

Corporate Governance of Enterprise IT: Research Study on IT Governance Maturity

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Abstract—Despite the financial crisis and ongoing need for cost cutting, companies all around the world heavily invest in Information Systems (IS) and underlying Information Technology (IT). Proliferation of governance of enterprise IT helps companies manage, or rather, governs IS as a primary business function with executive management involved in making decision about IS and IT. The business value of IT is raising with the involvement of the executive management in IT decision making process and quality IT governance mechanisms in place. In this paper the practice of governing the enterprise IT will be investigated on a sample of the largest 100 Croatian companies. Research questions posed here will reveal if there are some formal IT governance mechanisms, are there any differences in perceived role of IS and IT between CIOs (Chief Information Officers) and CEOs (Chief Executive Officers) of the sampled companies and what are the mechanisms to govern massive investment in enterprise IT.

Keywords—IT governance, governance of enterprise IT, information system auditing, IT maturity.

I. INTRODUCTION

INFORMATION SYSTEMS (IS) play very important role in modern business organizations supporting its organizational efficiency or, under certain circumstances, fostering business model innovation and change. IS can influence organization competitiveness in two ways:

- Supporting operational efficiency (IS as a main infrastructure for the current business), or
- Differentiating business through business model innovation and business process change.

In the first role IS enhances conduction of business processes in more efficient, quicker and effective way supporting cost leadership strategy. According to well-known IT Strategic Grid [9], this is so called defensive role IS might have in the business, with no direct influence on organizational innovativeness, but acting as a strong tool for cutting costs and making business processes conduct faster, efficient and with lower transactional costs. In other mode, IS takes an offensive role to the business, fostering change of business processes and innovation of business model which may result in direct competitive advantage. Innovative IS and underlying information technology (IT) offer so called ‘temporary monopoly’ to the business mainly through its turnaround and strategic mode. Ernst & Young [3] reported that 61% of executives believe that IT should focus on driving innovation in business processes. In either way IS becomes

very important to the business and needs to be aligned with strategic objectives in order to justify massive investments. A number of studies [18], [5], [4], [16], [13] showed that investments in IS and underlying IT resulted in added business value only if they are truly connected with strategic business objectives. In that sense proliferation of governance of enterprise IT helps companies manage, or rather, governs IS as a primary business function with executive management involved in making decision about IS and IT. The quality of IT governance is rising with the large number of decisions about IS made by executive management, not IT departments. The more executive management is engaged in making decision about IS and IT, the IT governance is of better quality [15]. Recent researches stand on that point, for example ITGI [7] and ISACA [6] reported that important business outcomes of governance of enterprise IT are improved management of IT-related risks, improved communication and relationships between business and IT and improved business competitiveness. To do so, IT departments and their CIOs (Chief Information Officers) need to become truly partners to the business and should propose principles, policies and methods by which CEOs would be able to govern enterprise IT. This is particularly possible through the set of metrics by which IT business value should be measured. In such an environment it is useful to investigate in further details mechanisms and principles for governance of enterprise IT. In the paper IT governance is defined and explained in further details, mechanisms for its implementation is analyzed and major principles investigated through research survey on a relevant sample.

II. CONSTRUCTING IT GOVERNANCE COMPONENTS

IT governance as a relatively new concept introduced in the late 1990s, has gained importance in the 21st century due to well-known collapses (Enron Inc, WorldCom, Parmalat, etc.) and the need for a better reporting and financial disclosure system. International and national regulatory provisions (for example, Sarbanes-Oxley act) helped in understanding control mechanisms in modern IS/IT environment and resulted in further impetus for IT governance issues world-wide [10], [12]. IT Governance is the process for controlling an organization’s IT resources, including information and communication systems and technology. IT governance is an integral part of enterprise governance, represents the responsibility of executives and board of directors and consists of leadership, organizational structures and processes that ensure that enterprise’s IT sustains and extends the organization’s strategies and objectives [18], [7]. Therefore,

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IT governance covers a broad, but not always clearly defined, set of management processes that are aimed at ensuring the effective use of IS and IT within that enterprise. The primary focus of IT governance is on the responsibility of the board and executive management to control formulation and the implementation of IS strategy, to ensure the alignment of IS and business, to identify metrics for measuring business value of IS and to manage IS related risks in an effective way [15]. The question is whether IT structures, processes, relational mechanisms and IT decisions are made in the interest of shareholders and other stakeholders, or primarily in the executives' interests. Nolan and McFarlan [9] recently pointed out that 'a lack of board oversight for IT activities is dangerous; it puts the firm at risk in the same way that failing to audit its books would'.

Having defined IT governance, it is necessary to understand its most important elements. The IT Governance Institute suggests that fundamentally, IT governance is concerned about two things [14]:

- IT should deliver value to the business and
- IT risks need to be mitigated.

This leads to the five main focus areas of the IT governance, all driven by stakeholder value. Two of them are outcomes: value delivery and risk mitigation. Two of them are drivers: strategic alignment and performance measurements. The remaining one refers to IT resource issues. While value delivery is focused on the creation of business value, risk management is focused on the preservation of business value [18]. IT Governance Institute (ITGI) and their partner institution ISACA (Information System Audit and Control Association) propose that IT governance should consist of five different components namely [7]:

1. **Business/IT strategic alignment** (IT Governance procedures should ensure linkages of business and IT plans; defining, maintaining and validating the IT value proposition; and aligning IT operations with enterprise operations).
2. **IT value creation and delivery** (ensuring that IT delivers the promised benefits against the strategy).
3. **IT Risk management and/or value preservation** (embedding of IT risk management responsibilities into the organisation, IT risk awareness by senior corporate officers, a clear understanding of the enterprise's appetite for IT risk).
4. **Performance measurement in IT** (tracks and monitors IT strategy implementation, IT project completion, resource usage, process performance and service delivery).
5. **IT resource management** (optimal investment in, and the proper management of critical IT resources: applications, information, infrastructure and people).

III. LITERATURE REVIEW ON IT GOVERNANCE MATURITY

While early IT implementations were clearly focused on automation of clerical and repetitive tasks, in today's highly competitive business environment, effective and innovative use of information technology (IT) has the potential to

transform businesses and drive stakeholder value [18], [11]. According to the recent ITGI study results, IT is quite to very important to delivery of the corporate strategy and vision [7]. On the other hand, poorly managed IT investment or badly implemented IT projects will lead to value erosion and competitive disadvantage [7], [18], [14]. A number of or company-level studies and analyses show that IT contributes substantially to company's productivity growth. This contribution is by all means strong where IT strategy is linked with business strategy, thus IT can initiate major changes in organization structure, business processes and overall activities [16]. In one study [1], it was concluded 'that while computers make a positive contribution to productivity growth at the firm level, the greatest benefit of computers appears to be realized when computer investment is coupled with other complementary investments; new strategies, new business processes, and new organizations all appear to be important.' Central message from the research literature, and one that is universally accepted, is that technology itself has no inherent value and that IT is unlikely to be source of sustainable competitive advantage [11]. The business value derived from IT investments only emerges through business changes and innovations, whether they are product/service innovation, new business models, or process change. Some researchers studied industry specific IT governance initiatives: Dameri [2] analyse the benefits of IS compliance preferably through IT governance role and Mashour and Zaatreh [8] investigate and validate the positive impact effective IS may have at Jordan Banks. Although the research efforts around IT governance area are impressive, there are very few evidences in literature review on evaluating IT governance maturity. We tried to fill the research gap by investigating how IT governance may be measured and what are the key principles of IT governance practices. In order to investigate factors affecting IT governance maturity, we pose following research questions: what are the formal IT governance mechanisms on a sample of Croatian companies, are there any differences in perceived role of IS and IT between CIOs (Chief Information Officers) and CEOs (Chief Executive Officers) and what is the role IT in the business.

IV. RESEARCH ON IT GOVERNANCE MATURITY

A. Survey Instrument

In order to be able to answer the posed research questions we decided to conduct a survey followed with a series of comprehensive and in-depth interviews with the key people involved in the IT governance processes (CIOs and CEOs) on a sample of the largest 100 Croatian companies.

The questionnaire was then sent to 100 CIOs (Chief Executive Officers) in Croatian large companies selected from the Register of '100 Large' companies, which are more likely to represent the structure of the Croatian economy. The survey was performed from March 2012 to April 2012 and was conducted by verbal communication with CIOs.

The survey resulted in 37 responses, representing acceptable response rate, but also limiting the research due to

the small scope. The strengths of the methodology used represent the fact that the respondents weren't self-selecting the questions and themes. They were rather interviewed about their IT Governance and IS Audit practice.

B. Analysis of Research Results and the Discussion

The analysis of the responded questionnaires reflects that large number (94%) of Croatian organizations have implemented an IS strategic plan, as a part of overall strategic plan, which represent large improvement compared to the last research on a same sample (46% in 2002, [13]). Considering relatively low level of IT investment (53,7% of companies allocate less than 2% of total annual revenue for IT, average IT budget is 2,62% of revenue, while world companies invested in IT in average 4,1% of their revenue), 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. If we break down typical IT expenses in surveyed companies, priorities are investments in hardware and far less in knowledge (applications, employees and services). These results imply that Croatian companies underestimate necessity of IT planning and that in Croatian organizations IT is neglected resource. With such a poor IT planning as well as IT budgeting one cannot expect progressive IT governance. This contribution is by all means strong where IS strategy is linked with business strategy, thus IS can initiate major changes in organization structure, business processes and overall activities. Majority of surveyed companies used IT in a support or operational mode of IT Strategic grid model explained in the introduction.

An Information System (IS) which does not serve corporate strategies should be a source of managerial concern and frustration and any misalignment of IS and corporate strategy could have detrimental effect on organizational performance. Therefore, aligning IS with business objectives represent one the most important activities that add value to the business and proper measures for evaluating its contribution to the business is needed. Research results suggest that in 58,7% of companies there is no measure for evaluating the influence of IT on business productivity, although the conscience of having such a metrics is highly appreciated (average mark 3,95 on a 1-5 scale).

Research has shown that the smaller portion of the leading Croatian companies use certain formal mechanisms of IT governance such as various committees (councils) to make decisions and monitor implementation of these decisions, the various procedures and processes. Thus, only 31% of the leading Croatian companies have the established IT Steering Committee (Council), only 38% have the IT Investment Council to manage investments in IT and the procedures for approving these investments, only 19% have the established IT Architecture Board and only 12% have established the IT Strategy Committee. On the other hand, majority of leading Croatian companies use some model (framework) for IT governance - 67% of them use ITIL, 61% use CobiT, 56% of them use the PMI/PMBOK. In addition, 69% of the leading

Croatian company regularly perform IS audits mainly due to regulatory provisions. Furthermore, 54% of the leading Croatian companies do not have a formal system of IT governance or this system is poor. There are some differences in the application of IT governance mechanisms according to industry (in finance and insurance industry, for example, more formal mechanisms of IT governance are applied - 75% of these companies have established an IT Steering Committee, 50% have established the IT Investment Council, almost all these companies manage their IT investments as a portfolio of projects, etc.)

The results of the research show that there is no major difference in who makes decisions on important domains of IT governance, except maybe in the domain of managing IT investments. But there is a difference in how those decisions are made. Leading Croatian companies use formal mechanisms such as committees (IT Steering Committee, IT Investment Council, IT Architecture Board, IT Strategy Committee), procedures (for example, procedure for selecting and approving IT investments), and good practices (for example, managing IT investments as portfolio of projects, assigning responsibility for realization of benefits from investments). Also, leading Croatian companies are lagging behind in the use of good practices and recommendations in the areas of managing IT investments, IT architecture management, and IT performance management (31% of them use IT Balanced Scorecard for performance management tool, IT performance metrics mainly refer to cost indicators, while indicators for measuring business value of IT are very rarely used, [17]).

The most substantial difference compared to world-wide researches (for example, [18], [9], [17]) is in engagement of executive management in IT governance and their perception of IT governance. The research revealed that although the CIO is the key person for IT governance, CEOs need to take more responsibility for IT governance. Also, executive management of the leading Croatian companies spends less of their time on issues related to IT compared to world-wide practice and does not take necessary responsibility for IT governance, but delegates it to CIOs. On the other hand, CEOs find maturity of IT governance at highest level (86% of them consider IT governance practices to be at the medium and high level of maturity) compared to best practice (only 40% of world CEOs consider IT governance practices to be at the medium or high level of maturity). This can lead us to conclusion that CEOs don't realize the importance of IT governance and its alignment to business strategy. Also, executive management might not completely understand the full potential of IT usage in business, so we may conclude that there is room for improvement in IT governance in the leading Croatian companies which should result in better results and greater value from investing in IT.

V. CONCLUSION

In this paper we argued about IT Governance prospects in Croatian large companies. Research conducted emerged with a conclusion that Croatian companies underestimate the role IT

can have in increasing productivity. But despite the perceived importance, IT in surveyed companies is not governed according to best practice:

- executive management is not engaged and it does not take responsibility for IT governance, but it is delegating this responsibility to CIOs,
- formal mechanisms of IT governance such as are boards, processes and procedures are not used enough,
- IT investment practices lags behind good practices,
- IT architecture management is neglected,
- practices of monitoring IT performance are cost based, while business value of IT is not measured,
- structures, processes and procedures of IT governance, if exist, are not consistent and often change,
- IT departments in the leading Croatian companies have substantially less employees compared to best practice.

Even so, CIOs and CEOs of the leading Croatian companies find IT to be important to extremely important for achieving business strategy of the company, a reactive approach from CEOs to IT governing might be confirmed due to:

- perceived role of IT in the business (IT is rather used for improving efficiency and effectiveness than for fostering innovation),
- CIOs involvement in creation of business strategy (CIOs are in just 38% of the cases included in business strategy creation),
- IT efficiency practices (level of automation through IT is low) and,
- IT investment practices (mainly investing in hardware, minor investments in services and knowledge which consequently leads to the fact that majority of IT professionals are employed on low value added jobs such as equipment support and help desk, while high value added activities such as knowledge jobs and development of new services are of less priority).

Therefore, the answer to the main research question is: Croatian companies use IT as a technological (infrastructure) support, and IT governance benefits are not exploited to the full. IT governance system defines who has the right to make decisions related to IT, how those decisions are made, who is responsible for their implementation, and how accomplished results are monitored. Relevant researches (for example, [18]) have shown that quality IT governance results in better IT performance, greater return from IT investments, better perception of IT and consequently better business results. Poor IT governance results in lower IT investments returns, loss of money, time and resources, lower moral and bigger fluctuation of IT employees and it results in general dissatisfaction with IT function in the company.

Results of this research reveal that when IT and business are strategically aligned (mainly through IT governance initiatives), IT investments are high, IT governance maturity raise and the IT department is seen as a strategic partner to organization, which was not the case on a sample of surveyed Croatian organizations. The alignment can be improved and the level of IT governance maturity may be evaluated through regular IS auditing activities which arises from regulatory

obligations. The research might be useful because of fact that similar efforts are very rare (if there are any of them) and there are modest evidences of IT governance maturity.

Possible recommendations for practitioners should include following suggestions:

- implement a program of education in IT governance area and explain the benefits which can be gained by implementing a quality IT governance system,
- start a program of improving an IT governance system. Primary focus must be on improving IT investment management practices and determining strategic goals of IT (alignment of IT and business),
- establish an IT Steering Committee whose members would be key people from management of the company (including the CEO) and CIO. That board should monitor IT governance initiatives and activities,
- make organisational changes to strengthen the CIO role and include IT in the process of strategic planning and determining goals,
- perform thorough IS audit, analyse current IT practice, identify possible risks business are exposed to and suggest to CEO countermeasures which are to be implemented to improve IT governance practices.

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