

IT governance in the context of HE governance in South Africa

C. Johl*

e-mail: cjohl@ufh.ac.za

R. von Solms*

e-mail: Rossouw.VonSolms@nmmu.ac.za

*Nelson Mandela Metropolitan University

Port Elizabeth, South Africa

S. Flowerday

University of Fort Hare

Alice, South Africa

e-mail: sflowerday@ufh.ac.za

Abstract

Public higher education (HE) in South Africa is governed by the Higher Education Act (Act No. 101 of 1997) (DoE 1997a). This article refers to four different, but related, levels of governance that span the landscape of public HE: firstly, within the global context; secondly, in the context of the country with all of its government ministries; thirdly, the 'system' of education in the context of legislative governance within the public higher education sector in South Africa; and finally, the institutional governance arrangements required in terms of legislation or regulation, which will be reviewed with particular attention being given to information technology (IT) governance. Further, the notion of 'managerialism' will be discussed to provide some structure to the context in which governance is practised. IT governance, as a subset of institutional governance, within and across the public HE system is subsequently addressed. Finally, the current absence of IT governance oversight or reporting to the public HE authority and mechanisms to improve governance in the sector are discussed, which provides an indication of the value that can be created by the implementation of a best practice IT governance framework at institutional level. The layered approach to governance investigated in the article provides insight into the factors that influence the ability to govern subsystems, particularly the IT subsystem, in the public HE sector in South Africa. This approach can be adapted for use in most environments.

Keywords: governance, levels of governance, higher education, information, information technology

INTRODUCTION

Governance, and particularly governance in higher education (HE), has been questioned in terms of the need to govern public HE in the world today. The HE

environment is highly complex and direct management by governments is no longer appropriate. Moreover, in exchange for increased institutional autonomy, governments seek to hold institutions to account, linking funding to performance and the public assessment of quality (OECD 2003).

The modern public appears to require higher levels of accountability for government spending, and the spotlight often falls on education, spending on which in South Africa in 2010 amounted to approximately 19.2 per cent of total government spending (United Nations 2013). In the same year, the proportion of *public higher education* spending in South Africa was approximately 3.2 per cent (DHET 2012).

Despite the highest academic ideals, public higher education institutions (HEIs) are faced with delivering more with less in a world that demands increased higher education participation rates. These increase annually with no apparent slow-down in demand. Over the past decade, public HE funding in South Africa has increased on average by approximately 15 per cent annually (DHET 2012). This is considerably higher than the approximate 5 per cent average consumer price index increase over the same period (Statistics South Africa 2012). In an attempt to satisfy stakeholders, many public HEIs have introduced business principles in order to deliver more with less, as well as to respond to government requirements to increase participation in the HE sector. This has led university councils, that is, the governing bodies of public HEIs, to use management practices rather than academic techniques. Also relevant in this article are the levels of governance discussed by researchers in the European Union (EU) which are referenced in an attempt to understand governance at the general systems level and within all the subsystems in the public HE system in South Africa.

The article seeks to explore the element of information technology (IT) governance within a multilevel structure or system, including its subsystems of governance, in the public HE sector in South Africa. It also aims to conclude whether the Department of Higher Education and Training (DHET) should formalise IT governance to a greater extent in order to eventually bring about more governance control or oversight of the IT function.

GENERAL SYSTEMS THEORY IN THE CONTEXT OF THE PUBLIC HE SECTOR IN SOUTH AFRICA

In the current article, the HE system in South Africa is viewed as an open system that is governed by the Higher Education Act (Act No. 101 of 1997, hereafter the HE Act) (DoE 1997a). The HE Act defines the cooperative nature of governance requirements both within institutions and between institutions; thus, from an epistemological viewpoint the article embraces systems theory. This widely used interdisciplinary concept studies the properties of systems as a whole in order to learn about and understand the behaviour of systems within their boundaries and, particularly with open systems, how they are influenced from outside their boundaries. The concept of a system serves to identify those manifestations of natural phenomena and

processes that satisfy certain general conditions. In the broadest conception, the term *system* connotes a complex collection of interacting components together with the relationships among them that permit the identification of a boundary-maintaining entity or process (Laszlo and Krippner 1998). To summarise the concept, systems theory includes inputs, processes and outputs and represents the transformation process (O'Brien 2000).

This traditional system flow of input, process and output is, however, no longer adequate and, as pointed out by O'Brien (2000, 21), the 'system concept becomes even more useful by including two additional components: feedback and control'. The control element involves monitoring and evaluating feedback to determine whether a system is moving towards the achievement of its goal. It is, therefore, essential to define the system that can be influenced by this research and distinguish between its environment, environmental influences and subsystems. A system of controls for the management of, primarily, alignment and risk can influence a subsystem; governance objectives cannot traverse several systems without weakening as they pass through intermediaries or inhibitors between the systems or subsystems. The concept of 'layers or levels of governance' is presented in association with systems or subsystems theory. Likewise, the number of layers of governance that need to be traversed between the DHET and work at the operational level in individual institutions is high and this can result in governance objectives, intent or mandates expressed or given at the highest level being diminished during operationalisation.

There is also a need for cooperative governance between institutions that exist in the 'system' of education. In the context of autonomy, this complicates the functioning of the system as there are intersystem dependencies in spite of the desired institutional autonomy contemplated in the HE Act. Figure 1 shows three typical institutions in the system of HE in South Africa, indicating the elements of cooperative governance and inter-institutional cooperative governance. Working relationships between institutions are generally regionalised as these initiatives require regular physical meetings to achieve objectives. Governance initiatives generally include all institutions nationally as these are less time bound and usually require strategic level interaction.

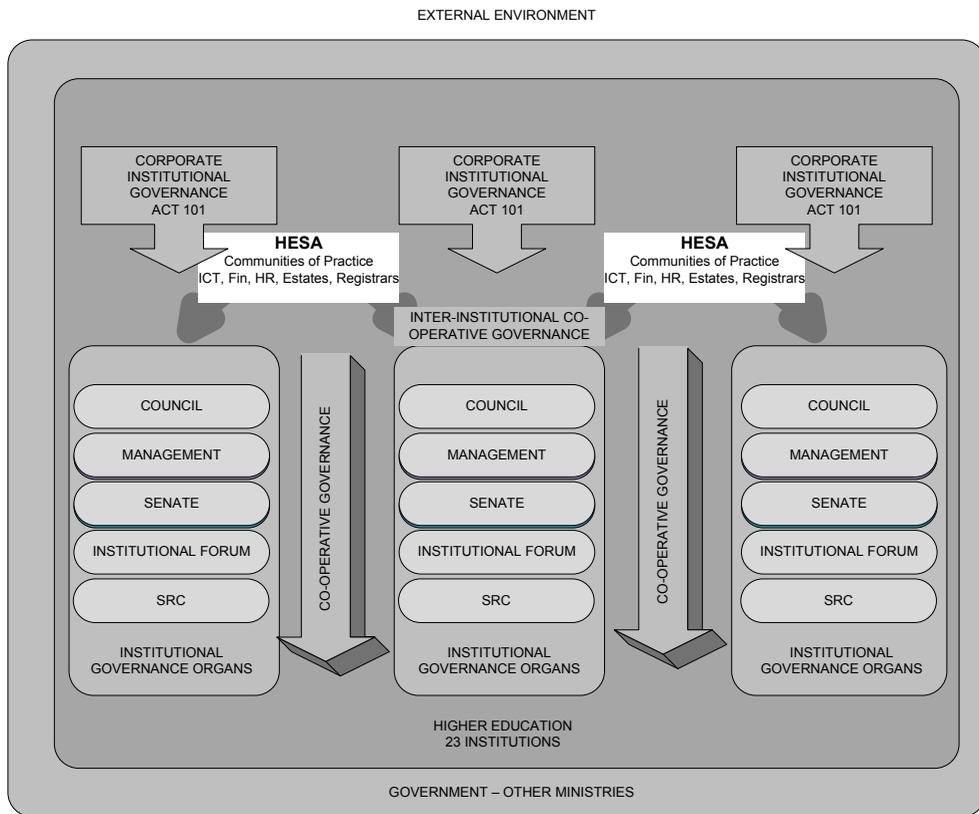


Figure 1: Higher Education as an open system (Legislation, Policy and Practice)

The HE Act and the Institutional Statute define the governance organs required in South African HEIs. Currently, the HE system comprises 23 institutions or subsystems, and subsystems also exist within each institution. Public HE can be categorised as a social system, which Hoogervorst (2009) describes as a complex, multi-loop, non-linear feedback system that shows counter-intuitive behaviour, and where a lack of understanding leads to unexpected, ineffective or detrimental results. Higher education can also be characterised as an open system because it can be influenced by the government as a subsystem of the country. Van Vught (2009), in his discourse on open systems in the social sciences environment, interprets HE as an open system consisting of individual HE organisations (i.e. the components or subsystems of the HE system) embedded in an environment that includes the social, political and economic conditions under which the HE organisations need to operate.

In addition, because it is an open system, the HE system is open to its environment, which implies that its components are both able to receive inputs (in the form of students, faculty, finances and other resources) and deliver outputs (in the form of graduates, research, results and advice).

Collaboration between institutions as subsystems can also play a vital role in the governance objectives of the HE system. Higher Education South Africa (HESA) is a not-for-profit company set up in 2005 by the vice chancellors of the 23 public HEIs and succeeded the South African Universities' Vice Chancellors' Association (SAUVCA) and the Committee of Technikon Principals (CTP). All 23 vice chancellors serve as directors on the board of the company. In its 2009/10 annual report, HESA (2011) listed four focus areas. Focus area one is to build the sector's capacity and academic capabilities, including funding the next generation of academics and technology. Focus area two is to strengthen sector research, innovation and technology transfer capabilities, as well as international and continental collaborations. The third focus area is to enhance the sector's contribution to national imperatives and the final focus area is to enhance sector collaboration. In the fourth focus area, HESA (2011, 19) convened Communities of Practice (CoPs), which it defines 'as being a critical resource for feedback and advice to HESA on critical policy and operational issues'. The CoPs are listed as the Education Deans' Forum, the Human Resource Directors' Forum, the Finance Executives' Forum, the Registrars' Forum, the Transformation Managers' Forum and the Quality Managers' Forum. It is noteworthy that there is no CoP for IT under the auspices of HESA. The HESA associated CoPs were formally established in 2008, whilst the Association of South African University Directors of Information Technology (ASAUDIT) has met formally twice annually from as far back as 1990 without any association with either HESA or its two predecessors, SAUVCA and the CTP. ASAUDIT became a not-for-profit company on 6 January 2011 and is currently seeking formal recognition as an HESA CoP.

The contribution already made to the collaborative HE environment through the CoPs and the formation of ASAUDIT as a not-for-profit company supports the need for the inclusion of ASAUDIT as a CoP. This would accordingly include information and communication technology (ICT) in the 'collaborative energies' or synergies that contribute to the system of public HE in South Africa. In summary, the governance of public HE in South Africa clearly lies within the systems theory paradigm, and feedback and control is a definite addition or extension to traditional systems theory, specifically in this context.

THE ORIGINS OF GOVERNANCE AND ITS INFLUENCE ON SYSTEMS IN PUBLIC HE IN SOUTH AFRICA

Clarke (2007) describes the fundamentals of governance by explaining the origin of the word 'governance' as being from the Latinised Greek *gubernatio*, meaning management or government. This was originally derived from the ancient Greek *kybernao*, which means to steer, to drive, to guide or to act as pilot. Governance

structures are implemented in many ways both within and across systems. In the broadest conception of a system, it is described as a complex collection of interacting components together with the relationships among them that permit the identification of a boundary-maintaining entity or process (Laszlo and Krippner 1998). Systems or subsystems interact with each other, generally at their boundary, and this interaction influences the behaviour of the system processes. In the context of the current study, the system boundaries become the area of regulation or definition of what may be passed between systems to control or to steer the desired outcomes. It is thus possible to differentiate constitutionalised systems with formal, but limited, hierarchies from adaptive, more or less informal, networks (Enderlein, Wälti and Zürn 2010, 5).

Regulation generally takes place in the presence of policy which governs desired behaviour. A system can have many subsystems and subsystems can in turn have further subsystems. However, in the context of the current study, which suggests four overall levels of governance as indicated in Figure 4, only two levels of governance will be addressed, namely: the level of ministerial governance of public HE; and the level of institutional governance of individual public HEIs.

Lastly, IT governance as a subsystem of governance will be discussed. Thus, governance in the context of the article exists on multi levels. Friedrich (1968) discusses the concept of multi-level governance primarily in the federal political domain but alludes to a conceivable governance arrangement composed solely of private collective actors such as corporate governance or associative governance. Governance arrangements in the political, business or associative context have their origins in the concept of steering, driving, guiding or acting as pilot.

The etymological origin of governance provides Cloete and Kulati (2003) with the basis from which to develop the concept of cooperative governance. Associative or cooperative governance is practised between willing participants and is also found in the public HE sector in South Africa in the form of voluntary structures such as HESA and ASAUDIT, which have been set up by the collective will of institutional leaders rather than by government directives.

Another form of governance is legislative and is required to ensure that the public good is served by the elected leaders as it relates to their constituents within systems or structures. This form of legislative governance directed through steering as defined in the HE Act requires formal governance structures within public HEIs and formal reporting to the DHET at certain defined intervals.

Still another form of governance is defined in the King III report (2009) on corporate governance. This form of governance refers to all entities operating in South Africa, both public and private, including public HEIs. This sets about transforming the associative, collegial or consensual concept of governance of HEIs into a corporate notion of governance by simple direction and control in a hierarchical structure or system.

In the current study, the public HE system is treated as a subsystem of government and each institution is, in turn, viewed as a subsystem of the public HE system. As shown in Figure 2, at each of these system levels, the governance cycle of direct-

execute-control originating from the Australian standard on corporate governance AS 8000:2005 – and described more recently by Von Solms and Von Solms (2006) with reference to information security governance but applicable across the full spectrum of governance – is practised within the system and within each subsystem of government but particularly, in this case, the DHET.

The European HE system functions within a complex environment that spans the European Union (EU) and involves each individual institution as a subsystem. Kohler (2006, 18) states that HE governance is an issue permeating almost all matters of HE dealt with by both HEIs and research institutions, but no less by state authorities involved in HE and research. He continues, saying that issues such as optimising institutional structures, internal and external participation and communication, democratic, legal and monetary steering mechanisms, public responsibility and autonomy, ensuring quality whilst minimising cost, to name just a few of the hotly discussed topics concerning HE governance, determine much of the current debate in HE and research. Further, he indicates that HE governance is indeed seen as crucially important both at institutional and systems levels.

In published research on HE governance in the EU, Vukasovic (2006, 210) defines three levels of governance, namely: the institutional level; the system level; and the international level. The current study proposes that there are three levels of governance relevant to South Africa, namely: the institutional level; the DHET level; and the government level, and that the governance cycle operates independently within each system, as well as influencing, interacting and inter-working between the autonomous systems. The subsystem autonomy is usually framed in the context of the public good and public accountability of the HE system in terms of the country or the public as a whole (DoE 1997a). The highest level system thus places accountability on the autonomy granted to the subsystem. This accountability is passed through the levels to the core subsystem level of HE, which is proposed in the article as an individual autonomous institution. In the case of the DHET as the higher level system, the control element of the governance cycle is directed across the system boundary in the direction of the subsystem, which in this case is an individual public HEI.

Once the governance element of ‘direction’ has been successfully transferred, or in the context of autonomy placed as a mandate to be received by the next level subsystem, then the process of acceptance of the mandate or ‘execution’ can take place. This entails another complete direct-execute-control cycle that functions within the subsystem of individual institutional governance until the end of the process cycle, after which the ‘control’ element of the governance cycle will return the systems’ response back to the higher level system of the DHET. The subsystems therefore process the governance intent or mandate within each subsystem and then pass the results of the intent or mandate, and thus the execution thereof, between systems through governance mechanisms and back to the governance source. This implies that there are multiple levels of governance between the systems or subsystems, with these levels being identified by system boundaries.

Scholarship on multi-level governance has developed into one of the most innovative themes of research in political science and public policy. From 2000 to 2009, multi-level governance was a central topic in over 150 articles in academic journals with a steady increase in article publication every year (Enderlein et al. 2010, 1). Public HE governance is multidimensional (CoE Higher Education 2006, 39) or multi-level and, as such, in most HE systems HE governance spans more than one system, subsystem or level of governance. These levels of governance imply a hierarchical structure which is usually informed by law, policy or regulation. Public HE in South Africa is governed by the HE Act in which the governance framework is clearly defined. In some cases however, it is a voluntary collective agreement towards shared goals or objectives that drives HE governance within the system of HE.

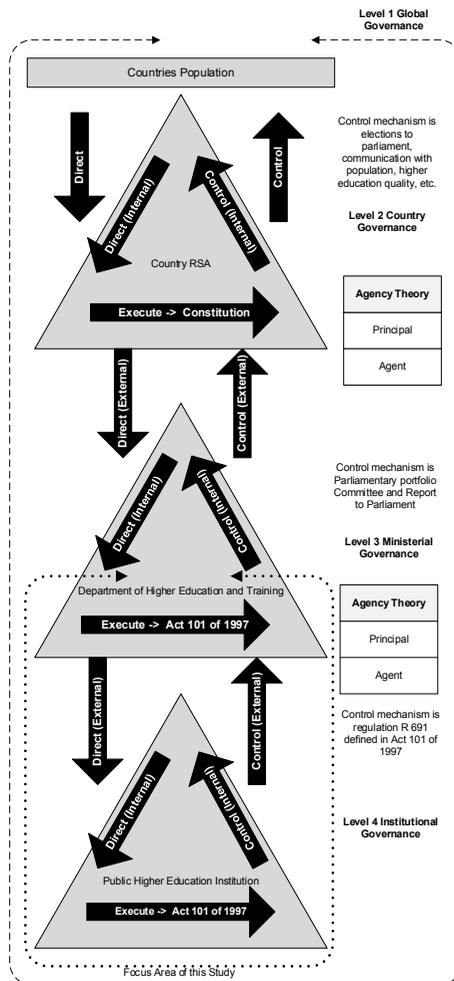


Figure 2: Direct-Execute-Control governance cycle (adapted from Von Solms and Von Solms 2006)

This type of voluntary governance is usually not informed by law and is associative in nature, striving for collective benefit, and is maintained by the will of individual role players which in this case are public HEIs. This type of governance is usually focused on specific objectives that may span one or more of the levels of governance across the HE domain, and may possibly even have commercial participants. Higher education governance is a key aspect of maintaining and developing a democratic culture without which democratic institutions and democratic legislation cannot function, while at the same time, HE is crucial for developing the knowledge, skills, values and attitudes that modern societies need (CoE Higher Education 2006, 6). In South Africa, the HE Act defines the organs of governance required within each HEI. One of the five-year governance-related goals of the South African HE system is to improve institutional efficiency through improved capability and strengthened alignment of information, finance, governance and management in the post-school learning system (DHET 2010a, 45).

A standard institutional statute (DoE 2002) published in terms of the HE Act can be amended or enhanced to provide for institutional requirements including enhancing governance requirements. None of the South African public HE institutional statutes that are replacing the standard institutional statute with their own statute provide specifically for an IT governance framework despite the significant investment in technology required to provide for IT systems in institutions.

Figure 1 shows the public HE and institutional components of the system and subsystems referred to in the study. The diagram in Figure 2 indicates the separation between the system of Higher Education and Training (HET) and one of its subsystems, a public HEI. The interface between the HET system and the HEI subsystem is regulated by the HE Act, which defines an HEI as it functions within a complex framework of requirements in terms of financial controls, areas of study and other guidelines that must be followed in order to qualify for funding; therefore, the HE Act maintains its very existence. HEIs' comprehensive annual results are communicated to the DHET as defined in reporting Regulation R691 (DHET 2007) required in terms of the HE Act. The next section covers the 'direct' requirements that the DHET places on HEIs in terms of steering institutions towards meeting the DHET objectives.

THE 'DIRECT' ELEMENT OF THE GOVERNANCE CYCLE BETWEEN DHET AND PUBLIC HEIS

As can be seen from Figure 3, the DHET has implemented a complex and comprehensive framework to steer the public HE sector as defined in the HE Act. This section covers these requirements in more detail.

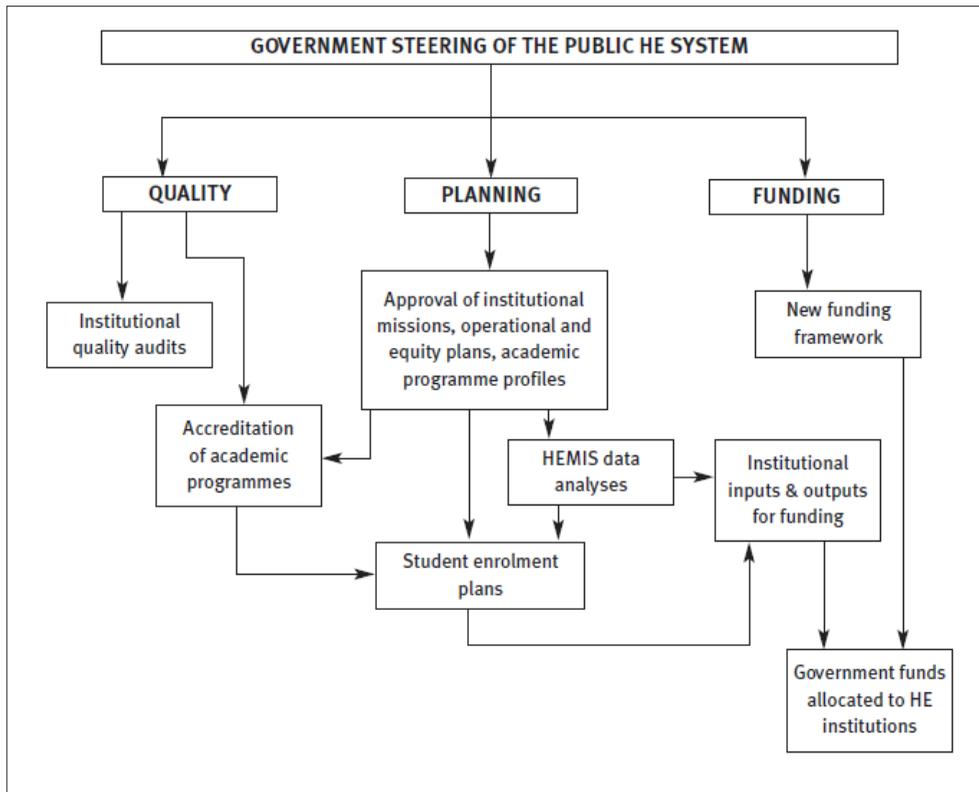


Figure 3: South African government steering mechanisms of the public HE system (DHET 2010)

Three areas of control by the DHET are evident in the steering mechanisms shown in Figure 3 for the public HE system in South Africa. These are quality, planning and funding, which are directed, executed and controlled through governance mechanisms and not management mechanisms. *Governance*, by definition, implies control by steering an *autonomous* system, whilst *management* would mean a system of controls which implies direct interaction between the management of DHET and staff at institutions. It is definitely not the intention of this article to promote the idea that the DHET should *manage* institutions, but rather that it should strengthen the governance framework or ability to govern autonomous institutions by the inclusion of an IT governance framework in the existing institutional governance framework. Each of these areas is discussed in more detail in the following subsections.

Funding of the South African public HE system

The Education White Paper 3 – Programme for the Transformation of Higher Education (DoE 1997b) states that a new funding framework will be required to facilitate the transformation of the HE system. These transformation goals include those of more equitable student access; improved quality of teaching and research;

increased student progression and graduation rates; and greater responsiveness to social and economic needs.

A further requirement of the 1997 White Paper (DoE 1997b) is that government funds allocated to HEIs be divided into block grants and earmarked grants. Block grants are defined as undesignated grants which may be spent at the discretion of the council of each HEI, while earmarked grants are defined as funds which may only be used for specific purposes designated by the Minister. The HE Act gives the Minister the power to determine what proportions of the HE budget should be allocated to block and earmarked grants. The Minister also determines annually, within the context of the Medium Term Expenditure Framework (MTEF), what the allocations to various subcategories of the block and earmarked grants should be. After consulting with the Council on Higher Education (CHE) and with the concurrence of the Minister of Finance, the HE Act requires the Minister to determine the policy for the funding of public HEIs.

Planning of the programme and qualification mix

The programme and qualification mix of institutions in the public HE sector in South Africa is a structural requirement which is defined in terms of the HE Act. All qualifications offered by public HEIs are approved by the Minister of Higher Education and Training through the South African Qualifications Authority (SAQA) prior to them being offered. The Minister also approves the number of students that the ministry is prepared to fund per qualification and this is calculated on the basis of the country's requirements in terms of skills and expertise. The Higher Education Management Information System (HEMIS) is the mechanism through which student numbers per qualification per institution are recorded and managed. HEMIS data is collected from all institutions using a structured and highly regulated software system which is supplied to all institutions so as to comply with the information submission requirements. The HEMIS planning cycle usually covers a period of three years.

Quality in public HE in South Africa

The CHE was established in terms of the HE Act in order to: advise the Minister on aspects of HE; arrange and coordinate conferences; publish information on developments in HE; promote the access of students to HEIs; and create a permanent Higher Education Quality Committee (HEQC). The HEQC's advice to the Minister includes: advice on quality promotion; research on the structure of the HE system; planning of the HE system; mechanisms for the allocation of public funds; student financial aid; student support services; the language policy and governance of HEIs; and the HE system. The CHE and the HEQC must comply with the policies and criteria formulated by SAQA in terms of the South African Qualifications Authority Act (Act No. 58 of 1995) (DoE 1995). SAQA's role is to: advance the objectives of the National Qualifications Framework (NQF); oversee the further development of

the NQF; and coordinate the sub-frameworks. SAQA also had to advise the ministers of Education and Labour on NQF matters in terms of the National Qualifications Framework Act (Act No. 67 of 2008, hereafter the NQF Act). In terms of the NQF Act, the Quality Councils (QCs), will, among other things, develop and manage their sub-frameworks and make recommendations in this regard to the relevant ministers, ensure the development of qualifications or part qualifications as is necessary for their sectors, including appropriate measures for the assessment of learning achievement and recommending qualifications or part qualifications to SAQA for registration.

The NQF is a comprehensive system approved by the Minister for the classification, registration, publication and articulation of quality-assured national qualifications. In short, the NQF is a set of principles and guidelines by means of which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an integrated system that encourages lifelong learning (SAQA 1996). The areas in which direction takes place from the DHET to institutions, namely, funding, planning and quality, place onerous obligations on public HEIs to comply with the requirements for funding for approved programmes.

THE 'EXECUTE' ELEMENT OF THE GOVERNANCE CYCLE WITHIN PUBLIC HEIS

The 'execute' element of the direct-execute-control governance cycle as adapted from Von Solms and Von Solms (2006) maps directly to the individual public HEI's function of teaching, research and community engagement. The 'execute' element of the governance cycle takes input from the 'direct' element of the governance cycle and maintains its cyclical function indefinitely and it provides output to the 'control' element of the governance cycle required in terms of regulation R691. It is, however, moderated by changes to the public HE system that may be required by legislative or regulatory change. It is during this element of the governance cycle that the education process takes place with annual intakes of students and their graduation on completion of the programmes. This is the element of the governance cycle that identifies with corporate governance as described in the King III report (2009) and which is applicable to public HEIs.

THE 'CONTROL' ELEMENT OF THE GOVERNANCE CYCLE BETWEEN DHET AND PUBLIC HEIS

Public HE governance requirements are formalised in terms of the HE Act with reference to Regulation R691 which requires specific data in a specified format. This regulation requires comprehensive reporting data that covers all of the functional areas within a public HEI with the exception of IT, where only the IT personnel costs are required to be identified. The DHET Strategic Plan (2010b) does not, however, provide any policy directives on IT governance.

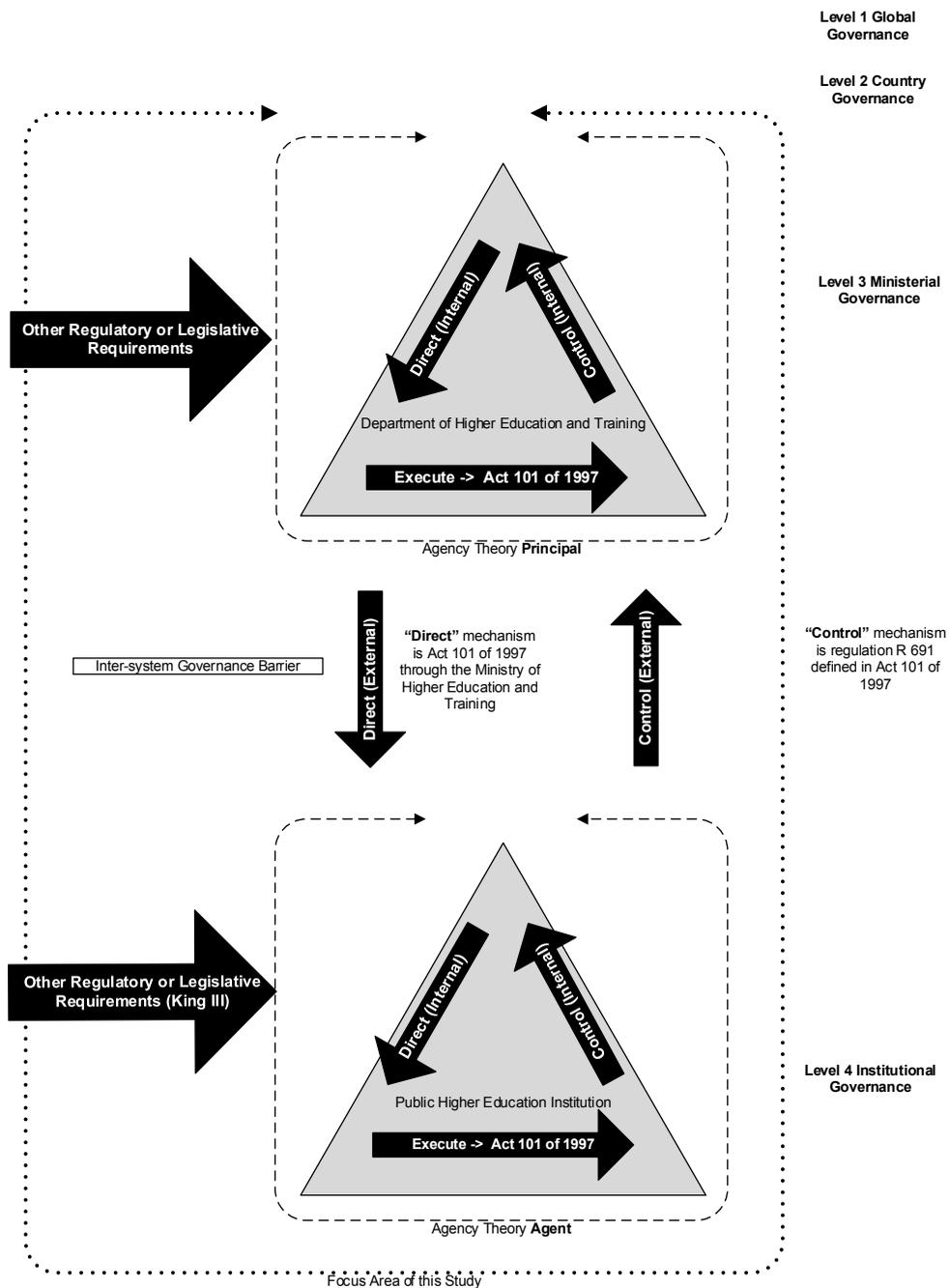


Figure 4: Governance cycle indicating inter-system governance barrier (adapted from Von Solms and Von Solms 2006)

Figure 4 indicates the institutional subsystem level at which there is an obligation to comply with the King III code of best practices. There is, however, no formal obligation to comply with the King III code at the ministerial level of governance. There is also no regulatory requirement to channel any King III-related governance intent or mandate between these levels of governance. The ‘control’ element of the direct-control governance cycle (Von Solms and Von Solms 2006) is proposed in the current study as the feedback or reporting requirements of the HE Act the primary purpose of which is the regulation of the format and content of a public HEI’s annual report to the Minister, as prescribed in the regulations for annual reporting (DHET 2007) by HEIs in terms of section 41 of the HE Act. Despite this being the only legislated requirement in terms of annual reporting, there is formal interaction between the DHET and institutions between governance compliance reporting periods, the nature of which is mostly operational.

Governance structures between the DHET and public HEIs in South Africa are limited to the formal structures required in terms of the HE Act. Accordingly, the CHE (DoE 1997a, 10) was established to advise the Minister on aspects of HE, one of which is the governance of HEIs. Conformance and performance, two of the primary objectives of governance, are not reinforced by participative governance structures within the public HE sector in South Africa. The King III code of good governance practices applies to public HEIs in South Africa, but is not required at the level of the Ministry of Higher Education and Training. These inconsistencies in the requirements for governance at the different levels within the HE system make it extremely difficult to set up a governance structure that is consistent and effective across the levels applicable to the public HE system in South Africa. The next section seeks to investigate some of the factors influencing the interaction between these systems or subsystems.

FACTORS INFLUENCING THE INTER-SYSTEM ‘DIRECT’ AND ‘CONTROL’ GOVERNANCE CYCLE ELEMENTS

The structure of the HE system in South Africa is depicted in Figure 4 with more detail on IT governance at institutional level. Two concepts will be considered, namely, *institutional autonomy* and *managerialism*.

Institutional autonomy

Factors influencing the effectiveness of the transfer of governance intent or the acceptance of the governance mandate from the DHET, and the return to the DHET of the control results as proposed in this study, are supported by both the Von Solms and Von Solms’s (2006) adaptation of the governance control cycle and Agency Theory. Agency Theory ((Eisenhardt 1989), in this study, is directed at the relationship between the DHET (the principal) which delegates work or ‘directs’ public HEIs in terms of the direct-control governance cycle (Von Solms and Von Solms 2006) (the agents) to perform that work. This theory is concerned with

resolving two problems that can occur in agency relationships. The first is the agency problem that arises when (a) the desires or governance intent or goals of the DHET and institutions conflict, and (b) it is difficult or expensive for the DHET to verify what the institutions are actually doing. Willekens and Sercu (2005) state that in a world without agency costs there would be no need for an audit committee or a committee responsible for governance oversight. Institutions only need to report to the DHET within six months of the year-end cycle. This means that 18 months can pass between the governance intent of the DHET being declared or institutions being advised of governance requirements and the response on activities in terms of the annual report.

King III (2009, 63) indicates that the board, or in the case of public HEIs, the council, should assign oversight of the institution's risk management function to an appropriate board committee such as a risk or audit committee and that this committee should consider risk as an integral part of the effective oversight of risk management. In terms of the current governance structure relevant in the public HE sector and as indicated in Figure 4, the governance requirements defined in the King III report relate only to the internal dynamics of an institution and do not cover the governance requirements between institutions and the DHET, or the DHET and the government at the next system level of governance.

The second agency problem is the problem of risk sharing that arises when the DHET and HEIs have different attitudes towards risk. As response to risk mitigation is only reported to the DHET six months after completion of an annual cycle, this can strongly influence the ability of the DHET to direct any changes that may be required for institutional success in terms of risk mitigation. This relationship is defined in the preamble to the HE Act which states that it is desirable for HEIs to enjoy freedom and autonomy in their relationship with the state within the context of public accountability and the national need for advanced skills and scientific knowledge (DoE 1997a). Operational risk should be borne and managed by institutions on an ongoing basis. The council report on the risk portfolio is required in terms of paragraph 2.1.1 of reporting Regulation R691 and is thus part of the governance framework of the HE Act.

The granting of autonomy to HEIs in a sense creates a barrier between them and the DHET in that autonomy granted within a specific context and under certain conditions could be freely and broadly interpreted; consequently institutions are able to run without oversight and therefore at possible increased risk levels for up to 18 months without influence or intervention from the agency principal, the DHET. The council has the mandate to 'govern the public HEI, subject to the HE Act, any other law and the institutional statute' (DoE 1997a, 24). The council comprises stakeholders which include persons appointed by the Minister of Higher Education and Training. Thus, the transfer of the governance intent or mandate to institutions from the DHET places institutions under pressure to comply with the legislation or

face the consequences of non-compliance. The second idea to be discussed is the notion of managerialism and how it may have influenced HE governance over the past two decades.

The notion of managerialism

The notion of managerialism is defined by Deem, Hillyard and Reed (2007, 6) as a general ideology or belief system that regards managing and management as functionally and technically indispensable to the achievement of economic progress, technological development and social order in any modern political economy. Moreover, management is regarded as that generic activity, group and institution that is necessarily, technically and socially superior to any other conceivable form of social practice and organisation such as a craft, profession, or community.

Public HE in South Africa is primarily funded by government grants, student fees and income generated from the publication of research articles. In South Africa, the average proportion of institutional income derived from tax payers has decreased from 54.1 per cent in 2004 to 51 per cent in 2010 (DHET 2012). In 2004, the currency value of this state spending amounted to approximately R12 billion and this escalated above the consumer inflation index to an amount of approximately R29 billion in 2010. The HE Act is not the only act that governs the public HE sector in South Africa (DoE 1997a); other acts regulate issues associated with functional disciplines within HE, such as finance, human resources and IT. Associated with the funding of the public HE system is the need to ensure that public money spent on education is efficiently and effectively managed.

It is clear from the DHET Strategic Plan (DHET 2010b) that the public HE system in South Africa is governed primarily to improve access, throughput and quality and this can be interpreted as being supportive of managerialist intent and practice. The governance goal of institutional efficiency aims at improved capability and alignment of information, finance, governance and management in the post-secondary school environment. The DHET Strategic Plan (2010b) states that the DHET also needs to significantly strengthen its internal systems so that it can increase its efficiency and effectiveness, as measured in terms of learner and employer satisfaction. The DHET also states that it needs to dramatically increase the number of learners the system is able to accommodate over time and, to meet this need, new institutions may very well be required. Central to the efficient and effective functioning of the envisaged system will be a broad-based, well-resourced information system. This will help individuals plan their careers better, while enabling learning institutions to align their programme offerings to the occupations for which there is the greatest demand. Consequently, establishing such an information system is a key national priority (DHET 2010b).

Governance oversight

Governance oversight is required in all functional areas of governance, including IT governance, and is present in some limited ways in the CoPs set up by the HESA. These CoPs function at inter-institutional level and do not necessarily participate in governance structures together with the DHET, other HE entities or entities making strategic use of IT. The primary governance objectives of conformance and performance are difficult to achieve when the subsystems or institutions within a system operate without the appropriate inter-system interfaces. Accordingly, ASAUDIT was formed to ensure collaborative synergy is achieved within the IT domain of public HE. It plays a broad role which includes operational, strategic and governance initiatives. Further, it is important to note that the changes envisaged in the transformation of the HE system in South Africa after the change of government in 1994 are largely enabled by a revolution in the development and application of ICTs (DoE 1997b). Moreover, the National Development Plan: Vision for 2030 (National Planning Commission 2011), notes the critical and central role that HE will have to play in contributing to the development of an information society in South Africa in terms of both skills development and research. At government level, the Ministry of Education has not yet focused on these issues and, in this sense, there has been no central steering of the development and application of ICTs in HE in South Africa (CHE 2006).

In summary, the DHET does not have a technology roadmap for teaching and learning in place and it allows institutions the freedom to govern their own IT systems in both the administrative and academic realms. The dependence on IT systems is extremely high and yet the DHET has not yet introduced the requirement to implement any IT governance best practices into the existing HE governance framework through legislation. The absence of IT governance in the relationship between the DHET and institutions *denies* the DHET any governance-related knowledge of how IT is used to support its objectives. Improving IT governance for the benefit of the HE sector could be achieved by acknowledging IT governance as a part of corporate governance or, in the context of the current article, HE institutional governance, and by setting up an IT governance framework with best practices (De Haes 2007) that forms an integral part of the annual reporting process to the DHET as defined in Regulation R691 (DHET 2007). This implies that the council would remain the guardian of the autonomy of the HEI whilst improving its ability to make better use of IT through improved IT governance processes. The significant cost of IT to institutions and the high risk resulting from the use of IT should be properly addressed as, if overlooked, could cause significant failure in public HEIs in South Africa.

CONCLUSION

Improved IT governance can be achieved by acknowledging IT governance as a part of corporate governance (De Haes 2007) or, in the context of this article, HE institutional governance, and by setting up an IT governance framework with best practices that complements the reporting on other elements of governance already required in terms of Regulation R691 (DHET 2007).

The governance cycle as adapted by Von Solms and Von Solms (2006) and its application at a public HEI in South Africa has been presented in the article. The relevance and applicability of this adapted cycle to the governance cycle that takes place between public HEIs and the DHET has also been discussed. This discussion highlights the need to improve the inter-system governance oversight function in public HE in South Africa. Regulation R691 is currently under review and a new regulation R1002 has been gazetted for public comment but not yet promulgated into law. This regulation strengthens the finding of the article in that an IT governance framework will be required in terms of the amended regulation, but it does not require any specific framework which may result in the adoption of different frameworks. The result can lead to difficulties in the execution of the governance cycle in that returned data is not necessarily comparable between public HEIs in South Africa.

Evidence presented in the article indicates that IT governance in public HEIs has been neglected, as the first movement towards the governance oversight of the IT function only appeared when the King III report became applicable to public HEIs. The second possibility of IT governance becoming mandatory in public HEIs is the requirement expressed in the new, but as yet, not promulgated into law, reporting requirement R1002, in which the creation of an IT governance oversight committee of council and the mandatory use of an IT governance best practice framework is defined.

A consultative process between the role players in the DHET, public HEIs and other governance structures such as HESA and ASAUDIT to determine the most appropriate framework to use, could result in the early adoption and use of an IT governance framework. This in turn would contribute to the overall DHET (2010b) goal of improved efficiency through improved capability and strengthened alignment of information, finance, governance and management in the post-school learning system.

REFERENCES

- CHE *see* Council on Higher Education.
- Clarke, T. 2007. *International corporate governance: A comparative approach*. New York: Routledge.
- Cloete, N. and T. Kulati. 2003. *Managerialism within a framework of cooperative governance*. Pretoria: Centre for Higher Education Transformation.
- CoE *see* Council of Europe.
- Council on Higher Education. 2006. ICTs and the South African higher education landscape.

- Available at: http://www.che.ac.za/documents/d000127/ICTs_HE_Landscape_Jul2006.pdf (accessed 11 June 2011).
- Council of Europe Higher Education. 2006. *Higher education governance, between democratic culture, academic aspirations and market forces* (Series No. 5 ed.), ed. S. Bergan. Strasbourg: CoE.
- De Haes, S. 2007. *Implementing information technology governance: Models, practices, and cases*. Hershey, PA: IGI Global.
- Deem, R., S. Hillyard and M. Reed. 2007. *Knowledge, higher education and the new managerialism*. New York: Oxford University Press.
- Department of Education. 1995. *South African Qualification Authority Act (Act No. 58 of 1995)*. Cape Town: Government Printer.
- . 1997a. *Higher Education Act (Act No. 101 of 1997)*. Pretoria: Government Printer.
- . 1997b. *Education White Paper 3 – Programme for the transformation of higher education*. Available at: <http://www.info.gov.za/whitepapers/1997/education3.htm> (accessed 12 February 2011).
- . 2002. *Standard institutional statute*. Pretoria: Government Printer.
- Department of Higher Education and Training. 2007. *Regulations for annual reporting by public higher education institutions*. Pretoria: Government Printer.
- . 2010a. *Ministerial statement on university funding: 2011/12, 8 December 2012*. Pretoria: DHET.
- . 2010b. *Strategic plan 2010/11–2014/15*. Available at: <http://www.dhet.gov.za/LinkClick.aspx?fileticket=XfAHmalvQjw%3d&tabid=352&mid=1174>. Cape Town: DHET.
- . 2012. *Higher education financial data 2004 to 2011.xls*. Pretoria.
- DHET *see* Department of Higher Education and Training.
- DoE *see* Department of Education.
- Eisenhardt, M. K. 1989. Agency theory: An assessment and review. *Academy of Management Review* 14(1): 57.
- Enderlein, H., S. Wälti and M. Zürn. 2010. *Handbook on multi-level governance*. Cheltenham: Edward Elgar.
- Friedrich, J. C. 1968. *Trends of federalism in theory and practice*. New York: Praeger.
- HESA *see* Higher Education South Africa.
- Higher Education South Africa. 2011. *Annual report 2009–2010*. Available at: http://hesa.org.za/sites/hesa.org.za/files/HESA%2520AR%25202010%2520Final_0.pdf (accessed 29 October 2011).
- Hoogervorst, J. 2009. *Enterprise governance and enterprise engineering*. Diemen: Springer.
- King III Report. 2009. *Report on governance for South Africa*. Johannesburg: Institute of Directors in Southern Africa.
- Kohler, J. 2006. Higher education governance: Background, significance and purpose. In *Higher education governance, between democratic culture and market forces*, 17–32. Strasbourg: CoE.
- Laszlo, A. and S. Krippner. 1998. *Systems theories: Their origins, foundations and development*. Amsterdam: Elsevier Science.
- National Planning Commission. 2011. *National development plan: Vision for 2030*. Available at: <http://www.nponline.co.za/medialib/downloads/home/NPC%20>

- National%20Development%20Vision%202030%20-lo-res.pdf.
- O'Brien, J. A. 2000. *Introduction to information systems: Essentials for the Internetworked Enterprise*. 9th edition. Boston, MA: Irwin McGraw-Hill.
- OECD see Organization for Economic Co-operation and Development.
- Organization for Economic Co-operation and Development. 2003. *Education policy analysis*. Paris: OECD.
- Russel, C. 1993. *Academic freedom*. London: Routledge.
- SAQA see South African Qualifications Authority.
- Skyttner, L. 2005. *General Systems Theory: Problems, perspectives, practice*. 2nd edition. London: World Scientific.
- South African Qualifications Authority. 1996. Available at: <http://www.saqa.org.za/print.asp?include=structure/nqf/overview01.html> (accessed 14 February 2013).
- Statistics South Africa. 2012. Available at: <http://www.statssa.gov.za/keyindicators/CPI/CPIHistory.pdf> (accessed 18 January 2013).
- UNESCO see United Nations Educational, Scientific and Cultural Organization.
- United Nations Educational, Scientific and Cultural Organization. 2013. *NationMaster.com*. *NationMaster.com*. Available at: http://www.nationmaster.com/graph/edu_ter_enr-education-tertiary-enrollment (accessed 22 February 2013).
- United Nations. 2013. *Global indicator database*. Available at: <http://data.un.org/Data.aspx?d=UNESCO&f=series%3aXGOVEXP> (accessed 22 February 2013).
- Van Vught, F. A. 2009. *Mapping the higher education landscape*. Enschede: Springer.
- Von Bertalanffy, L. 1969. *General Systems Theory*. New York: George Braziller.
- Von Solms, R. and S. von Solms. 2006. Information security governance: A model based on the Direct-Control cycle. *Computers and Security* 25(6): 408–412.
- Vukasovic, M. 2006. Higher education governance: General report. In *Higher education governance, between democratic culture and market forces*, 203–212. Strasbourg: CoE.
- Willekens, M. and P. Sercu. 2005. *Corporate governance at the crossroads*. Oxford: Hart.