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## Conference Paper

# IT as strategic resource in Croatian Companies (Challenges and Acceptance)

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# Information Technology as a Strategic Resource in Croatian Companies: Challenges and Acceptance

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**ABSTRACT:** Information technology (IT) grows in its importance and becomes one of the strategic means for company development. This paper presents the result of survey on the strategic information system (IS) planning practices of Croatian companies. The results are compared with similar surveys done in Slovenia and Singapore. In large Croatian companies IT is still neglected resource, concerned just as a tool for automation of present business processes. The source of those problems comes from lack of knowledge and interest from top management structures. Thus the significant efforts must be done on the management side. It seems that appears the necessity to develop new hybrid manager profile with additional knowledge in strategic business planning and IT management capabilities

**KEYWORDS:** Information technology, strategic information system planning, Croatian company, management, hybrid manager.

## 1. INTRODUCTION

The use of information system (IS) has changed over time from simple operational data processing to top management decision support and strategic planning. Technical innovations and the global market environment are the key factors resulting in reengineering of existing business processes. Thus, IS plays very important role in how a company's adapts to this turbulent environment. IS can provide new forms of customer service, new distribution channels and even redefines company procedures and boundaries. The logical progression from purely quantitative, operational applications to system designed for qualitative, strategic purposes reflects the increased sophistication of IS and growing reliance on this systems by management [20]. IS becomes extremely important asset that can strongly influence company market position, and which must be carefully monitored, controlled and planned. Improving the planning process for information systems is one of the key concerns of corporate management.

In today's dynamic market environment business success rely heavily on the effectiveness of strategic planning – strategic IS planning (SISP), which is the first stage of the information system planning model. Strategic IS planning includes several different types of activities and it refers to the process of identifying a portfolio of computer-based applications that assists an organization in executing its business plans and realising its business goals [11]. The expected outcome of this process will be a better or increased managerial understanding of strategic information system opportunities and decision making. Therefore, it is a comprehensive process in which management as well as most of the company's employees should be involved.

The perception of SISP has advanced significantly in the past decades. In the late 1970's primary objectives of SISP were improvement of communication with users, getting top management support

and various opportunities for IS improvement. In the 1980's an additional aim become the development of an organization-wide architecture as well as the identification of strategic application (Pun and Lee, 1998). In recent time, Lederer and Salmela (1996) have suggested the seven constructs of SISP including: (1) external environment, (2) internal environment, (3) planning resources, (4) planning process, (5) the information plan, (6) the implementation of the information plan and (7) the alignment of the information plan with the organization's business plan.

### **Strategic look on information technology in Croatia**

Republic of Croatia may be considered as a advanced country with regards to technology but not in using it strategically because not much attention is paid to strategic IS planning. 'Croatia is, in IT terms, one of the pioneers in the region<sup>1</sup>, characterized by the widespread use of IT, a significant Central-European IT trade fair, a developed telecommunications infrastructure, a fair-quality school system and a significant reputation in the profession, both on a national and international level. There is a private IT sector with approximately 1,700 firms in Croatia, many of which are quite capable of putting new technologies and expertise to practical use at the drop of a pin. Approximately 64,000 economic facilities in the Republic of Croatia utilize IT in their operations, and there are over 10,000 functioning workstations in the state administration. While approximately US\$ 1 billion have been invested in the procurement of IT equipment and its use, Croatia is still lagging far behind the developed countries and even some neighbouring countries' [22].

Members of the working group (Srica, V., et. al. 2000) also found that 'the IT gap with the world has widened over the course of the last decade. The outflow of IT experts into foreign countries has grown intolerably high. The previous decades saw no proposed strategic documents, nor an adopted regulation which would set up standards in the field. Chaos and mere survival are the main features of the current situation in Croatian IT. While the developed countries are taking giant strides forward, Croatia is walking in place'.

In Croatia as transitional country there is significant lack of empirical research in the area of strategic relevance of IT as well as in strategic IS planning (SISP). For a relatively long period of time, from 1945-1990, the Republic of Croatia belonged to the socialistic eg. strictly planning economy, where planning was the basis for practically any company and government activity. Every company must develop a plan, based on the government-accepted plan of country development. One of the most important political issues was process of government and company plan development. For this purpose a special government institutions was founded. Since plans were prepared and developed under strictly political premises, planning was generally accepted as a key difference between socialistic (east, planned) and capitalistic (west, market driven) model of economy. Thus the process of planning was strictly connected with this socialistic political system.

The process of political differentiation had consequences in implementing some elements of market economy. It was based on workers 'self-management' model within government strictly controlled market. Nevertheless, even in this model, with some elements of the market, the plan development process remains key political issue.

The consequence is that Croatia even now, more than ten years after implementation of market economy, the term "plan", "planning" and "strategic planning" is strongly connected with former political issues. The very same situation reflects on IT strategic planning issues as well. But it is obvious that new conditions requires new "structure mentis". At least on the strategic management

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<sup>1</sup> Srica, V., et.al., The Working Group of the President of the Republic of Croatia: e-Croatia – A Proposal for Croatia's Informatization Strategy, July, 2000., available at [http://www.predsjednik.hr/english/working\\_groups/croatian\\_i\\_strategy/documents\\_1.html](http://www.predsjednik.hr/english/working_groups/croatian_i_strategy/documents_1.html).

level alternative opinion must be developed, instead previously dominated and politically driven “wished” opinion.

Therefore, for a long period of time in Croatian companies term 'strategic planning' as well as 'planning' has only formal meaning. In the Croatian companies the strategic issues were treated occasionally, not systematically, and due to very dynamic environment changes there was no possibility for systematic and continuous researches in that area. Therefore the motive for this study was that SISP is important and that there appears to be a lack of strategic planning in Croatia. There are three major objectives of this study:

1. to describe existing strategic IS planning practices in Croatia and to compare them with similar studies (Slovenian, Singaporean),
2. to identify factors that are related to corporate adoption of strategic role of IT/IS in Croatia
3. to give framework for organizational change of Croatian companies and proper treatment of IT in business sectors.

### **Overview of prior researches**

There were several researches in the area of strategic IS planning (SISP) practise so far. McLean and Soden (1977) conducted a very first survey on the matter with a limited population of only 20 top IS executives, while Conrath et. al. (1992) used the similar methodology for survey of 138 Canadian companies. In both studies IS planning has been recognized as a very important activity. A number of researches (Burn, 1991; Premkumar and King, 1994; Wynekoop and Russo, 1995; Pun and Lee, 1998) were related to the suggestion of SISP methodologies as well as the improvement of management and software developing process. Despite the existence of these methodologies, there were quite a small number of researches (Pavri and Ang, 1995; King and Teo, 2000), trying to evaluate and test them in real enterprises. There were some researches about SISP in Croatia<sup>2</sup>, as well as management and organizational challenges of the SISP. Prior researches of top management activities in Croatian companies<sup>3</sup> (Sikavica, 1999; Srica and Spremic, 2000) suggested that average top manager in Croatia spend 57% of his/her time on operational and routine decisions, 22% on tactical decisions and only 21% on strategic issues and long-term decision. The latter shows that strategy is the last on the top manager's priority list, so one can wonder who's taking care about company's strategy? Therefore, we can expect reactive or even no relationships between macro-organizational variables, IT department issues and SISP business planning.

## **2. METHODOLOGY**

### **Survey Instrument**

To address the study's objectives, a survey questionnaire was considered the most appropriate research methodology for this study. The study was conducted by IS researches from Department of Information Science and Business Computing of Faculty of Economics in Zagreb (Croatia) in 2000. The questionnaire was previously developed by Pavri and Ang [13] and has been used in other studies (Pavri et al., 1996, Spremic, 2001). The questions as well as overall coverage of the questionnaire is found to be good basis for investigating current strategic IS planning (SISP) practise and therefore the questionnaire was left unchanged, but, of course, translated into Croatian language. Same questionnaire was conducted in Slovenia in 2000., as well as in Singapore in 1996, and these results are used for a comparison.

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<sup>2</sup> Spremic, M., Strugar, I., A Study of Strategic IS Planning in Croatia, 4th European Conference on Accounting Information Systems, Athens, 2001.

<sup>3</sup> According to: Srica, V., Spremic, M., Informacijskom tehnologijom do poslovnog uspjeha (in Croatian), Sinergija, 2000, Zagreb, pp. 15.

The questionnaire consist of parts: (1) general information about the company, (2) structure and current state of IS, (3) strategic IS planning practices and (4) business process reengineering practise and data warehouse issues. This paper focuses on the first three parts, covering strategic IS planning implementation, initiation of strategic IS planning process, company and IS department degree of maturity and alignment of IS strategic plan with corporate plan. This instrument was selected for several reasons. First, it contain questions on current strategic IS planning (SISP) practise. Second, prior study results can be used for comparison with this study's findings.

The questionnaire was translated into the Croatian language and then pre-tested on post-graduate and doctoral students for content validity, comprehensiveness and readability. After the feedback from the pre-testing had been obtained, the questionnaire was pilot tested with five senior IS executives.

### Sample

The questionnaire was sent to 150 IS executives in Croatian companies from the Register of '400 Biggest' Croatian companies that were likely to represent the structure of Croatian economy. In that Register, companies of various business activities were ranked according to their 1999 annual revenue. The survey has been performed from April 2000 to November 2000 and was conducted by professional market research agency (Puls, <http://www.puls.hr>) with verbal communication with IS executives. Finally we got 106 responses which can be considered as a high response rate.

Table 1. Structure of surveyed Croatian organizations

<b>Structure of surveyed Croatian organizations</b>		
<b>Structure by type of business</b>	Number	%
Wholesale and retail trade	32	30,2%
Manufacturing	18	17,0%
Construction	12	11,3%
Agriculture, hunting and forestry	5	4,7%
Miscellaneous	37	34,9%
No response	2	1,9%
<b>Structure by total number of employees</b>		
< 50	10	9,4%
51-250	23	21,7%
> 250	73	68,9%

Table 1. shows the structure of the surveyed organizations according to their economic activity (based on European Classification of Economic Activities – NACE Rev.1) and total number of employees. Almost one-half of Croatian companies are included in only two industry types: trading (wholesale and retail trade, 30,2%) and manufacturing (17%) and represent the overall structure of Croatian economy with a trading as a prevailing economic activity rather than manufacturing. Furthermore, majority of the surveyed companies are from Zagreb, which is economic centre of Croatia and of broader region. The activities in the category Miscellaneous referred to a various types of business such as transport, tourism, IT, telecommunications, finance and insurance, real estate, government.

Concerning the size of the surveyed companies some researches (Harris and Katz, [7]) used annual revenue as a measure of firm size, while Raymond [16] used total number of employees. In this study, both annual sales revenue and total number of employees were used, as well as Pavri and Ang did in their research [13]. Moreover, it must be stressed that, by Croatian corporate law, a company is, classified as a large when a total number of employees excides 250 and annual revenue is over 4 million USD. About 68% of surveyed Croatian companies were large companies according to 1999 annual revenue, and 69% had more than 250 employees. Almost one-half of Croatian companies were large companies according to both criteria: more than 250 employees and revenue over 4 million

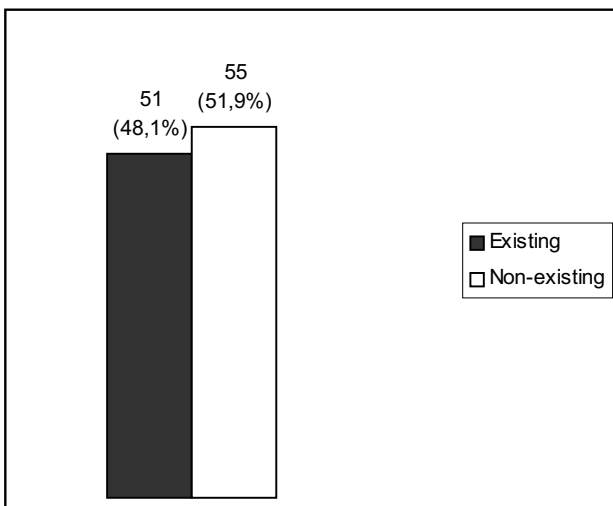
USD. As it can be noticed from Table 1., 33 organizations have less than 250 employees while their 1999 annual revenue structure is: 10 of them has 1999 annual revenue over 4 million USD, 5 of them between 1 and 4 million USD, another 5 less than 1 million USD in annual revenue, and, finally 13 of these 33 organizations did not respond to the question about 1999 annual revenue.

### 3. RESULTS AND DISCUSSION

The first research question investigates strategic IS planning practices in Croatia and compares these findings with prior studies in Slovenia and Singapore. The analysis of the responded questionnaires in Figure 1. show that only moderate number (48,1%, or 51 out of 106) of Croatian organizations have IS strategic plan implementation. This is in line with Slovenian study result [17] also performed in 2000. (44,6%, or 41 out of 92), but surprisingly low if compared with results of Singapore study in 1996. (Pavri et al's study suggests that 71% of Singapore organizations perform IS planning process in 1996.). Singaporean economy is certainly larger and more efficient than the transitional Croatian and Slovenian economies, but the comparison is especially worrying concerning a 4 years time distance between Croatian and Slovenian study on the one hand and Singaporean study on the other. The reason for this gap could be economical and political background of Croatian organizations. Furthermore, this gap between Croatian and Singaporean results may also be explain, at least in part, by the initiatives and lead taken by the Singaporean Government in the SISP process. On the other hand, it is encouraging that in majority of Croatian organizations (78,4%) the IS strategic plan developers show high level of awareness of corporate objectives.

Table 2. show detailed analysis of chi-square tests between macro-organizational variables, IT department issues and SISP practise.

Figure 1. IS strategic plan implementation in Croatian organizations



#### *Company's size*

As evident from Table 2. there is no significant relationship between SISP and company size variables (total number of employees with  $\chi^2 = 1,765$ ,  $df = 2$ ,  $p < 0,414$ , and total annual revenue with  $\chi^2 = 1,593$ ,  $df = 2$ ,  $p < 0,451$ ). These results are opposite to Pavri's and Ang's findings. Pavri et. al. reported significant relationships between the companies that perform SISP practise and annual sales revenue as well as total number of employees ( $\chi^2 = 12,257$ ,  $df = 3$  and  $p < 0,007$  in the case of annual sales revenue and  $\chi^2 = 9,315$ ,  $df = 3$  and  $p < 0,025$  in the case of total number of employees). In Conrath et.

al. [3] this relationship was not found significant when the size was measured only by revenue, but it was significant with respect to total number of employees.

From Croatian business perspectives, SISP practise do not depend on company size and number of employees, what might mean that even smaller companies, or companies with smaller number of employees do perform SISP. Thus, strategic planning is not exclusive privilege of large companies.

It is evident that relationship between size of the firm and SISP planning should exist at least for technology and organisational reasons. Large firms usually have significant number of hardware and different software products in use, purchased at different periods of its development cycles. It is evident that rather fast development of IT, and the company's organisational development and growth on the other side, asks for changes in applications and use of IT technology. Thus, the pressure for IT change is based at least on the necessity to leverage different IT technology on higher level. This brings IT managers and highest company management structures together in must be process of defining IT strategic plan development. The consequence for the large companies, but not only for them, is that investing in IT is never ending story, which must be carefully planned and supported by strategic planning process.

For example one large Croatian bank presently has all kinds of PC based computers and its software, ranging from 386 platforms to newest Pentium based processors. The same situation is on the software side of technology, ranging from the different UNIX, LINUX and Windows 98 to NT platforms. The problems appear not only related with service but also related with compatibility problems. But leverage of different technologies is not the only reason for planning IT changes. Very often company's growth asks not only for changes in present business procedures and supportive computer applications, but also for changes in business objectives and the overall strategic role of IT as well. For example just implementation of ISO standard could make significant change in IT overall role in company.

#### *IT / IS issues*

No significant relationship was found between SISP practise and:

- total IT budget ( $\chi^2 = 4,069$ ,  $df = 3$  and  $p < 0,254$ ),
- number of IS employees ( $\chi^2 = 1,273$ ,  $df = 1$  and  $p < 0,259$ ),
- existence of IT department ( $\chi^2 = 3,666$ ,  $df = 2$  and  $p < 0,160$ ).

Some of these findings are contrary to Singaporean study results. Pavri and Ang reported that there was highly significant relationship between SISP and the pair 'total IS budget and number of IS employees' ( $\chi^2 = 12,753$ ,  $df = 2$  and  $p < 0,002$  in the case of total IS budget and  $\chi^2 = 6,913$ ,  $df = 1$  and  $p < 0,0009$  in the case of total number of IS employees). IT departments are generally human capital intensive with a scarce resources and expertises. From Croatian perspective it is evident that there is a lack of employees in IT departments (almost 85% of companies has 20 or less than 20 IS employees). Quantity is not essential, but of the essential importance is the quality of employees in IT departments. In Croatian companies there is an evident lack of qualified personnel and experts, who continued their business careers in development countries and international companies with a suitable IT infrastructure. Possible reason may be that company can't afford and pay such a high-level knowledge, or company's management do not find IT as a driver of growth and new opportunities, so they don't need specific knowledge and skills of IT experts. Same considerations may be depicted from total IS budget numbers, where 65% of surveyed Croatian companies allocate less than 2% of annual budget for IT activities. These results are familiar with overall economic situation in Croatia, but they imply that in Croatian organizations IT is neglected resource. With such a poor IT budgeting one cannot expect major changes through IT activities.

There is no significant relationship between existence of IT department and SISP practise ( $\chi^2 = 3,666$ ,  $df = 2$  and  $p < 0,016$ ). Regarding the population size (106 companies) and survey methodology (verbal

communication with IS executives) a weak criteria of statistical significance at a 0,1 level is defined. It is point out that the upper level of statistical significance is at a 0,05 level, but the strong criteria due to the population size and study methodology is not used. Therefore, there is no significant relationship, although the given relationship ( $p < 0,016$ ) is close to be statistically significant and some indicators need additional comments. There is relatively large number of companies that have IT department, but do not perform SISP process, which can indicate that IT departments are focused on operational issues, rather than strategic ones. Moreover, some contradictions arise from the fact that there are several companies who don't have IT department, but do perform SISP process. This can prove the thesis that strategic issues are treated occasionally, rather than systematically and methodologically.

#### *Organization variables*

No significant relationship was found between SISP practise and:

- physical organizational structure (centralized or decentralized business operations;  $\chi^2 = 0,147$ ,  $df = 3$  and  $p < 0,701$ );
- operational organizational structure (whether the company is organized by functions or products or combinations of both. Also, the functional structure is the prevailing model of organizational structuring in Croatian companies;  $\chi^2 = 0,7$ ,  $df = 3$  and  $p < 0,873$ );

On the other hand, it was found rather significant relationship between SISP and ISO 9000 certificate ( $\chi^2 = 5,026$ ,  $df = 2$  and  $p < 0,081$ ).

From Table 2. results it can be observed that Croatian companies carry out their businesses on more locations and organize it by functions rather then products, processes or a combination of both. Preferring functional organization can cause problems in applying projects with cross-functional dimensions, such as IT projects or IS planning projects. Furthermore, it is observed strong and surely significant relationship between SISP practise and the position of IT manager in the organizational hierarchy ( $\chi^2 = 21,032$ ,  $df = 3$  and  $p < 0,0002$ ). Therefore, another issue must be stressed related to IT projects: management and organizational problem. Managers in majority Croatian companies are essentially specialists in their own areas following functional organization structure, while strategic IT benefits are process related and cross-functional. Things are worse when IT is not autonomous organizational department (under control of another department, mostly under corporate finance in Croatian business practice). In these circumstances communication between IT department and top management isn't direct with middle or line management as infomediary. So, one cannot expect that, for instance, finance manager would be the initiator of corporate strategic IT thinking. The higher the position of IT manager in corporate management structure is, the strategic planning is of more importance. IT is not the matter of concern for a single department, nor for a single person in the company, but rather related to overall company structure and every company employee.

Therefore, an organizational problem with a source coming from lack of knowledge and interest from top management structures can be observed. Major organizational changes must be done to recognize IT as strategic resource and position it well in the organization structure. The fact is that IT managers should come out from the shadow of the operative or tactical level of management and start dealing with business and strategic problems. Since IT strongly influences all business functions and all levels of management, IT manager is expected not only to possess technical knowledge, but knowledge of business management as well. On the other side, all levels of management, no matter of their affinity, must have proper IT knowledge. On this point appears a new term "hybrid manager" (Srica, V., Spremic, M., 2000), the one that has to have knowledge of business management, but also to be able to recognize possibilities and chances which application of IT can offer to their company.



Table 2. Relationship between macro-organizational variables, IT department issues and SISP

	Sample Size	Yes	No	Results of $\chi^2$ -Test
<b>Total number of employees</b>	105			
< 50		2	3	DF = 2
51-250		11	18	$\chi^2 = 1,765$
> 250		37	34	<b>P &lt; 0,414</b>
<b>Annual Revenue</b>	74			
< 1 million USD		3	5	DF = 2
1-4 million USD		3	8	$\chi^2 = 1,593$
> 4 million USD		26	29	<b>P &lt; 0,451</b>
<b>Physical Organization Structure</b>	103			
Centralized		9	12	DF=1
Decentralized		39	43	$\chi^2 = 0,147$
				<b>P &lt; 0,701</b>
<b>Operational Organizational structure</b>	104			
Functional		32	36	DF = 3
Product		3	4	$\chi^2 = 0,7$
Matrix		13	11	<b>P &lt; 0,873</b>
Combination		3	2	
<b>Type of business</b>	106			
Wholesale and retail trade		12	20	DF = 4
Manufacturing		11	6	$\chi^2 = 3,525$
Construction		6	6	<b>P &lt; 0,474</b>
Agriculture, hunting and forestry		2	3	
Miscellaneous		20	20	
<b>Total IT budget</b>	87			
< 2%		22	34	DF = 3
2-5%		13	8	$\chi^2 = 4,069$
>5%		6	4	<b>P &lt; 0,254</b>
<b>Number of IS employees</b>	87			
<=20		33	35	DF = 1, $\chi^2 = 1,273$
>21		12	7	<b>P &lt; 0,259</b>
<b>ISO 9000 certificate</b>	96			
Have		18	9	DF = 2
In preparation		13	15	$\chi^2 = 5,026$
Not in plan		16	25	<b>P &lt; 0,081</b>
<b>IT manager position</b>	84			
Member of top management		10	1	DF = 3
Indirectly subordinate to top management		32	22	$\chi^2 = 21,032$
Directly subordinate to top management		3	16	<b>P &lt; 0,0002</b>
<b>IT department</b>	105			
Exist		37	30	DF = 2
Exist, but not as an organizational unit		8	11	$\chi^2 = 3,666$
Does not exist		6	13	<b>P &lt; 0,160</b>

Note: Missing observations are left out. That explain why the samples size for type of business is not 106. This is especially noticeable on annual revenue results, where only 74 out of 106 companies answered the question about annual revenue.

Concerning the week criteria of statistical significance at a 0,1 level, the relationship between ISO 9000 certificate and SISP practices is a significant one ( $\chi^2 = 5,026$ ,  $df = 2$  and  $p < 0,081$ ). This obviously shows that acceptance of this standard overcomes the generally accepted role of IT as pure

supportive document procedure level. The overall influence of ISO 9000 standard on the organizational level thus becomes one of the consequences that forces managers and organization to change the IT role in company as well. This fact shows one positive effect of standardization on overall business practice.

*Economic activity*

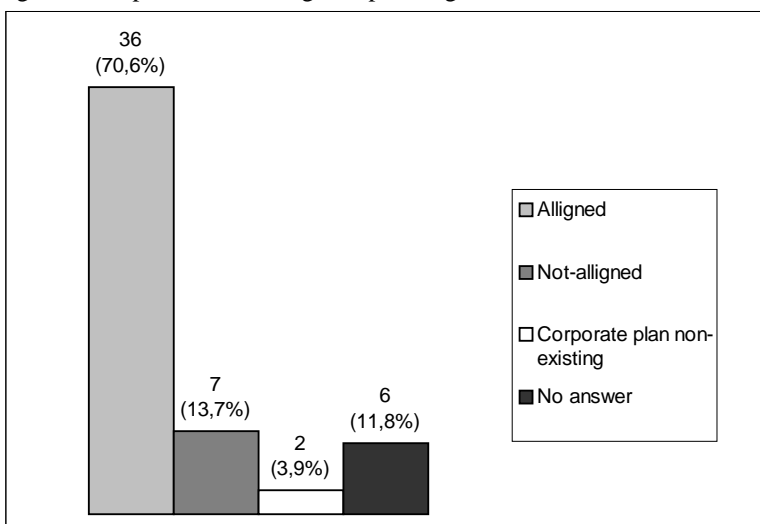
There is no relationship between economic activity and the SISP ( $\chi^2 = 3,525$ ,  $df = 4$  and  $p < 0,474$ ), which is in line with Pavri and Ang results, and certainly not with McFarlan et al's (1983) suggestion that SISP is more important for manufacturing and finance and insurance companies.

Furthermore, majority of Croatian organizations required significant period of time to develop the strategic IS plan (42,2% of respondents required more than 6 months to develop the strategic IS plan and 37,3% of respondents required from 3 to 6 months). This can be considered as an obstacle due to very dynamic change in IT and management should reduce time for IS development plan.

**3.1. Alignment of IS strategic plan with corporate plan**

The key factor for successful strategic IS planning process is in the corporate and strategic IS plan alignment (Lederer and Sethi [10] and Lederer and Salmela [11]). Only the respondents that have the strategic IS plan (51 Croatian organizations) answered this question and the rest of the questionnaire. As shown in Figure 2., by the IS executive opinion, the Croatian organization that perform strategic IS planning are not very much aware (only 70,6%) of the importance of corporate and strategic IS plans alignment. This deviation can lead to automation of particular processes with very weak impact on companies overall strategy. It should be pointed out that almost 30% of Croatian companies that perform IS planning process (and all the others that do not perform IS planning process at all) find IT only as operational tool and are not aware of strategic benefits of IT. Although the rate of organizations conducting the strategic IS planning in Croatia (48,1%) is slightly higher than in Slovenia (44,6%), it is surprising that the corporate and strategic IS plans in Slovenian organizations are aligned in a much higher rate (87,8%).

Figure 2. Corporate and strategic IS plan alignment



### 3.2. The initiation of SISP process

The results presented in Table 4. suggest that main initiators of strategic IS planning process in Croatian organizations are IS management (33,3%), top management (27,5%) and top management together with IS management. Surprisingly, line management do not initiate strategic IS planning process which may be the cause for high rate of IT projects failure in surveyed Croatian organizations (46,4%). It should be expected that better collaboration of top management and IS management will significantly add value to the strategic IS planning process.

Table 4. Initiators of strategic IS planning process

Initiators	Responses	%
IS management	17	33,3%
Top management	14	27,5%
Top management together with IS management	12	23,5%
Top, IS and line management	4	7,8%
No answer	3	5,9%
Line management	1	2,0%
IS management together line management	0	0,00%

Ideas and initiatives for IS development, once accepted by management, should be spread and supported by business structure in overall. If these initiatives come from IT structure, they are likely to be underestimated even when management accepts it. The consequence of this can be that management could hardly support even good ideas and solutions. One small Croatian bank developed very interesting and advanced model of electronic banking, but due to lack of support in marketing and promotion of such a service, the proposed goal was just partly reached.

On the opposite, when the initiative for new IS development comes from managerial structure of the company, it happens that project task is firmly defined. Therefore, influence of IT department on the characteristics of the required IS can be limited. There are a number of reasons for that: (1) characteristics of new IS are firmly defined by management; (2) managerial structure is a deep with large number of instances, (3) managerial structure is strictly functional and thus (4) changes are too complicated to perform.

This can bring to unsatisfied solution, which can't be well accepted by customers and can cause frustration in IT department. One large Croatian bank has large IT department, and all initiatives for IT development and new service development comes usually from management side. Due to very deep functional organizational structure of departments, development of new customer service requires almost 800 employees to participate. Therefore, IT department can weakly influence characteristics of the new service. The customer requirements and suggestions, even if they are a good one, is almost impossible to accept and add to the service. The consequence is that the several versions of same service exist simultaneously, what makes the IT staff and even customers unsatisfied. Thus it is not easy to find adequate version of the required service as well as to maintains all different versions of the same service. On this point it is interesting to compare time necessary to evaluate and accept customer suggestion about service. In the previous example of the small bank, customer suggestion was accepted via e-mail. Therefore, processed, evaluated and modified service was in function in just 3 days. In the case of the large bank this process lasts for several months so far.

## 4. DISCUSSION AND CONCLUSION

In pre e-commerce era, the potential use of IT as combat force in concurrent environment could differ between industries and companies and can serve for rising different barriers for new entrants on the

market, switching costs, product differentiation, access to distribution channels, improve price/performance relationship etc.<sup>4</sup> New business era inaugurate the information infrastructure (particularly the Internet) as a business backbone and a platform for conducting transactions and economic activities, what makes IT a key prerequisite and the very basis for any business model. Therefore, strategic planning of IT resources and proper management commitment are of the highest importance.

Concerning the proposed objectives of this study, it can be concluded:

- From Croatian business perspectives, SISP practise do not depend on company size and number of employees, neither it is not influenced by economic activity. There is no significant relationship between IT department issues, some organizational variables (physical and operational organizational structure, total IT budget, number of IS employees, existence of IT department) and SISP. Significant relationship between ISO 9000 certificate and SISP is found, as well as between IT manager position and SISP.
- Croatian companies underestimate necessity of IS strategic planning, regarding relatively moderate number (48%) of them performs strategic IS planning. This finding is in line with Slovenian study (44,6% in 2000), but certainly not with Singaporean study (71% in 1996). The reason for this gap could be economical and political background of Croatian organizations, as well as Singaporean Government initiatives concerning the SISP process. Moreover, SISP practise is, by Croatian IS executive's opinion, not well enough aligned with corporate goals (only at the rate of 70,6%). Considering relatively low level of IT investment (64,4% of companies allocate less then 2% of total annual revenue for IT), it can be concluded that Croatian companies are just keeping present IS in working conditions on the same level of technology with no initiative for improving or developing new IS. Overall results of study suggest that SISP practise in Croatia is in contrast with very dynamic changes in modern IT management theory and practise, particularly due to inadequate time planning process (42,2% of respondents required more than 6 months to develop SISP). Croatian IS planning process is still internally focused which correspond with industrial age market circumstances rather than digital age ones. IT is neglected resource in Croatian companies and is rather treated as operational tool with very weak impact on companies overall strategy.
- The main initiators of strategic IS planning process are IS management (33,3%), top management (27,5%) and top management together with IS management. Surprisingly, line management do not initiate strategic IS planning process which may be the cause for high rate of IT projects failure in surveyed Croatian organizations (46,4%). It should be expected that better collaboration of top management and IS management will significantly add value to the strategic IS planning process, and lower the rate of project failure. SISP processes in Croatia and Slovenia as transition countries are still traditionally oriented due to company's favourable functional organization structure and strictly defined command-and-control hierarchy. These can be detected as a problem of management in the transition countries.

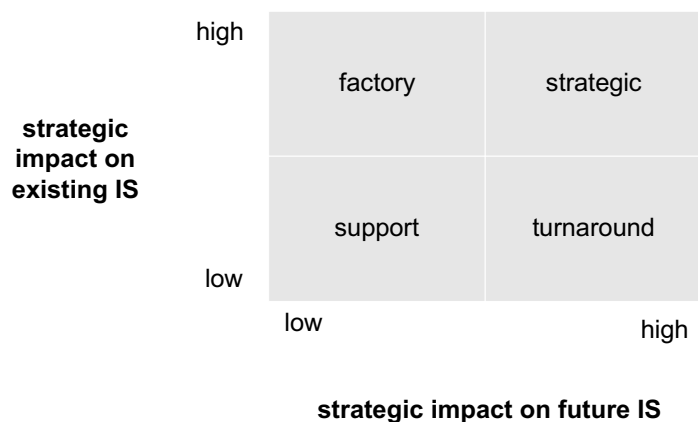
Strategic relevance and impact of information technology in organization depends on two key variables (McFarlan, 1985, Cash, 1992):

- strategic impact on existing information systems,
- strategic impact on future information systems.

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<sup>4</sup> for detail list of potential uses of IT see Cash et. al., p. 91.

Figure 3. Categories of strategic relevance and impact



**Strategic type:** The IT strategy is the backbone of such company’s competitive success and need considerable attention. These companies require appropriate strategic IS planning, IT manager’s position in the organizational hierarchy is very high (board of directors), organizational relationship between IT function and management is very close and IT planning is integrated with business planning.

**Turnaround type:** IT function is important, but far from being vital and crucial to company’s effectiveness and competitiveness. In this type, IT is treated as an operational support, but applications under development are crucial if the company is to reach its strategic objectives. Therefore, some efforts are done to recognize IT as a (future) strategic resource, but there are some priorities on that way such as new (higher) organizational placement of IT and integrated planning.

**Factory type:** In these organizations (manufacturing, service, retailing) even a one-hour interruption of IT function can make severe damage. Therefore, strategic impact on existing IS is very high, while there is no management understanding for any strategic impact on future IS. In this type, major organizational changes are to be done, IT function should be promoted to independent level and management should be educated in the area on IT management. These companies has IT operational excellence, but unfortunately their management run out of vision and IT is not recognized as a strategic resource.

**Support type:** IT function is positioned at a significantly low organizational level and there is no any effort, nor vision for linking IT planning with business planning. Considering the survey results, surprisingly large number of companies is still in this category.

Therefore several issues as a general framework for change in SISP practice in Croatian companies are pointed out:

- lack of strategic planning practise,
- alignment of business strategy and IS strategy,
- necessity for proactive approach of top and line management,
- promotion of IT function to highest organizational level, and
- promotion of IT management to the highest management level.

The lack of strategic planning practice represent major obstacle for implementation of SISP practice in Croatian companies. Thus significant educational efforts in strategic planning must be done on the all levels of management.

The other key issue on which framework for change must be based is related with alignment of defined business strategies and IS strategies. This problem is well known from works of King and Teo (2000) who developed four different taxonomies of business and IS planning integration<sup>5</sup>:

1. separate planning with administrative integration (coordination of schedules, budgets, etc);

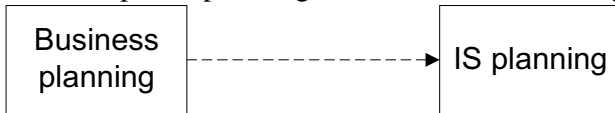


Figure 1. Administrative integration

2. one-way linked planning with sequential integration (business strategies drive SISP);

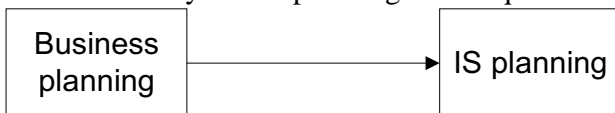


Figure 2. Sequential Integration

3. two-way linked planning with reciprocal integration (business strategies may drive SISP as well as be driven by it)

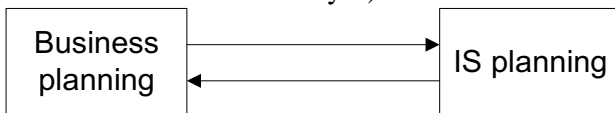


Figure 3. Reciprocal Integration

4. integrated planning with full integration (SISP is a part of BP process).

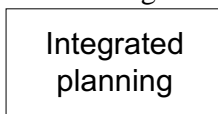


Figure 4. Full Integration

The present practice in Croatian companies generally shows lack of cooperation and coordination of defined business strategies and IS strategies. Thus in existing practice separate and reactive approach (figures 1 and 2) are dominant. The proposed framework for organizational change and SISP practice stand for proactive approach (figures 3 and 4). Therefore, the management process in Croatian company practice have to connect and integrate IS strategies and business strategies to gain suitable business context. The case of Croatian companies shows that the organizational changes must be done. To improve SISP practice, IT manager's position should be promoted to the strategic decision level and IT department should be in position to perform cross-functional activities.

### Future researches

The presented results are overview of IT manager's thoughts about the SISP practise in Croatian companies. Particular organizational and managerial problems in conducting SISP practise in Croatian companies are point out with a solution in developing completely new hybrid manager profile. Surely, this type of manager must get additional knowledge in strategic business planning and IT management.

To get a proper conclusion about the matter, it is obvious that some additional researches need to be done. Therefore, the plan is to conduct another very short questionnaire, but this time the focus will be on key problems stressed and observed in this paper. In this additional survey target population will be

<sup>5</sup> Based on: King, R., Teo, T., Assessing the impact of proactive versus reactive modes of strategic information systems planning, *The International Journal of Management Science*, pp. 677.

top managers of those companies that do perform SISP practise. Sometimes it is very useful to hear story from the other side, and surely it will be interesting to compare this results with top manager's response to key questions.

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