IT Governance for Albanian Universities (ITG4AU)

Study and document practices outside consortium

European University of Tirana (Albania)

ITG4AU CONSORTIUM

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AMENDMENT HISTORY

Version	Revision	Date	Author	Modification
1	0	22 Sep 2019	Ketrina Çabiri Mijo	Initial version
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1. Introduction

Information technology (IT) is nowadays a 'must have' tool for any type of organization and sector. IT is a critical factor for the sustainable growth and development of organizations worldwide (Bianchi & Sousa, IT Governance mechanisms in higher education, 2016), (Ayayi & Hussin, 2016). Universities are unique structures combining technology applications at different levels and targeting different stakeholders. Technology oriented universities tend to use a wide variety of applications and IS integrating all this infrastructure into a single academic system or several independent systems (Bianchi & Sousa, 2015). These IT tools are very important to support all academic processes of learning, teaching, research and administration and IT must be an integral part of the institution's strategy (Governance of Information Technology in Higher Education, 2006).

IT Governance emerged as a concept in the late 90s and many research works have been performed so far exploring and further purifying this concept. Even though a widely debated topic, many authors agree that IT Governance is all about controlling the strategic impact and added-value of IT project for an organization (Altemimi & Zakaria, 2016), (Cajo, Gunza, Cajo, Parra, & Cajo, 2017). Many organizations use interchangeably the concept of IT Governance and IT Management. Nonetheless, (Altemimi & Zakaria, 2016) empathize the core differences between these two concepts. According to them, IT Management is more about technical aspect of IT deployments and it focuses only on the management of all IT infrastructure and processes. By contrast, IT Governance is a much broader concept aligned more with the organization's vision and mission rather than daily operations. Yet, the IT Governance has rapidly evolved over time shifting from the design of static and reliable systems to more flexible and agile systems (Vejseli, Proba, Rossmann, & Jung, 2018), (De Haes & Van Grembergen, 2006).

As broadly accepted among scholars, IT Governance itself is a set of structures, processes and relational mechanisms allowing successful IT deployments at university levels (Bianchi & Sousa, 2016). As a complex endeavor, IT Governance is often perceived as a technical issue for many organizations (including universities) and top-management levels usually prefer to avoid getting involved in these processes. Even though many different IT Governance frameworks have been developed and employed, implementation of these approaches have turned to be a challenging enterprise for many organizations. In principle, successful IT Governance deployments highly rely in two key components: resources and skill (Batyashe & Iyamu, 2016). Only those organization that manage to align these two components and invest enough efforts and time have successfully employed IT Governance systems. (Batyashe & Iyamu, 2016) propose a framework for IT Governance Implementation (Figure 1). As shown in Figure 1, authors agree that a successful IT Governance deployment at organization level is directly affected by the successful linkage of several components such as organizational culture, organization strategy, information evaluation, technology repository and education and training.
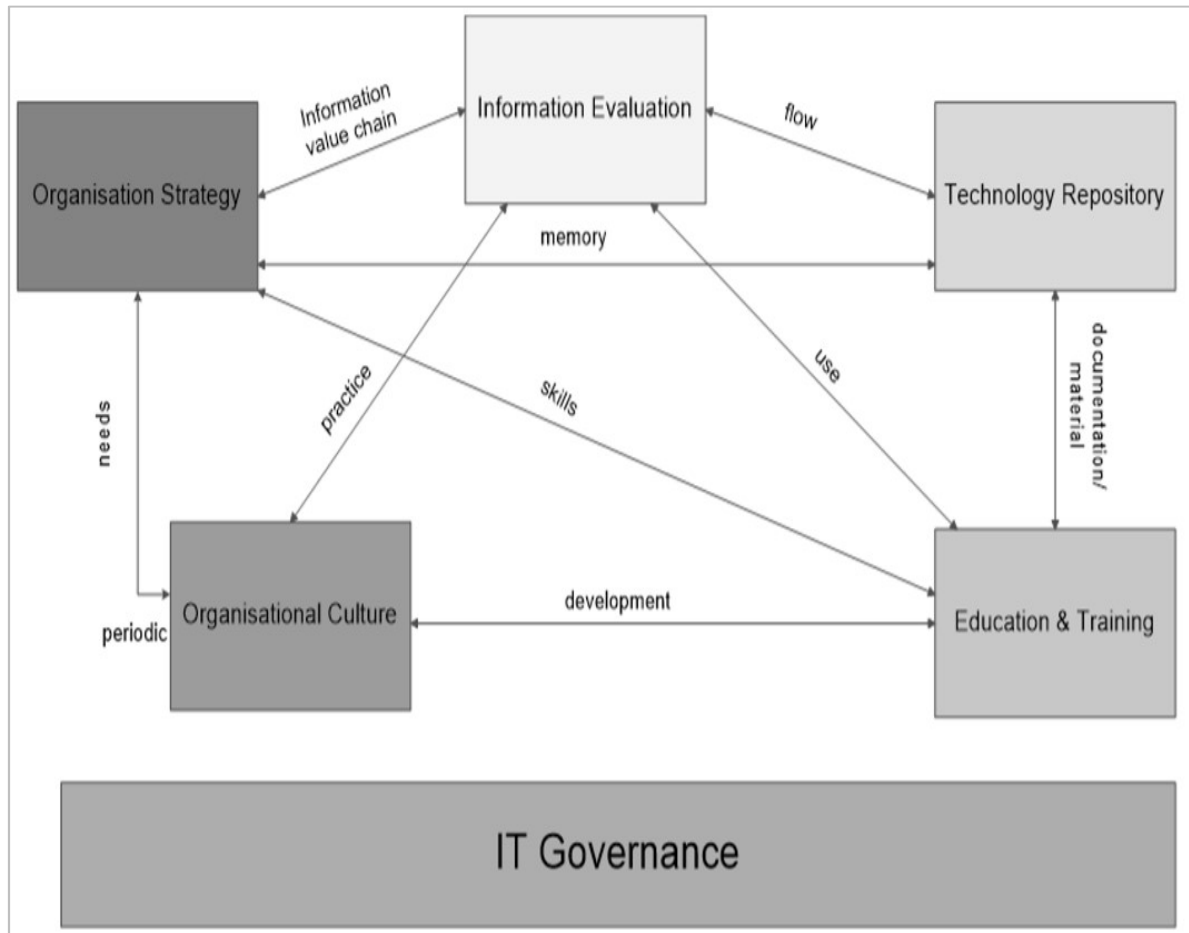
Figure 1. Framework for IT Governance Implementation (Batyashe & Iyamu, 2016)

This report explores best IT Governance practices at university level outside the ITG4AU Project consortium. A comprehensive literature review and web-based search provided with enough data to assess and discuss best practices outside the consortium. 'Best practices are exclusive to every organization according to the nature of their unique businesses and competitiveness' (Batyashe & Iyamu, 2016). Therefore, in the framework of this report, only IT Governance deployments at university level have been considered. The initial desk research on previous similar studies revealed that the literature on IT governance applications in higher education institutions is relatively.

2. Methodology

This report presents findings from IT Governance applications in several universities outside the ITG4AU Consortium. Data collection was performed using a two-step analysis. First, a comprehensive desk research was performed aimed to explore the IT Governance in theory and practice, as well as define the most convenient methodological approach. Desk research was mainly based in scientific articles, including journals, conference proceedings, reports, etc.

as well as various websites. In addition, two most relevant websites in the field (EDUCAUSE and UCISA) were explored in detail.

While there are many existing IT Governance frameworks and research works, IT Governance in the field of higher education is less explored and up to authors' knowledge, no best practices research in the field listing top-performing universities exists. Desk research as well as simple Google Search using key words such as: "IT Governance University", "Best universities in IT Governance", "Most technological oriented universities", etc. were used to define the university sample to be assessed. After exploring university websites for more than 150 higher education institutions, reviewing national surveys, explored various databases, and looked over winners of prestigious national awards (for instance, EDUCAUSE and UCISA awards such as Amber Miro Memorial Award, UCISA Award for Excellence, The Leadership Award, The Rising Star Award, Best Practice Award, etc.), a list of 30 universities was selected and an in-depth web-based conceptual content analysis was performed. Majority of the selected universities are in the top-200 THE University Ranking 2020. Section 3 presents a short description on the IT Governance at each selected university focusing more on the model implemented by each institution and the overall organization of the IT structure. Presented information is extracted from each university's IT Governance related website.

Web based content analysis is a complex tool due to large and unstructured amount of information available (Kim & Kuljis, 2010) yet it was selected as a convenient tool for this type of analysis. While this list may not be fully representative for all best practices in the field, yet it presents good insights for some outperforming universities outside the consortium. After deciding the level of analysis, a general description on the obtained information is presented in this report. It was difficult deciding between a manual content analysis or using a software (such as QSR NVivo, Atlas.ti, R-RQDA package or MAXQDA Software) nonetheless it was performed a manual assessment since the main aim of this report was to explore more than just the frequency of certain words or phrases.

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3. IT Governance for universities: A content web-based analysis

No.	University	Content Analysis Key Results
1	**Massachusetts Institute of Technology**	MIT as a world-class university has recognized the importance of IT Governance and has established some relevant related structures. MIT has a comprehensive webpage dedicated to IT Governance and an active It Governance Committee (ITGC). This committee is responsible to develop and monitor the implementation of 3-year IS & T Plans and initiates and manages to get funds for its IT related projects and initiatives. In addition, this committee used to advise the Executive Vice President and Treasurer and Provost on IT matters at MIT. The ITGC is as well responsible to oversees several IT related committees such as Administrative Systems Steering Committee (ASSC), Information Technology Policy Committee, Student Systems Steering Committee (SSSC), etc. The ITGC meets on regular basis twice or three times a year and in its agenda are discussed issues such as: Software Funding Model, Steering Committee Projects& Spending, Modernization Funding Plan Adjustments, Cloud Journey & Software Governance, Software Portfolio Planning Committee Report, etc. Details on the past meetings (agenda, minutes, etc.) as well as upcoming events are available online.
2	**Princeton University**	Princeton University has a well-designed and organized webpage on IT Governance and the entire related infrastructure is organized under the Office for Information Technology Unit. In annual basis, a comprehensive assessment of information technology (IT) requests is performed and needs for the upcoming 2 years are further consolidated into potential project proposal by the project team and proposed for funding. A comprehensive assessment of the proposed projects is performed (using criteria such as need, cost, benefit, visibility/impact and risk, etc.). At decision-making and administrative levels, IT Governance is organized in several interrelated units ensuring that the University's Administrative IT Systems meet the needs of all relevant internal and external stakeholders. The Strategic Advisory Group on IT (SAGIT) works as an advisory body on budgetary matters concerning the IT related projects under consideration. Enterprise Systems Planning Group (ESPG) oversees critically assessing all IT related initiatives. The Project Managers Team (PMT) is a 'working group' in charge of supporting and coordinating all maintenance and system requirements across offices and departments. University has a well-designed and established IT Governance framework, including a set of IT Decision-Making Principles, IT Governance Model, standard system selection process, etc.
3	**Yale University**	IT Decision making at Yale is organized in several units and committees. ITS Advisory Committee (ITSAC) is the main advisory body to CIO on institutional IT policy and service issues. This committee has members representing different faculties and departments within the university not necessarily involved in the top management of the institution. The Technology Architecture Committee (TAC) is another body comprised of technology leaders from across campus

		governing solution architectures for major technology initiatives. Concerning the Governance Committees and structures, IT Executive Committee is the highest committee in the hierarchy of IT Governance and functions as a special meeting of the Provost's University Budget advisory committee. This committee supervises the work of various committees such as: Academic IT, Research IT, Clinical IT, Cultural Heritage and Administrative IT Committee. Beside Governance Committees, Yale has two dedicated committees for service and portfolio governance. The main goal of these structures is to ensure that the proposed IT investments are in alignment with the strategic objective of the University. The Service & Portfolio Executive Committee (SPEC) has collective accountability for the services provided by ITS and it advocates proposed projects that help improving the overall IT services at the university. Capital Project Management Group (CPMG) is another Service and Portfolio governance related committee responsible for the financial oversight for the Portfolio Project spend. The IT Governance section at the Yale University website is user-friendly and provides sufficient information on its IT Governance approach and structures.
4	**University of Chicago**	The Office of the Chief Information Officer (CIO) runs over 5-year strategic priorities and a high-level roadmap for the IT enterprise. The roadmap is a comprehensive tool detailing all strategic priorities that frame decision-making and direction, and highlights illustrative projects, either in progress or planned. IT Services Unit (ITS), organized under the Office of the CIO, is the largest and the single unit in charge of providing all IT related services at the University of Chicago. ITS runs a wide range portfolio of services, strategic projects, and institution-wide initiatives and ensures their alignments with the overall mission and vision of the university. The designed 5-year plan (2016-2020), empathizes a key strategic priority for each year and last one to be accomplished in 2020 is 'Continue Maturity and Transformation' (including the implementation of a new campus-wide IT Staffing model).
5	**University of California, Berkeley**	History of IT Governance at UC Berkeley start back in 2000 with the approval of the e-Berkeley Initiative to encourage broad-based innovation yet not a fully IT oriented initiative. In 2011 the IT Governance Project was proposed and funded, and a new IT Governance model was developed in 2014. Technology@Berkeley Website is the main source of information for all IT related initiatives, plans, strategies and projects of the university. There are several active IT committees sharing different responsibilities and performing a wide range of tasks. IT Strategy Committee (ITSC) provides direct oversight of the campus IT governance structure for UC Berkeley, and supports Berkeley's teaching, research, and service missions by reviewing and evaluating strategies, plans, policies, and investments, regarding the use of information technology (IT), and making recommendations for action. Enterprise Applications and Data Committee (EADC) is charged with overseeing UC Berkeley's, investment in and ensuring the effectiveness of enterprise applications and institutional data management planning. Information Risk Governance Committee (IRGC) provides

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		input on foundational IT services, such as the data and voice network, email, calendar and productivity tools, as well as IT infrastructure services provided at scale, such as database, data center colocation, servers, storage and backup, and more. IT Architecture and Infrastructure Committee (ITAIC) provides input on foundational IT services, such as the data and voice network, email, calendar and productivity tools, as well as IT infrastructure services provided at scale, such as database, data center colocation, servers, storage and backup, and more. Research, Teaching, and Learning Technologies Committee (RTLTC) supports UC Berkeley's teaching, learning, and research missions by reviewing, evaluating, and recommending strategies, plans, and policies, regarding IT projects and services that support teaching, learning, and research goals of faculty and students.
6	**University of California, Los Angeles**	UCLA has three governance committees [Information Technology Planning Board (ITPB), Common Systems Group (CSG) & Committee on Information Technology Infrastructure (CITI)] closely working together to create an overall framework for decision-making, prioritizing, funding, and implementing all IT related projects and initiatives. ITPB is composed of both faculty senate-and administrative representatives and is responsible for strategic planning and policy recommendations on IT related matters. This committee reviews the IT project portfolio of the university to determine what best options are considering the available budget and strategic priorities of the university. CSG provides the technical expertise and operational perspective for UCLA's IT governance process and is responsible for ensuring coordination between distributed and central IT activities. CITI is responsible for strategic and tactical planning, operational policy, and business and cost allocation models.
7	**Cornell University**	Cornell University has a well-developed IT Governance Framework based on formal policy and delegated responsibilities. The main purpose of this tool is to enable an efficient and effective use of the University IT Resources and Systems, as well as improve the overall teaching and learning experiences at this institution. Delegation of responsibilities ensures that the use of IT Resources is done in full compliance with the university's requirements for data security, data confidentiality, and business continuity as well as in coordination with all the relevant stakeholders. There are several units and committees responsible for the successful implementation of the IT Governance Framework within this university. The highest authority deciding on IT initiatives at university level is the IT Governance Council (ITGC). Chief Information Officer and Vice President for Information Technology (CIO/VP) and the IT Advisory Council (ITAC) act both as advisory bodies, reviewing ongoing or potential initiatives and projects. Steering Committees acts as the main sponsor, owner and coordinating body for projects under consideration. The IT Project Management Office (PMO) is composed of experienced Project Managers and is the key responsible unit for IT Statements of Need and IT Project Charters as defined by the IT Governance Framework.

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8	Duke University	The management of the IT Infrastructure at Duke University is done by both central and departmental IT units. The Information Technology Advisory Council (ITAC) meets in regular basis twice per month and has representatives from both central and division levels (such as IT leaders, students and faculty members). The ITAC Website is very rich in information, providing detailed information on the meetings' agenda and minutes. This information is available from 1995 to 2019. ITAC meets to discuss mainly strategic IT Project expected to be implemented at university levels. Extended Staff Group is another special organization and consists of IT Directors from all schools and faculties. IT Council is a special small group working mainly as advisory body for new and innovative IT Projects that can be implemented at the university. There are some other special groups focused on providing advice and supporting specific initiatives within the university, such as: Steering Committee, Technology Architecture Group (TAG), Endpoint Management Steering Team, Duke Internal Audit - IT Audit/Review Services, Office of Research Support - Technology Transfer, etc.
9	University of Michigan	The IT Governance vision for the University of Michigan is to use its IT resources and infrastructure in the most efficient and effective way and ensure the achievement of the overall university goals. To ensure the most successful alignment between IT infrastructure and university goals and objectives, several strategic committees and advisory groups provide the necessary support and guidance. These initiatives function under the Strategic governance umbrella and have as a key responsibility the prioritization of major IT initiatives for the university. There are two key strategic governance groups: IT Council and Strategic Technology Advisory Committee (STAC). IT Council is a group including deans, faculty, administrators, IT leaders, and students and is an enterprise-wide advisory group to the VPIT-CIO. STAC provides strategic advices to the VPIT-CIO to support the institution in shaping the strategic direction of the IT initiatives. There are several other relevant IT Governance groups organized under three key divisions: Advisory Groups, ITS Information Sharing Group and Peer Information Sharing Group. Each group has a dedicated page with relevant information available. They meet in regular basis and the Governance Groups Calendar is available in the IT Governance University Website.
10	Northwestern University	Northwestern University vison for the IT Governance is that of a framework establishing the strategic, operational, and technical decision-making process necessary to ensure an innovative, reliable and robust information technology. IT Governance Executive Committee administrates the IT Governance framework at the Northwestern University and this committee is chaired by the VP for IT and CIO. Other committee members are senior administrators and they meet 4 times per year and prepare twice per year a report to be delivered to the Dean's Council. The framework also includes several IT governance advisory committees that meet regularly and provide input to the IT Governance Executive Committee. The highest authority responsible for all major IT related decision-making is the IT Governance Executive

		Committee. In regular basis, this committee receives significant input for its decision-making from the IT governance advisory committees. There are four key IT governance advisory committees: Learning and Technology ecosystem Advisory Committee, Administrative Systems Advisory Committee, Infrastructure Advisory Committee and Research Technology Advisory Committee. There is enough information available on the structure, purpose, objectives, operating principles and members for each IT Governance Advisory Committee.
11	**University of Washington**	The University of Washington has a well-developed IT Governance structure and its main function is to advise top management on IT strategies, priorities and projects to be considered for funding. The IT Governance structure was established in 2012 and is the main unit to take strategic IT related decision and promote campus-wide IT initiatives. The new holistic approach to IT Governance has enabled the participation of all relevant stakeholders across the institution and has allowed their direct involvement in all relevant IT decisions. There are three key advisory bodies actively guiding the IT decision-making at the University: IT Strategy Board, IT Service Investment Board and IT Service Management Board. The IT Strategy Board is the highest authority providing advice and guidance on strategic direction on IT issues and investments and is the key responsible for supervising all major IT projects, service improvements and infrastructure investments deployment at the university. The IT Service Investment Board has mainly an IT services-oriented focus and oversees providing advice on IT services provided by the IT Unit at the University of Washington. The IT Service Management Board ensures alignment between IT services provided at the university and institutional IT strategy and priorities. The IT Governance Structure is available in the university website. For each of the board there is enough information available on their overall purpose, charter, membership and meeting materials (agenda and presentation). For two first boards there have been on average 2 to 3 meetings per year and for the IT Service Management Board only for 2019 there have been 6 meetings.
12	**University of British Columbia**	University of British Columbia highly emphasizes the importance of IT Governance as a key tool to ensure that all IT projects are fully aligned with the university standards and priorities. In principle, IT Governance at the University of British Columbia is the responsibility of the board of directors and executive management. Yet, the IT Governance Model for the University of British Columbia is very comprehensive allowing active participation of both top management and executive levels with operation technical levels as a good approach to convey practical IT needs and requirements into strategic decision for the institution. This model aims at identifying relevant needs and requirements to be considered, responsible units and people, as all as the processes that enable the fulfillment of the identified needs and requirements. The IT Governance Model is organized in three different levels: Executive Leadership, Program/Project Leadership and Operational Leadership. The Executive Leadership is responsible for overseeing the

		alignment to Institutional strategy and priorities across all activities of the enterprise, the management of institutional risks and the verification of the value delivered using technology across the enterprise. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives. The Program/Project Leadership assigns priorities within their specific scope of responsibility and makes decisions about project and program operational priorities relating how to approach implementations of new capabilities, systems, software and services. These groups identify new opportunities and prepare the case for action to submit investment proposals to the Executive Leadership for review and approval. The Operational Leadership is responsible for executing the implementations of the investment decisions, ensuring the benefit realization of the opportunities, and ensuring day to day operations is in alignment with University priorities. The IT infrastructure in general and specifically the IT Governance Model at the University have been externally reviewed twice (2008 and 2014). There are several IT Governance bodies and groups at the University of British Columbia actively involved in the IT Governance process and decisions such as: Information Technology Advisory Council (ITAC), Architecture Review Board, UBC Board of Governors, UBC Provosts, CIO, etc. ITAC was established in 2014 as an advisory body to the UBC Executive and Board of Governors. Its main aim is to ensure the maximization of the profitability from IT investments at the university. ITAC meets 5 times per year and meeting agenda are available online in the university website. The Architecture Review Board (ARB) provides leadership and governance to enable Enterprise Architecture (EA) as a strategic capability providing UBC with a common vision for an architecture used to ensure alignment across information technology initiatives, trends, investments and direction across all its communities. ARB meets monthly for approx. two hours, but agenda or meeting minutes are not available online. A short description on the overall purpose and activity of other IT related committees and groups are available at the university website. In addition, a complex IT Governance Model of the university is available online.
13	**University of Illinois at Urbana-Champaign**	University of Illinois at Urbana-Champaign has a webpage dedicated to IT Governance and homepage provides a general introduction on IT Governance concept and responsibilities. There are two key categories of IT Governance groups: Advisory Groups and Service Delivery Groups. Under the advisory groups there are several organizations such as: IT Council, IT End Users Services Subcommittee, IT Infrastructure Subcommittee, Faculty Technology Advisory Committee, Initiative Governance Advisory Groups and Service Governance. The main purpose of the Advisory Groups is to identify the constituent needs and requirements and receive IT advices from various stakeholders. The IT Council, chaired by the CIO, is a key unit for providing strategic insights concerning IT ongoing and potential projects and initiatives. The Faculty

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		Technology Advisory Committee is a crucial part of the IT Governance model since it is responsible for identifying and presenting faculty and different stakeholders' needs. Initiative Governance Advisory Groups are mainly focused on providing input to the initiatives of either new or existing services and the main purpose is to assure the continuous improvement of IT services and infrastructure for different stakeholders. These groups are not permanent but are initiative-based establishments. In contrast to the Advisory Groups, Service Delivery Groups are operational unit responsible for the delivery of IT services at the university. IT Service Delivery Groups include: Data Center Shared Services (DCSS), Local IT Service Delivery – represented and coordinated by the IT Council and Technology Services. It is not possible to access past publications and information published at the website since the IT Governance website has undergone a refresh and old content has been removed.
14	**University of Wisconsin-Madison**	The University of Wisconsin-Madison has continuously improved its IT Governance model and the new approach ensures the equal involvement in the decision-making processes of the all stakeholders who pay for and benefit from the university IT services and infrastructure. Since 2017, all IT related project proposals are submitted to the IT Center of Excellence (ICoE) for review. In the same year, the Policy Planning and Analysis Team (PAT) was re-organized and re-chartered to ensure a closer collaboration with the IT Governance of the university. Since then, PAT works as a subcommittee of the Information Technology Committee (ITC) and each IT Governance committee or unit has its representatives at PAT. The IT Governance Structure for the University of Wisconsin-Madison is organized under several groups and committees such: Executive Groups (Information Technology Committee & IT Steering Committee), Technology Advisory Groups (TAGs) (Divisional Technology Advisory Group (DTAG), Teaching And Learning Technology Advisory Group – TLTAG, Research Technology Advisory Group and Infrastructure Technology Advisory Group - ITAG) and other advisory groups (Campus Computing Infrastructures Operational Advisory Group, Digital Accessibility Campus Advisory Group, Network Advisory Group, Policy Planning & Analysis Team, UW-Madison Information Security Team and Identify & Access Management Council). The Information Technology Committee is an important advisory body for policy and planning for information technology throughout the university. It is composed of faculty, academic staff, and students. All relevant details and information concerning past and upcoming meetings are available in the university website. The ITSC is the executive body that leads the strategic planning, organization, prioritization, investment, and decision-making activities in all areas of information technology throughout UW-Madison. The ITSC will make recommendations to campus leadership on strategic IT issues, lead improvements in business processes, IT systems and culture, and assess the effectiveness of IT investments and services. All relevant details and information concerning past and upcoming meetings are available in the university website. DTAG actively supports efforts to align priorities and

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		investments across campus with the university's missions of teaching, learning, research, and service. TLTAG provides leadership and guidance to support campus alignment, data sharing and usability of the shared student digital ecosystem and its various components. Research Technology Advisory Group advises the Vice Chancellor for Research and Graduate Education about policies, practices and resources around research cyberinfrastructure and IT. ITAG helps with IT infrastructure priorities and investments with university's core missions while representing the IT infrastructure needs of colleges, schools and administrative units across campus.
15	**Washington University in St. Louis**	The overall IT Governance approach at the university is based in the continuous improvement of model. The IT Governance Model is a comprehensive structure allowing active participation of representatives from various domains and units such as: Administrative, Clinical, Shared Infrastructure, Research Computing, Security and Privacy, and Teaching and Learning. The IT Capital Investment and Shared Services Request allows IT Governance to review and assess all IT related requests and proposed initiatives and prioritize actions. The IT governance structure at Washington University is organized into three layers: Strategic Governance, Project Governance and Shared Services Governance. Strategic Governance focuses on strategic alignment with the strategy and objectives of the university and the IT guiding principles. Project Governance focuses on project execution to ensure projects are delivered on time and on budget, delivering the benefits or services defined in the project proposal. Shared Services Governance focuses on services currently in use, ensuring consistency in quality and monitoring user adoption. Key IT governance committees are: IT Executive Committee making enterprise-wide IT decisions; IT Council taking decisions such as IT funding and resources; IT Leaders focused on decisions such as IT policy, IT architectures and IT infrastructure; Research Information Systems Domain focused on strategy, services, projects and investments to improve research technology. The IT Governance websites of the Washington University in St. Louis provides enough information on the vision and approach of the university towards IT Governance principles and practices used.
16	**University of North Carolina at Chapel Hill**	The goal of IT governance is to engage all the relevant stakeholders in the strategic and decision-making processes for successful IT deployments at the university. IT governance groups at the University of North Carolina at Chapel Hill are organized based on specific domains and are in charge of providing IT topics, for ongoing and potential new and innovative IT deployments at the university. Some of the most relevant committees and groups are: IT Infrastructure Coordinating Committee, Research Computing Advisory Committee, Enterprise Applications Coordinating Committee, Remedy Advisory Council, Communication Technologies Coordinating Committee, Information Security Coordinating Committee, Enterprise Data Coordinating Committee and Carolina Computing Initiative (CCI) Committee. IT Infrastructure Coordinating Committee meets monthly and reviews infrastructure-related policies, creates task forces to

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		investigate University-wide IT infrastructure initiatives, and makes recommendations to the CIO. Research Computing Advisory Committee meets monthly and is comprised of research faculty from varied disciplines and provides guidance and advice regarding both foundational research cyberinfrastructure and differentiating capabilities. Enterprise Applications Coordinating Committee meets monthly and advises ERP Sponsors on enterprise applications needs across campus and approves requests for data or integration with ConnectCarolina systems. Remedy Advisory Council meets quarterly and develops strategies for making the most effective use of the Request for Service application, focusing on innovation and user satisfaction. Communication Technologies Coordinating Committee meets on annual basis (or more frequently as needed) and coordinates communication technology activities regarding the campus network infrastructure. Information Security Coordinating Committee meets monthly and supports the confidentiality, integrity, and availability of University information resources. Enterprise Data Coordinating Committee meets monthly and has as its specific mission to ensure that the University has in place a set of processes that ensure that important data assets are formally managed throughout the enterprise. Carolina Computing Initiative (CCI) Committee meets twice yearly and consists of three sub-committees that select computer models, develop the software load, and make recommendations for administering the Chancellor's technology funds. There are several campus groups too such as: Faculty IT Advisory Committee (FITAC), IT Executive Council (ITEC), Deans of Research & Directors of Centers/Institutes, University Committee for the Protection of Personal Data (UCPPD), Enterprise Resource Planning (ERP) Sponsors, CERTIFI and ConnectCarolina Executive Committee. University IT Governance website provides detailed information for each group.
17	**University of California, Davis**	Like other reviewed university IT Governance approaches, IT Governance at the University of California - Davis is a join collaborative initiative of all stakeholders directly and indirectly benefiting from the IT services provided by the university. IT Governance groups and committees provide guidance and take important IT related decisions with the main aim to benefit all the relevant stakeholders and align IT Strategy, investments and services with the University's overall strategy. Some of the most important committees, work groups and special interest groups are: CIO Strategic Advisory Council, Deans' Technology Council (DTC), Academic Senate Committee on Information Technology (ASCIT) and Other Committees and Special Interest Groups. CIO Strategic Advisory Council is a multi-disciplinary group of stakeholders with representatives from various disciplines (such as academic, research, administrative and student perspectives) providing advice and guidance to decision makers regarding IT strategy, investments, and services for the benefit of the campus. The DTC brings together IT leaders from each division and unit and is established in collaboration with the deans and vice chancellors as an advisory and advocacy group to coordinate IT strategy amongst participating units and advocate for campus-wide IT policies and practices. ASCIT has a dedicated website but little information on

		the organization and function of the committee is available. Annual reports from 2007 are available online nonetheless there are no documents available concerning the activity of this committee for 2019.
18	**Boston University**	At the Boston University website, a complex IT Governance structure can be accessed. According to the diagram, there are five key committees and groups ensuring the successful IT governance at the University of Boston: Educational Technologies (ETC), Research Computing (RCC), Administrative Systems (ASC), Common Services & Information Security (CSISC) and Strategic Information Group (SIG). All committees are multi-disciplinary with the participation of representatives from both academic and administrative units. Until mid-2020 there are scheduled 23 IT governance committees' meetings. ETC oversees technology services that directly support teaching and learning, such as classroom technology, course management systems, e-portfolios, classroom capture systems, audience/student response systems, and other innovative uses of technology for learning. RCC provides strategic leadership and vision to accelerate Boston University research with leading research technology infrastructure and services. ASC provides strategic oversight for data governance, management and reporting, and oversees information services that support institution-wide administrative functions, such as student records, alumni relations, HR and finance, and research administration. CSISC oversees broadly shared technology services such as the wired and wireless networks, storage and backup, email, calendar and collaboration tools, websites as well as policies, procedures, and technologies. Its main purpose is to ensure the security, integrity and availability of Boston University data and systems, as well as compliance with applicable regulations. SIG aims at developing and continuously improving key performance indicators for the assessment of Boston University excellence and opportunities for development in areas of strategic focus. No details on the past meeting agenda or minutes are available online.
19	**Emory University**	The University IT governance structure is comprised of one steering committee and seven subcommittees. The IT Steering Committee (ITSC) creates and sustains a set of processes for IT governance and prioritization at Emory University that are timely, transparent, and clearly aligned with the university's missions. IT Governance related subcommittees are: Digital Scholarship & Pedagogy, Finance, Human Resources/Payroll, Research, Research Administration, Student Services and Technology Infrastructure & Policy. The primary purpose of each subcommittee is to evaluate IT project requests that fall within their respective domains, approving each project's placement within strategic priorities and existing resource commitments. Membership is intentionally broad-based across the university. Meeting time, frequency, agenda and location decisions are decided by each subcommittee. Most subcommittees meeting frequency is monthly.
20	**Suffolk University**	IT Governance at Suffolk University is organized around five key working groups focused mostly on reviewing new

		project requests, evaluating new initiatives, working to resolve existing issues, and soliciting feedback on new initiatives. The IT Governance Committee is charged with the responsibility of assuring that IT investments are aligned to generate academic and business value by achieving institutional goals, while balancing risk vs. return. Five Working Groups within the IT Governance structure at Suffolk University are: Data Access Integrity & Stewardship Working Group, Information/Network Security Working Group, Administrative Systems/Applications Working Group, TILT (Teaching, Innovation, Learning and Technology) Working Group and Web Systems and Communications Working Group. Working Group Committees at Suffolk University have specific roles and responsibilities. The university website provides enough information on the roles and responsibilities of each working group as well as participating members.
21	**University of California San Francisco**	The IT Governance model at the University of California San Francisco operates as a collective of eight thematic subcommittees and a steering committee populated with approximately 200 members to advise on, and approve, policies, procedures and priorities for IT. IT Governance manages IT innovations funds (IT Roadmap) provided by the Budget and Investment Committee and advises the CIO and senior administration on IT initiatives and capital projects. IT governance model was established in 2000 with the creation of the Administrative Systems Advisory Committee, later evolved to include an Academic Information Systems Board (AISB) and became its current representational IT Governance structure in 2010. The eight subcommittees include: Committee on Business Technology (CBT), Care Technology Governance Committee (CTG), Committee on Education Technology (CET), Committee on Enterprise Information & Analytics (EIA), Committee on Research Technology (CRT), Committee on Information Technology Security (CITS), Committee on Technology and Architecture (CTA) and Committee on Website Governance (CWG). CBT supports the IT Governance Steering Committee by identifying administrative and business technology needs of the university community and evaluating direction and progress of current technology initiatives directly related to creating an improved and streamlined administrative infrastructure. CTG is a special committee of the Executive Medical Board (EMB), and also reports to the campus-wide IT Governance Steering Committee. CET focuses on technologies that facilitate the effective use of learning spaces and online learning, and the financial and human resources required to support these technologies. The committee is asked to think holistically about how technology can support the integration of education in all aspects of the university's mission including patient care, research, and advancing health worldwide. CET supports the IT Governance Steering Committee by overseeing educational technologies across the UCSF enterprise. EIA as a key role provides advice and oversight for developing a vision and an overall 3-5-year data strategy. CRT supports the IT Governance Steering Committee by identifying technology needs of the UCSF research community and evaluating direction and progress of current technology initiatives directly related to supporting

		research. CITS is responsible for oversight of UCSF's information security program and ensuring alignment between the program and the UCSF's mission of advancing health worldwide through research, education, and patient care. CITS members represent schools and business units from across the enterprise, providing expert counsel to guide security strategy, assurance, compliance and policy directing reasonable and appropriate actions are taken to protect UCSF electronic information resources. The committee seeks to promote balance between the need for protection and the productivity needs of the university. CTA focuses on architecture technologies and is asked to think holistically about how the technology architecture for UCSF can best support all aspects of the university's mission including education, patient care, public service, research, and advancing health worldwide. CWG will support the IT Governance Steering Committee by overseeing websites across the UCSF enterprise. This committee focuses on oversight and coordination of UCSF websites to leverage expertise across the enterprise and maximize the effectiveness of each website in support of marketing and communication goals. The committee is asked to think holistically about how an enterprise website strategy can advance all aspects of the university's mission including patient care, research, and advancing health worldwide. Detailed information on the committee members and scheduled meetings are available online.
22	**University of Oxford**	The governance of IT in the University comes under the IT Committee, which reports to Council, University's main policy-making body. The IT Governance website provides University staff with access to the Committee's membership and terms of reference, together with a digest of the proceedings at each meeting. Several IT Boards give advice to the IT Committee on their specialist areas, which include education IT, digital content, infrastructure, research and business systems. The University has developed an IT Strategic Plan to ensure its members get the maximum benefit from IT - whether in research, teaching and learning or administration. The IT Strategic Plan is owned by the IT Committee and part of our role at IT Services is to work with partners in the divisions, departments and colleges to ensure it is implemented successfully. Different from most of the universities assessed, the University of Oxford IT Governance Website has limited access for most of the relevant information to the use of Oxford staff and students only. Most of the information concerning important IT Governance reports and meetings cannot be accessed by the broad public.
23	**University of York**	IT Governance at the University of York seems to be slightly different compared to other universities (especially USA and Canada). The highest governing authority is University Executive Board and Information Strategy Group is the second highest authority providing advice and guidance to the board. There are four key subcommittees of this group: IT Committee, Library Committee, Information Security Board and Enterprise Systems Strategy Group. IT Committee is operated via two committees: Research Computing Working Group and DCO Forum. Senior Management Team is another important independent unit directly reporting to the Information Strategy Group. At the university website, a

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		part of the IT Governance related information is exclusively restricted for internal staff use only. No information on the meeting schedules or agenda is available.
24	**The University of Queensland**	IT Governance supports the evolution of university-wide IT planning, assurance and operations, moving toward a model that best aligns the IT function with the University's Strategic Plan in an environment where planning, investment and priority-setting are transparent and coordinated. Established in November 2016, the role of the CIO is to ensure that the University's IT environment is fit for purpose and designed for agility and efficiency. IT governance will support the evolution of University-wide IT planning, IT assurance and IT operations towards a model that best aligns the IT function to the University Strategy in an environment where planning, investment, and priority setting is transparent and coordinated. IT Governance at University of Queensland is designed to support it in achieving its objectives. It must support agility and enable staff to explore opportunities that create value and improve university's competitive advantage. IT governance is influenced and supported by the Strategic Information Technology Council (SITC) and the Information Technology Governance Committee (ITGC). The SITC is mandated to provide University-wide recommendations and direction on IT strategy. It is a critical nexus between IT and the core operations of the University. The scope and purpose of the ITGC is to ensure IT objectives and delivery are in line with the Universities' strategic direction and to ensure that agreed stakeholder needs are met by governing benefit realization, risk optimization and resources optimization. Terms of Reference for both SITC and ITGC are available online. A comprehensive IT Governance Framework is available online.
25	**University of Florida**	University of Florida IT governance is a well-defined, transparent process. The governance committees assist with advising on policies, standards, and priorities in support of the university's mission and business goals. The university-wide IT Governance structure includes the following components: Unit IT Advisory/Coordination/Governance Committees to address local issues and provide representation to the Topical IT Advisory Committees. Meeting frequency is as needed and determined by the Unit. Six main Topical IT Advisory Committees: Education & Outreach, Research Computing, Administrative Systems, Web Services, IT Security & Compliance and Shared Infrastructure. Topical advisory committees provide recommendations and guidance on policies, standards, and priorities in support of university mission and business goals. Each Topical IT Advisory Committee will provide representation to the IT Policy Council in such a manner that corresponding IT providers and IT users will be represented equally. Recommendations from the topical advisory committee chairs are submitted to the CIO. The University IT Committee also submits reports to the university Faculty Senate. These committees are: University IT Committee, Information Security, Research Computing and Shared Infrastructure. Meeting frequency is determined by the committee chair. The Office of the CIO

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		guides the decision-making processes through the IT Governance. Through well-established engagement mechanisms and processes, the CIO ensures that all groups relying on IT within the university community can provide input that reaches all levels of the IT Governance structure.
26	**Appalachian State University**	IT Governance at the Appalachian State University provides processes and structures specifying strategies and techniques followed on technology decisions, implementation and management of technology changes to ensure the effective and efficient use of IT in enabling the University to achieve its goals. University IT Governance Policy can be found in the Policy Manual. Several working groups and committees share various responsibilities and are engaged in IT Governance related activities and processes. IT Executive Council (ITEC) oversees the IT governance structure, reviews major IT projects which introduce institutional risk, involve significant changes, and/or require cross division funding, and provides high level oversight to ensure that our limited IT resources work on our most pressing needs and strategic goals. IT Governance Board of Directors (IT BoD) reviews IT operations, proposals and projects to advise the CIO on demand management, strategic alignment, value delivery, policy/procedure development, and risk management. IT Implementation Group (ITIG) recommends and supports the development of holistic IT proposals, approves IT project artifacts, and conducts gap analyses for new and/or significant changes to IT policies and standards. Data Stewards Council oversees the development and maintenance of standards needed to ensure the consistent treatment of institutional data, as well as periodically reviewing and reporting on the effectiveness of University data management practices. There are several Technical Advisory Groups (TAGs) (university committees, councils and advisory groups) recognized by the IT BoD as units charged of assuring that information resources and technology needs are supported to advance the University mission.
27	**Western Carolina University**	Western Carolina University has recognized the critical role of the effective and efficient management of IT Services therefore a comprehensive governance structure has been established to ensure that policies, standards, and priorities mirror the needs of users in supporting the mission of the university. Request for new IT projects are assessed by the close collaboration of the Director of Academic Engagement and IT Governance with the IT Office of Project Management. All requests are analyzed for their relationship to the mission and strategic directions of the university as well as for total cost of operations. Several Advisory Committees are established task-based and serve at the request of the Information Technology Council to provide information and recommendations concerning information technology. Academic Technology Advisory Committee is a University Committee charged with receiving, developing, and submitting recommendations related to the use of technology for teaching, learning, research and scholarship to the Information Technology Council. The committee also reviews new building and renovation projects that are pertinent to

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		the academic environment. Decisions are made in the context of what is best from a university perspective. This committee serves an advisory role to the ITC and reports to the CIO and chair of the ITC. The committee will meet at least once during fall semester and at least once during spring semester. Administrative Technology Advisory Committee will advise the Information Technology Council concerning the collection, maintenance, and utilization of administrative information along with related systems, procedures, policies, priorities, and business processes. Decisions are made in the context of what is best from a university perspective. The committee serves an advisory role to the ITC and reports to the CIO and chair of the ITC. The committee will meet at least once during fall semester and at least once during spring semester. Infrastructure Technology Advisory Committee advises, provides input, and develops recommendations to the Information Technology Council concerning university's matters of acquisition, access, policies, standards, procedures and priorities related to technology infrastructure. The committee will also review all new building projects and renovations. Decisions are made in the context of what is best from a university perspective. The committee serves an advisory role to the ITC and reports to the CIO and chair of the ITC. The committee will meet at least once during fall semester and at least once during spring semester. Western Carolina University IT Governance and Prioritization Document is available online at the university website.
28	**University of Rochester**	The IT governance structure provides a forum within which the University can evaluate opportunities for increased coordination to determine if they would yield increased efficiency and/or improved levels of service. Tasks and responsibilities ate shared among several IT Governance related committees and their membership includes representatives from central IT, departmental IT, and all relevant stakeholder groups. A comprehensive three layer horizontally and vertically IT Governance model is available online and it is expected that this model will continue to evolve over time. IT Executive Committee is responsible for making decisions on all major IT investments for the University. This committee reviews the proposals and recommendations of the IT Advisory Committees and provides guidance on IT priorities in alignment with the University's strategic direction. IT Policy Committee functions differently compared to other advisory committees as it reviews and approves policy decisions that govern the security of University data and systems and inform the IT Executive Committee of any new policies or changes to existing policies. This committee oversees the University-wide information security strategy and interacts directly with the IT Executive Committee as needed. Clinical IT Advisory Committee is a special committee where all areas of scope reside exclusively within the Medical Center, responsible to develop and recommend policy decisions that govern access to and provision of the Medical Center's clinical systems and services, and those of its affiliates. It reviews and evaluates requests for major investments in clinical systems and services, such as future enhancements to eRecord and telemedicine, and

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review major investment decisions with the IT Executive Committee for awareness. Research IT Advisory Committee develops and recommends policy decisions that govern access to and provision of research computing systems and services at the University. They review and evaluate requests for major investments in research computing systems and services and sponsor liaisons with external parties to further support investments in research computing, such as partnerships with government agencies, private corporations, and peer universities. Educational Technology Advisory Committee develops and recommends policy decisions that govern access to and provision of educational technology systems and services at the University. They will review and evaluate requests for major investments in educational technology systems and services and present recommendations to the IT Executive Committee for approval. Enterprise Systems Advisory Committee develops and recommends policy decisions that govern access to and provision of the University's enterprise systems and services. They review and evaluate requests for major investments in enterprise systems and services, such as the replacement of legacy systems, and present recommendations to the IT Executive Committee for approval. Areas of scope include student systems, finance systems, HR systems, advancement systems, supply chain management systems, and data warehouse. Core Technologies Advisory Committee develops and recommends policy decisions that govern access to and provision of the University's network systems and services. They review and evaluate requests for major infrastructure investments in network systems and services and present recommendations to the IT Executive Committee for approval. Areas of scope include network systems, telecommunications systems, unified communications, mobile, teleconferencing systems, and videoconferencing systems. Data Center Systems Advisory Committee develops and recommends policy decisions that govern access to and provision of the University's data center facilities. They review and evaluate requests for major infrastructure investments in the Data Center facilities and its associated systems and services, such as servers and storage, and present recommendations to the IT Executive Committee for approval. Data Security Task Force was established to ensure that we are best able to mitigate threats to the security of data stored electronically. This committee is responsible for the tactical aspects of information security, including developing policy and procedure, overseeing the deployment of technology, assessing risk, recommending strategies for risk mitigation, and developing strategies for education and awareness. Data Analytics Advisory Committee advises on processes around data access, data definitions, and consistency in reporting and analytics. IT Campus Leaders from across the University share information, develop recommendations and proposals, and support subgroup and special interest group collaborations through the IT Campus Leaders Group.

29	**The University of Utah (USA)**	IT governance at the University of Utah is intended to find collaborative solutions for IT issues affecting the University of

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		Utah and its ability to fulfill its mission. The IT governance process was revised in 2016 to bring together a representative campus constituency chosen by academic and administrative leadership and to streamline the committee process. The Architecture and New Technology Committee (ANTC) is entrusted with hearing IT issues and makes recommendations that affect IT architecture and architecture standards, IT common services, and the adoption and implementation of new technologies. Its recommendations go to the SITC. Both the SITC and ANTC may create ad hoc committees to address specific issues of strategic importance. The Strategic Information Technology Committee (SITC) was formed to raise, hear, and discuss IT issues that affect significant portions of the University community or cross multiple areas of oversight. Its recommendations go to the University's executive leadership team for a final decision. The University Enterprise Web Advisory Council (EWAC) is an ad-hoc committee entrusted with raising, hearing and discussing issues that affect University web properties, its online ecosystem, and web visitors. The University Geographical Information Services (UGIS) subcommittee is an ad-hoc committee convened by the ANTC. The University Teaching and Learning Portfolio (TLP) focuses on technology to support teaching and learning across campus. There is a dedicated page for each committee and working groups with relevant information on charter, membership, purpose and authority, mission - scope and key goals, agenda and meeting, etc.
30	**Villanova University (USA)**	IT Governance represents the Villanova leadership and community in IT decision making. Its role is to ensure that investments in IT are aligned with the University strategy. IT Governance Model is available online and key decision-making and advisory structures are: University Council on Information Technology (UCIT), Administrative IT Committee (ADIT), The President's Cabinet and Administrative Budget Committee (ABC). UCIT serves as the decision-making body for major IT projects and policies. UCIT evaluates, recommends and approves IT strategies, projects, and policies that support the educational processes, receives input from College IT committees, and advises Vice President of Academic Affairs on Instructional Technology. ADIT represents the needs and requirements of the administrative community and provides feedback, input and advice to the University IT Committee (UCIT) on strategies, policies, initiatives and major projects that support the administrative IT needs at Villanova University. The President's Cabinet will review and comment on IT initiatives and polices that affect the university community. The ABC will review and approve IT initiatives that require additional funding. Faculty Advisory Group provides feedback and input (Advice) to the University IT Committee on Strategies, policies, initiatives and major projects that support the academics and educational purposes. For UCIT, ADIT and Faculty Advisory Group dedicated webpages exists providing information on membership and sub-units nonetheless no information on past or upcoming activities is available.

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4. Discussion & Conclusions

Section 3 presented short extracts from IT Governance approaches of 30 selected universities (most of them are USA higher education institutions). Overall, there have been more than 150 higher education institutions' websites reviewed. From the obtained information, some important conclusion can be drawn.

First, majority of universities that publish information on their IT Governance approaches has already designed IT Governance models with clear structures, roles and responsibilities. Reviewed institutions tend to have many committees established. In principle, each committee or working group has a clear goal and purpose of establishment and covers specific aspects on the IT Governance system within the university. In most of the cases there are no overlapping in duties and responsibilities and the primary goal of each committee or working group is to aid and support to the executive committees in their decision-making processes. All reviewed universities have these committees as formal structures and these structures in regular basis report to the supervising authority or authorities.

Second, there is no best IT Governance model that can be successfully deployed at every higher education institution. All the reviewed IT Governance models have some similarities yet display unique features. In addition, there is no best size of committees and working groups an institution must establish. There may be IT Governance structures with just 2 or 3 committees but there are other universities that run more complex systems with over 10 IT Governance committees and working groups. In general, at every reviewed institution it was noticed a vertical hierarchy with a centralized decision-making body mainly responsible for large scale IT Projects and initiatives. In terms of daily operations and division-based decisions, structures tend to be highly decentralized. Yet, in most of the cases local IT interventions and investments are supervised by an adequate control authority usually called CIO.

Third, concerning the processes, many standardized practices such as ITIL, COBIT, or ISO exist. Universities can start the process of developing their IT Governance structures and models by choosing one of these standards and customize it for their specific infrastructure and goal. Still, literature does not suggest a single standard as the best practice to be implemented by higher education institutions and research organizations. This report was not intended to provide insights on the potential standards applied by assessed universities.

Last, IT Governance is not a mechanism restricted solely to top-management or IT experts within a university. All the reviewed models and practices demonstrate a high level of involvement of all internal and external stakeholders in the process of IT decision making processes. Even though the final structure responsible for taking strategic IT decisions can be top-management and governance bodies within a university, still everyone is heard directly or indirectly via domain and department based working groups and committees.

In conclusion, beside the highly empathized importance of the IT Governance in the overall performance of universities and research institutions, still many reputable universities only

recognize the IT Governance relevance in their study courses and programs. After reviewing more than 150 universities websites with majority of them listed in the top-200 THE Ranking 2020, only approx. 20% of them have user-friendly dedicated webpages describing their well-established IT Governance structures and formalized committees and working groups.

References

Altemimi, M., & Zakaria, M. (2016). Effective IT Governance for Public Sector Based on Governance and Management Practices consideration. *International Journal of Academic Research in Management and Business*, 88-103.

Ayayi, B., & Hussin, H. (2016). IT Governance from practitioners' perspective: sharing the experience of a Malaysian University. *Journal of Theoretical and Applied Information Technology*, 219-230.

Batyashe, T., & Iyamu, T. (2016). IT Governance: An architectural framework based on consolidated best practices. *Journal of Governance and Regulation*, 7-15.

Bianchi, I., & Sousa, R. (2015). IT governance for public universities: Developing a model. University of Minho.

Bianchi, I., & Sousa, R. (2016). IT Governance mechanisms in higher education. *Conference on ENTERprise Information Systems / International Conference on Project MANagement / Conference on Health and Social Care Information Systems and Technologies* (pp. 941-946). Procedia Computer Science.

Cajo, B., Gunza, L., Cajo, D., Parra, B., & Cajo, I. (2017). ICT governance in Higher Education. *International Refereed Journal of Engineering and Science (IRJES)*, 32-37.

De Haes, S., & Van Grembergen, W. (2006). Information Technology Governance Best Practices in Belgian Organisations. *Proceedings of the 39th Annual Hawaii International Conference on System Sciences (HICSS'06)*.

Governance of Information Technology in Higher Education. (2006). Retrieved from http://tic.crue.org/wp-content/uploads/2016/04/FolletoITGovernance.pdf

Vejseli, S., Proba, D., Rossmann, A., & Jung, R. (2018). The agile strategies in IT Governance: Towards a framework of agile IT Governance in the banking industry. *Twenty-Sixth European Conference on Information Systems (ECIS2018)*, (pp. 1-17). Portsmouth, UK.

Websites*:*

- MIT Information Technology Governance Committee ITGC: http://web.mit.edu/itgc/;
- Princeton University Office of Information Technology: https://oit.princeton.edu/about-oit/it-governance;
- IT at Yale: https://its.yale.edu/about-it/it-decision-making;
- University of Chicago, Office of the Chief Information Officer: https://itroadmap.uchicago.edu/;
- Technology@Berkeley: https://technology.berkeley.edu/governance;
- UCLA Office of Information Technology: https://oit.ucla.edu/governance;
- IT Governance - IT@Cornell - Cornell University: https://it.cornell.edu/itgovernance;
- IT Governance | Duke University OIT: https://oit.duke.edu/about/it-governance;
- University of Michigan: https://it.umich.edu/governance;
- Northwestern University IT Governance: https://www.it.northwestern.edu/about/it-governance/index.html;
- UW Information Technology: https://www.washington.edu/uwit/governance/;
- The University of British Columbia IT Governance: https://cio.ubc.ca/it-governance;
- Illinois IT Governance: https://itgov.illinois.edu/;
- IT Governance - UW–Madison Information Technology: https://it.wisc.edu/it-community/governance/;
- Washington University in St. Louis, Office of the CIO – IT Governance: https://cio.wustl.edu/governance/;
- UNC – Information Technology Services: https://its.unc.edu/about-us/it-governance/;
- IT Governance at UC Davis: https://iet.ucdavis.edu/it-governance-uc-davis;
- TechWeb: Boston University: http://www.bu.edu/tech/about/governance/;
- EMORY Governance and Portfolio Management: https://it.emory.edu/governance/index.html;
- Suffolk University IT Governance: https://www.suffolk.edu/about/directory/information-technology-services/about/it-governance-committee;
- University of California San Francisco IT Governance: https://itgov.ucsf.edu/;
- University of Oxford IT Governance: https://www.it.ox.ac.uk/governance;
- Information Services governance - University of York: https://www.york.ac.uk/about/departments/support-and-admin/information-services/committees/;
- IT Governance - The University of Queensland: https://coo.uq.edu.au/operational-areas/information-technology-services/it-governance;
- Governance - Information Technology - University of Florida: https://it.ufl.edu/governance/:

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- o IT Governance - Appalachian State University: https://its.appstate.edu/it-governance;
- o IT Governance & Prioritization - Western Carolina University: https://www.wcu.edu/learn/academic-services/it/aboutit/itgovprioritization/index.aspx;
- o Governance & Committees - University IT / University of Rochester: https://tech.rochester.edu/vp-it/committees/;
- o IT Governance – University Information Technology Utah: https://it.utah.edu/cio/it-governance-overview.php;
- o IT Governance | Villanova University: https://www1.villanova.edu/villanova/unit/about/itgovernance.html.