Strategic IS Planning From the Slovenian Business Perspective

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In recent years there has been a dramatic change in business environment resulting in reengineering of key business activities and processes. Among others, the role of information system (IS) has significantly increased as organisations have employed information technology (IT) to improve the capture, processing and distribution of information. Information became an important asset to the company, which is carefully monitored, planned and upraised. The paper presents the results of a survey on the strategic IS planning practices of Slovene companies. It highlights the participation, critical success factors and main benefits of strategic IS planning. The results show that comparing to similar studies very low number (50%) of responding companies were performing strategic IS planning. It is also interesting that in Slovene companies the leading initiator is top management (36%) whereas the role of IS management is surprisingly modest (23%). Main benefits of strategic IS planning from the Slovene business perspective are improved internal co-ordination, efficient and effective management of IS resources and improved productivity.

1 Introduction

There are a number of researches focused on identifying key IT issues concerning corporate transformation. Technical progress together with the opening of a global market is definitely among the primary factors playing roles in modern society. IT is an essential component of a firm's strategy in a global market. One of the consequences of recent development in the field of information technology is an ongoing process of planning in both the IS and business arenas.

Slovene organizations react very differently to projects or attempts at introducing modern IT and renovation of business processes, though the purpose is clear: reduction of costs, shortening the business cycle, and improvement of quality. The difficulties in the public sector are larger than those in the private sector. The increased employment in the public sector during the past few years has further entrenched bureaucracies; the problems of efficiency are then most often solved through purchasing computer hardware and software. Moreover, if managers feel the corporation they work for is successful at the present time, they usually reject the idea of strategic IS planning and renovating the business. Of course, when a company faces trouble, there never seem to be enough financial or human resources to start such a project. Coping with these problems while working on IS renovation projects in the last few years, we have noticed (Kovačič, 1999) that IT plays the key role in business process renovation and a strong correlation between the quality of IS within an organization, and improvement of overall corporate culture and strategies (Lederer, Sethi, 1996). We must also keep in mind that an incorrect or inadequate strategic IS planning can deliver partial solutions which do not consider the system as a whole and are by all means unsatisfactory.

Strategic IS planning is the process of identifying a portfolio of computer-based applications that assists an organisation in executing its business plans and realising its business goals (Lederer, Salmela, 1996). Although the importance of strategic IS planning is clearly identified (Karimi, Gupta, Somers, 1996), (Lederer, Sethi, 1996), (Lederer, Salmela, 1996), (Porter, 1985) practical experience on strategic planning is very scarce. The lack of information encouraged us to perform a systematic analysis of strategic IS planning practices in Slovenia.

The paper presents the results of a survey on the strategic IS planning practices of Slovene companies. It highlights the participation, critical success factors and main benefits of strategic IS planning. The results are compared to the results of similar studies (Pavri, Ang, 1995), (Teo, Ang, Pavri, 1997). Different place and time of that investigation had to be considered.

2 Methodology

The purpose of the study was to analyse the strategic IS planning practices in Slovenia. The study was performed

by the MIS department of the faculty of Economics in Ljubljana in 1998 and was based on a questionnaire (can be optained from http://www.ef.uni-lj.si/projekti/informatika) that was previously developed by Teo, Pavri and Ang (Pavri, Ang, 1995), (Teo, Ang, Pavri, 1997). We found the coverage of the questionnaire a very good basis for evaluation of strategic IS planning situation and was therefore left unchanged in order to made the comparison of the results between present and Teo et al's study feasible. The questionnaire was sent to IS executives in several Slovene organizations which were asked to provide information by answering the questions on the following subjects: organization of the MIS departments, the state of IS, the use of new concepts and technologies in the development of IS, databases, data warehouses and IS strategic planning.

The answers to the first section provided general information about the company, its structure and general state of the IS, second part provided information about the architecture of IS and the underlying technology. The focus of the third section was the state of databases and data warehouses and the last part of the questionnaire investigated IS strategic planning. We are planning to repeat the survey every two years which will help us compare the results and observe current trends in Slovene organizations over a longer timeframe.

After eliminating the missing and illogical answers, we got the total number of answers to all the four parts of the questionnaire (181 to the first part, 175 to the second part, 166 to the third and 131 to the last part). Table 1 shows the structure of the organizations according to its activities. The activities in the category other is of a different kind such us consulting, transport, IT, catering, tourism, health service, government, telecommunications.

This paper focuses only on the IS strategic planning part of the questionnaire which covers the following topics:

- The participation in strategic IS planning
- The strategic IS planning critical success factors
- The benefits of strategic IS planning
- Company and MIS department degree of maturity
- Other relevant IS planning data (e.g. planning methodology, corporate and IS plans alignment).

3 Results

The study involved 450 large Slovene companies from a wide range of industries. The size of the companies was defined according to the number of employees and the revenues in 1997 (Slovene Corporate Law, 1993). A company classified as large when met both criteria: more than 250 employees and the revenues over 4 million USD. A total of 131 useful returns to the IS planning part were obtained, representing the database on strategic IS planning practices in Slovenia. The rate of the return was 29% and is comparable with the similar studies (Karimi, Gupta, Somers, 1996), (Lederer, Sethi, 1996), (Pavri, Ang, 1995), (Teo, Ang, Pavri, 1997), (Torkzadeh, Xia, 1992) conducted in the past where the rate of the return reached 21%, 24%, 22%, 20% and 23% respectivelly. Considering the length (21 pages) and complexity of open and closed questions, the number of useful returns is quite encouraging and is showing that strategic IS planning is becoming more and more important in Slovenia.

Analysis of the returned questionnaires shows that 66 (over 50%) of the responding companies were performing some form of IS planning process. As can be seen from Table 2, the relationship in Teo et all's study was better since 63% of companies have implemented some form of IS planning process. This is especially worrying since Teo et al's study was performed two years earlier.

Since we are planning to repeat this study every two years it is going to be very interesting to observe how the IS strategic planning process in Slovenia will develop.

3.1 IS strategic plan/corporate plan

As has already been presented in the past, the key to the success of the strategic IS planning process is in corporate and strategic IS plan alignment (Clarke, 1992), (Lederer, Sethi, 1996), (Lederer, Salmela, 1996). Although the rate of companies conducting the strategic IS planning in Slovenia is much lower that the one in Singapore, it is surprising that corporate and strategic IS plans are aligned in much higher rate (92.4% compared to Teo et al's 79.3%) as shown on Table 3.

Furthermore, in majority of companies (96.9% in the present study, 93.1% Teo et al's), the IS strategic plan developers show a high level of awareness of corporate objectives. Such results suggest that those companies that perform strategic IS planning realise the importance of corporate and strategic IS plan alignment as the key to the successful role of IT in business environment.

3.2 Planning methodologies/participants in IS planning

Table 4 shows the comparison of the planning methodologies used by companies. Of the 65 respondents, 39 (60% compared to Teo et al's 69%) stated that they used a combination of top-bottom and bottom-up planning methodologies. In addition, 24 respondents (36.9% compared to Teo et al's 19%) used top-down planning approach. This result suggests that combination of methodologies prevails as most usual IS planning methodology, enabling synergy of business and user involvement. Dissimilar to Teo et al's finding our results suggest that top-down approach is more widely used in Slovenia. This indicates that IS planning in Slovenia is still traditionally oriented process in which management plays very important role. Table 5 shows the portfolio of participants involved in strategic IS planning in which top and MIS management plays the predominant role (on the scale from 1 to 5, 2.92 and 2.43 respectively

Business activity	Number	Percentage
Manufacturing	75	41%
Commerce	31	17%
Finance and insurance	13	7%
Mixed	7	4%
Other	55	30%

Table 1: Structure of organizations based on business activity

IS strategic plan	Present study			Teo et al.		
	Number	Percentage	Rank	Number	Percentage	Rank
Existing	66	50.4%	1	58	63.0%	1
Non-existing	65	49.6%	2	34	37.0%	2

Table 2: IS strategic plan implementation

in the present study compared to Teo et al's 3.79 and 3.36) comparing to users involvement (1.55 compared to Teo et al's 2.8).

Comparing strategic IS planning methodologies and participants we can conclude that combination of both top-bottom and bottom-up planning methodologies is still prevailing. High involvement of top and MIS management and significant lack of users participation results in high rate of top-down approach.

3.3 Critical success factors

Among 10 critical success factors listed, first 4 in our study were related to importance of management involvement and support as well as human resources related issues.

Getting top management support for the planning efforts (4.83 in the present study, 4.69 Teo et al) with having a clear-cut corporate plan guide IS planning efforts (4.52 in the present study, 4.41 Teo et al) represent the key drivers for successful strategic IS planning in the literature (Clarke, 1992), (Karimi, Gupta, Somers, 1996), (Lederer, Sethi, 1996).

The ability to obtain sufficient qualified personnel ranks as the second most important critical success factor in strategical IS planning personnel in Slovenia (4.59 in the present study, 4.22 Teo et al). We believe that the reason for this deviation is a significant shortage of qualified resources to support increasing evolution and spread of information technology.

The fourth most important critical success factor is good user-IS relationships (4.38 in the present study, 4.22 Teo et al). This relationship is crucial for achieving the strategic objectives. Users and IS staff should act as partners in meeting the strategic objectives which would lead the company to operational excellence as already proved in the past (Karimi, Gupta, Somers, 1996), (Lederer, Sethi, 1996), (Lederer, Salmela, 1996), (Porter, 1985). Other success factors (see table 6) are mainly planning related (i.e. time management, environmental changes, planning procedure, etc).

3.4 Benefits/satisfaction with strategic IS plan

According to the results shown in Table 7, companies highly appreciate the benefits from strategic IS planning process (on a scale from 1 to 5, all benefits were rated with a mean of 3.89 or higher). The most important benefits were in both studies improved internal co-ordination (4.57 in the present study, 4.07 Teo et al), efficient and effective management of IS resources (4.45 in the present study, 4.05 Teo et al) and improved productivity (4.37 in the present study, 4.09 Teo et al). It is also interesting to observe that respondents value internal benefits more than external. The possible reason is that internal benefits are easily recognised whereas external are not clearly defined.

A comparison of the two studies reveals that although the most important benefits match, they were ranked differently. Improved productivity, which was the most important benefit in Teo et al's study ranked only third in the present study. This is somehow interesting since improved productivity is historically the most important benefit from strategic IS planning process (Davenport, Linder, 1994), (Karimi, Gupta, Somers, 1996), (Lederer, Salmela, 1996), (Porter, 1985), (Torkzadeh, Xia, 1992), that was in the present study clearly underscored (10 respondents rated improved productivity below semi-beneficial). This indicates that many Slovene executives perhaps still do not understand the strategic role and benefits of IS. The change of traditional thinking using IS for internal co-ordination and efficient and effective management support will have to be changed to improve productivity as well as external benefits. The first step to achieve this change should be a part of strategic IS planning process.

IS strategic plan allignment	Present study			Teo et al.		
	Number	Percentage	Rank	Number	Percentage	Rank
Alligned	61	92.4%	1	46	79.3%	1
Not-alligned	2	3.0%	3	12	20.7%	2
Corporate plan non-existing	3	4.5%	2	0	0.0%	3

Table 3: Corporate and strategic IS plan alignment

Planning methodologies	Present study			Teo et al.		
	Number	Percentage	Rank	Number	Percentage	Rank
Bottom-up	2	3.1%	3	7	12.1%	3
Top-down	24	36.9%	2	11	19.0%	2
Combination of above	39	60.0%	1	40	69.0%	1
No answer	0	0.0%	4	0	0.0%	4
Total	65	100.0%		58	100.0%	

Table 4: IS planning methodologies

Similarly to highly appreciated benefits from strategic IS planning process, the satisfaction with strategic IS plan also ranked high. Over 98 percent of respondents rated the satisfaction with their strategic plan above average.

3.5 Initiation of strategic IS planning process

The results presented in Table 8 show that initiators of strategic IS planning process vary significantly between Slovenia and Singapore. Whereas Teo at al's study shows natural rank of initiators (41.4% IS management; 25.9% top, IS and line management; 12.1% top and IS management), present study reveals that in Slovenia the most important initiator of strategic IS planning process is top management (35.9%), followed by top and IS management (28.1%) and IS management (23.4%).

The responses regarding the initiation of strategic IS planning process confirmed that in Slovenia IS planning is still traditionally oriented process in which top management plays very important role. This is very surprising since we would expect IS management to significantly add value to the strategic IS planning due to it's expertise.

It is also very revealing to note that top, IS and line management does not take joint initiation in Slovenian companies. In fact, joint management initiation rated last with only 3.1% in contrast with 25.9% in Teo et al's study.

3.6 Evaluating IS function

It is interesting to observe that among 66 companies that practised strategic IS planning process, only 15 (23.1%) have objective measures of IS contributions to productivity, although 95% of respondents rated the importance of developing such measures with 3 or higher on a scale from 1 to 5. This result is in line with Teo et al's result that shows 24% respondents have objective measures and 98% rated the importance 3 or higher.

The lack of objective measures of IS contributions to productivity is also connected to benefits from strategic IS planning. Since very few respondents have objective measures of IS contributions to productivity there is no mechanism to measure the impact on productivity of business processes resulting in poor rating of improved productivity as a benefit from strategic IS planning (Table 7).

Nevertheless, results show that the importance is recognised by the companies, but not yet implemented in practise. It is going to be very interesting to see how this subject is going to develop in the future since the impact of information technology on productivity remains an important benefit.

3.7 Company's degree of maturity

The company's degree of maturity has been evaluated through long range business planning, capital allocation and objective setting. It is very encouraging that 84.6% of responding companies perform long range business planning in either more tactical than strategic (47.7%) or clearly strategic nature (36.9%).

Financial aspect of the capital allocation is significant since 95.4% of respondents have set capital allocation criteria. Out of these 64.6% of respondents perform rigorous financial analysis with (33.8%) or without (30.8%) post audit. This results show that most companies perform serious financial analysis as a part of their planning process.

In case of clear objective setting, our study shows that the majority of respondents set the objectives (93.8%). It is interesting that there is a spread of only 12.3% between the top three objective settings; highly targeted in-

Participants (scale from 0 to 3)	Present study				Teo et al.		
	Number	Mean	S.D.	Rank	Mean	S.D.	Rank
MIS managers	64	2.92	0.32	1	3.79	0.59	1
Top managers	65	2.43	0.76	2	3.36	0.74	2
System analysts (developers)	55	2.20	0.86	3	2.75	0.88	4
Non-MIS managers	63	2.02	0.85	4	2.58	0.84	5
Consultants	62	1.92	1.05	5	1.89	0.92	9
Computer systems programmer	62	1.77	0.99	6	2.29	1.02	6
Computer operations personnel	57	1.56	0.94	7	2.05	0.91	7
Users	64	1.55	0.90	8	2.80	0.80	3
Vendors	58	1.36	1.03	9	2.02	0.86	8

Table 5: Participants in IS planning

dividual objectives with strong follow-up directly affecting compensation (32.3%), only generalised individual objectives (24.6%) and highly targeted individual objectives with strong follow-up (20%). This indicates that there is a wide variety of objective setting practises currently in place in Slovene companies leading us to a conclusion that this area should be better focused on and improved in the future.

3.8 MIS department's state of maturity

The MIS department's state of maturity has been evaluated through computer operations, system development, user involvement and feasibility assessment. The study shows that 14.8% of respondents stated that users are dissatisfied with the timeline and accuracy of computer operations. That is clearly a number that is not to be overlooked and computer operations should be the area where MIS departments must improve. One reason for dissatisfaction could be that extent of users participating in strategic IS planning is very low (1.55 in Table 5) although one of the most important critical factors in strategic IS planning is good user-IS relationships (4.38 in Table 6).

System development and users involvement parts of the questionnaire are possibly the most questionable in terms of data quality since our respondents are from the IS department. The study nevertheless shows that in the majority of respondents users are very confident of the MIS group's ability to consistently deliver major systems approximately on time, within budget and meeting specifications (66.2%) as well that users are involved only as much as necessary to define the system specifications and to implement it (63.1%), we must not forget that the questionnaire was filled in by IS executives. Ratings of IS department on MIS performance and users involvement might therefore be biased.

In case of feasibility assessment it is very surprising to note that in 24.6% of companies no formal standard for assessing the feasibility of proposed major systems development projects exists. Feasibility studies are nevertheless performed in 75.4% of companies. This share should increase in the future since resource management is becoming of vital importance in today's business environment.

4 Conclusions

Although the importance of strategic IS planning is clearly identified, the study shows that a moderate number (50.4%) of Slovene companies are involved in strategic IS planning. This is surprisingly low if we take into consideration that Teo et al's study reveals 63% of Singapore companies were performing strategic IS planning in 1996.

On the other hand, it is encouraging that those companies that perform strategic IS planning have corporate and strategic plans aligned (92.4%), enabling them to meet overall business plans and goals. The study also shows that strategic IS planning in Slovenia is still traditionally oriented process in which top management plays an important role since top managers are the key initiators and participants in IS planning in which top-down approach is broadly used. This is very surprising since we would expect the role of IS management to be significant due to their expert knowledge and experience. On top of the sometimes diminished role of IS management, the study shows that 14.8% of respondents stated users are dissatisfied with the timeline and accuracy of computer operations. This indicates that apart from underperforming role of IS management, users involvement in a strategic IS planning is also insufficient (users participation ranked last in the present study), although good user-IS relationship is one of the key success factors in strategic IS planning.

Overall strategic IS planning process is still one of the key business activities where Slovene companies will have to improve in order to be able to effectively participate on the overall global market of the information era.

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Critical success factors (scale from 0 to 5)	Present study				Teo et al.		
	Number	Mean	S.D.	Rank	Mean	S.D.	Rank
Getting top management support for the planning efforts	64	4.83	0.38	1	4.69	0.54	1
Being able to obtain sufficiently qualified personell to do a proper job	64	4.59	0.58	2	4.22	0.75	3
Having a clear-cut corporate plan to guide IS planning efforts	64	4.52	0.73	3	4.41	0.80	2
Good user-IS relationships	64	4.38	0.76	4	4.22	0.68	3
Investing sufficient 'front end' time to ensure that all planning tasks and individiual responsibilities are well understood	64	4.31	0.73	5	3.98	0.78	8
Anticipating likely changes in information technology (and environmental changes) which might affect the strategic IS planning process	64	4.28	0.74	6	4.10	0.67	5
Having free comunication and commitment to change throught the organisation	63	4.21	0.91	7	4.02	0.81	7
Having a clear, concise, formal, planning procedure	64	3.98	0.86	8	4.05	0.85	6
Deciding on an appropriate planning horizon	64	3.89	0.89	9	3.95	0.60	9
Taking into account the people and politics side of strategic IS planning system	63	3.65	1.09	10	3.55	0.82	10

Table 6: Critical success factors in IS planning

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Benefits from strategic IS planning process (scale from 0 to 5)	Present study				Teo et al.		
	Number	Mean	S.D.	Rank	Mean	S.D.	Rank
Improved internal coordination	65	4.57	0.63	1	4.07	0.71	2
Efficient and effective management of IS resources	65	4.45	0.66	2	4.05	0.59	3
Improved productivity	65	4.37	0.81	3	4.09	0.64	1
Improved quality in products/services	65	4.23	0.87	4	3.88	0.69	6
Improved competitive position	64	4.16	0.91	5	4.00	0.81	4
Sound technology path and policies	65	3.97	0.80	6	3.70	0.63	7
Larger market share	63	3.90	1.00	7	3.30	0.91	8
Greater ability to meet changes in the industry	62	3.89	1.11	8	3.89	0.76	5

Table 7: Benefits from strategic IS planning process

Initiated by	Present study			Teo et al.		
	Number	Percentage	Rank	Number	Percentage	Rank
Top management	23	35.9%	1	5	8.6%	4
Top and IS management	18	28.1%	2	7	12.1%	3
IS management	15	23.4%	3	24	41.4%	1
IS and line management	3	4.7%	4	3	5.2%	6
Line (or functional) management	2	3.1%	5	0	0.0%	7
Top, IS and line management	2	3.1%	5	15	25.9%	2
Missing data	1	1.6%	7	4	6.9%	5

Table 8: Initiators of strategic IS planning process

Degree of maturity	Number	Percentage
Long range business planning		
No formal long-range business plan	3	4.6%
Mostly financial and headcount projections	7	10.8%
More tactical than strategic	31	47.7%
Clearly strategic in nature	24	36.9%
Capital allocation		
No formal capital allocation criteria	3	4.6%
Formal document stating purpose and level of investment, but no financial measure of attractiveness	20	30.8%
Rigorous financial analysis for all major expenditures but no post audit	20	30.8%
Rigorous financial analysis with post audit	22	33.8%
Objective setting		
No formal setting of individual objectives	4	6.2%
Only generalized individual objective are set	16	24.6%
Highly targeted individual objectives are set but no formal follow-up or appraisal of results	11	16.9%
Highly targeted individual objectives with strong follow-up	13	20.0%
Highly targeted individual objectives with strong follow-up directly affecting compensation	21	32.3%

Table 9: Company's degree of maturity

Stage of maturity	Number	Percentage
Computer operations		
Users are dissatisfied with the timeline and accuracy of computer operations	9	14.8%
Users are generally satisfied with timelines and accuracy of computer operations but no formal production statistics are communicated to them	26	42.6%
Production control has been formalized, production objectives are set and performance versus plan is communicated to users on a regular basis	26	42.6%
Systems development		
No formal standard for systems development exists	8	12.3%
Users have little confidence in the MIS group's ability to deliver major systems on time, within budget and meeting specifications	14	21.5%
Users are very confident of the MIS group's ability to consistently deliver major systems approximately on time, within budget and meeting specifications	43	66.2%
Users Involvement		
Users are rarely involved in the systems development process	2	3.1%
Users are involved only as much as necessary to define the system specifications and to implement it	41	63.1%
Users are actively involved in all phases of the system development process and often manage the project team	22	33.8%
Feasibility assessment		
No formal standard for assessing the feasibility of proposed major systems development project exists	16	24.6%
Feasibility assessments are well defined and required for all proposed major system development project but no post-implementation audit	15	23.1%
Feasibility assessments are well defined and required for all proposed major system development projects and followed by post-implementation audits	34	52.3%

Table 10: MIS department's state of maturity