IC–based Inter-industry Variety in Serbia

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Abstract: This paper presents a wide-ranging research and analysis of intellectual capital within the Serbian business environment. The primary research objective was to scrutinize organizational intellectual capital within different industries in order to facilitate the fine-tuning of intellectual capital reporting according to particular facets of industry. The role of intellectual capital value drivers in the process of intellectual capital reporting focused this research on the identification of relevant intellectual capital value drivers, as well as the specific features of intellectual capital and knowledge flows within the observed industries. The results have revealed some specific features of industries, thus indicating inter-industry variety from the perspective of intellectual capital. This research should be viewed, first as a contribution to the refinement of existing intellectual capital reporting methods with respect to unique characteristics of these industries, and second as a case where the different stages of the evolution of intellectual capital between different cultures/countries is presented.

Keywords: intellectual capital, intellectual capital reporting, intellectual capital value driver, industry, Serbia

1. Introduction

An "intangible" asset as intellectual capital (IC), completely differs from its tangible counterparts and cannot be completely included within traditional accounting systems and disclosed in traditional business reports. Thus, companies are faced with the problem of how to successfully manage immaterial components of business. On the other hand, investors as well as other stakeholders, insist upon reporting on all value drivers, especially those of a non-financial nature, in order to lower their own risks.

The lack of relevant information in traditional financial statements can be overcome by additional IC reporting. Portraying intangible value drivers which are not directly available, but are vital to the future success of an organization, IC statement is an instrument for strategic management of immaterial components of business. “There is a large number of intangible value drivers which affect the efficiency and effectiveness of performance and the success of an organization. They are a part of the organization’s IC” (Arbeitskreis Wissensbilanz, 2004, p.22) called intellectual capital value drivers (IC value drivers). According to the IC categories - human, structural and relational capital, IC value drivers can also be categorized into human capital value drivers (HC value drivers), structural capital value drivers (SC value drivers) and relational capital value drivers (RC value drivers). It is of primary importance that IC statements cover those IC value drivers that are the most significant for production processes and strategically-defined business successes. This way a company focuses on monitoring that which is crucial for its success. Certain methods refer to those IC value drivers as key influencing factors - Wissensbilanz (Arbeitskreis Wissensbilanz, 2004), key success factors – IC index (Roos et. al., 1997), or critical intangibles – Meritum Guidelines (Meritum project, 2002). In this paper they are referred to as relevant IC value drivers. Identified relevant IC value drivers are “highlighted with measurable IC indicators in the shape of numbers and facts” (Arbeitskreis Wissensbilanz, 2004, p.28).

2. Researching IC in different industries

Pertaining to characteristics of the economic environment, industry and the company; many research works are focused on adjusting IC reporting to national (Andriessen and Stam, 2004; Bontis, 2004, EZ 2002; EZ, 2000; Pulic, 2002; Pasher 1999) and regional clusters (Ricarda project), as well as cities (Bounfour and Edvinsson, 2005) in order to increase report accuracy by including their specific features.

This paper aims to analyse IC in different industries in order to facilitate the fine-tuning of IC reporting according to particular industrial features. Researching organizational IC in Serbia from the perspective of IC reporting (Cabrilo, 2008), the following questions arise: Can a unique IC report, or the same group of IC indicators, measure and report on the IC of companies from different industries with equal accuracy? Are there certain specific features within various industries, which would, if taken into consideration, increase the report accuracy and simplify the implementation in a particular industry? In searching for answers, a wide-ranging research has been carried out, in order to distinguish general characteristics of IC within particular industries. The role of relevant IC value

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drivers in the process of IC reporting focused the research of IC in various industries on the identification of relevant IC value drivers, as well as the specific features of IC within these industries.

3. Research methodology

The questionnaire has been designed based upon the analysis of the most common methods of IC reporting and IC value drivers. The analysis included the Intangible Assets Monitor (Sveiby, 1997; Sveiby 1997a), Danish Guidelines (Danish Ministry of Science, Technology and Innovation, 2003), Meritum Guidelines (Meritum Project, 2002) and Wissensbilanz (Arbeitskreis Wissensbilanz, 2004). Within the group of IC value drivers suggested in the initial methods, 32 value drivers were chosen: 12 of human capital, 10 of structural, and 10 of relational capital. Each of the aforementioned value drivers was determined by a group of questions. The questionnaire consisted of 87 questions, with 70 Likert-type and 17 factual and categorized questions.

To use a questionnaire and identify IC value drivers as well as knowledge flows, the survey would need to include top and medium-level managers. This choice ensures relevant and sensible responses of the participants.

Considering the general lack of survey participants in Serbia, the following steps have been undertaken to encourage participation:

- Questionnaire provided a degree of anonymity (i.e., it did not include financial information pertaining to company and personal information of those surveyed),
- Two types of the questionnaire were offered - electronic and hard-copy – as a matter of convenience for those surveyed,
- A research team compiled a list of about 90 companies in Serbia in which the team members had business contacts or friends in managerial positions (“survey insiders”).

The majority of the “survey insiders” used their business contacts successfully; the response rate was outstanding – 90%. The total of 642 managers from 80 Serbian companies participated in the survey. Selected companies were diverse with regard to ownership structure, number of employees, industry, and geographical location.

According to industry of their companies, groups of participants were formed, showed in Table 1. Further analysis included 7 industries (groups of 50 and more participants). They are highlighted in gray colour in Table 1.

Table 1: Number of participants from particular industries

Industry	Number of participants	% in the sample
Utility services	116	18.1%
Industry	109	17.0%
Mining and energetics	94	14.6%
Services	79	12.3%
Media	55	8.6%
Telecommunications & IT	51	7.9%
Banking	50	7.8%
Insurance	35	5.5%
Education	32	5.0%
Chemistry and pharmacological	16	2.5%
Agriculture	4	0.6%
Traffic	1	0.1%
TOTAL	642	100 %

4. Results and discussion

Gathered data was first analyzed by Pareto analysis of cumulative frequencies of answers (categorized questions) and then by factor analysis of major components (Likert-type items). Here follows the overview of the most significant results.

Managers' profile: In almost all the industries, the majority of participants belong to 36-45 age group. Nevertheless, in the public utility sector, industry and services, there is an older structure of managers, with longer average length of service, compared to the media and banking sector, which are distinguished by younger age structures and smaller lengths of service of their managers. The largest percentage of managers in all the industries have a university education. However, in comparison with others, the media has by far the smallest number of managers with university education, and the largest number of those with secondary school education.

Training and education of managers: The acquired results reveal that almost a half, or even more than half of the managers in each industry in Serbia develop their levels of competence insufficiently, often neglecting training and education. In order to overcome challenges imposed by the knowledge economy, we have to accomplish obligatory pre-conditional factors: managing competences and leadership. They make key factors of modern companies' successes. The best situation, however, is in the sectors of telecommunications & IT, banking and services, while the worst situation is in the media, where 60% managers have never had any professional training, or had received it over a year ago.

Characteristics of employees most appreciated by managers: When the managers were asked to rank employee's characteristics (efficiency, experience, expertise, cooperativeness, innovativeness, commitment, education, initiative, loyalty, continuous competence development) they appreciate the most, the following results were gathered:

- managers in all the industries value employee expertise the most,
- characteristics most appreciated by managers in all the industries are: expertise, cooperativeness, commitment and efficiency, with slight variations in the order of merit according to priority,
- efficiency is not included in the group of the most important characteristics; only in the public utility sector and banking,
- what is particularly alarming is the result that innovativeness and continuous competence development belong to the group of the last three characteristics, according to how much the managers appreciate them in all the economic sectors.

Innovation is imperative for survival in modern business. Together with knowledge, they present new forces for gaining economic wealth. Managers in Serbia are not aware that in the knowledge economy, expertise cannot exist without innovativeness.

Employee motivators: When the managers were asked to identify the key motivational factor for employees in their companies, 70-90% of them, in all the industries, stated money as the major motivator. There are certain variations in the percentage and merit order of other motivators (promotion, working environment quality, public praise, non-financial benefits). These results go in line with the theory that money is the most significant motivating factor in companies with insufficient funds. According to numerous lines of research (Herzberg *et al.*, 1959; Kovach, 1987; Linder, 1998), work variety, promotion, advancing possibilities and job security are the most important motivating factors, while monetary factors are ranked as third or fourth.

Treatment of innovations: In all industries, innovations are mostly implemented spontaneously by employees, since there are no procedures for introducing innovations in business processes. Industry makes the only exception, since innovations are implemented to the largest extent according to formal procedures. Compared to other industries, far more innovations are patented in media and industry, while the smallest number of innovations is patented in the sector of mining and energetics. The largest number of innovations remains in the heads of employees (since they either do not want or are afraid to bring them up in groups) in banking, mining and energetics, whereas the smallest number remains hidden in the sectors of services, telecommunication & IT. Therefore, there is a lack of confidence between employees resulting in less knowledge sharing in companies within the field of banking, mining and energetics. The largest percentage of innovations is implemented in telecommunications & IT and services and the smallest in mining and energetics as well as banking.

Knowledge codification: If we consider codification of work processes, knowledge and experience, as well as innovations, we find out that the work processes are most codified (employees provide detailed documentation of the work process) in each industry. Knowledge is secondary

(documentation of specific problems and solutions) and experience third (documentation of the work methods). Innovations are the least codified (they document ideas for improving the work process). However, in telecommunication & IT as well as services, codification of innovations is present more than in other industries.

Knowledge base: Knowledge bases in all monitored Serbian industries mainly contain employee personal information, information on formal education and service length, whereas information on the employee actual experience, as well as their knowledge and skills is much less documented. In all the observed industries, psychological profiles of employees are least documented. Based on these results, it is possible to reach the conclusion that the observed Serbian companies are still not focused enough on the identification of knowledge, skills and experience, factors which are remarkably important in the value-creation process, their codification, and knowledge base creation.

Relations and cooperation with stakeholders: The process of identifying key stakeholders is very important during the analysis of relational capital. Out of 10 offered stakeholders (customers were not listed, since these relations were examined separately within other items), managers in various industries made different ranks of stakeholders, taking into account relations and cooperation (Table 2). The key stakeholders are labeled by X in Table 2.

Table 2: Summary of the key stakeholders

	Utility services	Industry	Mining & energetics	Banking	Media	Telecomm & IT	Services
Partners	X	X	X	X		X	X
State administration		X	X	X	X		X
Local administration	X				X	X	X
Industrial association and unions			X		X		X
Banks		X		X		X	
Investors							
Unions					X		
Shareholders							
Research institutes							
Universities					X		

Business partners make the most important stakeholders for companies in all industries, except for the media. The media sector differs from other sectors to the largest extent. The result, according to universities, occupies first place and business partners are ranked as seventh on the list of stakeholders, according to their importance in media, is completely an unexpected and still lacks a valid explanation. Due to the fact that most companies in Serbia have just recently finished or not yet finished the process of privatization, companies in all the industries have not developed the proper relationship with shareholders and investors so far, and remain blissfully unaware that these relations are extremely important for their business activities. In addition, a low level of cooperation with research institutes (as well as universities) reveals the existence of a big chasm between the economy and science. It is particularly surprising regarding the sector of telecommunication & IT.

Sources of competitiveness: According to the managers from the targeted industries, key sources of competitiveness (most appreciated by users/consumers) are labeled by X in Table 3.

Table 3: Key sources of competitiveness

	Utility services	Industry	Mining & energetics	Banking	Media	Telecomm & IT	Services
Quality of products/services	X	X	X	X	X	X	X
Reliability	X		X	X	X	X	X
Long tradition	X	X	X		X		X
Image					X		
Innovation							
Other							

In all observed industries the managers do not believe that the competitiveness of their companies is based on innovation, which is completely inconsistent with the results of numerous researches world-wide that found innovation to be the key driver of corporate value.

Knowledge acquisition: "Knowledge acquisition is a process of capturing and bringing knowledge from the external environment into the company" (Starovic and Marr, 2004, p.20). Key sources of knowledge acquisition in the observed industries are shown in Table 4.

Table 4: Key sources of knowledge acquisition

	Utility services	Industry	Mining & energetics	Banking	Media	Telecomm & IT	Services
training & education	X	X	X	X	X	X	X
employing individuals with proper competence	X	X		X	X	X	X
learning from experience gained in more successful companies		X				X	X
cooperation with customers	X	X				X	X
cooperation with scientific research institutes		X	X				
cooperation with universities							

Training and education present the key source of knowledge acquisition in all the industries. On the contrary, cooperation with universities is not amongst the key sources of knowledge acquisition in any of them. Companies from the mining and energy sectors acquire the missing knowledge the least by learning from the experience gained in more successful companies, whilst in telecommunications & IT, companies cooperate least with scientific – research institutions in order to acquire new knowledge that they are lacking.

Relevant value drivers of intellectual capital: Pareto analysis was used to determine the contribution of particular IC value drivers (human, structural and relational capital) to goal achievements and the company business success. Taking into account that the value driver with a greater contribution can be considered as more relevant, measures of suggested IC value drivers' significance were identified based on their contribution level.

a) Relevant value drivers of human capital The participants in the survey were first asked to choose, without ranking, 5 out of 9 offered HC value drivers, which according to them, make the greatest contribution to their company business achievements and successes. Based on cumulative frequencies of their answers, the following ranking of HC value drivers (decreasing in relevance) was acquired in the observed industries (Table 5). By distinguishing value drivers with the greatest contribution (the "Pareto rule"), relevant HC value drivers were determined and they are labeled in Table 5 as gray.

Table 5: Value drivers of human capital and their relevance in industries

UTILITY SERVICES		INDUSTRY	MINING & ENERGETICS		
HC value driver	C.freq.	HC value driver	C.freq.	HC value driver	C.freq.
efficiency	89,6	efficiency	91,5	efficiency	89,4
experience	88,7	experience	84,9	motivation	85,1
motivation	70,4	motivation	79,2	experience	84,0
strategic alignment	55,7	manag. competence and leadership	57,5	expertise	64,9
manag. competence and leadership	53,9	education and knowledge-sharing	49,1	education and knowledge-sharing	56,4
expertise	46,1	expertise	44,3	innovativeness	35,1
education and knowledge-sharing	35,7	strategic alignment	43,4	manag. competence and leadership	35,1
innovativeness	34,8	innovativeness	26,4	strategic alignment	30,9
social skills	27,5	social skills	17,0	social skills	12,8

BANKING		MEDIA	TELECOMMUNICATION& IT		SERVICES		
HC value driver	C.freq.	HC value driver	C.freq.	HC value driver	C.freq.	HC value driver	C.freq.
efficiency	89,8	efficiency	85,5	efficiency	88,2	efficiency	84,8
motivation	73,5	experience	83,6	expertise	68,6	motivation	73,4
experience	67,3	motivation	65,5	experience	68,6	experience	68,4
education and knowledge-sharing	65,3	expertise	61,8	motivation	66,7	expertise	53,2
manag. competence and leadership	55,1	manag. competence and leadership	52,7	manag. competence and leadership	58,8	manag. competence and leadership	48,1
expertise	46,9	innovativeness	43,6	education and knowledge-sharing	49,0	education and knowledge-sharing	45,6
strategic alignment	42,9	strategic alignment	40,0	innovativeness	37,3	innovativeness	43,0
innovativeness	32,7	social skills	34,5	strategic alignment	35,3	strategic alignment	36,7
social skills	28,6	education and knowledge-sharing	27,3	social skills	21,6	social skills	32,9

The fact that employee efficiency was seen as the most relevant HC value driver in all the observed industries was unexpected, especially if we take into account that expertise is listed among the group of relevant HC value drivers only in media and telecommunications & IT. Efficiency, being on top of the list, innovation and education of employees came close to last position, reflects the existence of the industrial, rather than the knowledge era in Serbia. The ranking of employee experience in the group of relevant HC value drivers is expected. The fact that motivation is listed in the group of relevant HC value drivers in all industries indirectly reflects the managerial awareness of its importance which is rather encouraging. Motivation is perceived as a powerful means of building relationships within the organization and a more efficient goal achiever. Education and knowledge-sharing is relevant only in banking. Employee innovativeness (as well as strategic alignment and social skills) is not on the list of relevant HC value drivers in any of the industries. That is quite discouraging. Such attitudes are certainly not in accordance with modern economies in which innovation and life-long learning have become company's ultimate tools in the attempt to cope with the dynamics and global competition in business.

b) Relevant value drivers of structural capital Based on the same principle, participants were supposed to choose 4 out of 10 offered SC value drivers (without ranking), which, in their opinion, primarily contributes to business achievements and business successes. The following ranking of SC value drivers, relative to their relevance in decreasing order, was acquired from within the observed industries (Table 6). Relevant SC value drivers were determined by the "Pareto rule" and they are labeled in Table 6 as gray.

Table 6: Value drivers of structural capital and their relevance in industries

UTILITY SERVICES		INDUSTRY		MINING & ENERGETICS	
SC value driver	C.freq.	SC value driver	C.freq.	SC value driver	C.freq.
process management	70,0	employees' commun. and interaction	64,0	employees' commun. and interaction	63,0
employees' commun. and interaction	68,0	process management	63,0	process management	52,0
ICT	60,0	process&procedural innovation	50,0	ICT	49,0
process&procedural innovation	54,0	brands and trade marks	42,0	process&procedural innovation	40,0
data bases	41,0	ICT	41,0	data bases	31,0
R&D	19,0	R&D	39,0	R&D	24,0
product innovation development	17,0	product innovation development	28,0	tech. opportun. for knowledge transfer and acquision	17,0
brands and trade marks	17,0	tech. opportun. for knowledge transfer and acquision	20,0	product innovation development	16,0
corporate culture	17,0	data bases	19,0	brands and trade marks	12,0
tech. opportun. for knowledge transfer and acquision	15,0	corporate culture	13,0	corporate culture	12,0

BANKING		MEDIA		TELECOMMUNIC. & IT		SERVICES	
SC value driver	C.freq.	SC value driver	C.freq.	SC value driver	C.freq.	SC value driver	C.freq.
corporate culture	98,0	ICT	80,0	ICT	86,3	employees' commun. and interaction	74,7
process&procedural innovation	61,0	employees' commun. and interaction	75,0	employees' commun. and interaction	60,8	process management	63,3
ICT	59,0	data bases	51,0	process management	47,1	ICT	54,4
employees' commun. and interaction	51,0	process management	51,0	process&procedural innovation	41,2	data bases	48,1
product innovation development	49,0	process&procedural innovation	36,0	data bases	37,3	process&procedural innovation	39,2
process management	45,0	brands and trade marks	31,0	brands and trade marks	33,3	brands and trade marks	31,6
brands and trade marks	43,0	product innovation development	25,0	R&D	31,4	product innovation development	21,5
data bases	27,0	R&D	24,0	tech. opportun. for knowledge transfer and acquision	23,5	R&D	20,3
R&D	18,0	tech. opportun. for knowledge transfer and acquision	20,0	corporate culture	19,6	corporate culture	17,7
tech. opportun. for knowledge transfer and acquision	14,0	corporate culture	9,0	product innovation development	15,7	tech. opportun. for knowledge transfer and acquision	16,5

SC value drivers that usually make the smallest contribution to business achievements are corporate culture or technical possibilities for transfer and acquisition of knowledge, except for telecommunications & IT, where product innovation and development take the last position when it comes to relevance for business success. This is probably seen as the biggest surprise. In this extremely knowledge-intensive industry, product innovation and development provide the condition for market survival, whereas R&D provides the basis for competitiveness. Corporate culture was ranked as the most relevant SC value driver in banking, but in all other industries was ranked last or next to last.

R&D and product innovation development were not seen as the relevant SC value drivers in any of the industries. We reach the conclusion that innovation and development components are again neglected, which falls into line with the previous results of ranking HC value drivers, in which innovation and competence development are omitted. These findings reveal obvious deficiencies in

business innovation in Serbia. It can be a result of poor employee innovation, lack of managing initiatives aimed to encourage innovation, or insufficient implementation of innovations.

c) Relevant value drivers of relational capital Participants were also supposed to choose 4 out of 10 offered RC value drivers (without grading), which, in their opinion, primarily contribute to business achievements and business successes. The following ranking of RC value drivers, relative to their relevance in decreasing order, was acquired in observed industries (Table 7). Relevant RC value drivers were determined by the "Pareto rule" and they are labeled in Table 7 as gray.

Table 7: Value drivers of relational capital and their relevance in industries

UTILITY SERVICES		INDUSTRY		MINING & ENERGETICS			
RC value driver	C.freq.	RC value driver	C.freq.	RC value driver	C.freq.		
customer relationship	91,0	customer relationship	90,0	customer relationship	76,0		
relationship with local community	72,0	supplier relationship	84,0	supplier relationship	60,0		
relationship with media	50,0	perceived image	56,0	relationship with banks and finan. institutions	34,0		
supplier relationship	46,0	relationship with banks and finan. institutions	47,0	perceived image	31,0		
relationship with banks and finan. institutions	33,0	integration of external knowledge	33,0	relationship with local community	26,0		
perceived image	33,0	relationship with competitors	26,0	relationship with competitors	24,0		
relationship with shareholders and investors	25,0	relationship with shareholders and investors	22,0	relationship with media	22,0		
social involvement	25,0	relationship with media	18,0	social involvement	16,0		
relationship with competitors	9,0	social involvement	10,0	integration of external knowledge	14,0		
integration of external knowledge	9,0	relationship with local community	6,0	relationship with shareholders and investors	9,0		
BANKING		MEDIA		TELECOMMUNIC. & IT		SERVICES	
RC value driver	C.freq.	RC value driver	C.freq.	RC value driver	C.freq.	RC value driver	C.freq.
customer relationship	94,0	customer relationship	93,0	customer relationship	96,1	customer relationship	96,2
perceived image	67,0	perceived image	67,0	perceived image	62,7	perceived image	65,8
relationship with media	51,0	relationship with local community	51,0	relationship with media	49,0	relationship with media	54,4
relationship with shareholders and investors	39,0	relationship with media	40,0	supplier relationship	47,1	relationship with local community	48,1
integration of external knowledge	33,0	social involvement	33,0	relationship with local community	33,3	supplier relationship	35,4
relationship with local community	31,0	supplier relationship	29,0	relationship with banks and finan.institutions	29,4	integration of external knowledge	24,1
relationship with banks and financial institutions	22,0	integration of external knowledge	29,0	integration of external knowledge	27,5	relationship with competitors	21,5
relationship with competitors	22,0	relationship with banks and finan. institutions	25,0	relationship with competitors	25,5	social involvement	15,2
supplier relationship	20,0	relationship with shareholders and investors	16,0	relationship with shareholders and investors	17,6	relationship with shareholders and investors	11,4
social involvement	16,0	relationship with competitors	16,0	social involvement	11,8	relationship with banks and finan. institutions	10,1

Customer relationship was emphasized as the most relevant RC value driver in all of the observed industries. Banking, media, telecommunications & IT as well as services have the same relevant RC value drivers (customer relationship and image). Furthermore, industry, mining and energy sectors have the same RC value drivers (customer relationship and supplier relationship), whereas in the sector of utility services the relationship with the local community is seen as the second relevant RC value driver.

Setting aside only the relevant value drivers of human, structural and relational capital (Table 5, Table 6, Table 7), groups of the relevant IC value drivers for particular industries were established. They are presented in Table 8. These IC value drivers, according to managers, contribute the most to business achievements and business successes amongst the observed industries.

Table 8: Relevant IC value drivers in observed industries

	UTILITY SERVICES		INDUSTRY		MINING & ENERGETICS	
	Value driver	C.freq	Value driver	C.freq	Value driver	C.freq
Human	employee efficiency	89,6	employee efficiency	91,5	employee efficiency	89,4
	employee experience	88,7	employee experience	84,9	employee motivation	85,1
	employee motivation	70,4	employee motivation	79,2	employee experience	84,0
Structural	process management	70,0	employees' commun. and interaction	64,0	employees' commun. and interaction	63,0
	employees' commun. and interaction	68,0			process management	52,0
	ICT	60,0	process management	63,0	ICT	49,0
	process&procedural innovation	54,0				
Relational	customer relationship	91,0	customer relationship	90,0	customer relationship	76,0
	relationship with local community	72,0	supplier relationship	84,0	supplier relationship	60,0

	BANKING		MEDIA		TELECOMMUNIC. & IT		SERVICES	
	Value driver	C.freq	Value driver	C.freq	Value driver	C.freq	Value driver	C.freq
Human	employee efficiency	89,8	employee efficiency	85,5	employee efficiency	88,2	employee efficiency	84,8
	employee motivation	73,5	employee experience	83,6	employee expertise	68,6	employee motivation	73,4
	employee experience	67,3	employee motivation	65,5	employee experience	68,6	employee experience	68,4
	education and knowledge-sharing	65,3	employee expertise	61,8	employee motivation	66,7	employee expertise	53,2
					manag. competence and leadership	58,8		
Structural	corporate culture	98,0	ICT	80,0	ICT	86,3	employees' commun. and interaction	74,7
	process and procedural innovation	61,0	employees' commun. and interaction	75,0	employees' commun. and interaction	60,8	process management	63,3
	ICT	59,0						
Relational	customer relationship	94,0	customer relationship	93,0	customer relationship	96,1	customer relationship	96,2
	image	67,0	image	67,0	image	62,7	image	65,8

5. The most important observations

By analyzing IC in 7 different industries, specific IC features, knowledge flows and relevant IC value drivers were identified. Comparative analysis of IC within the observed industries, indicated numerous similarities, as well as certain specific features within particular industries.

The fact that there are no 2 industries with the same relevant IC value drivers (Table 8) proves the existence of inter-industry variety from the perspective of IC reporting. Bearing in mind the basic assumption that relevant IC value drivers largely select the group of relevant IC indicators, the differences in groups of identified relevant IC value drivers in industries could result in different groups of IC indicators for particular industries, i.e. in differences in IC reporting.

On the other hand, similarities of industries from the perspective of IC, such as the common characteristics of IC and IC value drivers which are relevant in all industries (Table 8), can present the basis for defining the general model of IC reporting, applicable in all industries. This would create an opportunity for comparing companies from IC perspectives, which is crucial for precise assessment of company performance and success.

The results show that employee efficiency is considered to be the primary HC value driver in all industries. On the other hand, innovativion is not in the group of relevant HC value drivers in any of the industries. Education and knowledge-sharing are seen as relevant ones only in banking, whereas employee expertise is the relevant value driver in 3 out of 7 industries (media, teleccomunication & IT, services). These results illustrate the existence of the industrial rather than the knowledge era in an observed economic environment. Managers are not sufficiently aware of the fact that innovation and long-term learning are the ultimate tools for business success in modern economy. Therefore, they do not invest in professional development which results in low competitiveness in the marketplace. In addition, product innovation development, as well as R&D, is not seen as the relevant SC value drivers in any of the observed industries. Furthermore, process and procedural innovation development is the relevant SC value driver only within the utility services and banking sectors. The key importance of innovation, as well as management initiatives for promoting innovation, is not recognized in the observed Serbian industries.

6. Conclusion

This paper presents a wide-ranging research and analysis of IC and knowledge flows in seven different industries. The acquired results reveal some specific features of industries, particularly regarding relevant IC value drivers.

The results should be considered whilst keeping in mind the following:

- the primary research objective was not to identify precise IC measures for individual companies, but to scrutinize organizational IC from a broad perspective. In other words, the goal was to identify specific IC features within different industries in order to define general measures that are applicable in particular industries. These would in turn prescribe applications of IC reporting and management in companies from the observed industries;
- identification of relevant IC value drivers and specific IC features in different industries was not only oriented towards defining relevant IC indicators and IC measuring, but also towards managerial control and decision-making, based upon identified strengths and weaknesses of IC within the industries. “Measurement alone or measurement for the sake of measurement is not enough” (Nordic Industrial Fund, 2001, p.64). The knowledge concerning the IC from each of the observed industries can be synthesized into separate IC overviews of a particular industry. These IC overviews could, later on, be used in order to provide more accurate IC reporting and management from within the observed industries;
- identified groups of relevant IC value drivers are environment – specific, because they were chosen by those who were surveyed (Serbian top- and medium- level managers). Therefore, their implementation could be limited to the observed environment. Furthermore, identified groups of relevant IC value drivers are not free from certain drawbacks. For example, competence, employee training and education, innovation, and R&D are not included in the groups of relevant IC value drivers in almost all of the observed companies. These value drivers were not found to be significant within the observed environment. Nevertheless, they are dominant in value-added

creation and as an IC statement without indicators which relate to those value drivers, does not constitute a valid and all-encompassing picture of reality

In general, the contributions of this research should be viewed as a refinement of the existing IC reporting methods with respect to unique characteristics of the industries. By fine-tuning of IC reporting to particular industrial features, it is possible to capture and picture intellectual capital more precisely, thereby increasing the accuracy of IC measuring and reporting and making it easier for implementation in different industries.

On the other hand, a limitation of using different IC reporting models (different groups of relevant IC indicators) is the inability to compare companies from different industries. Comparison is only possible when the same measuring system is applied. In the case of IC measuring and reporting it only works if the same IC indicators are applied.
However, research programs that are tailored to specific environments while utilizing large data sets such as the present one can contribute to our efforts towards developing a universal methodology for IC reporting and measurement. Although IC community has made significant advances in assessing and reporting methods (Edvinsson and Malone, 1997; Sveiby, 1997; Roos et al., 1997; Stewart, 1997; Bontis, 1999; Sanchez et al., 2000; Andriessen, 2004), convergence of existing measuring methods towards a universal one and standardization in the field of IC measuring are of extreme importance for IC community.

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