.S. firms (Seddon et al., 2002), indicated that success in evaluation and success in IT performance are related. Moreover, a systematic and intensive IT evaluation seems to increase the managerial focus and understanding of values creation. This implies the following hypothesis:

**H5: The level of perceived success in evaluating IT investments is positively related to the level of perceived success in achieving business value from investing in IT.**

Based on the literature review presented earlier, our research model explores the possible effects of stakeholder consideration during the feasibility phase. In essence, our research will be conducted by an examination of key relationships as depicted in Figure 1.

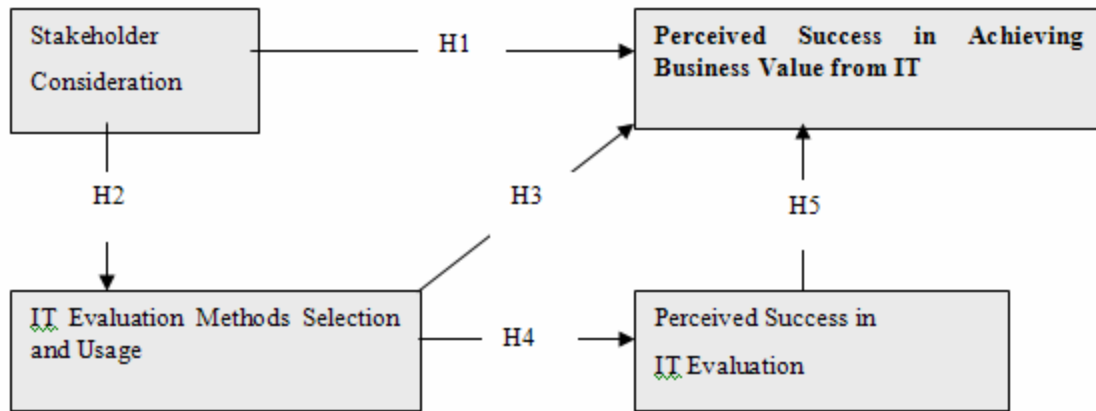


Figure 1. Research model

## METHODOLOGY

### Design of the Survey

Our hypotheses were tested through analysis of data collected by a survey sent to large companies in Sweden. The survey instrument was designed on the grounds of prior research and tested.

The first part of the questionnaire focused on the business value. The IT investments can generate different types of contributions to the value of an organization (Cronk and Fitzgerald, 1999; Willcocks and Lester, 1996; Seddon et al., 2002; Tallon et al., 2000). Furthermore, IT can have different roles in an organization depending on companies' goals (Pearson 2001). Four possible goals of IT investments are as follows: increase efficiency by reducing costs; enhance overall organizational effectiveness by increasing productivity and improving decision quality; improve strategic position by redesigning business processes; create added value by enabling collaborative partnership using new innovative business model. The initial questions focused on these objectives and respondents were able to describe their perceptions on a five-point Likert-scale ranging from never (1) to always (5):

1. Is your company successful in achieving business value of IT investments?
2. Is your company successful in evaluating business value of IT investments?

IT investments can be evaluated using different methods which include traditional tools with a financial focus such as the total cost of ownership (Bacon, 1992; Ballantine and Stray, 1999) and more current multi-perspective models such as the IT scorecard (Greaser et al., 1998; Willcocks and Lester, 1996). Consequently, the next question focused on methods used to support the evaluation of IT investments and as a response options, we included some evaluation methods such as Economic Value Added, Total Cost of Ownership, IT scorecard, Peng-model, Real Options value and others. The respondents were able to specify methods along frequency of usage on a five-point Likert-scale ranging from never (1) to always (5). The question was formulated as follows:

3. What overall method/model does your company use to evaluate IT investments?

The next question concerned stakeholder consideration during the evaluation of IT investment projects during the feasibility stage and as response options we included different stakeholder groups: customer; owner; employees; suppliers; others. The response options to these options consisted of a five-point Likert-scale again ranging from never (1) to always (5). The question was raised as follows:

4. What perspectives and criteria do you consider in the evaluation of IT investment projects?

In addition, the survey included other questions that are not the focus of this paper and, therefore, are not discussed.

In order to ensure the relevance and validity of the instrument, the questions were tested and with the help of a pilot group (Hussey and Hussey, 1997; Moser and Kalton, 1985). The pilot group consisted of business managers from various industries

to assure similarity with our target respondent group. After completing the questionnaire, the participants were asked to provide their feedback which was then used for refinement of the instrument.

### Survey Administration

In Spring 2004, the questionnaire was sent to 394 of the largest companies in Sweden. These companies were selected from a database provided by Veckans Affärer (2002) which included the 500 largest companies in Sweden. Our criteria for selecting the target population were based on the company's legal status (should be a parent company as well as a legal entity registered in Sweden) and IT function (should not be outsourced). These selection criteria assured that the participants would be in charge of supervising large IT projects as well as able to establish their own IT evaluation policies. Two follow-ups were conducted by email.

### Sample

In total, 77 questionnaires were returned, which resulted in a total response rate of 20% (77 out of 394). Seven of the returned questionnaires were incomplete and dropped from the final sample. Cronbach's coefficient alpha was 0.77, which implies adequate reliability of our survey instrument.

The response rate of 20% was comparable to the response rates achieved in similar studies: 25% (Willcocks and Lester, 1996), 20.3% (Tallon et al., 2000), 17% (Doherty and King, 2001), 13.8% (Lin and Pervan, 2001), 13% (Seddon et al., 2002; Hallikainen et al., 1998) and 7.3 % (Pervan, 1998) . The relatively low response rate is often explained by the lack of time the managers have to answer the questions (Seddon et al., 2002; Pervan, 1998; Lin and Pervan, 2003).

The final sample contained 70 companies from a broad cross-section of industries, as presented in Table 1.

Industry	Response
Bank and other financial	5
Basic	6
Bio industry	3
Chemical and medical	1
Conglomerate	2
Construction and real estate	1
Engineering industry	14
IT	10
Retail and wholesale trade	13
Service	5
Transport and shipping	6
Other	4
<b>Total</b>	<b>70</b>

**Table 1. Characteristics of the sample firms.**

The characteristics of the firms in the sample indicated that our respondents were managers across various industries. Furthermore, a comparison of the sample demographics to the target population suggested that our respondents were representative, allowing generalization.

## DISCUSSION

The aim of this paper is to shed light over how a stakeholder consideration could affect IT evaluation process and achieving business value of IT. Different theories concerning IT evaluation of IT investment in general has been examined and compared to the result of a survey conducted in Sweden during Spring of 2004.

### Key Findings and Insights

The importance of a stakeholder consideration during IT evaluation has been put forward by many researchers (Gregory and Jackson, 1992; Jurison, 1996; Remenyi and Sherwood-Smith, 1999; Willcocks and Lester, 1997; Willcocks and Graeser, 2001; Pouloudi and Whitley, 1997) . However, our results indicate that a stakeholder view is not enough for achieving business value from IT. The high level of stakeholder consideration seems to increase the selection and usage of various IT evaluation methods, but this course of action does not automatically lead to perceived success in achieving business value from IT. In addition, it appears that companies, which are successful in accomplishing business value from IT investments, tend to use several evaluation methods which better address different stakeholders' interests. In addition, our research provided empirical evidence to earlier studies (Seddon et.al 2002) which indicated that success in IT evaluation is related to success in achieving business value. Overall, our results imply that stakeholder consideration during IT evaluation increase the chances of achieving business value if several evaluation methods with different focuses are used.

### Implications for Research

The key findings of our research may have an important implication for other scholars in the field of IT evaluation and productivity. For example, there has been a long debate about the need for better methods for IT investment evaluation. Our findings indicate that since there is not a single current IT evaluation method addressing all stakeholders' interests, there is rather a need for a portfolio of methods. Future research may address the issue of how such a portfolio could be assembled considering unique stakeholders' characteristics and interests.

## CONCLUSIONS

The purpose of our research was to investigate if an initial key stakeholder consideration at the feasibility stage regarding IT investments in general will have an influence on choice of evaluation methods, perceived success of evaluating and perceived success of achieving business value.

Our findings indicate that a stakeholder view influences the choice of methods and also, at least indirectly, the chances of achieving business value. On the other hand, our results indicate that even a strong key stakeholder consideration does not automatically guarantee successful IT investments, if not backed by proper evaluation methods.

We believe that our paper contributes to the field of IT in several ways. The results of our study demonstrate that a stakeholder view in practice has an impact on both the amount of used methods and on the types of selected methods. A proper selection of IT evaluation methods seems to increase the chances of achieving business value. Our results also confirm findings from earlier studies (Seddon et al., 2002) showing that success in evaluating is related to achieving business value.

In summary, our results confirm that IT evaluation is a complicated issue and further research on this topic is needed.

## REFERENCES

1. Bacon, J. (1992) The use of Decision Criteria in Selecting Information Systems/Technology Investments, *MIS Quarterly*, 16, 3, 335-353.
2. Bansler, J. (1989) System Development Research in Scandinavia, *Scandinavian Journal of Information Systems*, 1, 2-20.
3. Ballentine, M., Leavy, M. and Powell, P. (1998) Evaluating information systems in small and medium-sized enterprises: issues and evidence, *European Journal of Information Systems*, 7, 241-251.
4. Ballentine, J. A. and Stray, S. (1999) Information systems and other capital investments: evaluation practices compared, *Logistics Information Management*, 12, 1/2, 78-93.
5. Brynjolfsson, E. (1993) The Productivity Paradox of Information Technology, *Communications of the ACM* (36), 12, 67-77.
6. Cronk, M. C. and Fitzgerald, E. P. (1999) Understanding "IS Business value": derivation of dimensions", *Logistics Information Management*, 12, 1/2, 40-49.
7. Doherty, N. and King, M. (2001) "The Treatment of Organisational Issues in Systems Development Projects: The Implications for the Evaluation of Information Technology Investments", *Electronic Journal of Information Systems Evaluation*, 4, 1.
8. Greaser, V., Willcocks, L. and Psianias, N. (1998) *Developing the IT Scorecard*, Business Intelligence Ltd., London.
9. Gregory, A. J. and Jackson, M. C. (1992) Evaluation Methodologies: A System for Use, *Journal of Operational Research Society*, 43, 1, 19-28.
10. Hallikainen, P., Heikkilä, J., Peffer, K., Saarinen, T. and Wijnhoven, F. (1998) "Evaluating Information Technology Projects in Finland: Procedures, Follow-Through, Decision-Making and Perceived Evaluation Quality", *Journal of Global Information Management*, 6, 4, 23-33.
11. Hallikainen, P. (2003) Evaluation Practices of Information Systems in Finnish Companies – the current situation and three views to guide development activities, in *Evaluation of information system investments*, Hallikainen, P. (Ed), Helsinki School of Economics, Helsinki, 56-83.
12. Hamilton, S. and Chervany, L. N. (1981) Evaluating Information System Effectiveness - Part I: Comparing Evaluation Approaches, *MIS Quarterly*, September, 55-69.
13. Hussey, J. and Hussey, R. (1997) *Business research: a practical guide for undergraduate and postgraduate students*, Basingstoke: Macmillan Business.
14. Jones, S. and Huges, J. (1999) IS Value and investment appraisal: a case study of a local authority, *Electronic Journal of Information Systems Evaluation*, 2, 1.
15. Jones, S. and Huges, J. (2001) Understanding IS evaluation as a complex social process: a case study of a UK local authority. *European Journal of Information Systems*, 10, 189-203.
16. Jurison, J. (1996) Toward more effective management of information technology benefits, *Journal of Strategic Information Systems*, 5, 263-274.
17. Lin, C. and Pervan, G. (2001) "The practice of IS/IT benefits management in large Australian organizations", *Information & Management*, 41, 13-24.
18. Lubbe, S. and Remenyi, D. (1999) Management of information technology evaluation - the development of a managerial thesis, *Logistics Information Management*, 12, 1/2, 145-156.
19. Moser, C. and Kalton, G. (1985) *Survey methods in social investigation*, Aldershot: Grower, tr.
20. Pearson, K. (2001) *Managing and using information systems: a strategic approach*, John Wiley & Sons, Inc., New York.
21. Pervan, G. (1998) "How chief executive officers in large organizations view the management of their information systems", *Journal of Information Technology*, 13, 95-109.
22. Pouloudi A. and Whitley E. A. (1997) Stakeholder identification in inter-organizational systems: gaining insight for drug use management systems. *European Journal of Information Systems*. 6, 1-14.
23. Remenyi, D. and Sherwood-Smith, M. (1999) Maximise information systems value by continuous participative evaluation, *Logistics Information Management*, 12, 1/2, 14-31.

24. Renkema, W. J. T. and Berghout, W. E. (1997) Methodologies for information systems investment evaluation at the proposal stage: a comparative review, *Information and Software Technology*, 39, 1-13.
25. Seddon, P., Graeser, V. and Willcocks, L. (2002) Measuring Organizational IS Effectiveness: An Overview and Update of Senior Management Perspectives, *The DATA BASE for Advances in Information Systems*, 33, 2, 11-28.
26. Stylianau, A. C. and Kumar, R. L. (2000) An Integrative Framework for IS Quality Management, *Communications of the ACM* 43:9, September, 99-104.
27. Tallon, P. P., Kraemer, K. L. and Gurbaxani, V. (2000) "Executives' Perceptions of the Business Value of Information Technology: A Process-Oriented Approach", *Journal of Management Information Systems*, 16, 4, 145-173.
28. Veckans Affärer (2002) [www.VA.SE](http://www.VA.SE) (2004-02-01).
29. Willcocks, L. and Graeser, V. (2001) *Delivering IT and e-business value*, Butterworth-Heinemann, Computer Weekly.
30. Willcocks, L. P. and Lester, S. (1996) The evaluation and management of information systems investments: from feasibility to routine operations, in Willcocks, L. (Ed), *Investing in Information Systems*, Chapman and Hall, London, 15-36.
31. Willcocks, L. and Lester, S. (1997) Assessing IT productivity: Any way out of the labyrinth? In L. Willcocks, D.F: & G. Islei (Eds.), *Managing IT as a strategic resource* (Ch4, 64-93). McGraw-Hill, London.