SUMMARY

Information technology (IT) has performed an important role in the functioning of organizations during the last decades. IT concerns the automation of the information services in and between organizations. Many authors consider the (automation of) information services as important because they regard “information” as a production factor in addition to the traditional production factors of “land, labor and capital”. Information services concern the input, storage, processing and distribution of information for the execution, the planning and control, and the support of the primary processes of organizations. Via the automation of the information services, this execution, planning and control, and support of the primary processes may improve. The organization's use of IT is found in the field of (Management) Information Systems. This field is concerned with the planning, development and use of information systems for the performance, management and support of organizational activities.

Although the costs of certain components used in the automation of the information services, such as ‘chips’ and software, have been dropping, the total investment in IT has been rising. New technology and improvements in knowledge enable newer and more advanced applications with better opportunities than before. The exploitation of these opportunities is, however, no triviality. Therefore, the goal of the research is to gain insight into the exploitation of the IT. This study researches the ways in which organizations really improve their performance. It is aimed, in particular, at the strategic functioning of organizations; hence, we speak about the strategic usage of IT.

Chapter 1 offers the context of the research, and finishes with the preliminary research goal.

Firstly, several case studies are presented, dealing with the strategic advantages that organizations have realized by IT (this IT is referred to as strategic IT). In the literature, these advantages are mostly explained by Porter's concepts of the value chain and the forces in the industry. Porter and Millar used these concepts to explain the strategic advantages with the use of IT in particular, especially in information-intensive industries.

Subsequently, the major IT investments are discussed. Capital investments of this magnitude should produce fair earnings.
It is a problem that this is not always the case. Researches using data from many organizations show that there is hardly any relation between IT investments and the earnings of organizations. Several studies support this view, with cases in which the usage of IT did not deliver advantages. Gaining an advantage in terms of strategic opportunities is often not the case. Effective management of IT to gain strategic advantage with IT is of great importance, considering this problematic situation. Unfortunately, current Strategic Information Systems Planning (SISP) methods also do not offer the solution to the strategic realization of IT. The consequence could be that management in organizations loosen their commitment to IT, so that future investments and usage are hampered.

The research wants to deal with this issue via the following (preliminary) goal: to gain insight into the strategic usage of IT. To reach this goal, a conceptual model has been developed. This model contains variables that deal with the successful usage of IT. Chapters 2 to 4 deal with several variables and their relations in the development of the conceptual model, which is presented in chapter 5.

Chapter 2 discusses the impact of IT, as a single variable, for the strategic success of organizations (uni-variate research). The literature shows that IT alone does not offer enough explanation for the competitive position of organizations. This observation is also made for several organizational variables which seem to be relevant in the field of Information Systems, viz. competitive strategy and organizational structure. Researching only one variable does not offer a sufficient explanation for strategic success.

Subsequently, the question of the strategic usage of IT is studied from several angles at the same time. Chapter 3 studies the combined effect of IT and the competitive strategy on the strategic position, and also the combined effect of the IT and the organizational structure (bi-variate researches). The impact of the relation between the competitive strategy and the organizational structure is examined to make the study complete. These variables are related via the value chain processes. The bi-variate researches occupy an important place in the literature. They offer promising competitive result, but are inconsistent. An important reason for this drawback, besides the standard operationalization issues, could be the neglect of a third variable.

We asked the logical question whether the three variables of IT, strategy and structure could have a combined impact on the competitive position. It is possible to research this combined impact, because the three variables do fit:
bi-variate relations exist between the variables. Models in the field of SISP also indicate that this type of research is promising. Chapter 4 deals with SISP models in which several variables are simultaneously related to optimize the usage of IT (multi-variate research). The high level of abstraction is an essential feature of these models. Therefore, the nature of the relations remains unclear. The research strives towards a reduction in complexity by means of a concretization of the abstract variables. This means that the nature of good relations (fits) is verified. Another important element of the SISP models, and the bi-variate researches as well, is the role of the management. Management has an enabling function. The usage of the means of production, such as IT, is a managerial issue that concerns the organization as a whole. Beside the IT management, the top and line management (or, to be more precise: the management of departments where the IT is in operation) should consider it necessary to support the usage of IT. Otherwise it will be hard to exploit the strategic IT opportunities.

If SISP deals with the competitive strategy and the organizational structure, and if SISP is supported by the top management and line management, we consider SISP to be mature.

This view leads to the theoretical model as illustrated in Figure S1, which is elaborated in chapter 5.
The model offers the opportunity to make a further specification of the preliminary research goal and to state the research questions.

Research goal
The mismatch between organization and IT hampers the realization of the strategic opportunities of IT. This may result in a decreasing commitment from the management, which would inhibit further IT investments and IT usage. A feature of the models that relate the IT and the organization is their high level of abstraction. Therefore, the finding of concrete fits is a complex problem. This research wants to deal with that problem via the operationalization of the conceptual variables. Hence, the ultimate research goal is stated as:

The finding of concrete fits between IT, strategy and structure as targets for the management of organizations to use IT strategically. Via these targets, the use of SISP can be concretized.

Research questions
The research goal is reached by answering the following research questions.

1. Do fits between IT, competitive strategy and organizational structure have a positive effect on the realization of the strategic opportunities of IT?
Hypothesis 1: Yes
The support of this first hypothesis involves two topics. Firstly, the SISP claim (several variables have to be studied simultaneously for insight in the strategic usage of IT) would be verified empirically. Secondly, it would become clear that inconsistencies between the bivariate researches are partly explained by the moderating effect of a third variable.

2. Are organizations relatively often situated in those balanced fit situations?
Hypothesis 2: No

The problems with the exploitation of the strategic opportunities of IT are widely known in the literature. A possible explanation might be the lack of fit between the IT and the organizational context (i.e. the competitive strategy and the organizational structure).

3. Does the existence of mature SISP have a positive effect on the presence of organizations in those balanced fit situations?
Hypothesis 3: Yes

If the second hypothesis were to be confirmed, then organizations would need insight into strategic IT usage. The third question, and the corresponding hypothesis, deals with the impact of the instrument of mature SISP for the strategic exploitation of IT.

Chapter 6 presents the method of research that describes the testing of the hypotheses. This method is merely determined by the features of the research goal and research questions and the nature of the theoretical model. In the research goal, it is stated that various fits are under scrutiny. Therefore, comparable data from several organizations were gathered. In this sixth chapter, the following elements are dealt with:

- research strategy: primary data were gathered via an extensive survey;
- sampling: the primary data were obtained via a sample from a population. The following parts of this sample are discussed:
  - population: the research used organizations from the so-called information-intensive industries because in those industries the relevance of IT for the competitive position is evident and recognizable for the respondents;
sample: the hypotheses concern the relations between variables. In order to enlarge the internal validity of the research, it was necessary to reach an optimum variation of the independent variables;

response: the questionnaires returned were not always filled in completely. Therefore, the response was split up into several groups;

instrument (questionnaire): the questionnaire was based on the operationalization of the variables. The reliability and the validity were also discussed;

method of data analysis: to test the hypotheses, the data are related. The series of analyses used is also presented in chapter 6.

Chapter 7 presents the final results. The data are analyzed on the basis of the method of data analysis, and the results are organized per research question. The results are as follows:

1. Hypothesis 1 is confirmed. Organizations that were situated in the hypothesized fits showed a significant higher competitive position than organizations in the other IT - strategy - structure combinations. The competitive impact of the three variables combined together was higher than could be expected if the impact of the variables IT, strategy and structure was simply added up (synergy).

2. Hypothesis 2 was confirmed as well. The variables IT, strategy and structure did not relate, so that they were not represented to a significantly greater extent in the fits than in the other combinations. Organizations did not seem to be attracted to the fits.

3. Hypothesis 3 was rejected. Organizations using SISP were not represented in the fits to a significantly greater extent than in the other combinations. SISP also did not relate directly to the competitive position.

These results form the basis for chapter 8. In this chapter, the findings are reviewed in the light of the theory developed. The main conclusion is that the SISP claim, namely that the fit between several variables has synergetic effects, is supported empirically. In addition to that, it becomes clear that inconsistencies between various bi-variate researches is partly explained by the disturbing effect of a third variable (hypothesis 1).

In practice, this result can be applied to the usage of IT. The study offers targets to the management. SISP is, however, not suitable to enhance the realization of these targets. Namely, an important result of the study is that
mature SISP, taking strategy, structure and the commitment of the top and line management into consideration, does not support strategically successful IT usage (hypothesis 3).

The question as to whether the concept of SISP might be used to gain strategic success is still open. The concept could be further differentiated, using the successful combinations of IT and the organizational configurations. In addition to that, the policy could be aimed more at supporting individual initiatives at the operational level of the firm to gradually bring strategic changes. Further research should test whether or not such SISP could bring strategic advantages. An appropriate study could use a case study approach or a longitudinal approach.