

Information Systems Audit for University Governance in Bucharest Academy of Economic Studies

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Today's successful audit leaders never lose sight of the importance of continually assessing and improving the organizations' university governance structure. Focusing on small and large mission, and using practical exercises and individual activities, the auditors will help gain the skills necessary to review and improve university governance structure, while developing techniques to assess risk management activities. Attendees will leave with an understanding of legal and regulatory guidelines as they pertain to university governance and discuss in-depth issues such as business ethics, transparency and disclosure, IT governance and university risks management. Identification, evaluation and management of university risks, is an important element of the university governance system. Today, the Bucharest Academy of Economic Studies is in a complex process to realize a university governance integrate information system. In context of this paperwork there are presented the main aspects for developing and implementing in actual phase information systems audit, to recognize the risks and establish the necessary measures to eliminate them.

Keywords: *University Governance, IT Governance, IS Audit, Risks Management, Performance*

1 Introduction

At the world level, from the analysis of the main classification in higher education, it results that the performance universities are those that became entrepreneurial universities. These universities apply the concept of university governance, assume from business domain, where is known as corporate governance.

As it is define by different entities, **university governance** is the set of processes, customs, policies, laws, and departments affecting the way a university is directed, administered or controlled. University governance also includes the relationships among the many stakeholders involved and the goals for which the entity is governed. The principal stakeholders are the shareholders, management, and the board of directors. Other stakeholders include employees, customers, creditors, suppliers, students, professors, regulators, and the community at large. The overriding objective of the university should be to optimize over time the returns to its shareholders. Where other considerations affect this objective, they should be clearly stated and disclosed. To achieve this objective, the university should endeavor to ensure the long-term viability of its business, and to manage effectively its relationships with stakeholders. [1] Many universities viewed business ethics only in terms of administrative compliance with legal

standards and adherence to internal rules and regulations. Today the situation is different. Attention to business ethics is on the rise across the world and many entities realize that in order to succeed, they must earn the respect and confidence of their customers. Like never before, universities are being asked, encouraged and prodded to improve their business practices to emphasize legal and ethical behavior. Universities alike are being held increasingly accountable for their actions, as demand grows for higher standards of social responsibility.

Nevertheless, Information Technology Governance (IT Governance) [10] is the difference between success and failure in today's high technology environment and it is an important part of the university governance. Regulators, students and professors are increasingly concerned about the proper use of information and particularly personal data. Many organizations are identifying information as an area of their operation that needs to be protected through university governance plans as part of their system of internal control [7].

IT governance focuses on IT systems and their performance and risk management. It is a core resource to help those responsible for university governance and IT management generally to understand, direct and manage the IT governance

and information security efforts within their organizations. Implementing a university governance regime, it will put in compliance with the needs of Sarbanes-Oxley and other key legislation. Any of the myriad aspects of effective IT governance, rang from the provision of relevant books and standards, through to training (both classroom and computer-based) and consultancy [2].

The primary goals for information technology governance are to (1) assure that the investment in IT generates value, and (2) mitigate the associated risks with IT implementation. This can be done by implementing an organizational structure with well-defined roles for the responsibility of information, business processes, applications, infrastructure etc [13].

It's virtually impossible to have too much transparency or education about IT governance. Transparency and education often go together-the more education, the more transparency, and vice versa. The more transparency of the governance

processes, the more confidence in the governance [15].

The Information Systems Audit and Control Association (ISACA) IT governance status report for 2008 stressed that there was substantial room for improvement in the alignment between IT governance and overall governance. Moreover, research published by ISACA has shown that most organizations are not generating optimal value from their IT investments [11]. The most important factor in distinguishing between top-performing and substandard-performing organizations in both the private and public sectors is the level of leadership from business and senior managers in a handful of key IT decisions. This holds true for government departments as they must deliver, support and maintain successful IT projects and IT infrastructure if they are to provide their services to the public economically, efficiently and effectively [14].

Table 1. Audit objectives for IT governance

Major objectives	Implementing good practice
	Assessing existent controls or in order to be introduce, like common policy and processes [9] which include: <ul style="list-style-type: none"> - IT Help desk amalgamation with common support processes - PC/Desktop installation and deployment techniques - Information Security - Software licensing - Virtualization of desktops, servers and data hosting.
	Configuring of key points for information security
	Reducing the frequency and/or impact of major incidents
Important objectives	Aligning to the internal security policy
	Integrating in the program of management risks
	Appearing new requests at each faculty level
	Growing the existent investments
Other objectives	Gain the competition advantages
	Appearing new requests at university level
	Responding to the pressure made by third entity (ministry, collaborating with other universities, suppliers, etc.)
	Obtain a minimum cost

The objectives of this audit are to assess:

- the adequacy of Committee on Institutional Cooperation (CIC)'s IT governance structure; and
- the degree of alignment and integration between CIC's IT strategy and its business strategy.

Some universities have established the involvement of board-level executives in IT issues to defer all key decisions to the university's IT professionals.

The main objectives are presented in the table 1.

In the light of work to date these objectives can be expanded to: review staffing, resources and processes for provision of IT Services and aim to move to a situation where:

- Policy, standards and common operational processes are established once and implemented by all support services, faculties and departments.
- Resources for policy implementation are drawn from staff with appropriate skills, irrespective of their current location (i.e. establish matrix management to allow departmen-

tal IT Support Staff to participate in organization-wide, strategic projects) [18].

2 Methodology for university governance

University governance methodology involves at least six steps. This process first introduces the students to university governance. The investment staffs then reviews the student's governance practices and, where necessary, develops a university governance improvement program with the student. Matrices, checklists, and other tools used in this process are tailored for each of the five paradigms (investee university model).

Step 1: First Impressions

- Form an initial view on whether university governance poses a special risk or a good opportunity for value-added.
- Select the governance paradigm (or combination of paradigms) to be applied to the university.
- Identify, if possible, specific issues that are likely to be priorities and whether there will be need for further resources from the University Governance Unit.

At the earliest practical stage in the project cycle, the investment staff should articulate their first impressions concerning the student's university governance. This will allow:

- the selection of the appropriate paradigm to use with the student.
- the IO to determine if the project requires a University Governance Review (UGR) or a Full University Governance Assessment (UGA).

Step 2: Student Self-Assessment

- Begin the dialogue with the student and introduce university governance methodology.
- Send the student the appropriate progression matrix and the explanatory note "Why University Governance?"
- Enable students to assess their own governance against the progression matrix.

Before conducts a thorough university governance analysis of the university, the students should carry out its own assessment. This self-assessment not only encourages the student to "buy-in" to the university governance dialogue, but can also act as the first step in own analysis.

Step 3: University Governance Analysis [6]

- Send the information request list to the student, at least three weeks in advance of the on-site appraisal, so that all the necessary background information can be acquired by the appraisal team prior to the review of the

university's governance. The information request list (and the delivery of responses from the student) should be coordinated with other parts of the investment team's legal and financial information gathering.

- Implement an on-site review of the governance of the university, assessing which approximate "level" is achieved in the five key areas of governance outlined on the progression matrices and clarifying any outstanding issues from the Information Request List.
- Decide whether the student needs to undertake a university governance improvement program. The basic purpose of the university governance review is to acquire understanding about the university, with a view to identifying risk and opportunity and, if necessary, developing an improvement program.

Step 4: University Governance Improvement Program

- Prepare an analysis of the university's governance, highlighting areas for improvement and making proposals to address governance weaknesses.
- Develop a university governance improvement program with the student that is specifically tailored to the needs of the university.
- Agree with the client on a timetable and methods for the implementation of this program.
- Identify areas where can assist the university in its university governance improvement efforts even after the transaction has taken place.

If the university governance analysis identifies a need for an improvement program for the university, this program will be developed in university with the owners and senior managers of the university. In developing a program, the investment staff can draw upon various university governance resources. In some cases, the program will be comprehensive, covering all five key areas of university governance. In other cases, the program will be more narrowly focused. For example, it will concentrate only on areas where risks or opportunities are identified, such as the board of directors or equitable treatment of shareholders.

Step 5: Documentation and Implementation

- Draft the operational documentation outlining the agreed improvement program, such as the Term Sheet, Loan Covenants or Shareholders Agreement.
- Decide upon the appropriate degree of legal enforceability of the program and what penalties, if any, are appropriate for the failure

to implement the program.

Identify any need for continuing assistance to the client after the disbursement. To ensure a common understanding of the university governance improvement program and to assign clear accountability for its effective implementation, both the program and the timetable for its implementation should be appropriately documented. There is wide flexibility in the operational documentation that can contribute to this goal, including term sheets, loan covenants, and shareholders agreements.

Step 6: Supervision

- Use the *Supervision Checklist* to ensure the continuing adherence to the agreed university governance improvement program.
- Identify the need for further university governance assistance.

The staff responsible for the subsequent supervision of an investment should become well acquainted with the student's university governance improvement program in order to monitor its implementation and identify need for further assistance.

This process is designed to be conducted as an integral part of the appraisal for new investments. However, the methodology is flexible so that it can be adapted to other circumstances, such as supervision of and assistance to existing portfolio university [17].

3 Collaborative University Governance in Economic domain

In 2005, at the initiative of managers from AES, there was founding Association of Economic Faculties in Romania (AEFR which is defining AFER). One of the major objectives of this association is to collaborate in management university governance. In this context, it will be presented some particularities regarding collaboration university governance.

Collaboration is required when multiple universities achieve complex goals that are difficult or impossible to attain for an individual one. This collaboration takes place under conditions of incomplete information, uncertainty, and bounded rationality, much of which has been previously studied in economics and artificial intelligence. However, many real world domains are characterized by even greater complexity, including the possibility of unreliable and non-complying collaborators, complex market and incentive frameworks, and complex transaction costs and organizational structures [21].

Collaborative and autonomous university that

plan, negotiate, coordinate, and act under this complexity aims to foster *models of collaboration in distributed systems*, addressing a range of theoretical and practical issues.

The main objectives for Collaborative University Governance are as follows:

- enable collaborative university to *form and follow joint agreements and contracts* in complex organizational and market driven domains.
- develop a *comprehensive contractual formation/maintenance framework* applicable to many application domains.
- build *comprehensive customer lifecycle management* systems for customers, including telecommunication consumers, students, professors and patients.
- deploy *lifecycle management systems in real world applications*, such as telecommunication and smart campuses [2].
- design markets that are adequate for students to act with *incomplete and uncertain information of the behaviour of collaborating departments*.
- the implications of *partial regulation* on the management of contractual relationships and service delivery.
- organizational structures influence *students duties and the distribution/execution of tasks*.
- cope with *collaborators that exhibit unreliable and non-conformant behaviour*, eg where agreements are made but are not always conformed with.
- can *interventions and incentive structures* assist in managing contractual relationships and service delivery.
- assign *transaction costs* to actions in planning, assignment, and execution in organizational structures.
- can transaction costs influence the *social outcome* of the system which is further influenced by the organizational context under which the collaboration takes place.
- can lessons learnt in *game theoretic computation* inform *collaborative* entity settings.
- role does *learning and adaptively* play in building organizational.

Strategic planning is about making conscious choices concerning the key drivers shaping your organization's future. Collaborative Strategies for University helps to improve performance by engaging students, professors, employees, planning strategy, and aligning capacity to reach outstanding results in organizational impact, capabilities,

and relationships.

In many industries, on behalf of both for-profit and not-for-profit organizations as AES, it raise strategic questions and collaborate with you to test hypotheses, find answers, and make decisions to fulfill strategic vision. The practical approach emphasizes execution. It will work to develop the metrics and define the milestones to guide successful implementation of university plan.

The approach starts with effective diagnosis through data gathering, accurate analysis and targeted interviewing. It applies that assembled knowledge to collaborating with leadership team to set a course for a desired future state and build commitment with key constituents. It is developed and documented a clear strategy that identifies the key needs to be addressed in order to maximize the impact of your plan in the context of your vision and mission - addressing the markets or constituents you will serve; the products, services and programs you will offer; the sales and distribution methods you will employ; the differentiators that will emphasize; and the capitalization that will require [23].

This focused intent and attention to what matters most yields breakthrough success and significantly improves results. The strategic planning services help leaders take control of their organizations' destiny and secure valuable competitive advantages. The success as a collaborator for strategic planning is linked to long-term students (master, doctoral school) who consistently achieve and surpass their visions by devoting sufficient attention to defining desired results, then aligning people and resources to shape the future. The collaborative governance help to define futures with strategies that develop exceptional people and systems, help attain leadership potential, enhance quality of life in campus, and advance the value and impact of university.

Privately-held businesses face the complex issue of succession planning, both for company management and ownership. Likewise, not-for-profit organizations must address leadership succession to gain the full advantage of their strategic planning efforts. In both cases, leaders must tackle the challenging issues associated with succession planning and management. Decisions made and actions taken - or not taken - have long-term consequences for students, professors, employees, customers, suppliers, and the campus.

The work with students and professors establish realistic succession and transition goals. The assistance in navigating the transition process max-

imizes achievement of goals and minimizes the financial, operational, and emotional risks. The comprehensive succession management services can help:

- Learn the principles of succession planning as they apply to your unique situation.
- Establish a clear succession vision for ownership, management, and the organization.
- Assess transition variables and options through a disciplined and informed process.
- Develop a comprehensive strategy and objective criteria for success.
- Find the win-win forms for purchase and valuation.
- Help create a comprehensive succession plan that separates ownership succession from management succession, a key variable for ensuring positive outcomes.
- Manage the efforts of the many specialists required to achieve a successful transition.
- Take universities to the "next level" in structure and management.

Early planning for succession strengthens universities operating in both the for-profit and not-for-profit sectors. Planning ahead of an immediate crisis offers the greatest flexibility and expands options. Smart planning and disciplined implementation make the difference between survival - or not. Jim Collins, author of *Good to Great*, reminds us that great leaders prepare for the time when they no longer will be at the helm [22].

4 IT governance model in Bucharest Academy of Economic Studies

The Bucharest Academy of Economic Studies is implementing a new IT governance model. Stage I of the implementation, with the overall direction by the Business and Administrative Systems Enhancement (BASE) Steering Committee, is focused on addressing the administrative needs of the university [4].

One of the key determinants of success of governance is the degree to which people understand the model.

IT governance will evolve over time based on learning and experience and will extend the scope of governance beyond the administrative realm. In the near term, we will apply aspects of the governance model more broadly; however, for Stage I our priority is to ensure the success of administrative governance.

The IT Project Office plays a key role in the facilitation of governance through the stewardship of the methodology by which we identify, define, and deliver IT initiatives, and the provision of

portfolio management support to the various governance bodies [5].

As part of the overall IT governance model, the IT Architecture and Standards Team is responsible for defining, designing and developing the overall solution architecture for the university. This architecture defines the role that various technical components such as Microsoft SQL Server, Enterprise Reporting, the Application Data Warehouse, and .Net applications play in meeting the information transaction and reporting needs of the University. Although clearly not as apparent from an application perspective, it extends to the entire supporting infrastructure required to provide a secure and dependable computing environment.

Partnering with units and faculties, the IT Architecture and Standards Team will work with the

various delivery teams to apply existing, new and emerging technology to help support and improve business processes. They also will help to ensure interoperability with existing information systems and technology. As part of the overall IT governance model, this team will provide technical input and recommendations at the appropriate phases and gates as defined in the IT Definition and Delivery Methodology.

The mission of the Business Administrative Systems Enhancement (BASE) Governance Committee is to represent the interests of the various stakeholders to ensure that administrative processes and related IT solutions effectively support, and are responsive to, the evolving needs of the Core Mission of the University as presented in figure 1 (adapted from [20]).

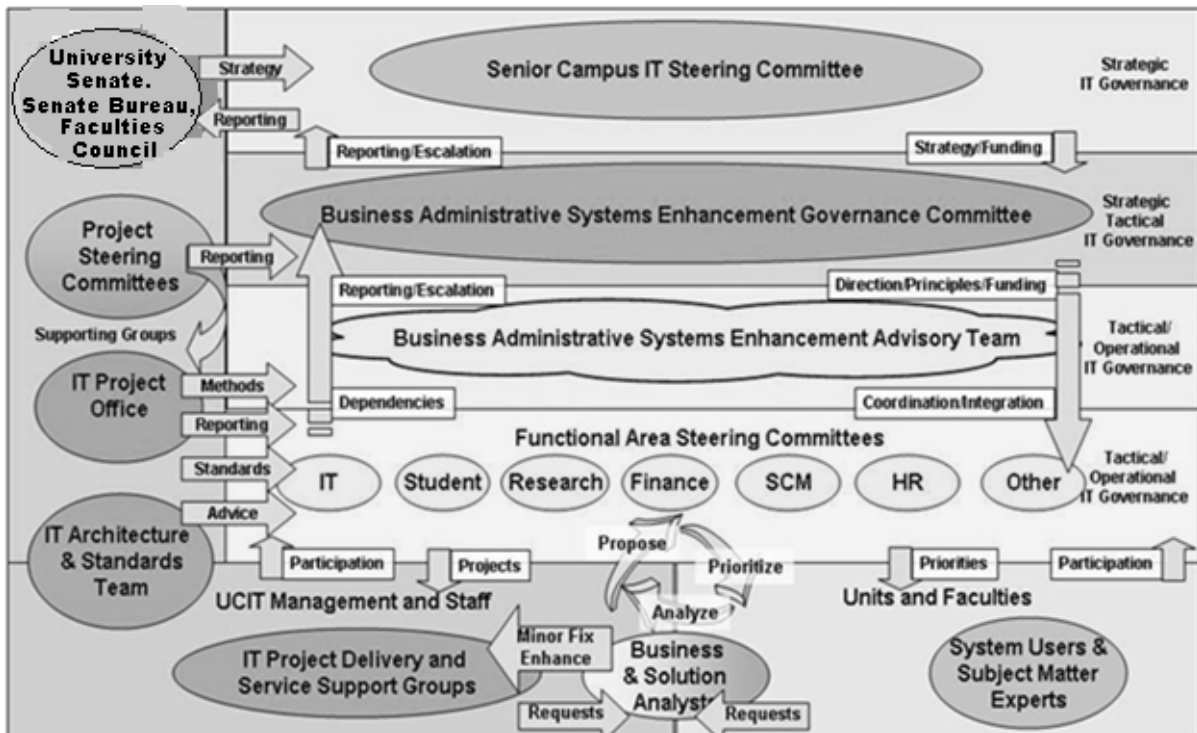


Fig. 1. University Administrative scope (model)

In support of this mission BASE has defined the following principles:

- Resources allocation should be based upon the degree of alignment with institutional priorities.
- We need to target, measure, and assess our performance against those priorities.
- Our decision-making process needs to be focused on, and responsive to, the needs of our customer groups, (students, researchers, faculty, staff, community) and compliance.
- Solutions should be integrated (end-to-end) with increased collaboration across former silos.
- Focus and resource allocation should be balanced on strategic, tactical, and operational issues.
- Our preference is to focus on and resolve root causes rather than symptoms.
- Solutions must be delivered and maintained in a sustainable, secure manner that supports the availability and capacity needs of the University.
- We want to assist our customer stakeholders

in the transition from task-focused to value-added knowledge work.

- Focus should be on reducing the number of steps within processes (especially for higher-frequency processes).
- We will adopt a continuous improvement approach towards governance.

Management at all levels needs to support the governance model.

The BASE Steering Committee defined a number of risks to our administrative capabilities. Using the same method of risk assessment used for Enterprise Risk Management the BASE Steering Committee evaluated the priority of the various risks [3]. While all of the risks are of significant importance to warrant attention, BASE identified several that should be given priority for attention in the near term. The risks defined by BASE are as follows: research noncompliance, can't support student needs, failure to support key business processes due to systems availability and support, poor data - quality/timeliness, action by external bodies, provincial auditor non-compliance, poor donor reporting, faculty loss due to administrative frustration, staff loss due to administrative frustration, research loss due to administrative frustration, administrative inefficiencies, cost of systems duplication, system misuse and fraud, liability to support systems growth, systems failure in event of disaster, inability to attract/retain IT staff, security breach and others.

5 Information System audit for risks management in Bucharest Academy of Economic Studies (AES)

Understanding and managing risk is an inherent part of the business process. In order for your university to survive and maintain a competitive advantage, it must take planned risks that will be rewarded with profit and growth. By confronting the risks that await the university before they become a threat, it gain the clarity to formulate effective controls that will offset the danger that they pose. With compliance initiatives such as the Sarbanes-Oxley Act (SOX), BASEL II, and ISO, it has become imperative that a university models its controls to ensure a transparent audit trail. Without an effective tool to help manage risk and controls, the compliance audit process becomes an obstacle to your business [16].

Risk management allows business owners to include risks in their business strategy. By conceiv-

ing of the risks related to business activities, the university can focus on preventative rather than reactive risk management. By looking at risk management in terms of processes, a business can use known risks to its advantage, while offsetting the threat that they pose with specific controls. Risks no longer become threats, but planned activities in the business process. This brings the added benefit of maintaining a clear repository of risks and controls and how they are related to the business process management along the dimensions of time and ownership. Coupled with a reporting tool, the entity can achieve compliance with as little hassle as possible.

Overall, regarding the conditions to elaborate, editing and archive the electronic documents, there must be following:

- From the databases point of view, there must be possibility to backup and restore the documents anytime ;
- Documents archives on WORM (Write Once Read Many) supports, must be sign by persons who do such an archive, as the law 455/2001 regarding electronic signature said ;
- There must be a security plan for information systems with technical and organizational measures to assure the next minimal request:
 - a) Confidentiality and integrity of communications;
 - b) Confidentiality and nonrepudiation of transactions;
 - c) Confidentiality and data integrity;
 - d) Restriction, detection and monitoring the access in the system;
 - e) Restoring information managed by the system by natural cause or other events unknown, as follows:
 - archive the data using WORM technology, which allow to write one time and multi access of the saved data;
 - recording the data from documents in real time, from a system to another with the same configurations placed in other site.
- There must assure to print all the documents, when there is a request.

To identify risks factors it was realized an IT audit mission over information system if the Bucharest Academy of Economic Studies, where the risks were calculate with Mehari method – Clusif Fr [12] and the results are in the table 2.

Table 2. Risks assessment at the university level in IT governance

No.	Risks factors	Risk assessment	Risk Value	Observations
1.	Organization	low	1.04	The low level of the risk is because the efficiency of the specify personnel responsibilities; maintain a contact with different organizations, other entities, to solve very quickly any problem.
2.	Sites	low	0.5	The access in the sites is realized at the person level and less by activity. Also, there are small problems regarding the access in restricted sites because of the inexistence of special lists of authorized personnel. In the university there is no monitories center even if in the internal security policy there is mentioned such a system to monitories 24 h by 24. The System is partial integrated in some buildings, but not all.
3.	Premises	low	0.96	In generally, the level risk is low because of existing controls (key, card, intrusion detection systems, guard) Problems were found on the power sector. There are no measures for losing data and information during technical problems at general level, just on local level.
4.	Extended Network (inter-sites)	medium	2.15	University has equipment with license and there is a permanent contact with suppliers for technical support. A very good protection is accorded to backup and recovery plans where the access is restricted.
5.	Local Area Network (LAN)	medium	2.34	It was taking to account the initiation of procedures to grow the network safety by implement firewall and filters. Frequent problems appear at equipment service with warranty, which is done superficial and very slowly, from one to six month.
6.	Network Operations	low	1.07	There are missing documents to report some data, there are no training. Inexistence of some explicit rules regarding how to add new application tools do that employees not respect rules verbal communicate.
7.	Security of Systems Architecture	low	0.8	There are superficial tests to demonstrate performance equipment security.
8.	IT Production Environment	medium	2.25	There are missing trainings for risks analysis and procedures and also rules regarding software installation. All documents are secures.
9.	Application Security	high	3.15	The access to the computer and to the applications is done by user and password, incorrect introducing of these induces temporary invalid state.
10.	Security of Application Projects and Developments	medium	2.77	There are problems regarding not apply support, of the projects where security employees are not present. Management takes into account the application continuity deployment plans, with equal responsibilities between specialists avoiding segregation of duties for one person.
11.	Work Environment	medium	2.08	Physic: The problem regarding security, the method apply in present, guard-peoples in fixed places, is an inefficient one, which must change with an automat surveillance system with waking guardians. There are no register to introduce data about visitors. Logic: The entity has a security policy and procedures regarding protection against viruses' attacks and takes into account the necessity to actualize the antivirus applications and system patch.
12.	Legal and Regulatory	high	3.43	The software has license; the control over this software is regulatig done. Managers understand the importance of kipping a long time the applications which use this software, but also the control of these to avoid modifications done by employees not well intentioned.

Analyzing the partial risks, it results a general risk level of 1.93. The low level of the risk from the entire university is because the management by implementing control measures to reduce the IT risks and/or elaborate some different measures to minimize the impact of the threats and vulnerabilities of the system.

Because the risks values were low as average, there is no necessary a general reorganization, but just in areas where the risk is higher than 1.93 (*considering being materiality level, if this would be calculated just from risks*), the general risk value of the university:

4. Extended Network: the risk level is 2.15 and it is a medium risk

5. Local Area Network (LAN): the risk is medium, as 2.34

8. IT Production Environment: the medium risk 2.25

9. Application Security: the risk is 3.15 - high risk

10. Security of Application Projects and Developments: the risk is 2.77 medium

11. Work Environment: the risk 2.08 medium

12. Legal and Regulatory: the risk is high 3.43.

The exact proposal to reorganized will be elaborate in the future study as in this paperwork there are presented a few general conclusions.

6 Conclusions

To improve university governance it is necessary to:

- *Schedule regular meetings of the non-executive board members from which director and the other executives are excluded.* Non-executives are there to exercise “constructive dissatisfaction” with the management team. They need to discuss collectively and frankly their views about the performance of the executives, the strategic direction of the university and worries about areas where they feel inadequately briefed;
- *Explain fully how discretion has been exercised in compiling the earnings and profit figures.* These are not as cut and dried as many would imagine. Assets such as brands are intangible and with financial practices such as leasing common, a lot of subtle judgments must be made about what goes on or off the balance sheet. It must use disclosure to win trust, not to hide;
- *Initiate a risk-appetite review among non-executives.* At the root of most university failures are ill-judged management decisions on risk. Non-executives need not be risk ex-

perts. But it is paramount that they understand what the university’s appetite for risk is and accept/or reject, any radical shifts;

- *Check that non-executive directors are independent.* Weed out members of the controlling family or former employees who still have links to people in the university. Also raise awareness of “soft” conflicts. Are there payments or privileges such as consultancy contracts, payments to favorite charities or sponsorship of arts events that impair non-executives’ ability to rock the boat?
- *Audit non-executives’ performance and that of the board.* The attendance record of non-executives needs to be discussed and an appraisal made of the range of specialist skills. The board should discuss annually how well it has performed;
- *Broaden and deepen disclosure on university websites and in annual reports.* Websites should have a university governance section containing information such as procedures for getting a motion into a proxy ballot. The level of detail should ideally include the attendance record of non-executives at board meetings. If you have global aspirations, an English-language version must be available [8];
- *Lead by example, reining in a university culture that excuses cheating.* Don’t indulge in sharp practice yourself - others will take this as a green light for them to follow suit. If the university culture has been compromised, or if loose practices on booking revenues and expenditure are sometimes tolerated, it must be taken a few high-profile decisions that signal change;
- *Find a place for the grey and cautious employee alongside the youthful and visionary one.* Hiring thrusting MBAs will skew the culture towards an aggressive, individualist outlook. Balance this with some wiser, if duller heads - people who have seen booms and busts before, value probity and are not in so much of a hurry;
- *Make compensation committees independent.* University executives should be prevented from selling shares in their entity while they head them. Share options should be expensed in established universities - cash-starved start-ups may need to be more flexible;
- *Don’t avoid risk.* No doubt university governance would be a lot simpler if universities were totally risk averse. But in the words of Helmut Maucher, honorary chairman of

Nestlé, "You have to accept risks. Those who avoid them are taking the biggest risk of all." [19]

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